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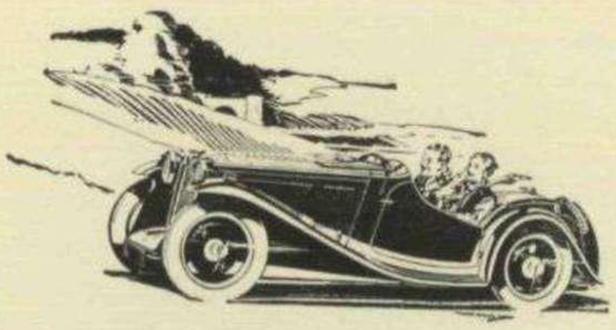
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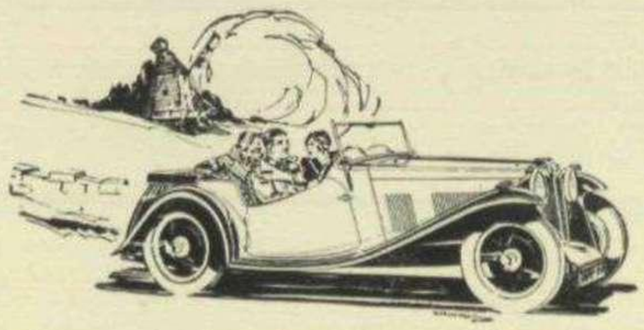
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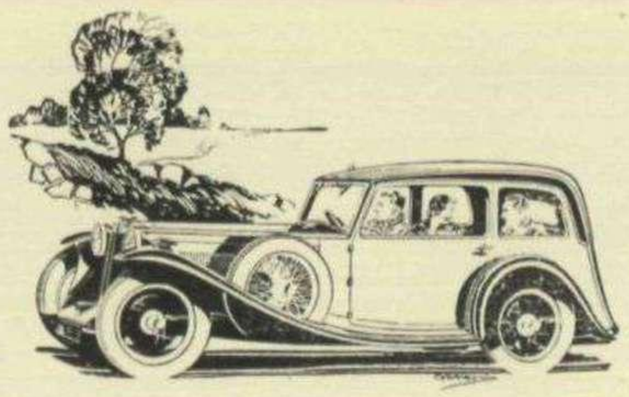
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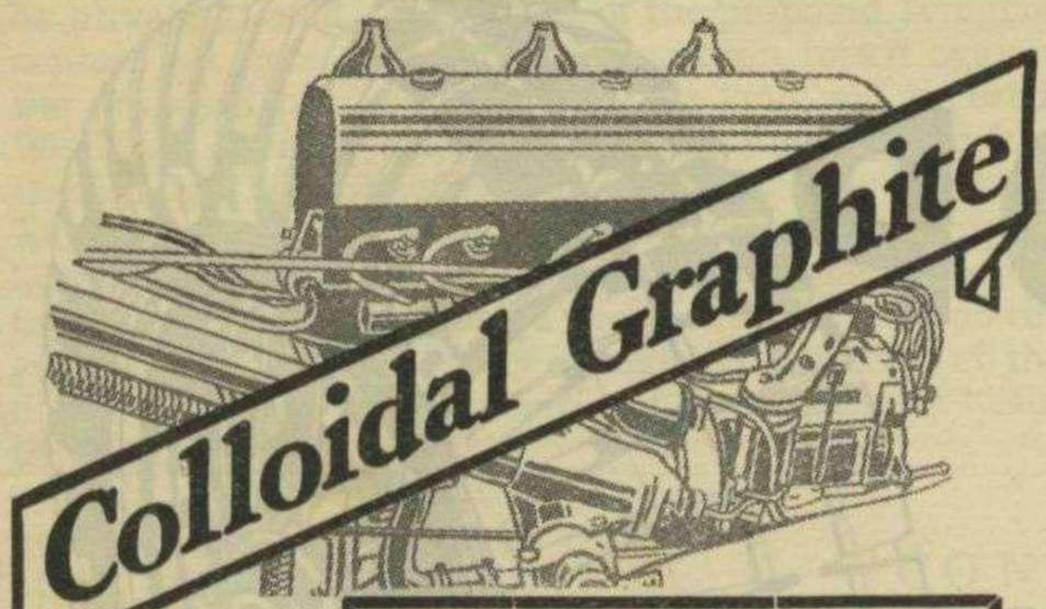
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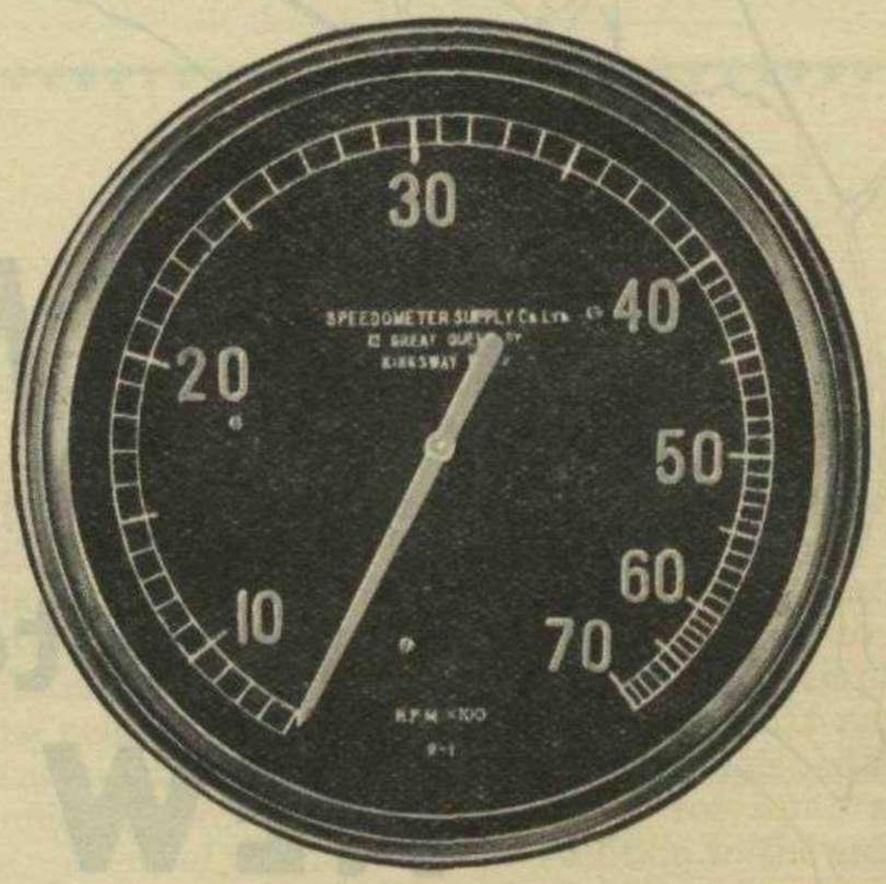
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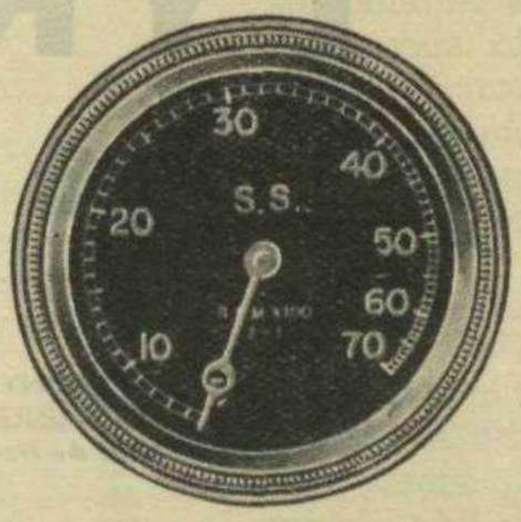
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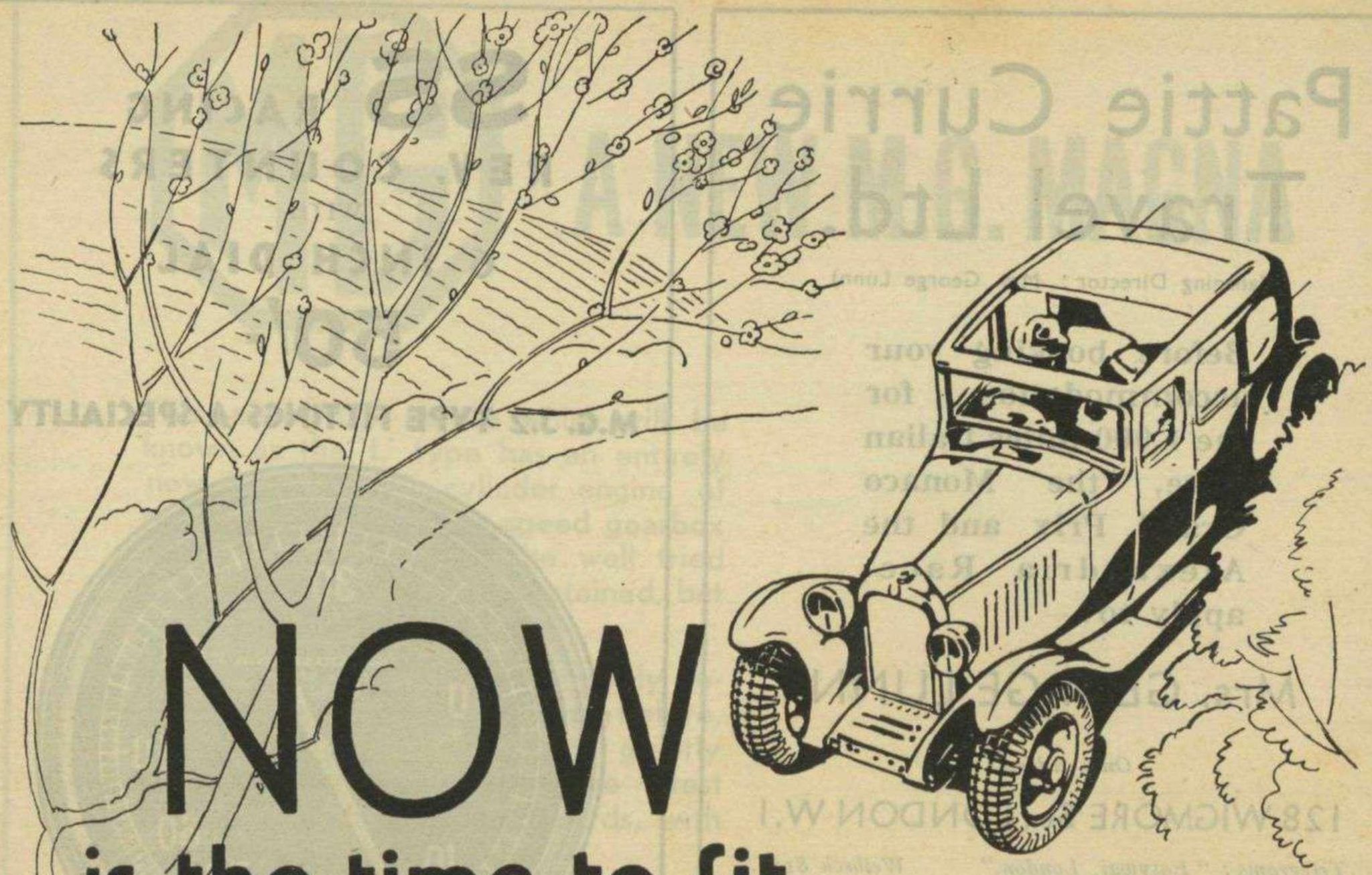
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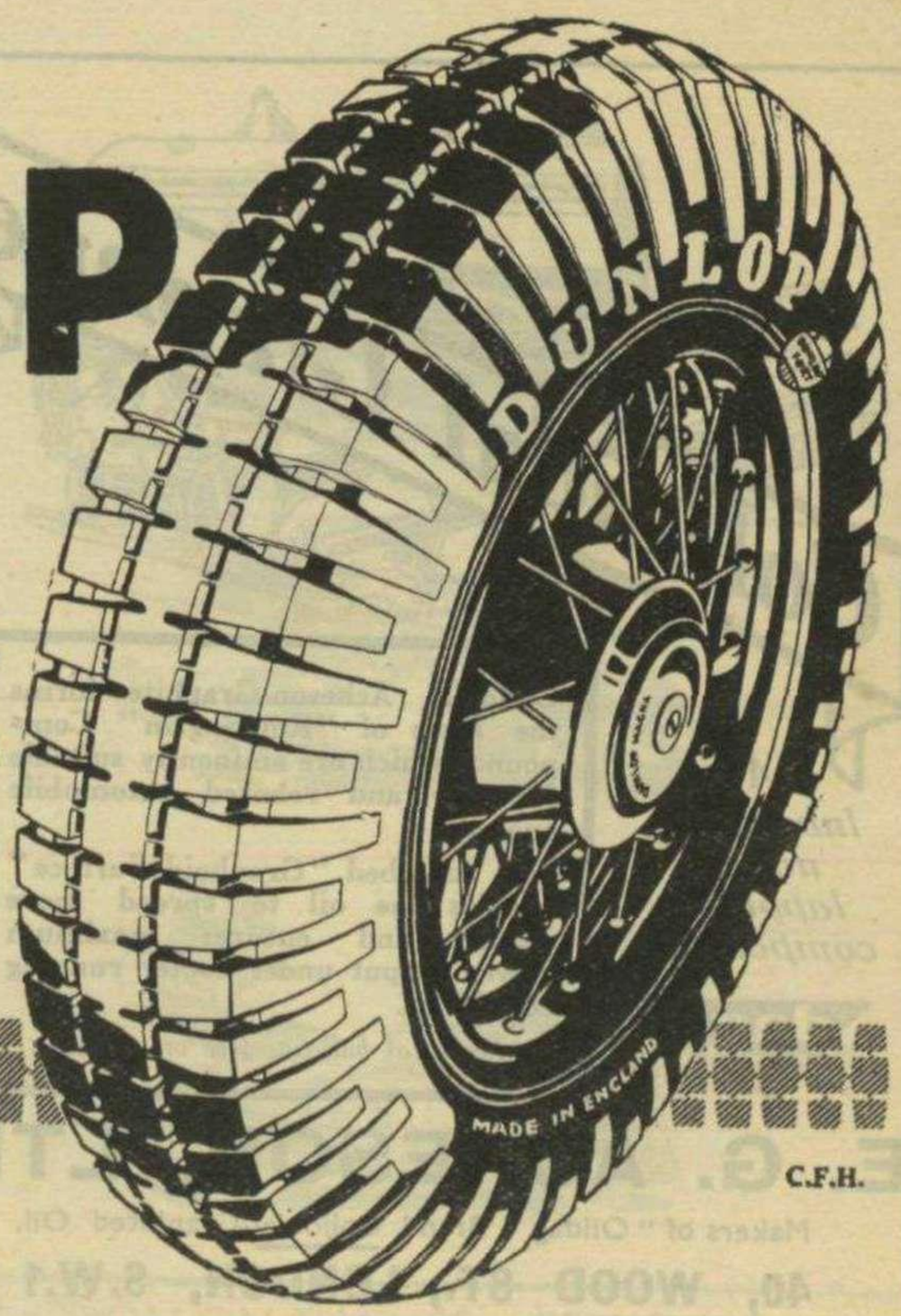
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EDITORIAL.

PRESERVATION OR PROGRESS ?

THE sport of motor-racing, while having an assured popularity among the general public in Great Britain, continues to be frowned upon by the powers-that-be. To begin with, the attempt of the Brighton Club to obtain Parliamentary sanction to run a race through the streets of Brighton has not met with any success. This is not surprising, however, in view of the already well known attitude of the Government towards motor-racing on public roads.

The alternative, of course, is to construct a circuit on private ground, on the lines of the proposed Ivinghoe course, but here again voices have been raised against the proposed purpose for which the land will be used. We have received a letter from the Buckinghamshire Branch of the Council for the Preservation of Rural England concerning a Resolution recently passed by the Committee that they "record their strong objection to the carrying out of such a project in that area, on the grounds that it will entirely change the character of the district and destroy the amenities of one of the most beautiful parts of the County."

Quite apart from the question of the right of others to interfere with the uses to which the owners of private land propose to put such land, we feel that the Preservation Council's statement of the case is hardly a fair one. To quote Sir Henry Birkin, "it is silly to assume that a road course must spoil the view." No one thinks of condemning Goodwood or Ascot racecourses as destroying the amenities of the beautiful stretches of country in which they are situated, and there is no reason why a motor road race circuit should be any less well planned. In fact, anyone who has inspected the plans and architect's drawings for the Ivinghoe track and buildings will have to admit that the whole project, far from detracting from the amenities of the neighbourhood, will actually add to them.

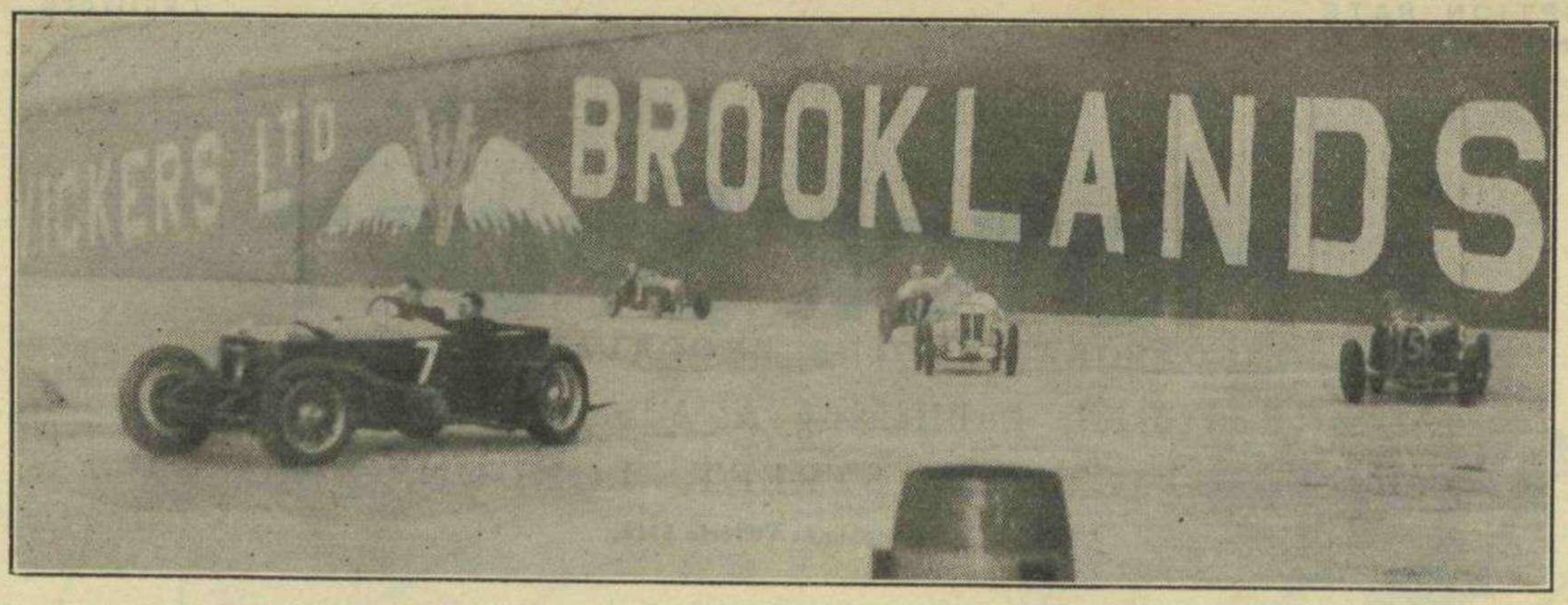
Then the view of the Council that the character of the district will be entirely changed seems to us to be in the nature of good tidings. The numbers of unemployed in the neighbouring villages, and the fact that most of the surrounding fields are lying fallow through bad times, is sufficient proof of the desirability for some active development of the district. In addition to the employment given to many by the construction and maintenance of the circuit (to say nothing of its benefit to the British motor industry) the presence of the track will cause a big increase in the rateable value of the property in the neighbourhood.

It is difficult, therefore, to see exactly whose interests the Council for the Preservation of Rural England considers it is safeguarding. Certainly not the out of work inhabitants of surrounding villages, nor the ratepayers of the district, nor the thousands employed in the motor industry, which will receive such a fillip from an English road racing calender.

In these days of financial stress, surely any attempt to develop a new sport, which will be of untold benefit to its parent industry, and which will provide badly needed work for many people, should receive the whole-hearted support of everyone having the welfare of his countrymen at heart. Instead, we find only "strong objection to the projection"!

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BROOKLANDS AGAIN!

AN INTERESTING MEETING, IN SPITE OF LIMITED FACILITIES FOR RACING. GOOD PERFORMANCES BY R. L. BOWES (BUGATTI) AND OLIVER BERTRAM (DELAGE).

AS if to compensate the Brooklands Authorities for their bad luck in having to cancel the usual outer circuit races from their programme, the weather at the opening Meeting on March 11th was almost incredibly benign. The sun shone with a serene and settled air from a blue sky, and but for the floods in the car park midsummer conditions prevailed.

Although the attendance was meagre—largely owing to the track subsidence scare—an impression of popularity was given to the paddock by the fact that the tennis courts were choc-a-bloc with cars, in consequence of the floods in the normal members' car park. Incidentally, the only occupant thereof was a solitary moor-hen, which seemed quite unperturbed by the howling racing cars as they hurtled up the Finishing Straight a few feet away.

As a substitute for the usual outer circuit races there were four "sprints," starting at the Fork and finishing half way down the Railway Straight—interesting for drivers, but rather too short from a spectator's point of view. There were five mountain races, all of which, we venture to suggest, were too short. Two of them were over 3 laps, and the remaining three over 5 laps, and we missed some of the long drawn-out battles of the usual 10 lap races.

* * *

THE FIRST MARCH SPRINT HANDICAP.

Distance about 1¼ miles.

1. L. T. Delaney (Lea-Francis 1,496 c.c., S), 18 secs.
2. C. G. H. Dunham (Alvis 2,511 c.c.), 15 secs.
3. Kaye Don (Bugatti 4,975 c.c. S), scratch.

Won by 180 yards; 180 yards between 2nd and 3rd. No speed given.

L. T. Delaney's Lea Francis was a red-hot favourite for this race, for all those who remembered the car's excellent performances in Mountain races last year were endeavouring to turn this triumph of memory to financial advantage at the hands of Jack Linton and his merry associates. The "Leaf" had some worthy rivals, though, notably in Noble's blown Salmson, Cumming's recently acquired 2.5 litre Maserati (the car driven by Eyston and Ramponi in the Double Twelve a few years ago), and last, but by no means least, "Tiger Two," or in other words Kaye Don's 4.9 Bugatti, starting from scratch.

Delaney was limit man, and made full use of his start with a very fine get-away. As he streaked down the Members Banking to the Railway Straight it was quite evident that no one could catch him, although Dunham's Speed Twenty Alvis was putting up a good show. Don, with the Bugatti, was somewhat slow off the mark, but once he got going—well, he gathered speed to such effect that he snatched third place.

Owing to "Ebby" being invisible to those in the Railway Straight no time was given for this race.

THE SECOND MARCH SPRINT HANDICAP.

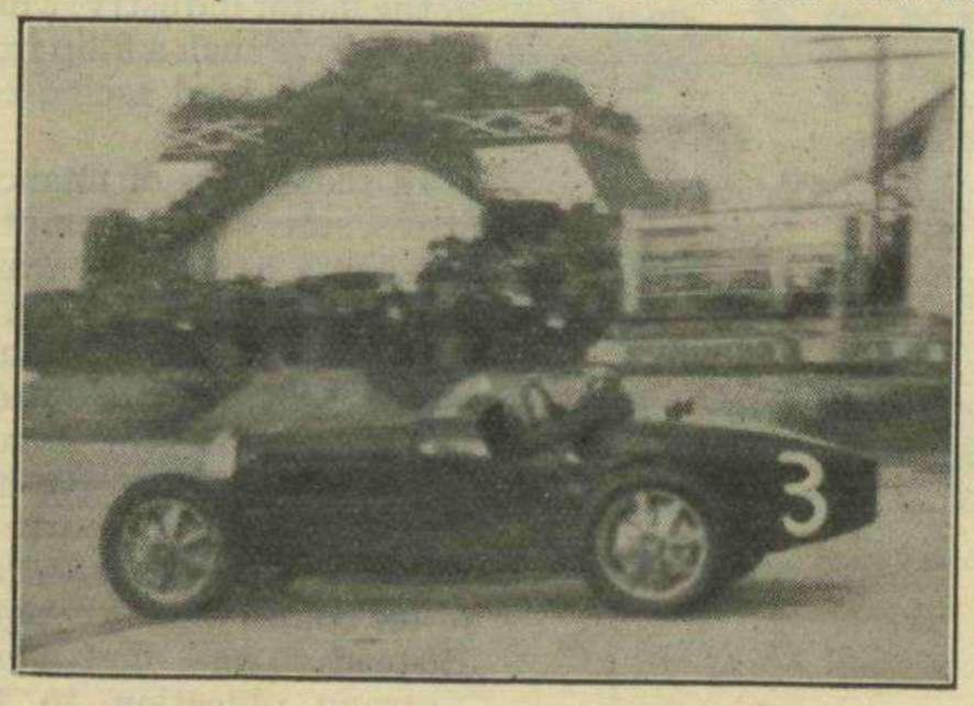
Distance about 1¼ miles.

1. C. le Strange Metcalfe (Abbot-Nash 1,496 c.c.), 17 secs.
2. G. L. Baker (Minerva 5,954 c.c.), 20 secs.
3. H. C. Dobbs (Riley 1,089 c.c.), 17 secs.

3 lengths separated first three cars. Speed 70.8 m.p.h.

Close finishes are seldom seen at Brooklands Opening Meetings, for the results of tuning-work during the winter months are apt to produce some distinct variations of form. In this race, however, a really good fight was seen for first place, and a bunch of cars went over the line together.

G. L. Baker's big Minerva, a regular competitor at Brooklands, had only just been reassembled after a spot of bother caused by a seized sleeve, and its owner was not sanguine of success. There was a newcomer in G. K. Cox's Rover Speed Model, while the rest of the field was made up of Dobbs' Riley, the Abbot-



"Bowes was handling his fast Bugatti with calm precision."



[*Motor Sport photographs*

"The 4.9 Bugatti, . . . seemed difficult to handle on the corners, and on the second lap Don used the 'escape road.'"

BROOKLANDS AGAIN!—continued.

Nash, Kenneth Evans' very fast M.G. Midget, Cummings' Maserati, and Oliver Bertram on scratch with the 12 cylinder Delage, now painted blue.

Metcalf pulled ahead of the Minerva, with Dobbs close at hand, and all three got a good lead on the back markers. Kenneth Evans had the misfortune to stop his engine a moment or so before he was flagged away, and had difficulty in re-starting. By the time he got going both the Maserati and the Delage had already left the line. Meanwhile the three early starters continued their battle, and Metcalf managed to keep his lead to the end, although the first three cars were only separated by three lengths.

THE FIRST THREE LAP MOUNTAIN HANDICAP.
Distance about 3½ miles.

1. K. D. Evans (M.G. Midget, 747 c.c., S), 20 secs.
2. C. Paul (Maserati 2,494 c.c., S), scratch.
3. H. J. Aldington (Frazer Nash, 1,496 c.c.), 12 secs.

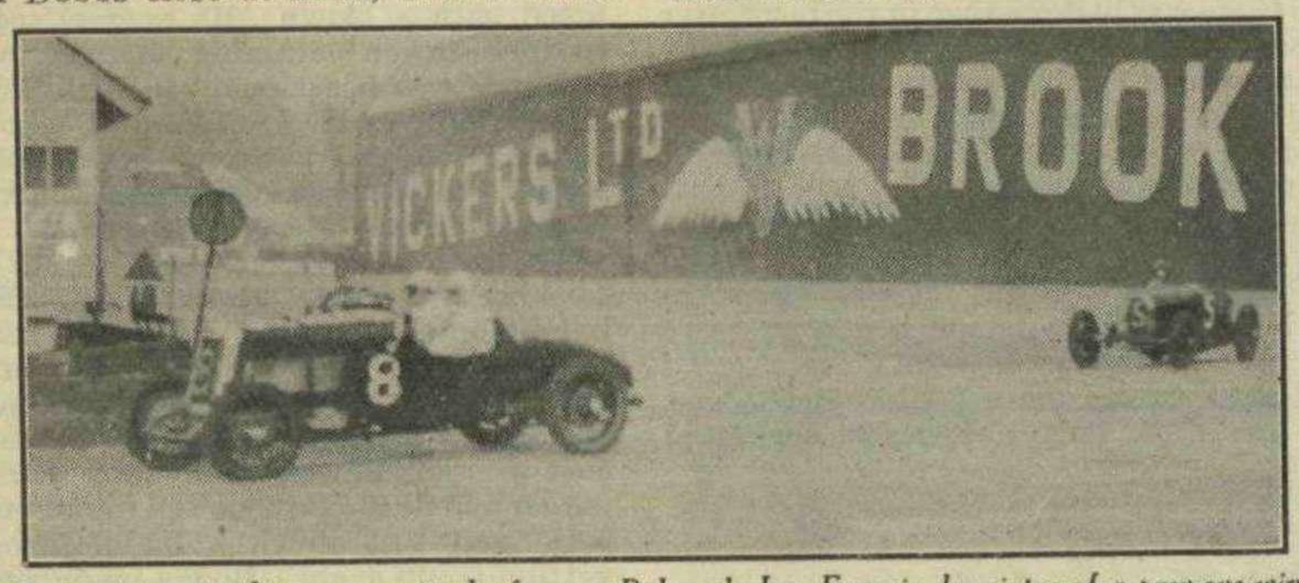
Won at 59.66 m.p.h. by 50 yards. 75 yards between 2nd and 3rd.

The first of the Mountain races was a very short affair of only 3½ miles. Limit man was W. L. Thompson, with the Austin he has raced regularly at Southport. He received 7 seconds from Kenneth Evans, but the latter quickly forged ahead with his blown Midget, and was never headed for the rest of the race. Aldington and Cyril Paul both made great efforts to catch the Midget, but Evans was handling the car with cool skill, his cornering at the Fork being very neat. Paul, who was driving instead of Cummings, caught and passed Aldington, and was close on the Midget's wheels at the Fork on the last lap, failing to catch Evans by 50 yards in a very good finish.

THE SECOND THREE LAP MOUNTAIN HANDICAP.
Distance about 3½ miles.

1. G. P. H. Noble (Salmson, 1,096 c.c., S), 12 secs.
2. R. J. W. Appleton (Bugatti, 1,496 c.c.), 18 secs.
3. R. L. Bowes (Bugatti, 2,263 c.c., S), scratch.

Won at 64.60 m.p.h. by 75 yards. 60 yards between 2nd and 3rd.



"Re-handicaps in this race consisted of . . . Delaney's Lea-Francis, by virtue of a prev.ous win."

The most interesting car on the starting line in this race was the 2.3 litre single-camshaft Bugatti once owned by Penn-Hughes, and recently acquired by R. L. Bowes, who was down to drive it in this race, starting from scratch. G. W. J. H. Wright was the limit man with his unblown M.G. Midget, but it soon became evident that the winner would probably be found either in Noble's Salmson or in Appleton's Bugatti.

At the end of the first lap Appleton was in the lead, driving with great determination. Bowes was handling his fast Bugatti with calm precision, and had already picked up two places. On the next lap Appleton and Noble were still first and second, but Bowes was now lying third, although some distance behind the leaders. Mathieson, with a blown 2 litre Bugatti, was driving his usual fast race, and clung to Bowes' wheels without being able to gain any distance. Wright's M.G. was not going well, and he fell back to last place, while Eccles (Bugatti) could make no impression on the leaders.

Then, on the last lap, Noble made a great effort and passed Appleton to take first place in a keenly contested race. Bowes, coming up hand over fist, was third, 60 yards behind Appleton.



"Metcalfe managed to keep his lead, although the first three cars were only separated by three lengths."

THE WEYBRIDGE JUNIOR MOUNTAIN HANDICAP
Distance about 6 miles.

1. P. M. Walters (Riley, 1,089 c.c.), 35 secs.
2. R. J. W. Appleton (Bugatti, 1,496 c.c.), 10 secs.
3. J. Eason Gibson (Riley, 1,089 c.c.), 25 secs.

Won at 59.66 m.p.h. by 500 yards. 300 yards between 2nd and 3rd.

A big field turned out for the first of the 5 lap Mountain races, in spite of two non-starters, these were Powys-Lybbe's 12/60 Alvis and J. C. Graham's Riley, which had broken its crankshaft in practice. Two cars were re-handicapped in view of previous successes, the Abbot-Nash going back 10 seconds on a par with Walters' Riley; and Appleton's Bugatti reverting to the scratch mark from 10 seconds, in company with Field's Invicta.

At the start Walters ran right away with his blue Riley, and established a comfortable lead which he was to hold until the end. On the second lap Apple-



[*Motor Sport photographs*

". . . the best race of the day . . . produced a very well-deserved win for 'Aldy" with an unblown Frazer Nash.

BROOKLANDS AGAIN!—continued.

ton, in spite of his re-handicap, had pushed the radiator cowling of his Bugatti into 6th place, and looked as though he would menace the leaders. Wright fell back, and on the third lap pulled up at the Fork to retire. When the car was travelling at about 15 m.p.h. there was a sudden *wh-u-u-f-f-f* and the whole machine was enveloped in flames. The driver leapt out, and in his hurry forget to switch off the Autopulse, and as the trouble was caused through a broken petrol pipe, a pretty little blaze ensued.

Drivers approaching the Fork, seeing the dense smoke as the Pyrene men dealt with the blaze, thought there had been an accident, and swept through the smoke in a most dramatic manner.

Just as Field was getting the measure of Appleton, his Invicta gave up the ghost and he had to retire. Meanwhile Appleton had displaced Metcalf in second place, who was also ousted from third position by Eason Gibson's smart black Riley. And so they remained until the finish, Rayson (Riley) snatching fourth place from the Abbot-Nash on the last lap.

By an extraordinary co-incidence the winner's speed was exactly the same, to two places of decimals, as that recorded by Kenneth Evans in the first three-lap race.

THE WEYBRIDGE SENIOR MOUNTAIN HANDICAP.

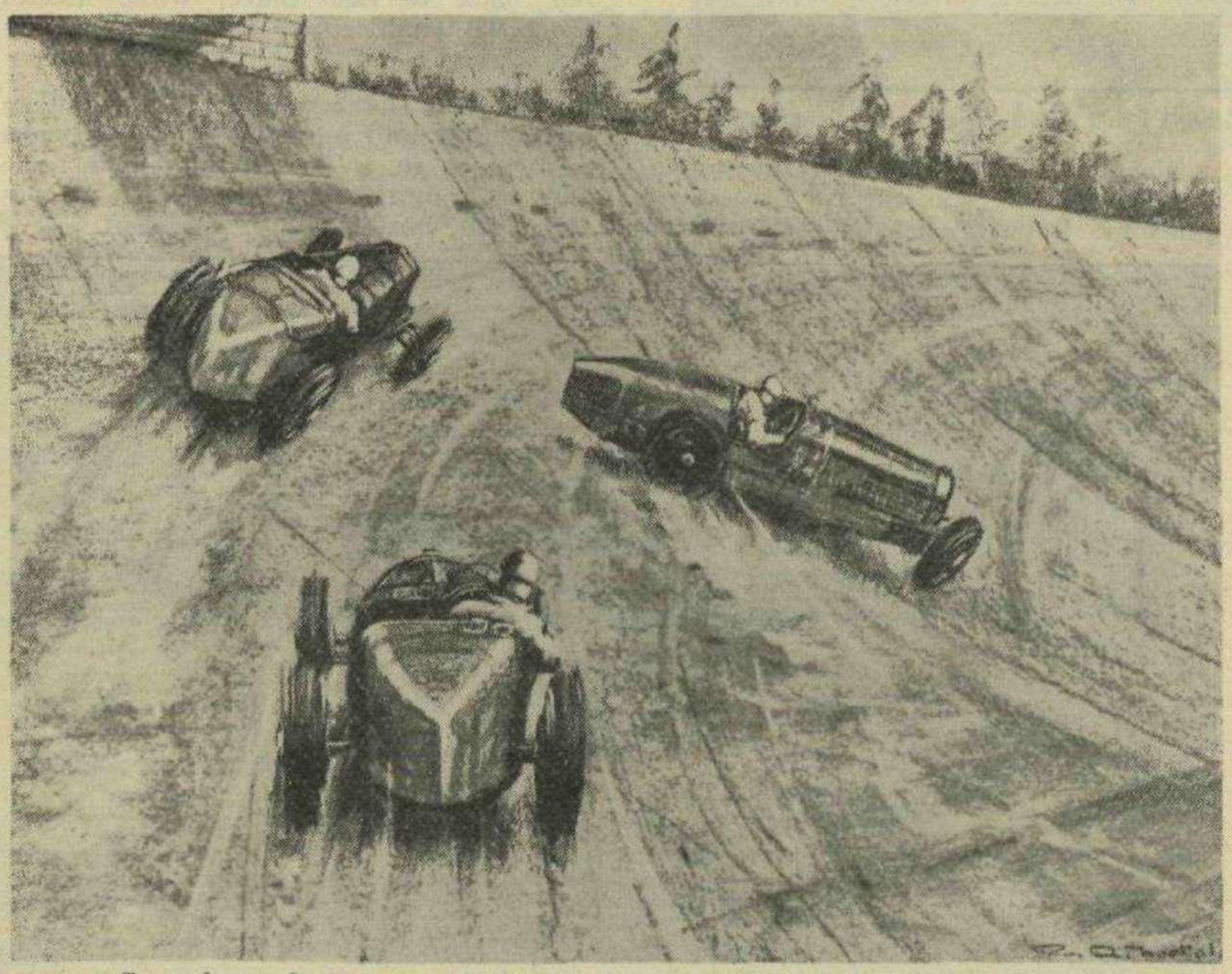
Distance about 6 miles.

1. R. L. Bowes (Bugatti, 2,263 c.c., S), scratch.
2. Marquis de Belleroche (Austin 749 c.c.), 40 secs.
3. A. H. L. Eccles (Bugatti, 1,496 c.c.), 15 secs.

Won at 68.6 m.p.h. by 100 yards. 70 yards between 2nd and 3rd.

Re-handicaps in this race consisted of I. M. C. Hepburn's Riley, which was found to have four carburettors instead of two, and was accordingly penalised to the extent of 10 seconds; Delaney's Lea-Francis, by virtue of a previous win, also 10 seconds; and Bowes' Bugatti, which was put back from scratch to owe 5 seconds.

At the start Cuthbert jumped into the lead, passing de Belleroche (Austin) and Powys-Lybbe's Alvis. On the second lap there was little change in the respective positions of the whole field, but on the third people began to shift about a little. Cuthbert's Riley began to sound queer, and he was repassed by de Belleroche, who was driving a very good race. Shuttleworth had fallen by the wayside with his 2 litre Bugatti, and he was followed by Cuthbert. Bowes, Eccles (Bugatti) and Morgan (Invicta) all began to move up, and on the last lap the green Bugatti got into second place behind Belleroche. At the Fork only a few feet separated them, and on the run-in Bowes got 100 yards ahead, to win a very well-driven race from scratch. Eccles passed Morgan to gain third place.



"Soon afterwards, Don . . . took the top corner a little too fast, slewed round broadside, and lost much valuable time in getting away."

THE WEYBRIDGE LIGHTNING MOUNTAIN HANDICAP

Distance about 6 miles.

1. H. J. Aldington (Frazer Nash, 1,496 c.c.), 40 secs.
2. R. L. Bowes (Bugatti, 2,263 c.c., S), 15 secs.
3. Kaye Don (Bugatti, 4,975 c.c., S), scratch.

Won at 62.31 m.p.h. by 30 yards, 100 yards between 2nd and 3rd.

This was undoubtedly the best race of the day, and produced a very well-deserved win for "Aldy" with an unblown Frazer Nash. On the first lap Aldington arrived at the Fork in company with R. L. Bellamy, on the veteran Nash driven by its owner in countless trials, but now repainted a beautiful green with white wheels, and with a blower attached to its engine.

With thoughts of Kaye Don on the 4.9 Bugatti and Bowes on his fleet "2.3" bearing down on them from the rear, the smaller machines were pushed by their drivers to the limit in order to establish a lead. Delaney was warned for going wide at the Members Bridge turn, while some fierce braking was seen at the Fork. The brakes of the Horton Special (now fitted with a blown Alta engine) seemed to lock in an alarming manner, while Bellamy was occasionally a little hectic. Best of all was H. J. Aldington, who certainly used the powerful brakes of his Nash to the utmost advantage, but whose judgment was always perfect.

The 4.9 Bugatti, in spite of its new Lockheed brakes, seemed difficult to handle on the corners, and on the second lap Don used the "escape road" at the Fork, made a wide sweep, and returned to the fray. Then, soon afterwards, having just passed Bowes, Don took the top corner a little too fast, slewed round broadside, and lost much valuable time in getting going again. Bowes made a great effort to catch Aldington, and might possibly have done so if he, too, had not slid just a little too much at the Fork on the last lap. So it was "Aldys'" race, after all, and a very good one at that.

THE THIRD MARCH SPRINT HANDICAP.

Distance about 1¼ miles.

1. A. L. Baker (Minerva, 5,954 c.c.), 20 secs.
2. O. Bertram (Delage, 10,688 c.c.), scratch.
3. R. Morgan (Invicta, 4,467 c.c.), 8 secs.

Won at 67.42 m.p.h. by 30 yards, 75 yards between 2nd and 3rd.

In this race the big Minerva, driven this time by "Junior," in other words Alec Baker, got over the line first, in spite of a re-handicap of 3 seconds. Oliver Bertram made a perfect get-away with the Delage from scratch and fairly pounced on the other cars in the Railway Straight. He could not quite make it, however, and the Minerva crossed the line with 30 yards to spare.

THE FOURTH MARCH SPRINT HANDICAP.

Distance about 1¼ miles.

1. F. W. Dixon (Riley, 1,089 c.c.), 11 secs.
2. O. Bertram (Delage, 10,688 c.c.), scratch.
3. C. G. H. Dunham (Alvis, 2,511 c.c.), 14 secs.

Won at 77.89 m.p.h. by 80 yards, 120 yards between 2nd and 3rd.

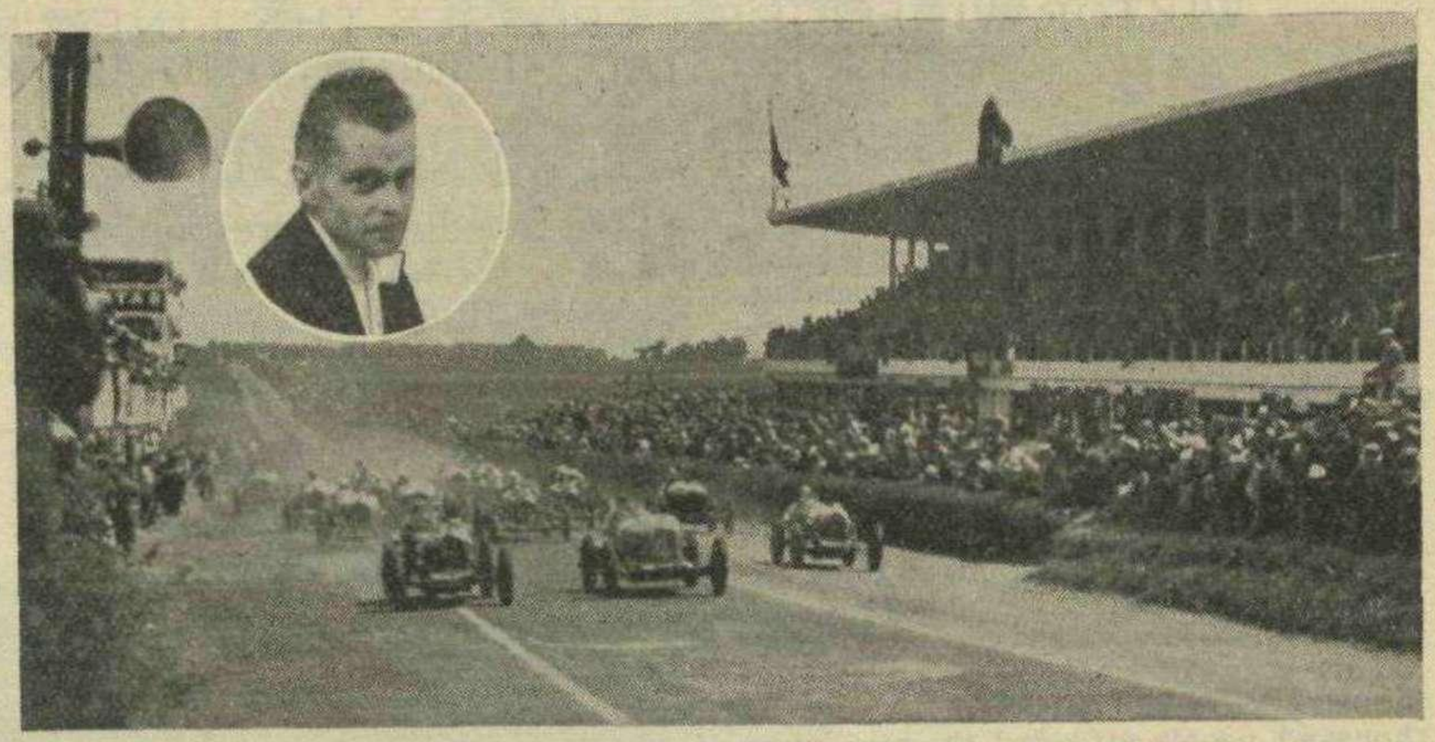
By the time the last race was run dusk was falling, and it was difficult to distinguish the cars as they flashed down the Railway Straight. Baker, senior, was at the wheel of the Minerva this time, and at the end of the race raised a protest that he had been baulked by another competitor. The protest, however, was not upheld.

An interesting car was R. J. Munday's Munday Special, which as exclusively reported in MOTOR SPORT last month, is composed of an old G.P. Sunbeam chassis powered by a 30/98 Vauxhall engine.

At the start Freddie Dixon showed that his Riley possesses really phenomenal acceleration, and he was soon bearing down on the Minerva. Bertram once again did all he could to score a win, but Dixon was too far ahead, so that the Delage driver had to be content with a "second" once more. Dixon's speed, 77.89 m.p.h. was the fastest at which a sprint race had been won throughout the day.

MEN BEHIND THE SCENES.

No. 1.
Mr. N. W. H. FREEMAN.



OF the thousands of spectators who stand at the side of road or track, cheering the drivers of racing cars as they flash by, how many give a thought to the tyres, withstanding so marvellously the strains of modern high speed racing? But ask the drivers, and they will tell you, and you can bet any money that in their conversation they will mention "Freeman of Dunlops," most decidedly a Man Behind the Scenes.

Norman William Howard Freeman, to give him his full name, was born on October 5th, 1892, at Birmingham, and was educated at the Sutton-Coldfield Grammar School. His first job was in the Distribution Engineer's Office of the Birmingham Corporation Gas Department, where he passed final examinations in Gas Engineering, and afterwards became Junior Engineer at a branch works.

In 1920 joined the Technical Staff of Dunlop Rubber Company, and after four years extensive experience in all departments confined his interests to racing side. In 1925 he carried out experimental work for the Company at Brooklands, and in 1926 accompanied the late Sir Henry Segrave to Daytona Beach, where the Sand Speed Record was raised to a speed in excess of 200 m.p.h. for the first time. Again in the following year he was sent over by the Company to Daytona with Sir Malcolm Campbell, and in the same year was appointed Racing Manager of the Dunlop Rubber Co. Then, in 1930, he was put in charge of the Racing and Concessionaires Department, moving from Birmingham to London.

Norman Freeman, besides knowing more about racing tyres than any man alive, owes not a little of his extraordinary popularity among racing drivers all over the world to a very charming personality. In the preparation of a racing car for a big event the supply of tyres is of paramount importance, and as a soothing influence on the jaded nerves of a team Freeman has many times proved invaluable.

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ALFA ROMEO VICTORY IN SWEDISH WINTER G.P.

WIKTOR WIDENGREN CROSSES THE LINE 4 MINUTES AHEAD OF E. BJORNSTAD, ALSO DRIVING AN ALFA-ROMEO

By GUNNAR MARCUS
(Our Swedish Correspondent)

THE Swedish Winter Grand Prix, held at Rämen, is the big motoring event of the year in Scandinavia, and every year is becoming more popular both with competitors and spectators alike. For most of the forty-six kilometres the course is over a road deep in snow, but on two occasions, at Ramenshyttan and Sellnas, a wide sweep is taken over frozen lakes, and here ice takes the place of snow as a surface. In order to obtain a grip, many competitors fit steel spikes to their tyres, but as these are very expensive there are always a few drivers who use normal tyres.

This year, in spite of grey skies, an immense crowd of between 40 and 50 thousand people attended the race, most of them being on the lakes, where their cars were parked in long rows. There were six non-starters, namely Bergstrom, J. E. Messon, Alan Vesterblom (Reo-Mercédès), Thostrupp, who thought he had no chance of winning, P. Pietsch (Alfa Romeo), and A. Johnsson (Bugatti).

The start was most impressive, jockeying being difficult owing to the cars sliding on the ice. The noise of the 31 odd cars was terrific, for no silencers are used. Immediately, W. Widengren with his 2.3 litre racing Alfa Romeo took the lead, closely followed by his brother, Henken, driving a green Invicta, the rest of the cars in pursuit in a solid mass. On the first lap this jockeying for position had its inevitable result of two cars being ditched, namely E. Lundborg (Paige), M. Stromberg (Chevrolet), while the popular Finnish dare-devil driver, Keinanen, had to retire with a broken universal joint. His Chrysler had been greatly shortened in wheelbase, and apparently the stresses had not been properly calculated.

Half an hour passed, and the crowd at the start fixed their eyes on the spot where the road runs out onto the lake, waiting for the first car to appear. As was expected, it turned out to be the Alfa Romeo driven by W. Widengren who had drawn well ahead of the rest of the field and set up a record standing lap at 91.2 k.p.h. Then, nearly two minutes later, another car appeared, this time the British Invicta, driven by Henken Widengren. He, in turn, was two minutes ahead of the next man, Anders Olsson (Chrysler). after which the remainder followed in close formation, the first to come by being S. O. Bennström (V8 Ford), E. Björnstad (Alfa-Romeo), C. G. Johansson (V8 Ford), and Karl Ebb (Mercédès-Benz). Everyone was surprised that Ebb should be so far behind, until it was realised that his white Mercédès was not emitting the usual scream of its supercharger—the gears were not engaging and he did not rectify the trouble until half way through therace.

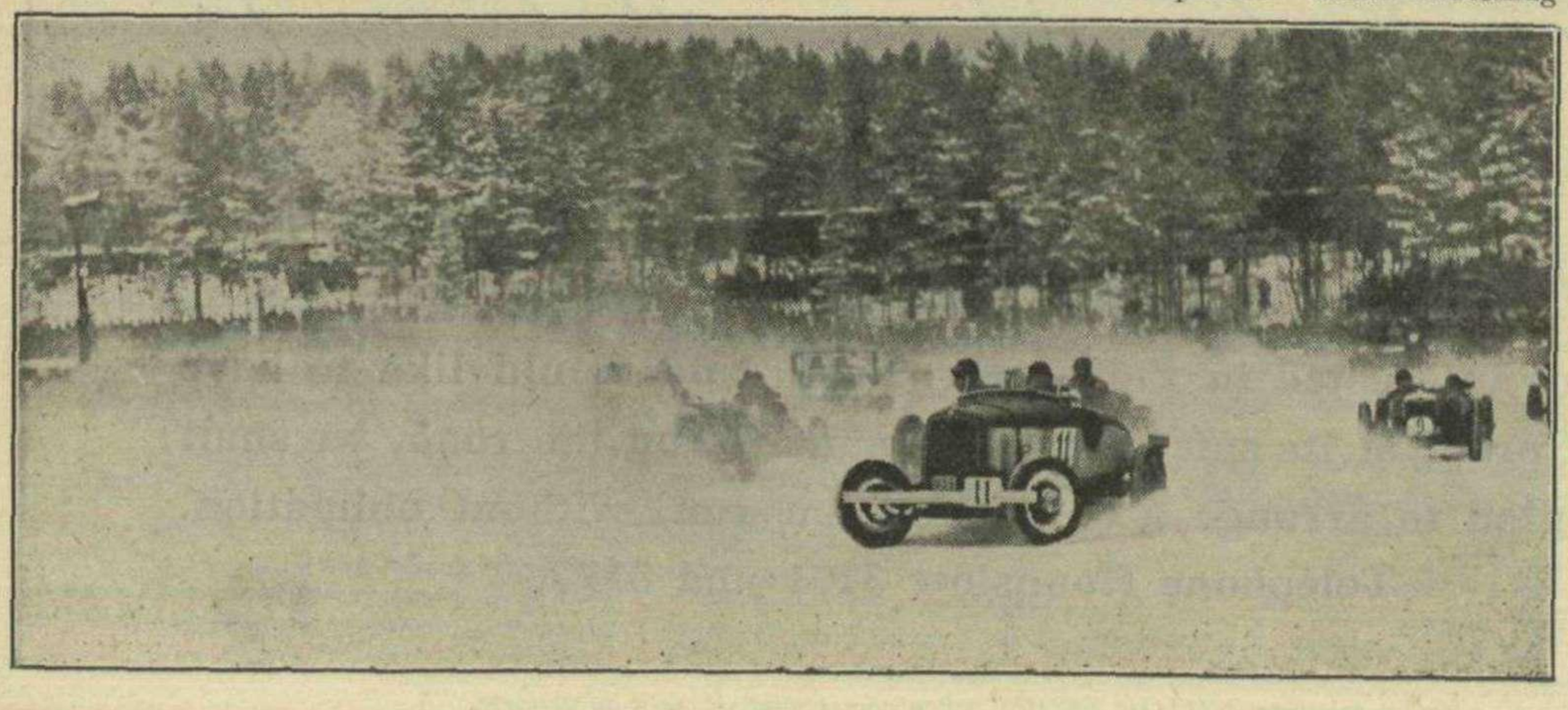


The winner, Wiktor Widengren, at the wheel of his 2.3 litre Alfa-Romeo.

The next man to drop out was G. F. Lafrenz whose Chrysler broke one of its pistons, and not long after Hans Torrell, driving a British Riley Nine, accompanied by an English mechanic named Kilby, had the misfortune to skid off the road, damaging his front axle on a rock. It appeared that Torrell was so interested in a car in the process of being ditched ahead, that he lost control of his own machine. On the second lap an amusing incident took place. W. Widengren lapped a German driver named Wimmer, who was driving a Bugatti, and the latter was so chagrined that he promptly re- tired !

Widengren still led at the end of the 2nd lap, but on the 3rd lap A. Ohlsson (Chrysler) had moved up into 2nd place, owing to the retirement of H. Widengren, whose Invicta had come to a standstill. After changing plugs and testing the compression it was found that the magneto drive had sheared. His retirement was greatly regretted by the crowd, who admired the silent speed of the Invicta. After refreshing themselves with coffee

(Continued on page 254)



Jockeying for position amid a cloud of snow-dust. The car in the foreground is S. O. Bennstrom's V.8 Ford, while on the right can be seen Hans Torrell's Riley 9.

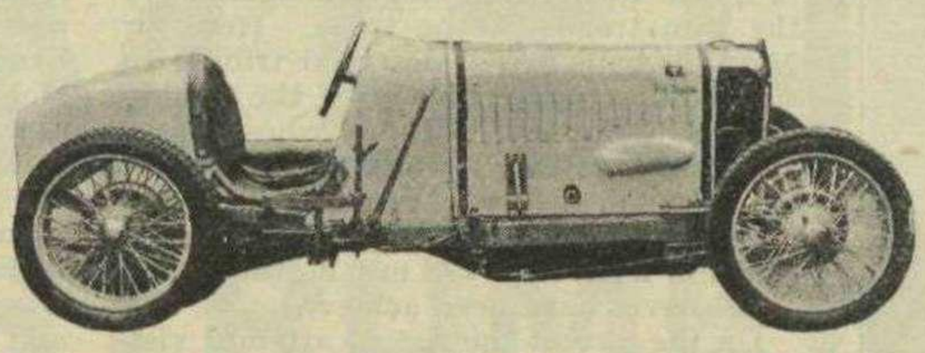
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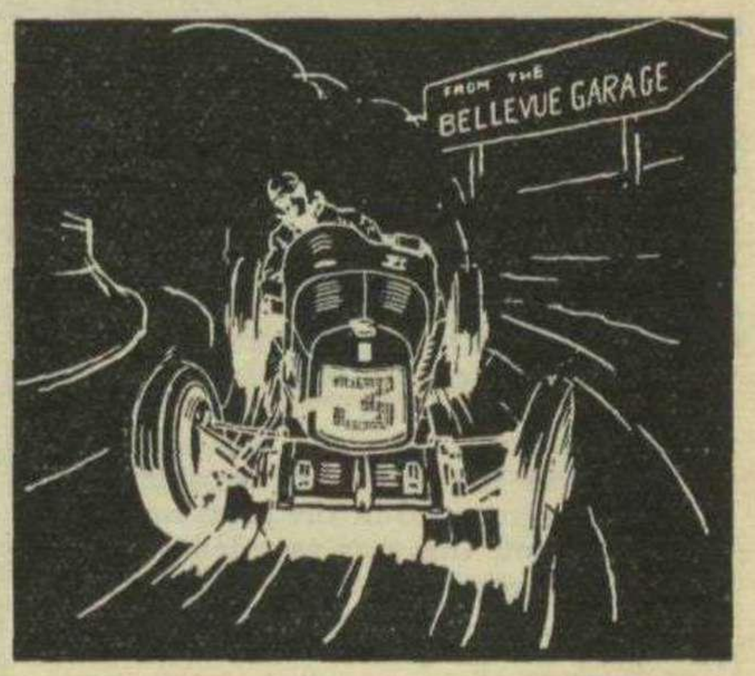
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HONOURING SIR MALCOLM CAMPBELL

H.R.H. PRINCE GEORGE PRESIDES AT BANQUET GIVEN BY THE B.R.D.C. IN HONOUR OF THE WORLD'S LAND SPEED RECORD HOLDER.



ON Tuesday, March 14th, British racing drivers and their friends acknowledged their admiration of Sir Malcolm Campbell's great achievement in setting up a new land speed record of 273 m.p.h. Graciously presided over by the President of the Club, H.R.H. Prince George, a Banquet and Dance was held at the Mayfair Hotel, London, at which there were gathered most of the well-known motor-racing personalities of this country.

After the Royal toasts had been proposed, H.R.H. Prince George, in proposing the toast of Sir Malcolm Campbell, congratulated the latter on behalf of the Club, and concluded by paying a tribute to the mechanics and all concerned in making the record possible.

Sir Malcolm's response was full of interest, and consisted of a *resumé* of the story of the record attempt. One of the first difficulties was to fit the new Rolls-Royce power-unit, developing 2,500 h.p., into the existing frame and transmission, and Mr. Reid Railton's skill in redesigning the car for this purpose received a glowing tribute from Sir Malcolm. The moulding of the body to fit the new shape of the car without sacrificing any streamlining was of course the work of Messrs. Gurney Nutting, the well-known coach builders. An interesting factor to the ordinary motorist was the danger of considerable heat being generated in the gear-box and back axle, and this was guarded against to a certain extent by the use of temperature gauges for those components on the dashboard of the car.

Sir Malcolm's account of the difficulties met with at Daytona made one realise to the full the determination and courage which lie behind the bald statement that the world's record has been broken. To begin with, the driver's hand was injured during the first practice run, through the gear-lever straining the tendons of his hand and wrist. Such an injury cannot be healed quickly, and Sir Malcolm had perforce to drive more or less with one hand during the record run, as no strength could be used with the injured one.

Then the beach itself was in a very bad condition. Normally, such shells as can be found on the sands are very small, but this year, in consequence of heavy storms, the beach was strewn with large shells of a size to be exceedingly dangerous to the thin treads of the tyres. Here Sir Malcolm paid a well deserved tribute to the manufacturers of his tyres, the Dunlop Rubber Company, without whose assistance and research work in placing at his disposal the only tyre in the world capable of withstanding the colossal strain of a speed of 273 m.p.h., the record could never have been achieved.

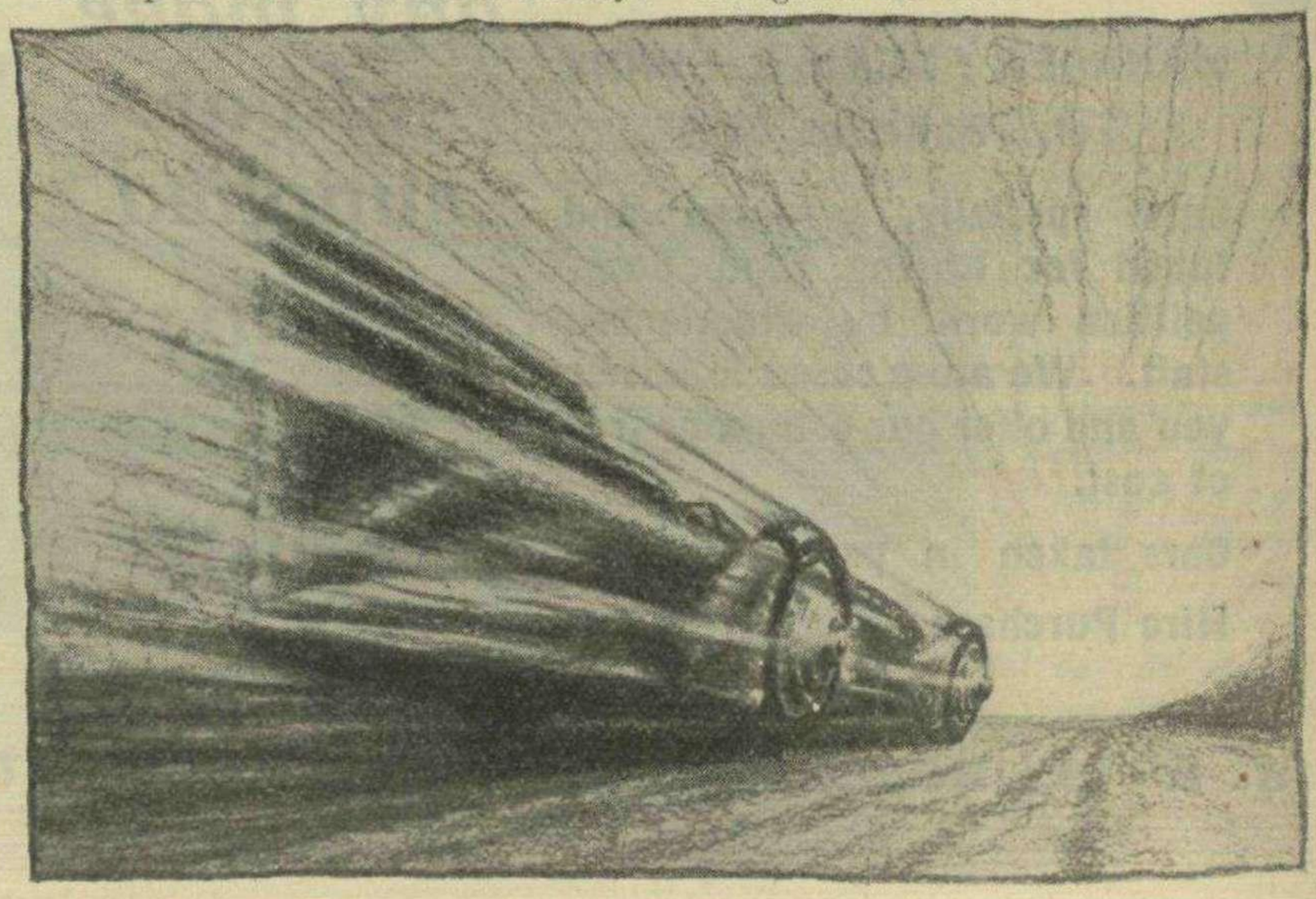
On the day of the record attempt visibility was very poor, and it says wonders for the driver's skill that "Bluebird" did not come to grief. Sir Malcolm modestly said that, after graduation, "you get used to the speed." The modesty of this remark will only become apparent after the greatest effort on the part of the reader to imagine such an appalling velocity. As an indication of his having become accustomed to travelling at speeds of well over 200 m.p.h., Sir Malcolm said that two years ago when he attained a speed of 245 m.p.h., he found the greatest difficulty in bringing himself to take his eyes off a point far ahead in order to glance at the revolution counter. Last year, at a speed of 254 m.p.h., he felt more at home, and was able to look at the rev. counter, and in addition, at the temperature guage, without discomfort. Finally, this year—although travelling at roughly 20 m.p.h. faster, he was able to do a thing he would not have thought possible two years ago, namely, take his eyes away from the one point ahead, and glance at each side in order to pick out his course more accurately!

Sir Malcolm was full of praise for his team of mechanics, who were just as cheerful at the end of three days and nights continuous work on the car, and we were glad to see that Sir Malcolm Campbell's head *mêcanicien*, Leo Villa, was present to bear this praise in person.

Another to whom Sir Malcolm recorded his thanks was that great English sportsman, Lord Wakefield, who was unfortunately prevented from attending the banquet owing to a chill. Finally, Sir Malcolm, in pointing out that the success of the attempt depended upon every single component and accessory doing its job 100% efficiently, paid a tribute to the manufacturers of these accessories. It will be remembered that "Bluebird" was equipped with Smith's instruments and a Bluemel spring-spoke steering wheel, and was finished with "Belco."

During his speech Sir Malcolm recounted a most amusing story. That same day he had presented a prize, offered by a newspaper to the reader who guessed most accurately the speed at which "Bluebird" would set up a new record, to a Staffordshire grocer. As a point of interest Sir Malcolm had asked the man why he had gauged his speed at 273 m.p.h. for he himself had hoped to have gone faster. To this the grocer calmly replied that he had known all along that "Bluebird" wouldn't do more than 273 m.p.h., because he never *had* liked the look of the front of the car which was designed all wrong, and which would have lifted the car off the ground if it went any faster!

After Mr. K. Lee Guinness had concluded the speeches, the floor was cleared and dancing continued until after two o'clock. And so ended a very cheerful evening, celebrating a feat which has, and will have, an incalculable effect in enhancing Britain's motoring prestige throughout the world.



Of course Sir Malcolm used SMITH'S INSTRUMENTS

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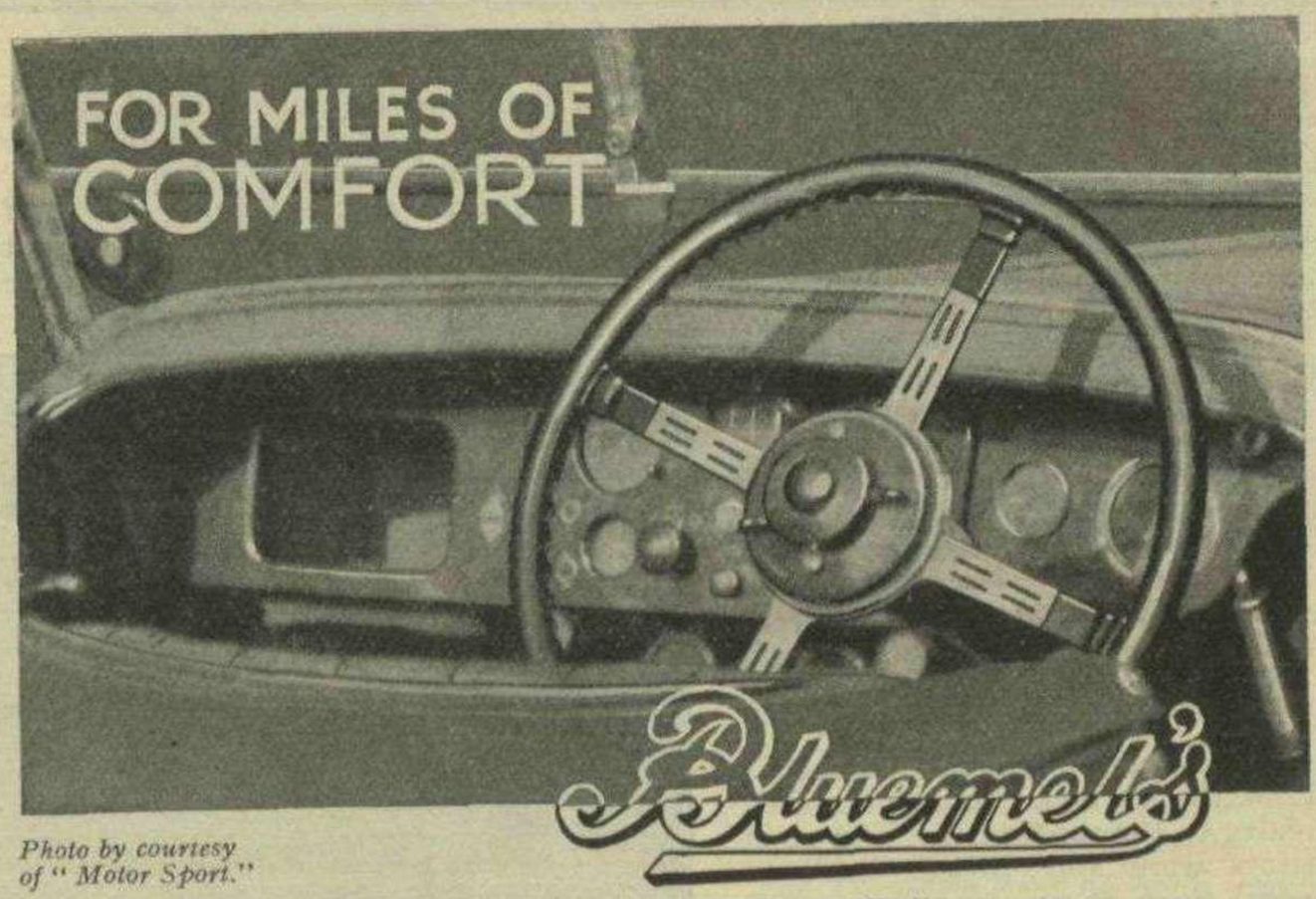


Photo by courtesy of "Motor Sport."

Follow Sir Malcolm's lead, and fit a Bluemel Spring Arm Wheel. It reduces vibration and muscular fatigue. Equally suitable for sports and touring cars.

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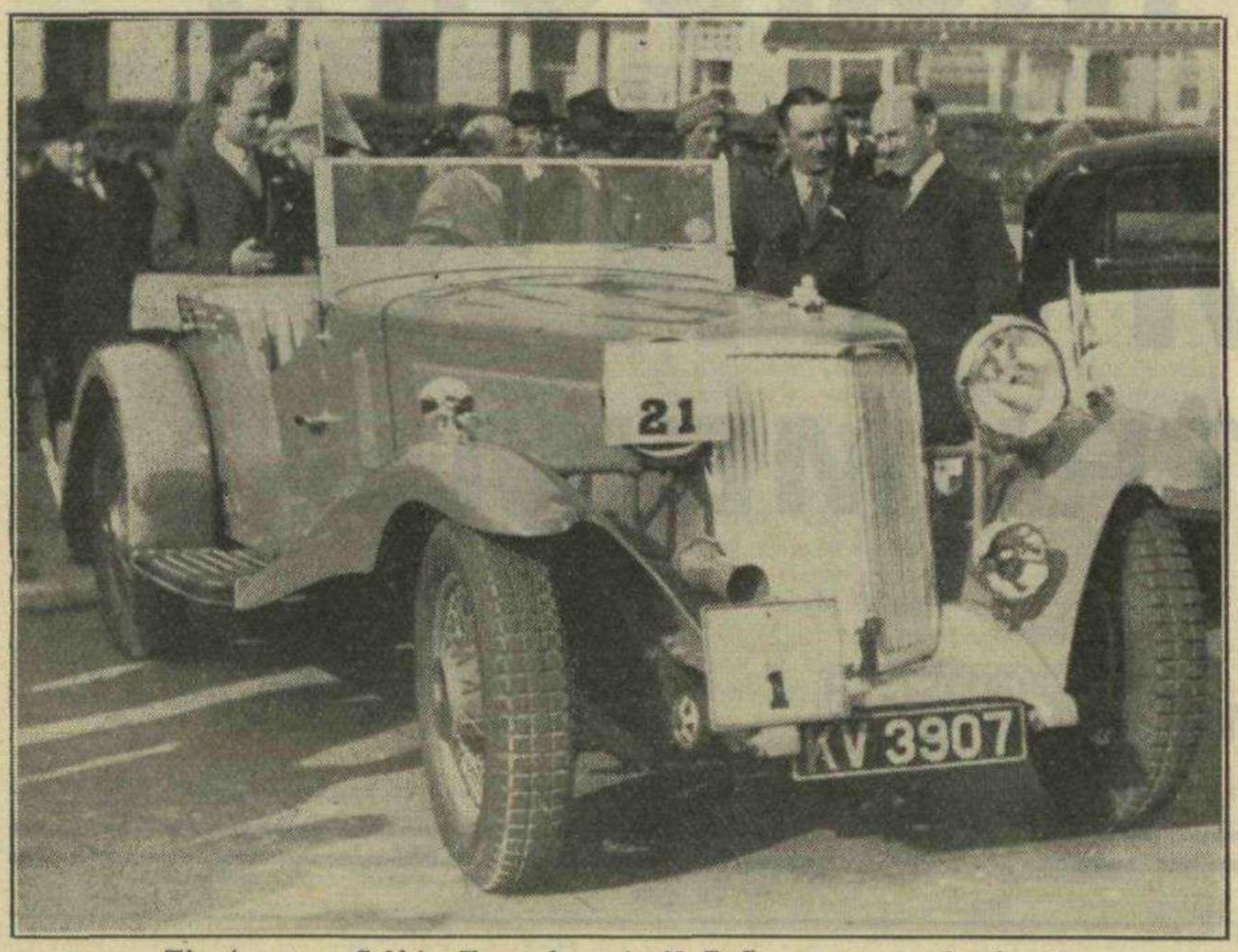
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THE R.A.C. RALLY

Victories for Rover, A. C. and Riley in the three classes

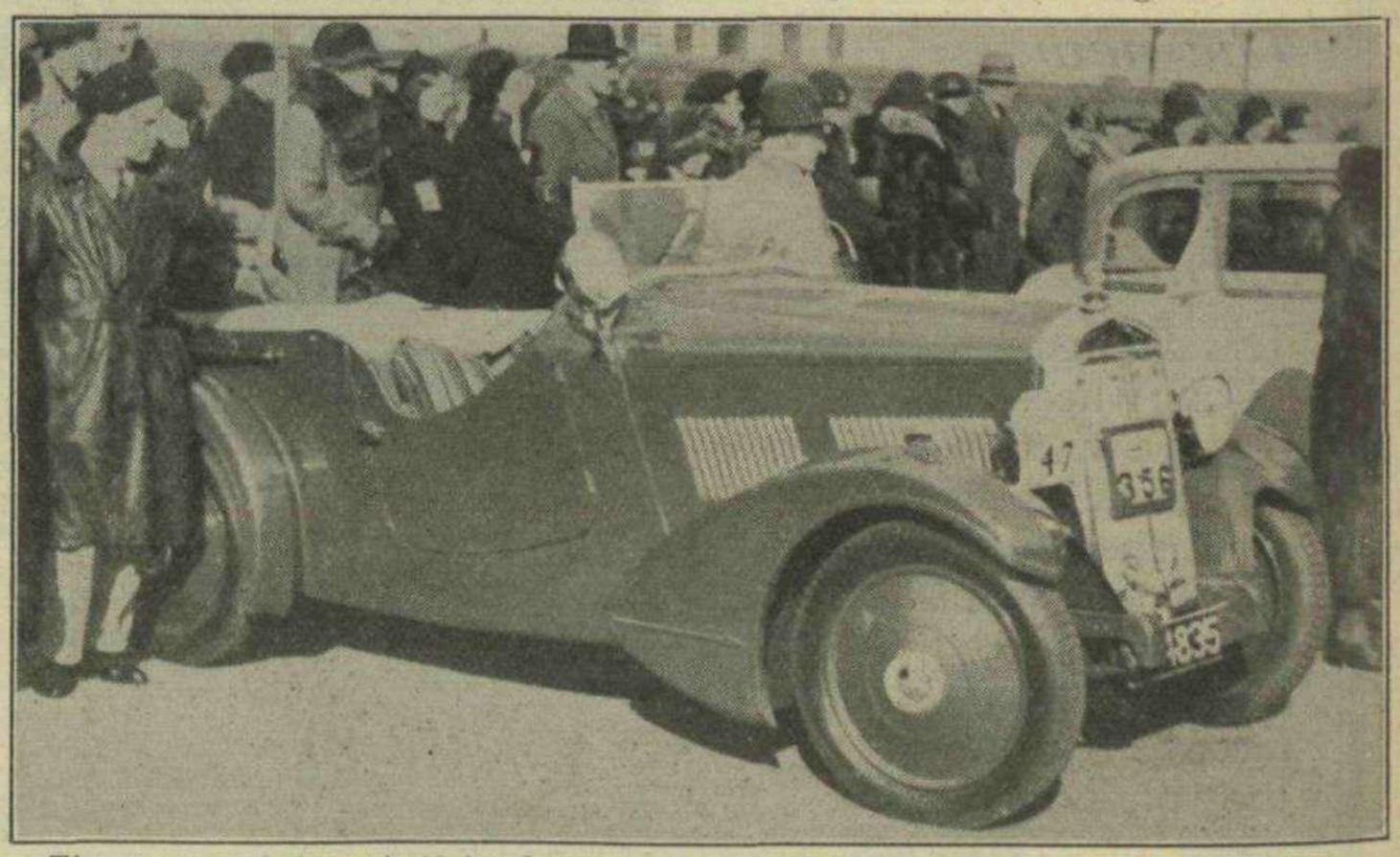
THE second R.A.C. Rally, which concluded at Hastings on March 18th, proved as great a success as was the Torquay Rally of 1932. 359 cars were entered, 346 actually left their starting points, and only 32 failed to gain the R.A.C. plaque for completing the road section, including 7 who arrived after the time limit. The competitors had to average 26, 24 or 22 m.p.h., according to whether their cars were rated at over 16 h.p., 11 to 16 h.p., or under 11 h.p. They left the controls from which they had chosen to start at times varying from 12 noon to 9 p.m. on Tuesday, 14th March, according to the average speeds to be achieved, arriving at Hastings on the Thursday from 9.30 onwards. There were eight starting controls in England and one in Scotland, and from each of these a route approximately 1,000 miles long was set out, passing through four intermediate controls.



The Armstrong-Siddeley Tourer driven by H. E. Symons was greatly admired.

Given a clear run, of course, the speeds set out for the various classes presented no difficulty to the modern car, and most competitors were able to get three or four hours' sleep at one or more points on their journeys. A mistake in map-reading, the failure of the lighting system or any of the other things which are liable to happen in the course of normal running, may change the state of affairs, however, and precious time is quickly lost. Weather conditions were, on the whole good, but some rain was experienced in Scotland and Wales, while those whose route passed through Plymouth or Torquay had to contend with a certain amount of fog. The more wary drivers avoided most of it by striking inland.

The fine spell which Hastings had been enjoying had broken by Thursday, and when the first arrival appeared light rain was falling, and an overcast sky promised worse to come. The final control was at the entrance to the underground garage which runs for nearly a quarter of a mile beneath the Promenade. Even at 9.30, when the influx began, a good crowd of spectators had gathered, and the interest was maintained all the morning, in spite of the heavy rain which soon set in.



The open sports body on the 10 h.p. Lanchester driven by J. M. Archer, who started from Glasgow.

Once inside, the cars were soon parked in the spacious accommodation underground. The route books received their final signatures, and then the cars were examined for damage to bodywork and other exterior defects, and marks were also deducted for lamps, horns or windscreen wipers failing to work. The condition of both cars and drivers seemed better than last year. The regulations provided that no single driver should be at the wheel for more than 700 miles, which doubtless saved people from dropping off to sleep and running into telegraph poles, as happened on several occasions in the Torquay Rally. After the formalities were completed, the drivers were handed cards giving the time at which they had to report the next morning, and then laden with armfuls of suitcases and overcoats, the weary crews walked or drove to their various hotels and sought some well-earned sleep.

Apart from rather a large crop of lighting failures, and a certain amount of bitterness amongst some of the all-female crews who had varied ideas as to the right way to drive, there were few complaints. The only case of fauna collection, usually such a conspicious feature of rally motoring, was that of G. B. Gush (30-98 Vauxhall), who spitted a hare on his starting handle and carried it 120 miles to Edinburgh, where it was handed over to the hotel authorities for any purposes for which they liked to use it. He had one or two other trials too, for his exhaust system blew up at Leamington, and his spare wheel bracket broke, allowing the wheel to damage the petrol tank. He was banished to a far corner of the Underground Garage to avoid the chance of fire from a carelessly flung cigarette.

The competitors varied from the cheerful enthusiasts who accomplished the journey in a very antique Aston Martin to the sort of person who complains that a Rally is rather an uncomfortable proceedings, as one cannot get on the road anything more nourishing than sandwiches, instead of a nice roast duck and vegetables. Evidently he had confused the Controls with the Relais Gastrono-

THE R.A.C. RALLY—continued.

miques of France, "leurs vins, leur cuisine." Happily these people were very much in the minority. As a fashion note we might add the instance of the coloured gentleman who produced his soft felt hat from a neat black and red lady's



Lining up for the final tests. *A group of competitors waiting for their turn in the slow-running tests.*

hatbox (his own) before leaving for his hotel.

The next morning the eliminating tests were held, the first car leaving the garage shortly after nine o'clock.

The slow-running test was held over a distance of 50 yards, which had to be covered at about 4 m.p.h. A little further along the second test began. From a standing start drivers had to cover 100 yards pulling up with wheels astride the finishing line. Then as soon as they had come to rest in the correct position, they had to cover a further 100 yards, this time without having to stop at the end.

Conditions were at their worst for the test, for the wet conditions affected carburetion and upset calculations of the right moment for braking to begin.

The large number of entries makes it impossible to mention many individual performances. H. E. Symons (Siddeley Special) crawled along very smoothly, and in the acceleration and braking made good use of the self-changing gear-box. Stott with a 4½ litre Invicta seemed to get away well, also a number of Alvis Speed 20's. Fords, especially the V8 type, were noticeably good, and Hutchison somehow managed to change down from second to first as he braked. Healey, tipped as a likely winner, braked too early and had to accelerate. Weston's Sports Rover was impressive. Singers, Rileys and A.C.'s also performed well, and the Trojans, helped probably by their free-wheel device, again did their stately slow running performance.

Considered from the utility point of view, the slow running test was of little practical use, for most of the small cars got down to 4 m.p.h. by the famous "jerking" tactics originally developed by Rileys, which would probably tear to pieces the transmission of the average car in a few thousand miles if this practise were resorted to instead of changing down.

On the other hand some of the bigger cars, such as Healey's 4½ litre Invicta got down to the speed without difficulty.



T. D. W. Weston, the winner of Class I., during the acceleration and braking test.

The acceleration and braking, on the other hand, serve to indicate the efficiency of the cars which take part in the test, and the shortness of the distance prevented undue prominance being given to the merely high-speed car.

The standard of driving varied tremendously, as always must be the case when novices and experienced drivers appear together in a public competition, but there was no excuse for people who had not read the rules, and who braked on the last line instead of going straight on.

The Stop and Restart Test was quite entertaining, and would have been more so if the rain had not come down unmercifully the whole morning. Fortunately the surface had been dressed with coarse tarred chippings, so drivers were not troubled with wheelspin. The cars were held on the incline with chocks. They had to accelerate and brake so that their wheels stopped astride a line 15 yards from the start, and then accelerate to another 15 yards.

An Aston Martin, driven by C. Anthony came up well, also an ancient F.W.D. Alvis, in spite of considerable wheel spin. The Alvis 20's were also noticeably good, Drivers of the faster cars had some



A number of cars arriving at the end of their 1,000 mile journey.

difficulty in negotiating the right angle turn at the top of the hill, notably Lord Curzon who had an inside berth. The cars were actually started alternately, though the drivers of a Hillman Wizard and a Standard, tried to cheer up proceedings by going off together.

The V8 Fords were as usual dashing in their get-away Weston (Rover Speed Meteor) who clocked equal-fastest time with Healey's Invicta made effortless climbs. Great things were expected of a pale blue 38-250 Mercedes, but it seemed over-geared or under-driven. Healey shot up well, but might have been a little faster with less wheel-spin.

E. S. Denny (Riley) was lucky to reach the top, as a number of teeth in his crown wheel had gone. Mrs. Stanton (Riley) apparently tried to get away with her brake hard on, and ruined the clutch, while Hudson in an oldish 2 litre Lagonda, just managed to get up with clouds of smoke and a nasty smell.

Continued on page 285.

What Do You Know About Cars?

THE SECOND PROBLEM IN NEW COMPETITION FOR MOTOR SPORT READERS.

Report on Problem No. 1.

THE make of car shown in the reflection of a headlamp, which formed the first puzzle in our competition last month, was Lancia. The first correct solution opened on the 15th of the month was that submitted by :

Mr. G. B. Vinycomb,
Trinity Hall,
Cambridge,

to whom we have sent a cheque for one guinea.

The solutions sent in by many competitors were interesting in their variety, the most frequent make, apart from the correct one, being Lagonda. Next came Austin, Frazer Nash, B.S.A., Ford, Riley, Invicta, Alfa Romeo and Standard. Other makes suggested were Minerva, Dodge, Triumph, Bianchi, Talbot, Vauxhall, etc. Actually, 61% of the entrants sent in correct solutions. As a point of interest, many competitors included in their answer the model, as well as the make of the car, which is superfluous, but at the same time does not prevent a competitor from winning the prize. As it turned out, of these solutions only one cited the correct model, namely the Lancia Astura, and this was sent in by Mr. Alan Whitaker, 49, Staveley Road, Ingrow, near Keighley.

RULES FOR PROBLEM No. 2.

1. Cut out the coupon on the inside back cover, fill in your solution, and send it to us in a sealed envelope, marked *Competition.*
2. Write your solution and name and address in block capitals. Any alterations will automatically disqualify the entrant.
3. The Editor's decision is final.
4. Entries must reach this office, 39, Victoria Street, London, S.W.1., not later than first post, April 15th, and a prize of one guinea will be given to the sender of the first correct solution opened.
5. More than one coupon may be included in one envelope.
6. No letter must be sent with coupon.
7. The result will be published in our May issue.

Problem No. 2.

To which make of car does the following specification apply :

15/80 h.p. 6 cylinders, 65 mm. bore x 100 mm. stroke. Tax £16. Detachable head, 7 roller-bearing crankshaft. Roller-bearing big-ends. H-section con-rods. Aluminium alloy pistons, with two rings in head and one scraper in skirt. Two tulip valves per cylinder, operated by twin overhead camshafts, running in roller bearings. Camshafts driven by Y-shaped member and eccentric from rear of crankshaft.

Single plate clutch, four-speed gear box with right hand change. Spiral bevel final drive.
Semi-elliptic front and underslung rear springs.

Four wheel brakes utilising the Perrot system.

Wheelbase 10 feet 3 inches : track 4 feet 5 inches.

Tyres 34 x 4½ inches.

ALFA-ROMEO VICTORY IN SWEDISH WINTER G.P.

(*Continued from page 248*).

and brandy at a neighbouring farm Widengren and his mechanic walked 3 miles to the nearest official control-point. Widengren expressed himself delighted with the performance of the Invicta, having on one occasion touched 107 m.p.h. Incidentally, Widengren's visor was so greatly admired by other drivers when he was practising that many persuaded their wives to make them for the actual race !

On this lap Dahlin pulled into the pits, and after examining his front springs which had been damaged in practice, decided to retire. Another retirement was that of a very fine sportsman, F. M. Weyer, with a Dodge Special, nicknamed by the crowd the "Woolworth car." Weyer's car was built up from scrap for less than £100, and he could not afford to buy new tyres, so that when he punctured both his rear tyres he was forced to withdraw !

On the next lap Gunnar Thorsell ditched his Chevrolet, and as the cars came past the starting point for the fourth time, i.e., at half distance, the order was as follows :

1. P. W. Widengren (Alfa-Romeo, 2,337 c.c. S.), 2h. 6m. 57.1secs. Average speed, 84.6 k.p.h.
2. Karl Ebb (Mercédès-Benz, 7,070 c.c. S.), 2h. 15m. 27secs.
3. A. Olsson (Chrysler, 4,630 c.c.), 2h. 15m. 30.7 secs.
4. E. Björnstad (Alfa-Romeo, 2,337 c.c. S.), 2h. 15m. 34.8secs.
5. C. G. Johansson (Ford V8, 3,620 c.c.), 2h. 18m. 40.2secs.
6. S. O. Bennström (Ford V8, 3,620 c.c.), 2h. 16m. 48secs.
7. J. Forsberg (Ford V8, 3,620 c.c.), 2h. 27m. 19secs.
8. T. Johansson (Ford V8, 3,620 c.c.), 2h. 27m. 20secs.
9. B. Lindh (Hudson, 4,170 c.c.), 2h. 33m. 52.4secs.
10. K. G. Sundstedt (Bugatti, 2,260 c.c. S.), 2h. 35m. 37.2secs.
11. A. Larsson (Ford, 3,350 c.c.), 2h. 35m. 47.9secs.
12. E. Bake (Buick, 4,470 c.c.), 2h. 36m. 6 secs.
13. I. Hastings (Chevrolet, 3,180 c.c.), 2h. 38m. 13secs.
14. S. Soderlund (Ford, 3,280 c.c.), 2h. 44m. 13secs.
15. T. Wistedt (M.G., 850 c.c.), 2h. 47m. 45.6secs.
16. S. Lindblom (Ford V8), 2h. 47m. 57.9 secs.
17. H. Larsson (Ford, 3,860 c.c.), 2h. 50m. 5secs.
18. H. Andersson (Dodge, 3,620 c.c.), 2h. 53m. 6secs.
19. P.Näs (Näs Special, 2,830 c.c.), 2h. 57m. 28secs.
20. O.F. Wickberg (Bugatti, 1,990 c.c.), 3h. 12m. 30.8secs.
21. K. H. Rudoff (N.R.W., 3,120 c.c.), 3h. 17m. 18.3secs.

It will be seen that Ebb, having rectified the supercharger trouble of his "Merc." was trying very hard to catch Widengren. Then came a whole crop of retirements, Rudoff (N.W.R.), H. Larsson (Ford 4-cyl.), with carburettor trouble, Wickberg ran his Bugatti into a snow-wall, and could not extricate it, Näs ran a camshaft on his Special, and Anderson dropped out with some elusive trouble with his Dodge. The M.G. Midget was lapping regularly, but was handicapped at the beginning by its driver, who had only just taken delivery of the car, thinking he was in top gear when he was really still in third ! The car seemed very good on corners, and sounded very healthy.

A terrific scrap was going on between Ebb (Mercédès), Ohlsson (Chrysler) and Björnstad (Alfa Romeo). On one occasion Nas, Ohlsson and Ebb arrived at a corner in that order. Nas skidded wide, so Ohlsson skidded still wider in order to pass him. Seeing this Ebb cut in close, and slipped by both of them—a fine piece of driving. Bjornstad was treating his new Alfa-Romeo with care, never exceeding 4,000 r.p.m. Then Ohlsson fell back through having a puncture, and Ebb continued his pursuit of Widengren alone. He cut down his lead by as much as 1 minute per lap, and then, in taking a pull at a bottle of sugar water in the car at speed, got into a skid and dashed into some trees. Ebb was knocked out by the steering wheel, but soon recovered, while his mechanic, who had been forced by Ebb to wear a crash-helmet, was thrown out onto his head, without injury.

Lindh, son of Alexandra Lindh, well known lady-driver in last year's Monte Carlo Rally, (Hudson) pulled into the pits with a damaged axle, and soon afterwards I. Hastings ditched his Chevrolet but got going again. Bjornstad now held second place, and third came C. G. Johansson's V8 Ford, which was putting up a splendid performance. As the steel spikes on the tyres gradually wore down, so more care had to be taken by drivers, and near the end of the race some very wild skidding was seen. But nothing could stop Widengren from winning, so comfortable was his lead, and eventually he crossed the finishing line 4 minutes ahead of Bjornstad, who in turn was followed by Johansson's V8 Ford.

RESULTS.

1. P. W. Widengren (Alfa-Romeo, 2,337 c.c. S.), 4h. 27m. 32secs. Average speed, 82.98 k.p.h.
2. E. Björnstad (Alfa-Romeo, 2,337 c.c. S.), 4h. 31m. 37.2secs.
3. C. G. Johansson (Ford V8, 3,620 c.c.), 4h. 39m. 24.9secs.
4. S. O. Bennström (Ford V8, 3,670 c.c.), 4h. 40m. 46secs.
5. A. Olsson (Chrysler, 4,630 c.c.), 4h. 44m. 1 sec.
6. T. Johansson (Ford V8, 3,620 c.c.), 4h. 45m. 56.5secs.
7. J. Forsberg (Ford V8, 3,620 c.c.), 4h. 46m. 34secs.
8. A. Larsson (Ford 4-cyl., 3,350 c.c.), 4h. 58m. 18.2secs.
9. E. Bake (Buick, 4,470 c.c.), 5h. 11m. 28.5secs.
10. K. G. Sundstedt (Bugatti, 2,260 c.c. S.), 5h. 12m. 27.2secs.
11. I. Hastings (Chevrolet, 3,180 c.c.), 5h. 15m. 4.2secs.
12. T. Wistedt (M.G., 850 c.c.), 5h. 30m. 29.4secs.
13. S. Lindblom ( ), 5h. 36m. 47secs.

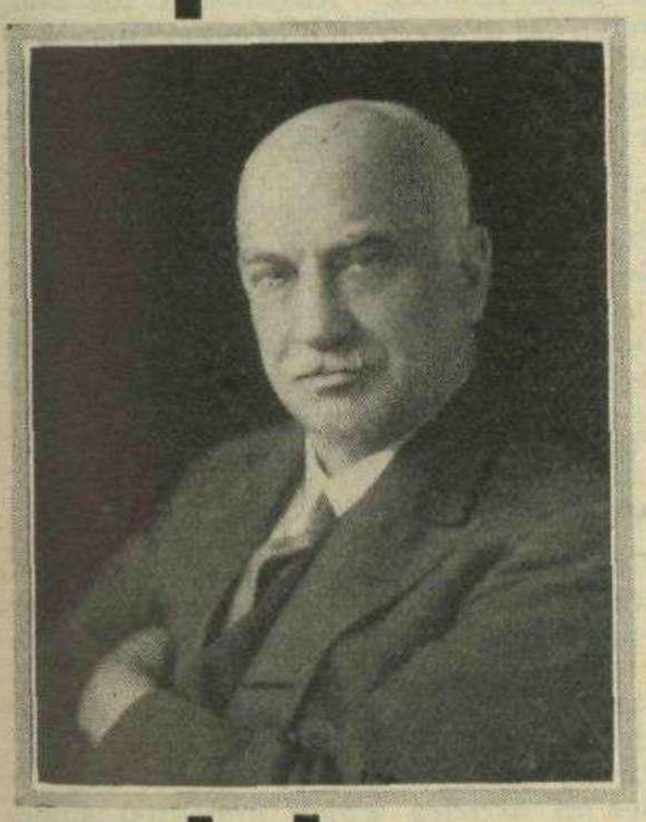
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LETTERS FROM READERS.

THE FAIREY MONOPLANE.

SIR,—Re photograph of a Fairey Long-Range monoplane on page 236 in your March edition.

Could you tell me what has happened to the top half of the "prop" in the photograph. S. BROAD.

Institute of Motor Salesmanship, Ltd.,
16-17, Little Portland Street,
London, W.1.

[The fact that the top half of the propellor is "missing" is due to the fact that its blades are at different angles, the top half, in this case, reflecting the light and therefore being invisible.—ED.]

A RACING CAR IN RETIREMENT.

SIR,—Being a regular reader of your fine journal which I consider is the best dealing with sports cars and racing ever published, I thought you might be interested in an old racing car which is in my possession.

I purchased it about seven years ago from scrap, and after much overhauling, etc., used it on the road for about six months.

The engine is a six cyl. O.H. camshaft unit, the cylinders being cast separately, and the heads non-detachable, it has no maker's name on it, or date, although the rear axle and gear-box have M.A.B. stamped on some of their components. It has six pipes leading out the side of the bonnet, running into a very large long flexible pipe, a rev. counter was fitted, and aero screens. The person I purchased it from said it came from Brighton, and was running there in 1921, and was called a Boora and Roberts.

I myself have never heard of such a car, although I have made quite a study of racing cars, new and old, having worked on the D.F.P. car driven at Brooklands by Capt. R. C. Gallop in 1921, I then being in the employment of Messrs. Bentley & Bentley, who were at that time sole concessionaires for that make of car, prior to the appearance of the famous Bentley car which I am proud to say, I was among the first to ride in.

I shall be glad if you, or any reader of the MOTOR SPORT can help me in solving the problem of this nameless racer.

Wishing you every success.

J. P. BOWLES.

154, High Street,
Epping, Essex.

[The car referred to by our correspondent is, we believe, a Boora, which was raced at several meetings at Brooklands in 1923. Any other information will be appreciated.—ED.]

AMERICAN VIEWS ON HANDICAPPING.

SIR,—In the February number of MOTOR SPORT the question was brought up of how to reconcile the different sizes of competition cars under one handicapping system, in the article entitled "David and Goliath."

May I suggest the possibility offered by a system of handicapping based on prices "at works?" In this way, the less expensive cars would be given certain handicaps which would enable them to compete against more expensive and, it follows, larger cars.

By the price-handicap system, fantastic special makes would be discouraged, as well as those which furnish paint instead of performance. In adding the provision "at works" to the price classification, I had in mind the effect of customs duties on foreign car prices in England. A remarkable example of this effect may be seen by comparing the twelve cylinder Auburn, whose factory price is now equal to about 450 pounds, with the M.G. Magnette in standard form or the Humber. The Auburn's performance is rather outstanding. As nearly accurately as I was able to check its speedometer, it accelerates from a standing start to 60 m.p.h. in under 15 seconds, and is able to touch 100 m.p.h. in speedster form. It has two rear-end ratios, changeable at will, which improve its low speed performance. The new Essex "Terraplane" 8-cylinder develops ninety h.p. and compares in "at works" price to the J-2 M.G. Midget.

Undoubtedly my suggestion regarding a price fixed handicapping system has a "hitch" in it somewhere. However, I would be very grateful for your opinion. Congratulating you on an excellent journal.

MILES COLLIER.

8 East 75 St.,
New York City

SIR,—I read with considerable interest the letter from your Correspondence Column for March, suggesting the price classification in handicap racing, a system which undoubtedly has many merits.

I was, however, very surprised to see that your contributor after first suggesting price as the governing factor, should then introduce a further variable of engine capacity, an addition which seems logically indefensible, as it excludes the possibility of comparing such cars as the Essex and Ford with the smaller type of vehicle.

Actually, on a price limit for the junior class of £500, I feel very strongly that a modified Essex or Ford chassis, supercharged, and selling between £430 and £480, should give the smaller cars a very good run for their money, and, moreover such a car could be sold in racing trim at the figure I have mentioned, whilst it is common knowledge that the average English sports car selling at this price has a very considerable additional sum spent on it to prepare for a season's racing.

It is very doubtful if the running expenses of the cars I have mentioned would be very much more than those of the smaller English car, whilst the advantages of quietness, comfort, and body space cannot be denied, so that it would be particularly interesting to have them raced on a common basis.

LAURENCE POMEROY, Jnr.

M. A. McEvoy (London) Limited, Directors: M. A. McEvoy, M. A. S. McEvoy, 146, High Street, Notting Hill Gate, W.11.

SIR,—I am sure that every British motorist must be greatly gratified by the entry of the team of M.G. Magnettes in the Italian 1,000 miles race to be driven by Lord Howe and H. C. Hamilton, Bernard Rubin and Sir Henry Birkin, Count Luvaui and G. E. T. Eyston. And the fact that the Ferrari stable are to run a team of these cars during the coming season is a great compliment to their British manufacturers and to the past performances of the M.G. Midget. It is more than gratifying too, to see that Sir Henry Birkin will be driving on the continent even though the cars he will drive are not English. However, perhaps there *will* come a day when at least some of our manufacturers feel that times justify the expense of Grand Prix racing. In the meanwhile let us display our good drivers. Anyhow, I for one, foreign car or no, wish him every success—fast motors and trouble-free runs. The greatest of thanks are due to Mr. Rubin for running this stable. Every success to him too.

To Lord Howe and his team I extend a most grateful vote of thanks for upholding Britain's prestige and for the confidence they place in a typically British product. That their confidence is not misplaced and that they will represent this country successfully to the full extent of their powers, I am confident.

MORE ABOUT THE PRICE LIMIT.

Furthermore, the best of luck to MOTOR SPORT which, to those like myself who are prevented by circumstances from enjoying the sport in any practical way, is a real magic carpet to the world of motor racing, the finest sport of all.

Lastly I would like to suggest that a series of articles which appeared some years back in MOTOR SPORT, if augmented and, in many cases, brought up to date, would make very interesting subject matter for a book. The articles to which I refer are: "Famous Racing Marques" by E. M. Karslake. The amount of books on motor racing is lamentably small.

JOHN P. LLOYD.

School House,
Mill Hill, N.W.7.

COLLOIDAL GRAPHITE IN A BUGATTI ENGINE.

SIR,—I was very interested to read the article on Colloidal Graphite in your March number, as one who has had personal experience of this preparation in a racing engine.

The car in question is an unsupercharged 4 cylinder 1½ litre Bugatti, in which Colloidal Acheson Graphite has been used constantly in conjunction with the usual lubricating oil. The engine has not been taken down since prior to the Relay Race last July, and is still in excellent condition—the car lapped the Mountain Circuit at Brooklands during the Opening Meeting at a speed of 66.02 m.p.h.

On the way up to Gopsall Park recently the camshaft ran dry, and some of the valves began to stick. Normally, the head has to be removed to rectify this trouble, but in this case, owing to the metal surfaces having been thoroughly treated with Colloidal Graphite, the valves freed themselves.

Incidentally, I have no connection with Messrs. E. G. Acheson, Ltd., other than that of a satisfied user of their product.

R. J. W. APPLETON.

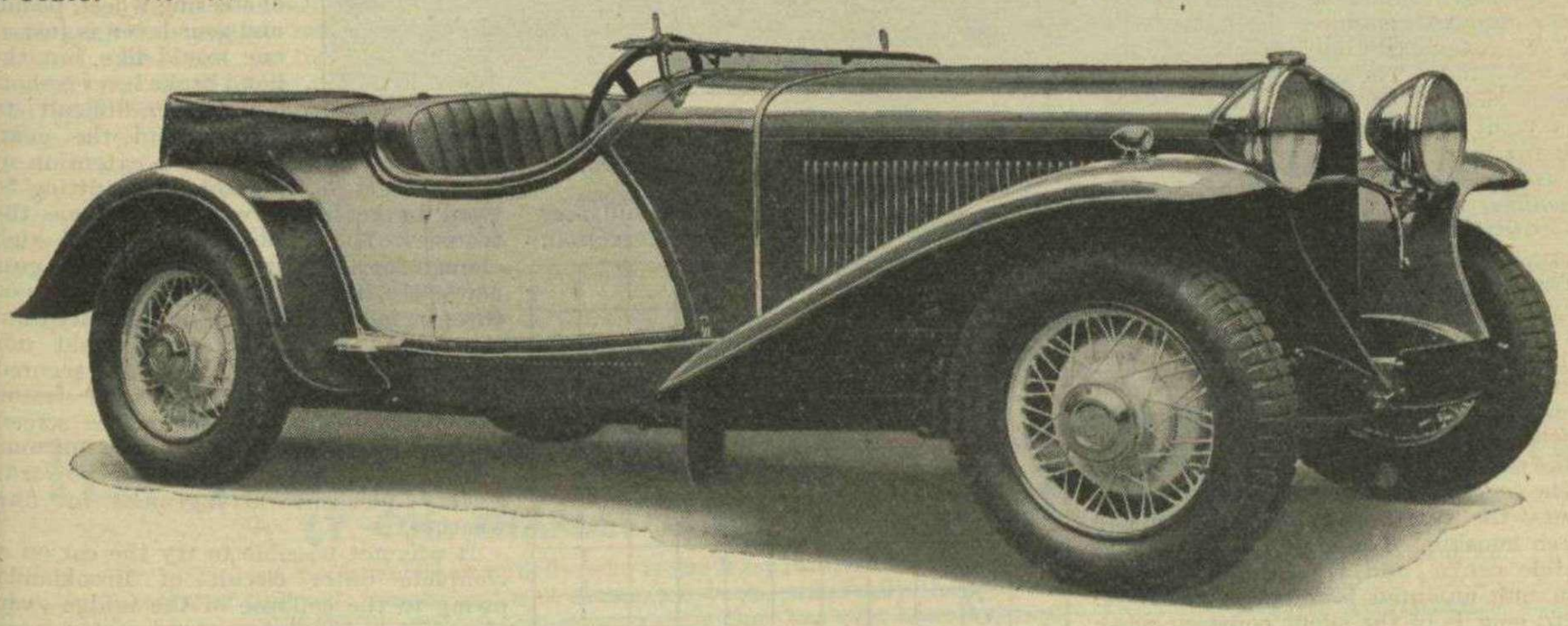
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THE 20-70 H.P. SPORTS FIAT

A LIVELY CAR OF ATTRACTIVE APPEARANCE

WHETHER the powerful sun acts as a stimulus on the continental designer's brain, or whether he is driven to making striking and gay coachwork by the love of speed and colour which the Latin nations are not ashamed to admit, sports car bodies from abroad tend to follow much more original lines than those produced in this country. The 2-4 seater body on the new Sports Fiat, with its striking two-colour scheme in scarlet and cream, no doubt owes some of its inspiration, its sweeping wings, its neat bonnet and the sloping tail with sunk spare wheel to the successful Italian racing marques, but this outline has been secured without sacrificing the passengers' comfort.

Brief Specification.

Engine : 6 *cylinder,* 72 *mm. and* 103 *mm. bore and stroke. Capacity* 2,516 *c.c., R.A.C. rating* 19.3. *Side valves. Two Solex carburettors. Coil ignition.*

Gear-box : 4 *speeds and reverse. Centre change. Ratios* 13.1, 7.75, 5.65 *and* 4.09 *to* 1.

Rear axle : Spiral bevel. Semi-floating.

Brakes : Dual hydraulic front and rear. Hand brake on transmission.

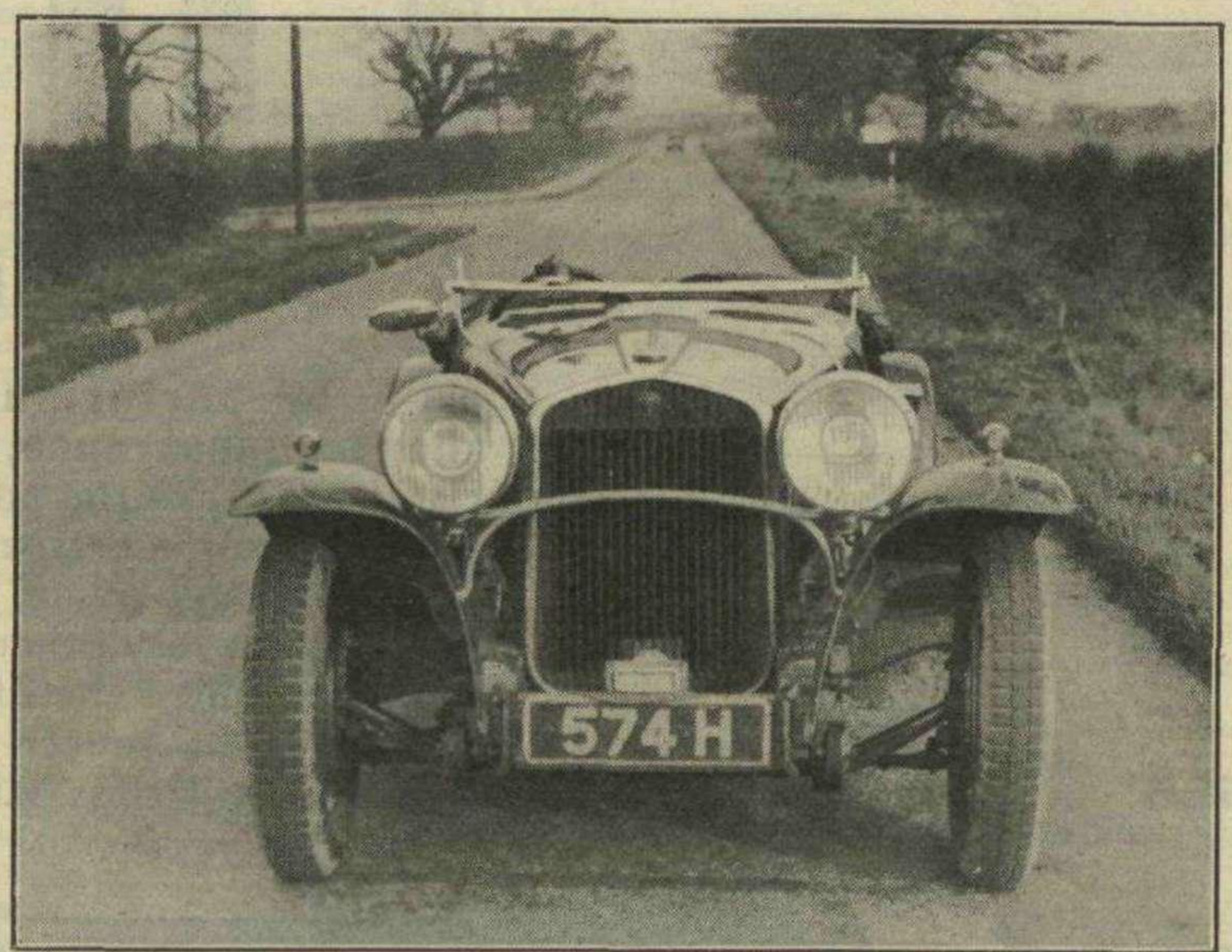
Suspension : Half elliptic.

Dimensions : Wheelbase 9*ft.* 1½*ins. Track* 4*ft.* 9*ins. Weight* 23 *cwt.*

Price : 2-4 *seater Tourer,* £585.

This 20/70 h.p. sports car is developed from the normal 20-60 h.p. chassis, and like all the products of the Fiat factory, it has been thoroughly tested on the rough roads of Turin and the Alps which lie all around the neighbourhood of the works, so that the chassis, brakes, and cooling are above suspicion. It follows that the car has an exceptional lock and a good performance on all the gears.

The six-cylinder engine is of the side valve type, with a chain-driven camshaft, and is fitted with a seven-bearing crankshaft which carries a torque damper at the front end. The compression ratio is considerably higher than on the standard engine, and two Solex carburettors are fitted. The engine is claimed to give 80 h.p. at 3,500 r.p.m. The sparking plugs are of course particularly accessible on a side valve engine, and the distributor is mounted vertically above the block.



[*Motor Sport Photograph*

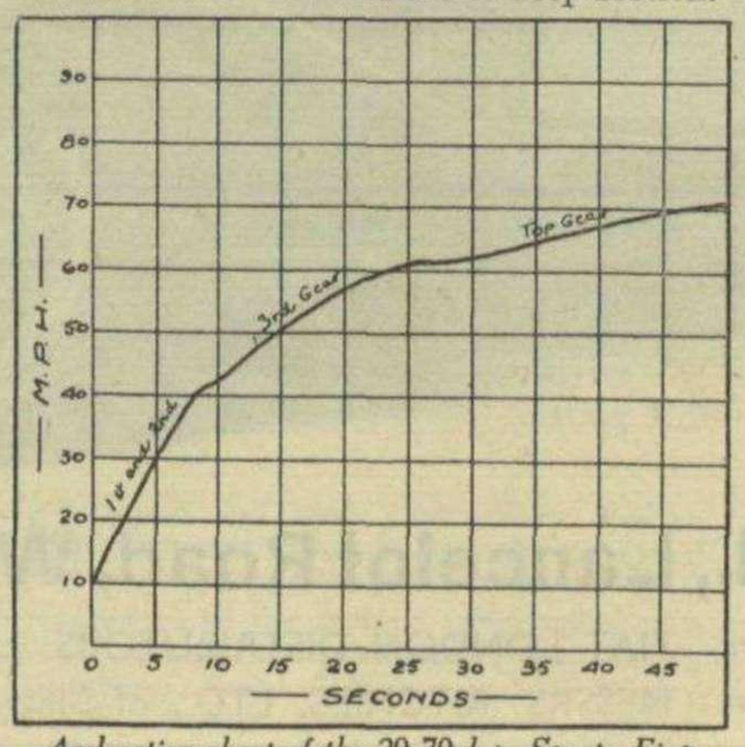
Clean, sporting lines, characterise the 20-70 h.p. Fiat. Note the thermostatically controlled radiator shutters and the folding windscreen.

The radiator is fitted with thermostatically controlled shutters, and a belt-driven fan and impeller are fitted to the front end of the cylinder block. An oil cleaner is included in the lubrication system, and a breather pipe carries off any oil fumes which might accumulate in the crankcase as the result of prolonged high speed work.

The engine is suspended from three points, the rear two being arms on the clutch housing. The clutch has a special flexible centre and transmits the drive to a unit-mounted four speed gear-box. Third gear is of the silent constant mesh type. A centre gear-lever is fitted, and the brake lever operates a contracting brake at the rear end of the gear-box.

The transmission is by open propellor shaft with two universal joints, and the rear axle is semi-floating with spiral bevel final drive.

The chassis is dropped front and rear and the side members are of deep section. It is rigidly braced, especially behind the gear-box, where a cruciform member is used. The springs are semi-elliptics, the rear set being mounted outside the chassis and passing under the rear axle. Hartford shock absorbers are fitted front and rear.



Accleration chart of the 20-70 h.p. Sports Fiat.

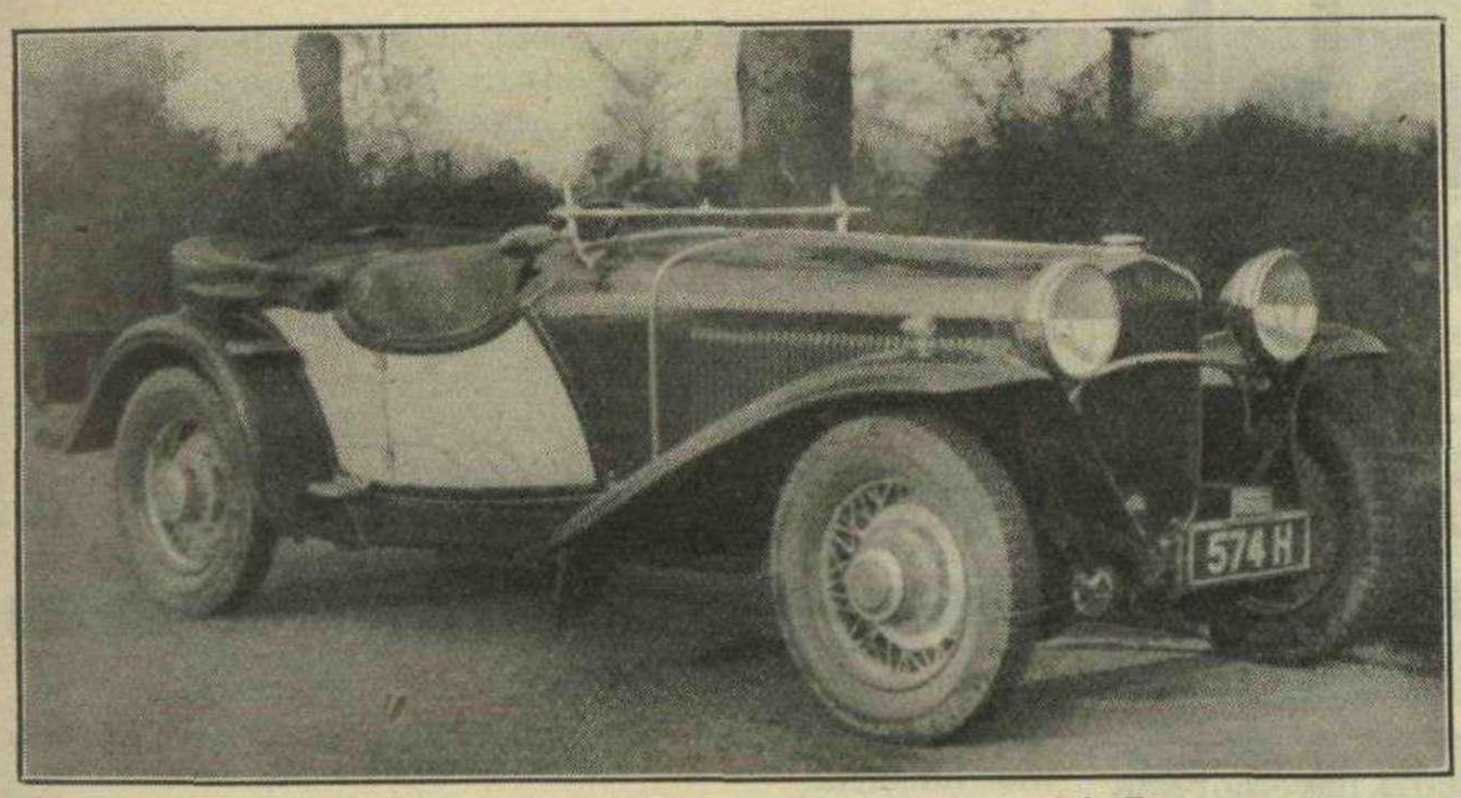
The service brakes operate on the Lockheed hydraulic principle. Two cylinders are used, one for the rear pair and one for the front pair of brakes, so that even if a leak develops in one set, the other will remain unaffected. The brake reservoir is divided into two compartments so as to maintain the independence of the two sets.

When the car was committed to our care, we were warned about its exceptional liveliness in traffic. We found this trait was, however, thoroughly under control, and the short wheelbase and powerful brakes made it possible to make fast progress even through crowded thorough-fares. The gear-lever which is short and stiff, lies just under the left hand, and the changes, especially that between second and third gears, are quick and easily made. The engine is well silenced, and can be run up to full revs. without fear of causing annoyance. All the gears are quiet running, and third is as silent as any of the constant mesh type which we have tried.

The driving position, as regards the placing of steering wheel, pedals and gear-lever is just as one would like, but the hand brake lever is short and rather difficult to reach round the gear-lever. An extension as marketed for fitting to Ford brake levers would overcome the trouble. The windscreen is hardly high enough for a tall driver, as the frame cuts across the line of vision. A screen two or three inches higher would not detract from the car's appearance, and would not affect the hood fixing, as this is secured by tubes carried on the hood frame which fit on to projections on the screen pillars. Actually during most of our test we had the screen folded forward, a very pleasant arrangement in fine weather.

It was not possible to try the car on a complete outer circuit of Brooklands owing to the collapse of the bridge over the Wey, but the speedometer was checked. Another difficulty in making a complete speed chart was that the speedometer reading started at 12 m.p.h. The figures recorded confirmed one's impression of exceptional acceleration up to 60 m.p.h. Comfortable maximum speeds in second and third gears were 45 and 60

THE 20-70 H.P. SPORTS FIAT—continued.



Beauty of line is exemplified in this three-quarter view of the Fiat.

m.p.h. which represents about 4,000 r.p.m. in each case.

From 40 m.p.h. the car achieved the excellent braking figure of 57 feet on a bumpy concrete surface, and little over 40 feet on a rather spongy stretch of tarmac. In each case the back brakes tended to lock, so there is no fear of getting a front wheel skid through violent application on a wet road.

The maximum speed on the level was about 75 m.p h. which was rather less than we expected. In tests made on Brooklands track Messrs. Thomson & Taylor had tuned the car to reach 85 m.p.h. but in further experiments the most successful settings had apparently been lost.

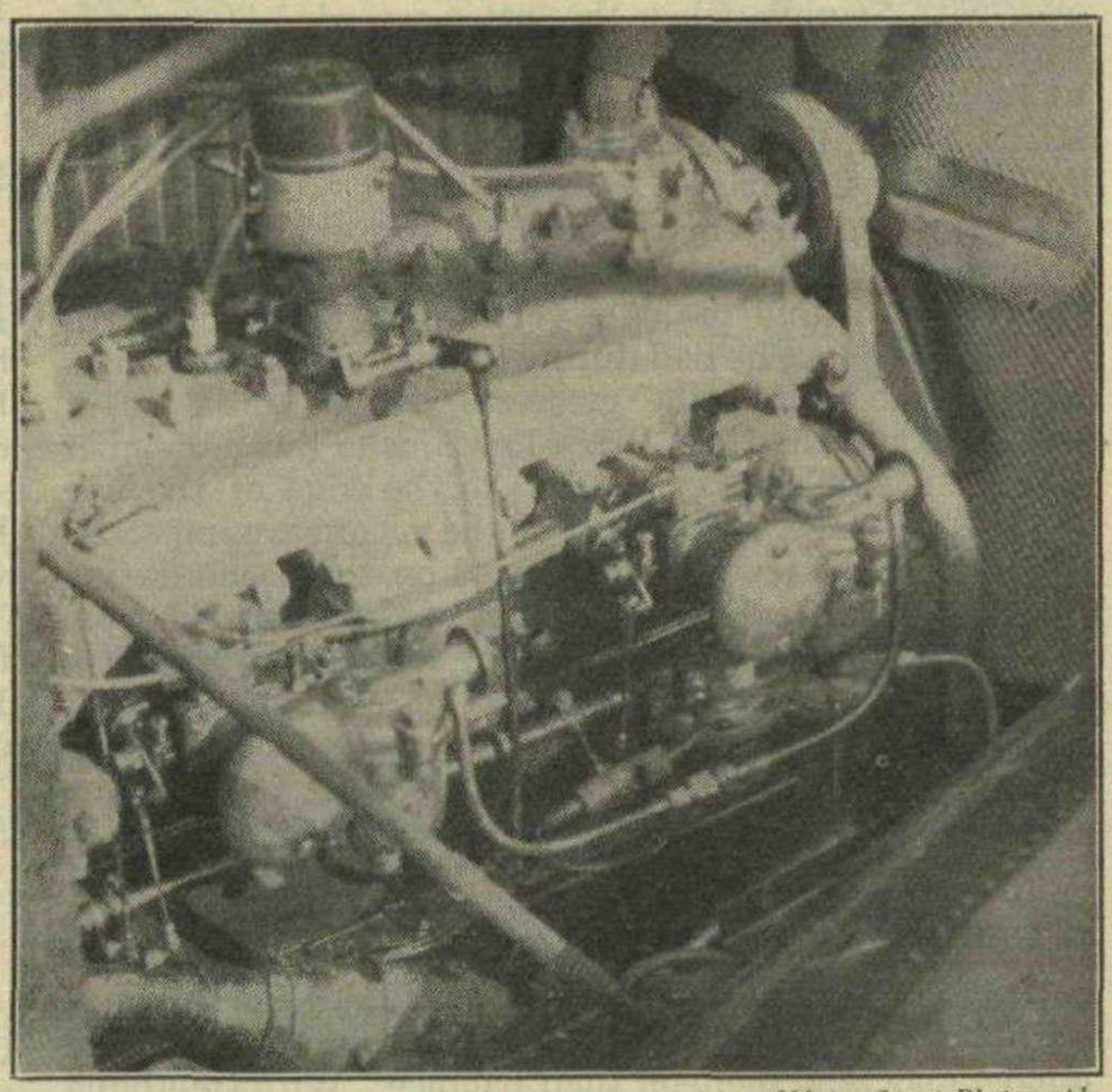
Some sports cars base their appeal on high maximum speed, others on a terrific performance on the gears, while a third type are deservedly popular for their low first cost and economy of operation. The Fiat is fast enough for most practical purposes, and has a gear-box which can be used with advantage, but provides an unusual attraction in its high power-weight ratio which allows it to pull a high top gear, and its compactness, which allows it to be taken round corners in a way worthy of a " fifteen hundred." The steering, which at low speeds is lacking in caster and is low geared, handles perfectly at high speeds. It is in fact ideal for the rather winding roads which are characteristic of the greater part of the British Isles.

The steering lock is unusually good, giving the car a turning circle of 34 feet, which allows it to be swung round in one operation on the average by-pass road.

The appearance of the car is quite on a par with its performance. Apart from its compact low lines, the " view " over the long low bonnet and large headlamps is pleasing. The front seat is comfortable, and the sides of the body are cut away to give plenty of elbow room. The back seats are intentionally small to allow the body to be all inside the wheelbase, but the rear passengers are provided with deep wells and adequately cushioned seats. These are reached by steps either side of the body, and a hinged flap lifts up to make it easy to enter. The flap serves to protect the passengers from some of the draughts which one always experiences in the back of an open car, and can be locked to prevent interference with luggage stored there.

The 20-70 h.p. Fiat is a lively car with a distinctive and tasteful style of coach-work. It is a little different from any sports car produced in England, and from this aspect alone should be seen and tried. The cars are handled in England by Fiat (England) Ltd., Lancelot Road, Wembley, who placed the car at our disposal.

T. G. M.



This off-side aspect of the 20/70 h.p. Fiat power unit shows how the two Solex carburettors have been fitted to provide increased performance.

[*Motor Sport Photographs*

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Rumblings



That 273 m.p.h.

IT is a permanent regret of mine that I have not had the good fortune of being present at one of Sir Malcolm Campbell's record-breaking runs at Daytona Beach. When you come to think of it there must be very few Englishmen who have had this unique experience. I was recently talking to a man who went over with Segrave when the latter recorded 203 m.p.h. with the twin-engined Sunbeam, and who also travelled to Florida with Sir Malcolm Campbell in 1928—to wit, Mr. N. H. W. Freeman, the technical expert of the Dunlop Rubber Company.

I happened to remark on the impossibility of being able to visualise such a colossal speed as 273 m.p.h., and Freeman told me of a very interesting (and terrifying) experience he had during his last visit to Daytona. In order to obtain the greatest possible sensation of speed, he and the Hon. Brian Lewis, who was a member of Sir Malcolm's party, walked to the edge of the line marked by flags, at the end of the record timing strip. The rest of the few people allowed on the beach during the run were standing at the foot of the sandhills, from where the car naturally does not look so fast as in a nearer view.

To their horror, as "Bluebird" approached at well over 240 m.p.h. they saw the car veering towards the spot where they were standing. Neither attempted to move, for human agility is not quick enough to avoid such a projectile, and Freeman told me that his chief thought was concerning "Bluebird," which seemed to be getting into an uncontrollable lurch. In a fraction of a second the car was past them, the gale of slipstream almost knocking them off their balance. With trembling legs they measured the distance between them and the wheelmarks of "Bluebird," and found it to be just 20 feet!

Hustle at Brooklands.

The Brooklands people have had everyone's sympathy over their bad luck in the track subsidence business. When all the usual winter repair work had been finally completed, and the services of the gentlemen with pneumatic drills at last dispensed with, to have to start work all over again was enough to make Mr. Bradley cast himself in despair from the observation tower of the club house. Instead, with great determination he recalled the aforesaid gentlemen with the drills and other apparatus, and told them not to stop work until the job was finished.

The trouble was that it was difficult at first to find out the extent of the damage to the foundations of the piers of the bridge. After much work, in which a diver played an important part, the matter is now in hand. Great efforts are being made to complete the job in time for the Easter Meeting, but in any case an alternative programme, on the lines of the opening event of March 11th, will be held in reserve.

New Drivers of Fast Cars.

All this must be particularly disappointing for Oliver Bertram, who has bought John Cobb's 10 litre Delage. Bertram was able to put in a little practice with the big car before the floods swept away the bridge-pier, but not nearly as much as he would have liked to have done. Anyway the sprint races, which have temporarily supplanted the outside-circuit races at Brooklands, give him plenty of opportunity of mastering the get-away, which he seems to have accomplished very effectively.

Incidentally, on all sides, I heard a good deal of praise for Bowes' handling of the Bugatti once owned by Penn Hughes—one of the fastest cars of its type in this country.

A Question of Accuracy.

Here is a story from Sweden.

1st Driver: "How fast will your Chrysler go?"

2nd Driver: "135 k.p.h."

1st Driver (looking at dashboard of 2nd Driver's Chrysler): "But you haven't got a rev. counter or a speedometer. How do you know you're doing 135 k.p.h.?"

2nd Driver, airily: "Oh, I can tell by the wind-pressure on my face!"

Hidden Talent.

The band had just finished playing "God Save the King" at the end of the B.R.D.C. Banquet and Dance in honour of Sir Malcolm Campbell. Suddenly there was a familiar burst of noise, and the room was filled with the sound of a well-tuned Bugatti being revved up on the starting line, getting away, and changing up through the gears. The guests, slowly drifting out of the ball-room, stopped in amazement. Then once more came the noise, this time of a car passing the Fork, gradually

RUMBLINGS—continued.

drawing near, rising to crescendo, then dying slowly away, with a slight lilt in the note as wheelspin set in after an extra large bump.

Vernon Balls clutched h s neighbour's arm. "Marvellous, absolutely marvellous!" was his verdict.

Then followed a completely realistic sound of a car approaching the Fork Turn in a Mountain Race; revving up as each lower gear was engaged, a screeching of tyres, then full bore on each ratio as the car sped up the Finishing Straight.

At the end of the room stood a young man, his face within 6 inches of the microphone, comb pressed to his lips. It was Roy Nockolds, the artist whose work is well known to readers of MOTOR SPORT, revealing a hidden talent with which he cheers up his friends during the Winter season, when no one has heard the sound of a healthy Bugatti exhaust note for months.

Brooklands Tuning.

Good luck to Dick Nash with his new venture at Brooklands! He has acquired a large building on the road lead ng into the Paddock from the Tunnel, and there he will be at the service of all those who require some more "pep" from their engines. Incidentally, his new car "the Spook" is receiving the final touches before being put into action throughout the season.

Now then, Dick, how about that Shelsley record?

Brooklands Prospects.

People are still very reticent (and probably with good reason) about their plans for the season at the Track. John Cobb's car is progressing favourably, but he is wisely refraining from letting any details of the car become public knowledge until the machine is completed.

Then I know of a man who has done a lot of good work at Brooklands, who has a special sprint car in course of preparation. He is keeping it "under his hat" for the moment, but has promised to let me have full details as soon as possible. I have an idea that the power unit will be Riley Nine.

And last, but by no means least, is the exciting news of a six cylinder supercharged two-stroke engine to be fitted into a well-known chassis. This is naturally what the daily newspapers love to call a "hush-hush" car in its present state, but great things are expected of it this summer.

Power-Units.

Experiments are continuing on the new two-camshaft Anzani, and the head castings and other parts should be free from the distortion which used to cause trouble on the "Slug." Chain-drive instead of the train of gears originally planned, will be used for driving the camshafts.

Another interesting engine on the way is a 1,660 c.c. six-cylinder Meadows, which is to be tried in Frazer Nashes. In the Nash's light chassis the combination should provide flexibility with a brisk performance.

Stop Press.

For the first time an English driver will take part in the Alexandria C.P., to be held on April 30th—namely Sir Henry Birkin. His car has not yet been decided.

"... with the express desire to *disprove* your claims"

1, Westover Road,
LONDON, S.W.18
November 24th, 1932

Dear Sir,

The mention in last week's "*Autocar*" was, as you guessed, in reference to my experience with your Oil. There is very little to add.

The oil pressure remains high over all conditions. I have been out on the road with the express desire to disprove your claims that the pressure would remain "up" but after much "revving" and high speed I had to admit that I was unsuccessful. The pressure remained "up."

As regards consumption, I can only say that it is most surprisingly economical. I have not yet used half a gallon, and the car is used every day.

Yours truly
(signed) Barry Appleby,
Member of the "*Autocar*" staff.

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WHY CARS BREAK DOWN

INTERESTING POINTS IN THE R.A.C. ANNUAL ANALYSIS OF THE CAUSES OF FAILURE

THE analysis of the causes of breakdowns in motor cars issued annually by the R.A.C. is now available. In 1932, the number of cases dealt with was 12,557, covering every type of car. It will be seen from the comparative figures given with the analysis that there is little variation from year to year, although there are two noteworthy instances where there has been a decline. The percentage of breakdowns due to accidents last year was 11.9, which is the lowest figure recorded since the analysis was first compiled. The number of breakdowns due to axle shaft failure also shows a considerable drop, and again is a new "low record."

The principal cause of trouble continues to be ignition, and in the opinion of the R.A.C. this is not so much due to the weakness of this particular part of a car's mechanism, but rather to neglect on the part of drivers and possibly lack of understanding of the electrical equipment of a car. It is of interest that, although the majority of cars are now fitted with coil ignition, there is little variation in the percentage of breakdowns compared with some years back when magnetos were generally employed.

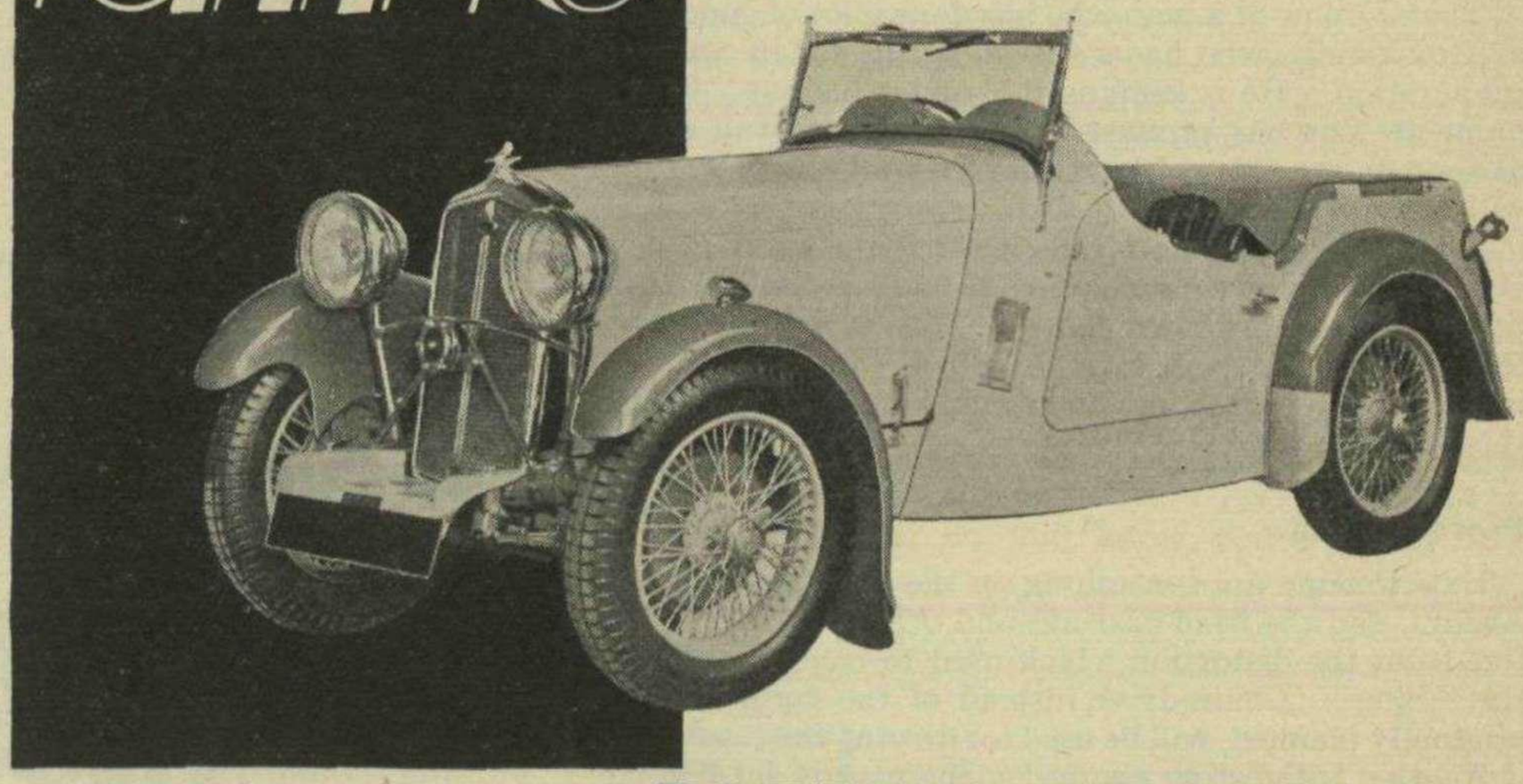
The following are the figures for 1927, 1928, 1929, 1930, 1931 and 1932 respectively :—

	1927.	1928.	1929.	1930.	1931.	1932.
1.—Power Unit.						
(a) Ignition	21.	22.7	20.3	20.4	20.8	20.4
(b) Carburation	2.6	2.6	2.6	2.8	3.5	3.7
2.—Engine.						
(a) Cylinders and pistons	10.2	10.5	10.9	10.4	10.1	9.9
(b) Valve mechanism. Camshaft. Lay shaft. Secondary and Timing gear	.7	.4	.6	.7	2.6	2.3
(c) Valves	1.4	1.4	1.5	1.5	1.3	1.5
(d) Lubrication	2.7	2.5	3.1	2.8	2.2	2.6
(e) Water circulation	1.1	2.2	3.1	2.6	2.2	2.5
(f) Crankshaft	.5	.5	.4	.7	.7	.8
(g) Not stated	6.4	5.8	6.1	5.9	5.5	5.3
(h) Starting	.9	1.	1.	1.	1.	1.2
3.—Transmission and Brakes.						
(a) Clutch	4.9	5.1	5.9	6.4	6.3	6.2
(b) Gear Box	3.2	2.6	2.4	2.3	1.9	2.6
(c) Couplings, Universal joints and propeller shafts	4.9	4.1	4.3	4.1	4.2	4.0
(d) Brakes	.2	.1	. 2	.3	.3	.4
4.—Back Axle.						
(a) Axle Shafts	13.6	13.8	14.	14.2	13.6	12.7
(b) Differential	1.4	.7	.9	1.	.9	1.2
(c) Bevels and Worms	.7	1.	.8	.9	1.	1.1
5.—Front Axle and Steering	3.1	3.3	2.4	3.3	3.2	3.1
6.—Road Wheels and Suspension	4.1	4.2	4.5	4.3	4.4	4.1
7.—Lighting Failures	2.2	2.0	2.4	2.2	2.	2.5
8.—Accidents	14.2	13.5	12.6	12.2	12.3	11.9
	100.	100.0	100.	100.	100.	100.

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CONTINENTAL NOTES.

CITROENS ON MONTLHERY

As announced in last month's MOTOR SPORT two long-distance record attempts have recently been started at Montlhéry track.

The first car to start was the 10 h.p. model "la petite Rosalie." The weather was most inauspicious at the start of the 25,000 kilometre attempt, snow falling heavily. In spite of this an excellent speed was maintained, and at the end of 24 hours a distance of 2,433 kilometres had been covered, at an average speed of roughly 63 m.p.h. The next day, however, the attempt had to be abandoned, for a sharp frost set in, and converted the track into an ice-rink. After some valiant attempts to keep going, in which the drivers showed great skill in skid-correction, it was decided to postpone the run until finer weather returned.

A week passed, and the snow and ice all melted, so that once more the team assembled to get under weigh. The drivers were L. Marchand, C. Marchand, L. de Presalé, R. Fortin, and M. Combette. No sooner had the attempt started than rain began to fall, but the drivers managed to cope with this new obstruction quite successfully, so that at the end of 24 hours a distance of 2,413 kilometres had been covered, being a slight drop on the car's previous figures. The speed of "la petite Rosalie" was still high enough to break records, however, and the first to fall was the 4,000 kilometres, at 99.570 k.p.h., followed by the 48 hours at 99,305 k.p.h., the 3,000 miles at 99,331 k.p.h., and the 5,000 kilometres at 99,270 k.p.h., all in International Class F (under 1,500 c.c.).

By this time the weather had cleared up, and the drivers had a much easier ta k. The 4,000 miles fell at 99.361 k.p.h., and the 3 days' record at 99.477 k.p.h. It will be seen that the car was lapping at an extraordinarily consistent pace, there being practically no variation in its speed for the whole run so far. Nothing seemed likely to stop the car, and the following day the 5,000 miles record fell at 99.531 k.p.h. and the 4 days at 99.535 k.p.h. All these records had been held by Singer and Fiat. Two more records fell, the 10,000 kilometres at 99.572 k.p.h. and the 5 days at 99.593 k.p.h., when the little car, at 10.30 in the morning, failed to appear at the replenishment depot. The trouble was found to be a broken back axle, which by the rules governing record attempts, could not be changed. Nothing daunted, those in charge of the run decided to begin all over again, after the repair had been executed.

All this time another Citroen had been circling the track, starting on the 4th March. The same drivers as those piloting "la Petite Rosalie" were used, but in addition Edmond Bestaux and Alphonse Vallant were brought into action. This car, named "Agatha," was a 20 h.p. model, fitted with a two-seater racing body, and the idea was to attack long distance class, and probably world's records.

At the end of the first 24 hours a distance of 3,011 kilometres had been covered at an average speed of roughly 78 m.p.h. Maintaining this speed with unfailing regularity "Agatha" kept going to such good purpose that the 5,000 miles record fell at a speed of 125 k.p.h. and the 3 days at 124 k.p.h. The next day it was found that the 10,000 kilometres and the 4 days records had been taken, all from the Hotchkiss which holds all the long-distance records in Class "C." The latest news is that the 15,000 kilometres and 5 days have fallen by the board, and that the car is still going as regularly as ever.

4.9 Bugatti Records at Montlhery.

The Kaye Don - Eldridge - Eyston 4.9 Bugatti has been greatly modified for this season, the engine being set further back in the frame, and Lockheed brakes being substituted for the original system. It was recently decided to attack records at Montlhéry, but the day fixed for the attempt on the Class C 1 hour record produced a severe rain-storm, so that Kaye Don, who was to drive the car, was forced to put off the attempt.

Finally, the weather cleared, and the car set off. The hour record was taken successfully at a speed of 123.01 m.p.h., and all being well, the car pushed on and took the 200 miles record at 122.36 m.p.h., G. E. T. Eyston driving for the last part of the run. Previously the hour record was held by the "Tiger" Sunbeam, also driven by Don, at 120.80 m.p.h., and the 200 miles record at 117.47 by the Delage driven by Don. Needless to say, Dunlop tyres were used.

The Road Racing Season Opens.

The two big events of next month are the Italian 1,000 Miles Race on April 8th and 9th, and the Monaco Grand Prix on April 23rd. For the former the only British entries will be the team of M.G. Magnettes to be driven by Earl Howe, Sir H. Birkin, G. E. T. Eyston, B. Rubin and H. C. Hamilton. As usual, the preponderance of entrants will drive Alfa Romeos.

The Monaco Grand Prix is open to competitors by invitation only. Continental drivers have a habit of entering for races at the last moment, so although we are not in a position to give a complete entry list at the time of writing, the usual first class field will undoubtedly go to the line on the 23rd of next month.

The Fiat Affair.

A considerable sensation has been caused by the action of the International Sporting Commission in debarring Fiats from entering in competitions for one year. The trouble all arose in Spain, but the suspension applies to the whole world. So that Fiat owners can compete in International events until the appeal is heard. The Fiat Company, in co-operation with the Italian Automobile Club, has lodged a protest.

CONTINENTAL NOTES—continued.

A Speedy Renault.

Speed demonstrations by standard cars with normal coachwork are always interesting from the sports car owner's point of view, and seem to be specialised in on the Continent and in the U.S.A. A very striking performance of this nature was recently accomplished by a straight-eight Renault, with an occasional four-seater cabriolet body, on the Linas - Montlhéry autodrome. Driven by Quartresous the car was officially timed by the Automobile Club de France for 6 consecutive hours, at the end of which the remarkable distance of 925 kilometres 853 metres had been covered, at an average speed of roughly 96 m.p.h., the fastest lap being at the rate of 99 m.p.h.

MOTOR SPORT readers will recall the wonderful 24 hour world's record held for many years by a 45 h.p. Renault with enclosed cockpit, and it is possible that this recent run is in the nature of a preliminary try-out for serious record work with the straight-eight model. At all events, 96 m.p.h. for six hours with a completely equipped stock car is a wonderful achievement.

For a non-stop run of this nature freedom from tyre trouble is essential, and the Dunlops used on the Renault looked hardly used at the end of six hours.

The Chateau-Thierry Hill Climb.

The famous French hill climb at Chateau-Thierry will be held this year on April 9th. The organisation is in the hands of the A.C. de Picardie et de l'Aisne, and the event is promoted by the newspaper "L'Echo des Sports."

Already several well-known drivers have expressed their intention of taking part in the hill-climb, among them being Raymond Sommer (Maserati) and Giraud Cabantous (Caban). It will be remembered that last year the fastest car time was made by Druck on a 2 litre Bugatti, at an average speed of 63.5 m.p.h.

Good News of the Bol d'Or.

The annual 24 hours race run on the circuit at St. Germain, near Paris, at Whitsuntide always attracts a good entry and a large attendance. This year the event has received the blessing of the Federation Nationale des Clubs Automobiles de France, and at recent meeting of the Council it was decided to provide an annual cash prize of 10,000 francs to the race. This sum will be awarded to the car covering the greatest distance in the 24 hours of the race, a "car" being designated a vehicle with four wheels. The race is open to three-wheelers, and the Bol d'Or is awarded to the competitor who travels the greatest mileage, either on three wheels or four.

The race never seems to attract British competitors, although we imagine that a Montlhéry M.G. Midget or a Riley Nine would stand a very good chance of success. The race is a considerable test of endurance, for only one driver per car is allowed, and in addition, the 2½ mile circuit abounds in corners. An English driver would have the extra inducement of attempting to win the coveted Robert Sénéchal Cup, awarded to the driver who holds the record for the 24 hours race. So far the cup has never been awarded, for Robert Sénéchal himself still holds the record of 1,205.32 miles established in 1926.

Any British driver who is thinking of entering should get in touch with Mon. E. Maure, 87, Boulevard de Rheims, Paris (17e).

Who wants a Bugatti?

Double-camshaft 2.3 litre Bugattis are not easily come by in the second-hand market, especially one that has a successful racing season to its credit. In France, however, there is a car of this description awaiting a purchaser, to wit, the Bugatti raced by René Dreyfus last year. Now it is the property of M. Tremblay, of Nice, who entered the car in the Pau Grand Prix, where it was driven by Morand. M. Tremblay now wishes to dispose of the car. Any offers?

A "Stable" to be reckoned with.

In spite of the lack of team entries by manufacturers there is no falling off in the entry lists of forthcoming races. This fact is largely due to the new "entrant" in motor-racing, namely, the "stable." Starting with the Ferrari group in Italy, with Nuvolari and Borzacchini as drivers, among others, the next to be formed was the Sommer/Zehender team. This was followed by the Birkin/Rubin combination in this country, and now comes the great news that Louis Chiron, the French champion about whose plans there have been so many conflicting rumours, has joined forces with the German driver Rudolf Caracciola.

According to the Parisien newspaper "L'Auto," these two redoubtable drivers will be seen throughout the season at the wheel of Bugatti and Alfa Romeo racing cars. Already they have at their disposal a couple of 2.3 double-camshaft Bugattis, a model for which Chiron has a particular affection, and in addition they have placed an order for two of the latest type 2.3 litre Alfa Romeos, which will be used for "sports car" races at Le Mans and Spa—and, one hopes, at Ulster.

The Ferrari stable will have to look to its laurels!

The Grand Prix of Tunis.

Unfortunately, the results of the Grand Prix of Tunis arrived in London too late for inclusion in this issue of MOTOR SPORT. The race took place on March 26th over the circuit of Carthage, which measures 12 kilometres 714 metres, and competitors had to cover 37 laps, or a total distance of 470 kilometres 418 metres. The prize money subscribed for the race was considerable; the winner receiving 40,000 francs; second man 25,000 francs; third, 15,000 francs; fourth, 8,000 francs; and fifth, 5,000 francs.

At the time of going to press the entry list was as follows: Hartmann (Bugatti), Petsche (Alfa Romeo), Lehoux (Bugatti), Etancelin (Alfa Romeo), Falchetto (Bugatti), Czaikowski (Bugatti), Sommer (Maserati), Gaupillat (Bugatti), Toselli (Bugatti), Nuvolari (Alfa Romeo), Trintignant (Bugatti), Varzi (Bugatti), Fagioli (Maserati), Borzacchini (Alfa Romeo), Zehender (Maserati), Villar (Alfa Romeo), Walthausen (Alfa Romeo), Braillard (Bugatti), Brunet (Bugatti), Joly (Bugatti), Veyron (Bugatti), and Premoli (Maserati).

MUDLARKING IN SURREY

F. S. BARNES (SINGER) MAKES BEST PERFORMANCE IN THE LIGHT CAR CLUB'S HALF DAY TRIAL.

"REALLY worth while"! seemed to be the general trend of the remarks overheard at the finish of the Light Car Club's Half-Day Trial held on March 4th. The route, which was short and concentrated, was laid out in Surrey, starting from Godalming and ending at Hindhead. Following a new policy, the organisers endeavoured to find a course in which the obstacles called for a high standard of driving rather than a test of individual cars, for a 1st class award to be gained.

Thirty-one competitors out of an entry of thirty-three lined up at the starting point—Jordan's Garage, Godalming. The heavy rains of the previous fortnight had played havoc with the course, and, while it was a fine afternoon, the whole countryside was practically under water.

Five miles of narrow country lane, calling for much use of the gearbox, led to the first hill—Mare Lane, Hascombe. This hill was observed to a point just below the summit where a stop and restart test took place. The surface of wet sand on clay was scarcely conducive to a quick getaway, and competitors were called upon to cover fifteen yards in seven seconds. Twelve cars failed to satisfy the timekeeper. One Riley, towards the end, actually took nineteen seconds to cover the distance, while R. J. Cook (Wolseley Hornet) took twelve and two-fifths seconds. D. A. Aldington (Frazer Nash) apparently suffered from a high gear ratio, as his time was eight and two-fifth seconds. The fastest time was put up by H. M. Avery (Singer Sports 9), whose getaway was terrific and who clocked four and two-fifth seconds! Others who were good were J. A. Bastock (M.G. Midget), L. Maxwell (M.G. Magna), W. E. C. Greenleaf (Riley), and C. G. Fryer (M.G. Midget), all of whom took five seconds only.

In order to prevent blinding in narrow lanes, the average speed of the trial was kept down to 18 m.p.h., and competitors were secretly timed for the next three and a half miles—those who exceeded this average by more than ten per cent. being penalised. This check caught out ten drivers, six of them in a bunch, namely, Messrs. Styles, Greenleaf, Hess, Wilcoxon, Knight, Maxwell and Avery.

The next test was named a controllability test. It consisted of accelerating away on a flat sandy road for seventy-five yards and stopping in an area of three yards. An average time was struck and competitors penalised for exceeding the average. Fastest time was put up by G. C. Harris (Morgan), whose judgment was sound in pulling up after such a meteoric getaway. His time was eight and two-fifth seconds, and he was closely backed up by Aldington (Frazer Nash), nine and two-fifth seconds, and F. S. Barnes (Singer Sports 9), nine and three-fifth seconds. F. Sforza (M.G. Magna) was also good (ten seconds), but thirteen people lost marks through lack of speed or brakes. A. E. Carr (M.G. Midget) spoilt an otherwise impeccable performance in the trial by losing two marks in taking two seconds longer than the average of eleven seconds: doubtless one of the cases when one's fingers become all thumbs and one's boots full of feet!

Immediately after this test came Colmar—an observed section of a hundred and thirty yards of very glutinous mud. No fewer than thirteen competitors helped to exhaust the small army of marshals in gum-boots. Two cars were excellently handled in this section. They were J. G. C. Bond's Morris Minor and J. A. Driskell's 8 h.p. Ford. C. Knight (M.G. Magna) was also good, but many competitors got through more by luck than by careful throttle work. G. C. Harris, driving the only Morgan, approached at speed, and his machine literally leaped in the air as it took the mud and thereupon went all shapes and came to a stop. A great pity, as it lost him his first-class award.

A further four miles of good second-class road brought the cars to Blind Lane, Brook, a narrow and very muddy hill about three hundred yards long. Not much gradient, but a whole lot of mud. This caught only eight cars out, two of them being very unlucky. Aldington (Frazer Nash) and Richardson (Singer 9) failed a few yards only from the crest. Three drivers were very good indeed, these being C. J. Fryer (M.G. Midget), Driskell (Ford 8 h.p.) and Greenleaf (Riley). All these were fast and sure.

The next hill—Highbutton—was a fiasco. The torrential rain of the past week had made the lower slopes a morass, and few competitors reached the right-hand hairpin, which was the climax of the hill. Three competitors succeeded in climbing the hill unaided before the marshals decided to cut the obstacle out of the trial. These were G. C. Harris (Morgan), very fast indeed; J. A. Driskell (Ford), and Alan Hess (J2 Midget).

A delay of about one and half hours at this point resulted in chaos, and many competitors climbed the last hill in the dark. This was Tree Trunk Alley, a narrow, slippery slope leading up to the main Portsmouth Road, but it accounted for only six failures. Only two miles of main road followed, to the finish at the Royal Huts Hotel, Hindhead, where tea awaited marshals and competitors alike. All had well deserved it. Only three drivers had gained first-class awards, which is as it should be. F. S. Barnes (Singer) gained the purse of £2 2s. 0d. for the best performance—a very fine show indeed, closely followed by Langley (Singer) and Thatcher (Triumph), who also came through without loss of marks.

AWARDS.

Best performance of the day—F. S. Barnes (Singer).

1st Class.—A. Langley (Singer), F. A. Thatcher (Triumph), A. E. Carr (M.G. Midget).

2nd Class.—H. C. Hunter (Riley), G. C. Harris (Morgan), W. J. B. Richardson (Singer), J. G. C. Bond (Morris Minor), C. J. Fryer (Midget), W. E. C. Greenleaf (Riley), L. Maxwell (Magna), H. M. Avery (Singer), G. F. Viola (Triumph), J. A. Bastock (Midget), S. J. Randall (Austin).

Team Award.—The Avery-Singer Team. Messrs. H. M. Avery 95%; F. S. Barnes 100%; and A. Langley 100%.

Due to the tie for best performance between Barnes, Thatcher and Langley, the times taken in the controllability test were considered. Barnes took nine and three-fifths seconds, being four-fifths seconds better than the other two, thereby gaining the award.

R. G.

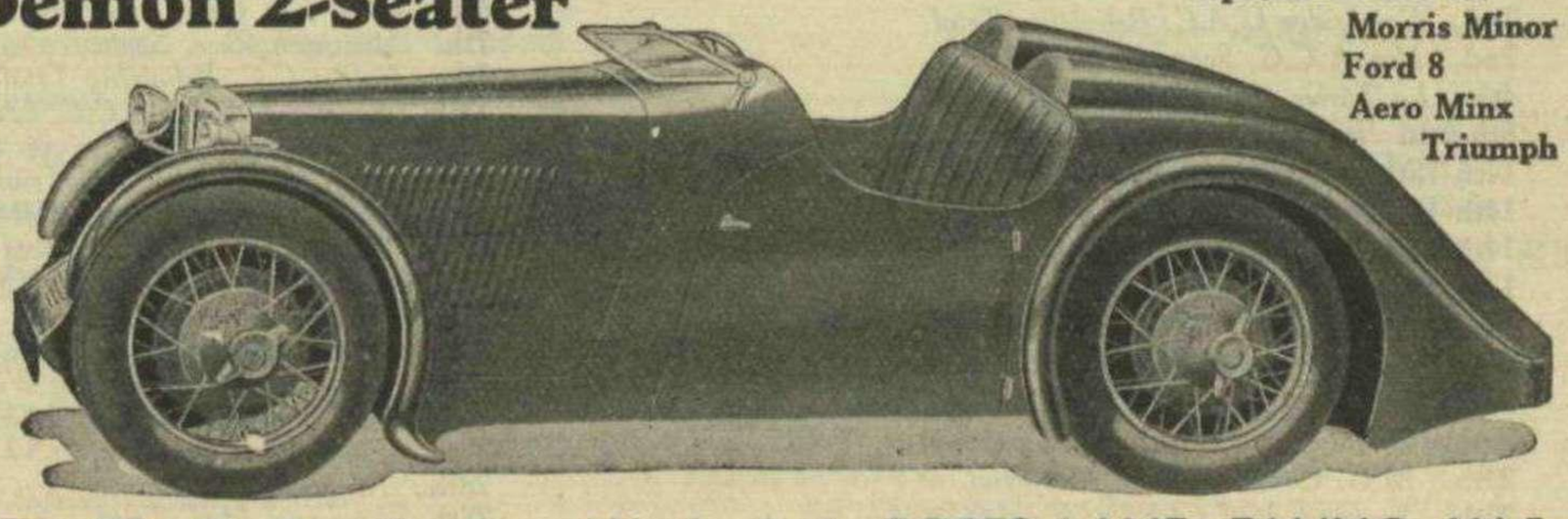
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ABOLISHING THE GREASE GUN

ANOTHER LINK IN THE CHAIN OF "TROUBLE-FREE MOTORING" FORGED BY THE CASTROL "LUBREQUIPMENT" SERVICE.

ONE by one the old bug-bears of motoring are being removed. Self-changing gear-boxes, finger-light controls, and general ease of maintenance has resulted in motoring of such reliability and freedom from worry that the average motorist now gives little more thought to the mechanical working of his car than he does to the locomotive of a train in which he travels.

The latest step forward to this state of trouble-free motoring is the "Lubrequipment" Service recently introduced by Messrs. C. C. Wakefield & Co., Ltd., the manufacturers of Castrol. But one cannot do justice to the benefits of this new Castrol service without first painting the reverse side of the picture, i.e., the state of affairs which the "Lubrequipment" service is intended to supplant. Every intelligent motorist realises the importance of chassis lubrication, and of the correct maintenance of the level of oil in gear-box and back axle—but how often does he pluck up courage to tackle the job himself? Very seldom, and when at last he does, it means that for a whole morning at least his car is out of action, while he grovels on the ground, grease-gun in hand, and attempts to force grease through nipples which are generally blocked with dirt and mud. Having found all the nipples of the chassis and universal joints—ruining his instruction book with greasy fingers in the process—he sets about checking the level of lubricant in the gear-box and back axle. To do this he has to remove the seat squabs and floor-boards, leaving behind him liberal smears of muddy grease on the upholstery which will ultimately soil his overcoat, and at last, with great contortions, he reaches his objective.

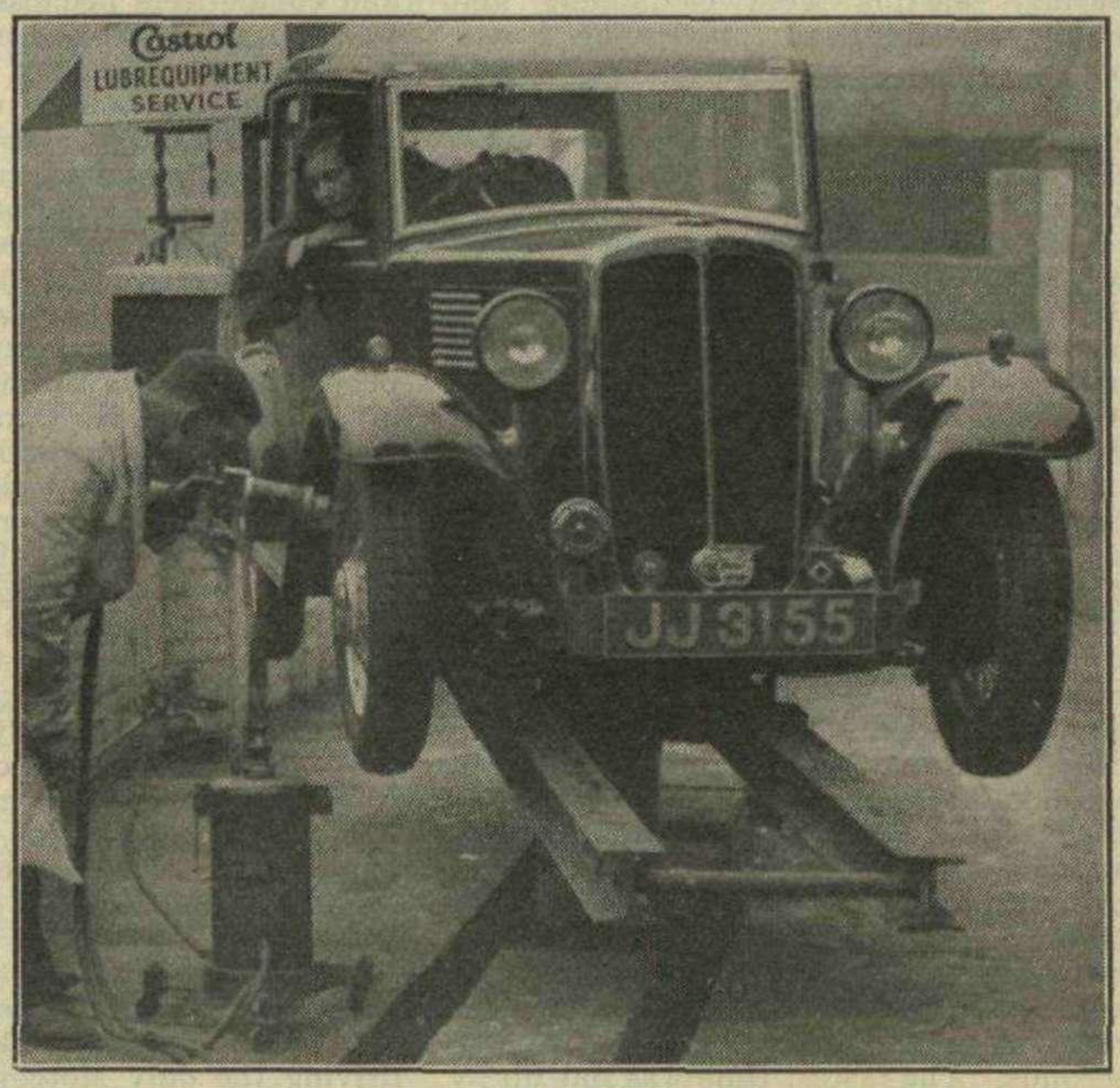
But one can go on in this strain *ad nauseum*. Let us look at the brighter—and cleaner—picture of the same owner making his periodic visit to a garage where Castrol Lubrequipment service is available. The motorist consults his Log-Book, where he will find the mileage and date at which the chassis of his car was last lubricated. Then he fills in a job card handed to him by the garage mechanic, marking those points which he requires lubricated or attended to. His car is then quickly raised on a ramp, two mechanics set to work with a special plant giving a pressure of from 2,000 to 10,000 lbs. per square inch, and, hey presto! in ten minutes the job is done. He then fills in his Log-Book, has it stamped with the official Castrol Lubrequipment mark, and his car is once more efficiently lubricated until such time as his speedometer tells him that a further period has expired.

Two aspects of this new Lubrequipment service are worth stressing. First, in order to lubricate one's car properly, as many as eight different types of oil and grease are sometimes required, so that a large stock had to be kept by an owner who did the job thoroughly himself. Secondly, the owner of a car who has regularly had his car attended to at a Castrol Lubrequipment Service Station will be able to get a better price for his car when he wants to sell it by producing his Log-Book, officially stamped, which will testify to the care with which his car has been tended.

And don't forget that R.A.C. statistics show that transmission troubles cause 27.9% of breakdowns on the road!

Chassis Lubrication up-to-date and while you wait.

Our picture shows a typical Castrol Lubrequipment Service Station, with an Attendant at work with a grease gun giving a pressure of anything up to 10,000 lbs. per sq. inch



FORTHCOMING EVENTS

MOTORING FIXTURES FOR 1933.

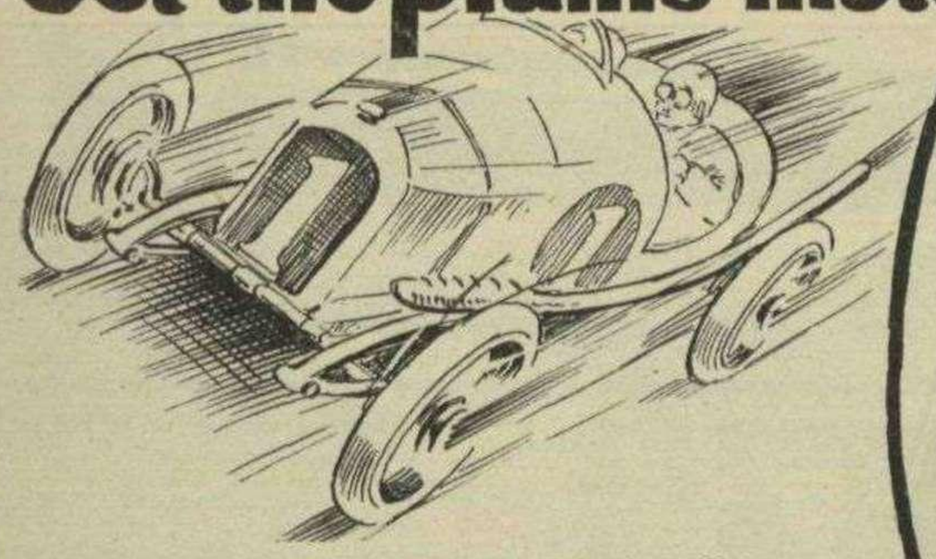
APRIL.

1st. *Southport M.C. Race Meeting.*
2nd. *Cambridge U.A.C. Reliability Trial.*
2nd. *Hornet C.C. Scavenge Hunt.*
4th. *La Turbie Hill Climb.*
8th-9th. *Italian Thousand Miles Race.*
14th-15th. *M.C.C. London—Land's End.*
14th-16th. *Carl Benz Rally, Mannheim.*
14th-17th. *Singer C.C. Easter Tour.*
17th. *B.A.R.C. Easter Meeting.*
22nd. *Liverpool M.C. Reliance Trial.*
23rd. *Monaco Grand Prix.*
29th. *Southport M.C. 50-Mile Handicap Race.*
29th. *Brighton and Hove M.C. Twelve-hour Trial.*
29th. *M.G. Car Club, Chilterns Trial.*
29th. *Sunbeam M.C.C. Speed Trial (Gatwick).*
30th. *Bugatti Owners' Club, Honiton Rally.*

MAY.

6th. *J.C.C. Race, Brooklands.*
6th. *M.G. Car Club, Brooklands Rally.*
7th. *Montjuich Race, Spain.*
7th. *Hornet C.C. Reliability Trial.*
13th. *Kent and Sussex L.C.C. Lewes Speed Trials.*
14th. *Targa Florio.*
20th. *M.G. Car Club Speed Trials.*
20th-25th. *Wisbadaner Automobil-turnier.*
20th. *Bugatti Owners' Club Speed Hill Climb.*
20-21st. *Junior Car Club Inter Centre Rally.*
21st. *Avus Track Race, Germany.*
27th. *Shelsley Walsh Open Hill Climb.*
27th. *M.G. Car Club Shelsley Walsh Rally.*
27th. *Mid Surrey A.C. Grand Cup Trial.*
28th. *Eifelrennen, Germany.*
28th. *Royal Prix de Rome.*
28th. *Liverpool M.C. Trial.*
30th. *Indianapolis 500-miles Race.*

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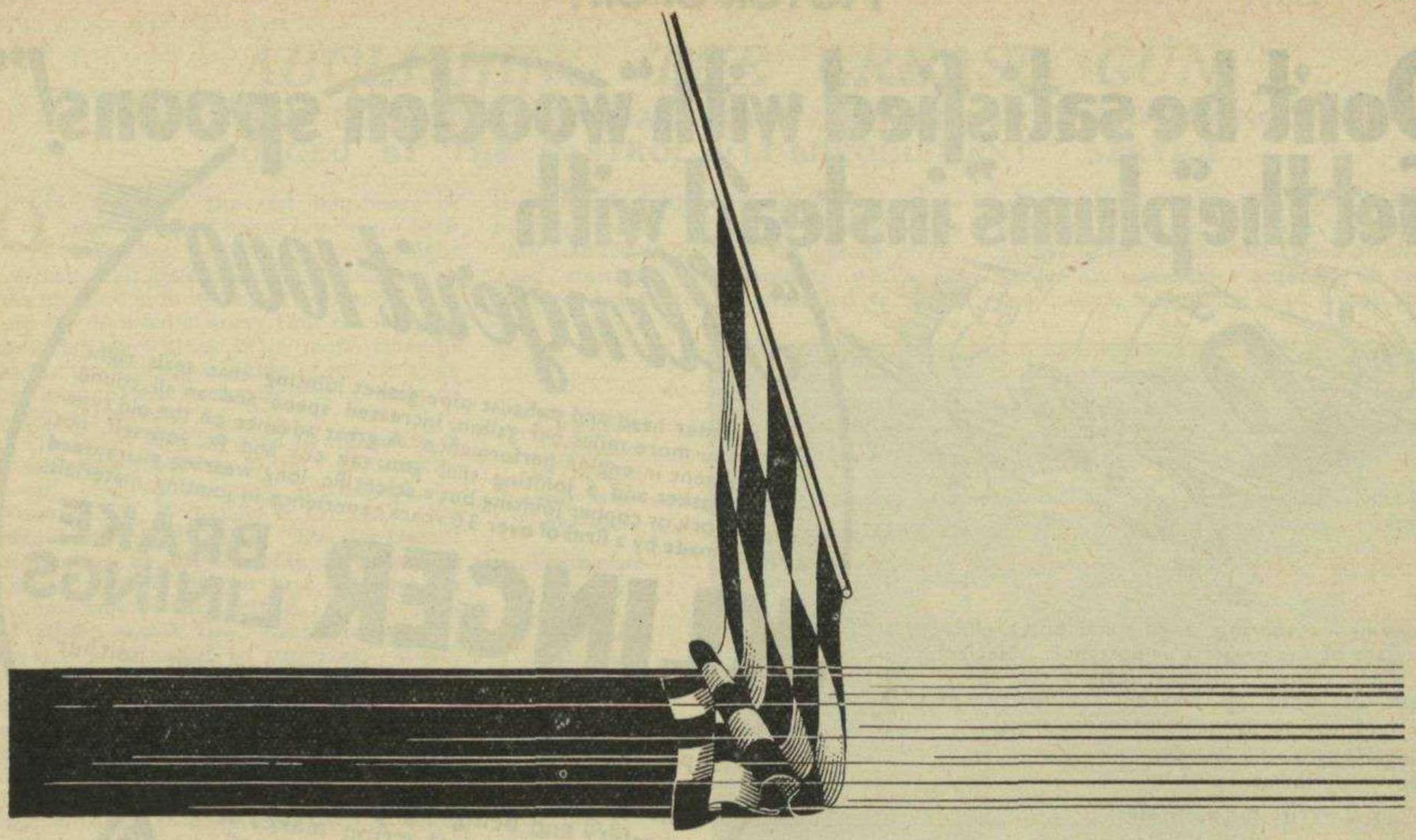
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Castrol

MOTOR OIL

THE J.C.C. AT BROOKLANDS

MANY FAILURES IN TESTS SIMILAR TO THOSE SET AT HASTINGS.

FOR their opening Rally, the Junior Car Club had the excellent idea of using the tests in slow running, acceleration and braking scheduled for the R.A.C. Rally at Hastings. The weather conditions were appalling, there being heavy snow in the morning which thawed into floods, and left a watersplash at the foot of the Test hill. Allowing for bad weather, the results of the trials gave most people furiously to think, particularly the slow running in top gear, for only 29 out of the 83 competitors exceeded the stipulated minimum of 25 seconds for 50 yards.



M. H. Fortlage (Ford) negotiating the watersplash at the foot of the test hill.

Proceedings opened with an easy starting test, which, in addition to necessitating a quick-starting motor, also demanded considerable agility from drivers. The maximum time allowed for opening the door, getting in, and driving for 10 yards was 12 seconds. Fastest time was shared by Miss Fay Taylour (Ford V8) and E. B. Longbottom (Vauxhall) in 7.4 seconds, these two being well ahead of the second fastest man, H. R. Winnicot (M.G. Midget), who took 8.2 seconds. The majority of people got through with flying colours, and good times were recorded by A. Negal (Morris Major), C. C. Terry (Wolseley Hornet), C. F. Wood (Wolseley Hornet), R. D. Tong (Lagonda), and C. Wood (Talbot), all of whom took less than 9 seconds.

Next came the surprisingly difficult test of covering 50 yards in not less than 25 seconds. Performances, even on similar cars, varied enormously. For example, G. H. Goodson (M.G. Midget) could not manage better than 13.2 seconds, while R. I. Cowley, on another Midget, took 34.8 seconds. The most snail-like performance of all was put up by Gordon Wood's Talbot, with the amazing time of 45 seconds. He was followed by W. Edmondson (Wolseley Sixteen) in 42.6 seconds, F. J. McKenzie (Essex Terraplane), 36.8 seconds, Donald Monro's 1½ litre Invicta, in 35.8 seconds, and L. W. Madge (Alvis) with a time of 35.2 seconds.

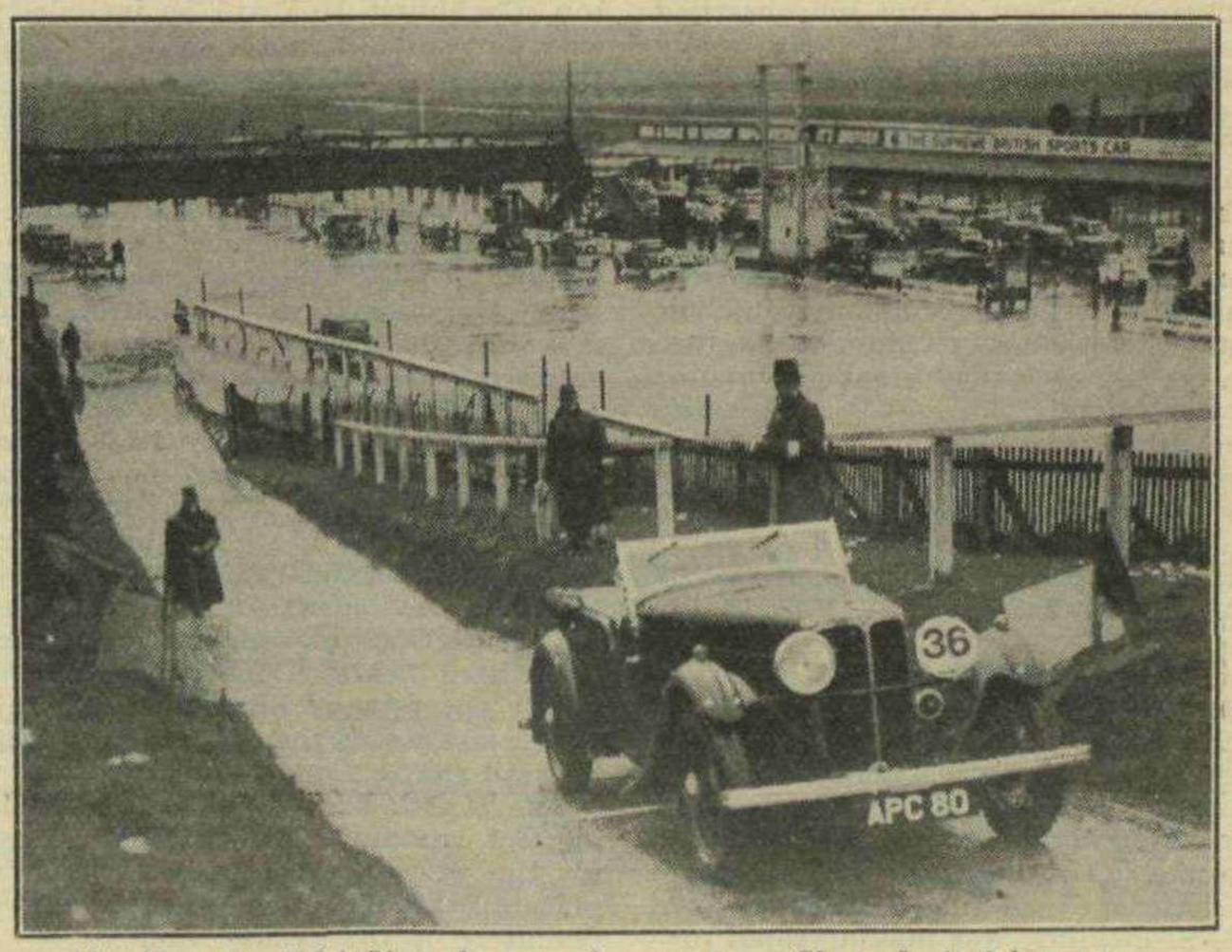
The acceleration and braking test produced more consistency in performance, the majority of competitors appearing to take between 23 and 27 seconds. Best of all was A. E. S. Curtis, who gave a very neat display with his Wolseley Hornet to record a time of 18.2 seconds, 4/5ths second faster than anyone else. Miss Fay Taylour once again distinguished herself by clocking 20 seconds dead with her V8 Ford, other good times being made by C. M. Anthony (Aston Martin) and J. Harrison (V8 Ford) in 20.2 seconds, E. B. Longbottom (Vauxhall) 20.6 seconds, and Gordon Wood (Talbot) 20.8 seconds.

The reversing test, which followed, was eventually cut out of the results owing to line being practically invisible on the wet track. The next event, then, was the kerb test, in which competitors had to pull up within six inches of the "kerb," a feat which no fewer than sixty-seven out of eighty-three people failed to perform.

The next test, in which competitors had to start on the 1 in 5 section of the Test Hill, accelerate for 15 yards, stop on a line on the 1 in 4 bit, and move on for a further 15 yards, proved the undoing of many. Different times were set for the various classes, but fastest of all was C. M. Anthony (Aston Martin). Driving skill was just as important as plenty of power, and a praiseworthy effort was that of J. V. Driskell, who was second with his 8 h.p. Ford in 7.6 seconds. Miss K. Brunell, with one of the new sports A.C.'s, was third, her time being 8.4 seconds, and she was followed by the irrepressible Miss Fay Taylour (V8 Ford) and T. C. Mann (Lagonda), who both recorded 8.6 seconds.

The Rally ended with a non-stop climb of the hill, in which drivers had to change down through the gear-box, and all but 7 got over this without difficulty.

The final results showed that it is not always the people who make outstandingly good performances in individual tests who come off best in the long run; a premier award is more often earned by consistency. The J.C.C. Silver Tankard for the best performance of the day was won by E. B. Briault (Wolseley Hornet), who handled his car with careful skill throughout the afternoon. Of the ladies, Miss Fay Taylour thoroughly deserved her success, for her V8 Ford made one of the best times in all tests. Only seven out of the 83 competitors gained first-class awards, these being F. A. Longman, on the promising Andre V6, M. H. Morris-Goodall (Austin), N. A. Prince (Austin), E. B. Briault (Wolseley Hornet), E. J. Linden (Delage), Miss Fay Taylour (Ford V8) and C. W. P. Hampton (Talbot).



Miss Kitty Bruell (A.C.) in the stop and restart test. She made third fastest time.

Club News

WEST HANTS M.C.

IN the First Winter Night Trial, held on March 11th, only four competitors, out of twenty-three starters, got through with a clean sheet to qualify for one of the handsome tankards offered as a first class award, and these four, W. Jackson, N. Medrington, W. Porter and G. Adams, were driving a most representative selection of cars, consisting of an S.S.1, a Morgan, an M.G. Midget, and a Singer Junior, the last a saloon of not too recent vintage.

The trial started from Bournemouth, and an easy route was followed to Exeter, where there was a chance to take refreshments. Only one hill was included before Exeter, namely Devenish Pit, which did not bother anyone except P. E. A. Talbot, whose Brooklands Riley decided that its gear ratios were definitely unsuitable.

In spite of adequate marking and a very explicit route card, a number of people lost themselves, and had to hurry to make up time. N. A. Watkins hurried a shade too much, and ditched his Frazer Nash, fortunately without personal injuries, though he had to retire.

After Exeter came the tit-bits of the course, the first being Higher Rill. The sharp right hand bend at the foot proved troublesome, especially to the S.S.

In another six miles came Harcombe, and then Meerhay was tackled. The bumps and gradient of this hill unsettled almost everyone, and the only really notable climbs were of the four first class winners. J. G. Tice had an ominous amount of steam issuing from his radiator at the top.

Ibberton was the next hill, and was fortunately in good condition, and then the main roads were followed, with the exception of a brief excursion to include Capstich, another easy climb, to Shaftesbury, and a welcome breakfast at the *Grosvenor hotel*.

The other prize winners were: Silver medals, P. Huxham (Morgan), B. Pitcher (Lanchester 10), N. Prince (Austin 7), J. G. Tice (Avon Standard 16); bronze medals, G. N. Ellis (Austin7), S. Whitelock (M.G. Midget), and G. Gard (M.G. 14/40).

THE LONDON EAGLE M.C.

The Point to Point trial was held on March 19th over a course in Herts. The most severe section was "Scrubbs Wood," also named "Suction Swamp." This section was timed and the outstanding performance by the cars was C. L. Freeman's Austin 7. A Singer 9, in the hands of W. S. Fielding, was making rapid progress until a bad skid sent him off the course and so registering a stop.

The Easter tour this year will be to Devon, where sporting members of the Club will be able to practice in preparation for the "Group Trial" to be held on the 23rd of April. Light car owners will be welcomed as members and anyone interested should communicate with Mr. P. B. Haworth, 14, Whitefriars Drive, Harrow.

The chief events in April will be as follows: April 1st, Dance; 13th-17th, Devon Tour; 23rd, Support Group Trial.

DARLINGTON M.C.

At the Annual General Meeting of this Club it was unanimously decided to cater very strongly this year for the car members of the Club, and to organise a really comprehensive programme of trials, treasure hunts and other events, including speed trials if a suitable venue can be found. Sporting (and other) car members are assured of a really interesting season. Any car owner wishing to join the Club should apply to the Hon. Secretary, Mr. H. Winter, at 15, Pease Street, Darlington, who will furnish full particulars. The annual subscription is 12/6.

THE M.C.C.

Regulations are now to hand for the annual London to Lands End Trial, which will be held on April 14th–15th.

The start will take place at Heston Aerodrome, which is conveniently situated near the Great West Road. There will be adequate arrangements here for the fortification of man and machine against the tribulations of the Trial, while the more energetic entrants will be able to while away the time before the start in making night flights from the Aerodrome.

Following the usual easy run to Taunton, Grabhurst Hill will be included for cars, but not for motor cycles, owing to the fact that the latter would reach the hill before daybreak. Their turn will come later, however, for they have to climb Doverhay, which the cars will avoid. Porlock, once the pièce-de-résistance of the trial, is now included, but not observed. Lynmouth has long ceased to worry the majority of competitors, but if it is wet, the newcomer, Station Hill, will give everyone something to think about. *Beggar's Roost is still one of the greatest* "gold snatchers" of any trial—indeed, no "Lands End" would be the same without it.

From here the route has been altered, and competitors will make for the North Cornish coast, near Bude, for the new hill, Gooseham, of which grim accounts have been heard. Hustyn follows, and finally the famous Bluehills Mine, taken by the last cars in the dark, and a straightforward run to Lands End.

The M.C.C. has hit upon the excellent idea of running a Team Championship for the year, the winning of which will place all three members of the team very definitely on the Trials "map."

Entries for the "Lands End," which promises to be one of the best ever held, close on Friday, March 31st. Intending entrants should get in touch with the Secretary, Mr. J. A. Masters, of 22, Norland Square, London, W.11.

WEST HERTS A.C.

So severe were the conditions during the annual Chiltern Hundred Trial that more than half of the competitors retired, while those who determined to keep going were forced to curtail the event and finish at Grove Farm, instead of at the "Humming Bird," whence the cars had been originally started. There were some stiff hills to be taken *en route*, notably Shantock Hall, Pudds Cross, White Hill, Little Lane, Scrubbs Wood and Hang Hill.

A STANDARD CAR CLUB?

A recent suggestion that a club should be formed for Standard owners has met with an enthusiastic response. Already scores of letters from motorists willing to join have been received by the Company, and from London has come an offer of a furnished office and clerical assistance.

Owners in all parts of the country who are interested in the idea should at once write to Mr. B. Alan Hill, the Standard Motor Co., Ltd., Canley, Coventry, with suggestions as to the activities of the proposed club, the amount of subscription, and other relevant points.

THE TRIUMPH CLUB.

THE Earl and Countess of March were the guests of honour at the Triumph Club's dinner and dance at the Palace Hotel in London on March 3rd, to celebrate its first "birthday."

Already the Club has a membership of over 100, with headquarters in London and in Sheffield.

Among the 150 members and guests who attended the dinner were Major Hanna, the head of the Triumph Company in London, and Mr. G. G. Hayden, the Sales Manager, who replied for the guests. Colonel Holbrook, Managing Director of the Company, and Vice-President of the Club, arrived later in the evening, during the dancing.

The chair was taken by Mr. W. J. Morgan, of Morgan Hastings, Ltd., Vice-President of the Club.

WEST MIDDLESEX AMATEUR M.C.

The fixture list for the forthcoming season is as follows:—April 14th to 17th, Easter Run to Lynmouth; May 21st, Rushmoor Scramble; May 28th, Committee Cup Trial.

Anyone willing to join this enterprising Club should get in touch with the Secretary, Mr. K. P. H. Jeans, of 89, Gordon Road, Ealing, W.5.

GREAT WEST M.C.

It was announced in MOTOR SPORT last month that a new Club was in course of formation, with headquarters "somewhere" on the Great West Road. Arrangements have now been completed, and the Club has been called the Great West M.C., and will use Surrey as its hunting ground for trials, etc. The annual subscription is only 5s., with an entry fee of 2s. 6d., and attractive badges can be obtained on loan for 5s. The Secretary's address is: Mr. C. J. Curd, Delverton, 30, Denehurst Gardens, Richmond, Surrey

HERE AND THERE

More Records at Muroc.

FOLLOWING Stubby Stubblefield's records with the Gilmore Special on the dry lake-bed at Muroc, Cal., a standard Auburn 12-cylinder 6418 c.c. chassis, slightly modified and fitted with a racing body, was taken out by Eddie Miller and Howard Wilcox. The records attacked were those in Class B (5001 c.c. to 8000 c.c.), and altogether 9 records were taken during the course of the run. As will be seen from the figures below, the car attained a very high speed for a stock car, the fastest being that for 500 miles, at 113.38 m.p.h. The records were previously held among the Leyland-Thomas, the Lanchester, and the Graham-Paige.

Here are the new figures :—

	New Figure. m.p.h.	Old Figure. m.p.h.
200 miles (s.s.) ...	112.93	101.861
500 kilometres (s.s.)	113.12	111.24
500 miles (s.s.) ...	113.38	110.04
1000 kilometres (s.s.)	110.81	109.76
1000 miles (s.s.) ...	109.30	95.27
2000 kilometres (s.s.)	105.93	87.25
3 hours (s.s.) ...	113.14	111.28
6 hours (s.s.) ...	110.75	109.95
12 hours (s.s.) ...	105.83	95.70

Stop that Squeak !

Nothing is more annoying than to have a number of squeaks emanating from various parts of one's car. Particularly are they audible when travelling slowly over a poor surface, and to any keen motorist the lack of efficiency which they reveal is distinctly irritating.

Probably the worst offenders in this respect are road springs, which receive the brunt of the rain and mud, and recently, of flood water. A little creeping-oil, such as Filtrate Penetrating Oil, squirted on to the leaves, will soon put matters right and remove the squeaks, at the same time freeing the leaves from rust.

Singers in Switzerland.

Singers proved their ability to cope with Alpine Passes by the magnificent show they put up in the Alpine Trial of 1932, when one of them gained a Glacier Cup. Now the Singer Co. has followed this up by sending over two cars, a 9 h.p. sports coupè and a 14 h.p. saloon, and giving demonstration runs over the worst roads in the country to Swiss dealers. The result is that one of the largest distributing organisations in Switzerland has taken up a Swiss agency, and is placing substantial orders for all models.

Brakes.

One of the most vitally important parts of a car which is often taken for granted is the quality of the brake lining. Up till now the problem of ensuring that a particular brand of lining is used has presented great difficulty. The writer has always requested that Ferodo should be used whenever he has had the job of relining executed, but as he drives away from the garage he realises that he has no proof whatsoever—beyond dismantling the brakes himself—that Ferodo has actually been used.

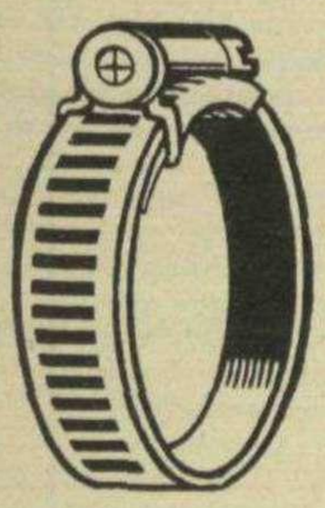
The Ferodo people have now hit upon a plan, however, which will obviate this uncertainty. If he has specified Ferodo, a motorist will receive from the garage who have relined his brakes a guarantee, written on a special disc, that Ferodo brake linings have been used.

Incidentally, there are some very interesting points about braking contained in a little booklet issued recently by the Ferodo Company, called " You Step on the Brakes—and what Happens ? " Here are one or two : a 30 cwt. car at a speed of 45 m.p.h. has sufficient contained energy to lift itself vertically into the air to a height of 70 feet. The power required to drive it along at 45 m.p.h. is not very great, but to dissipate the contained energy created by its momentum requires the equivalent of 150 h.p. to bring the car to rest in a distance of 90 feet. The booklet is well worth reading, and any reader, on mentioning MOTOR SPORT, will be able to obtain one post free from Ferodo, Ltd., Chapel-en-le-Frith.

In Australia.

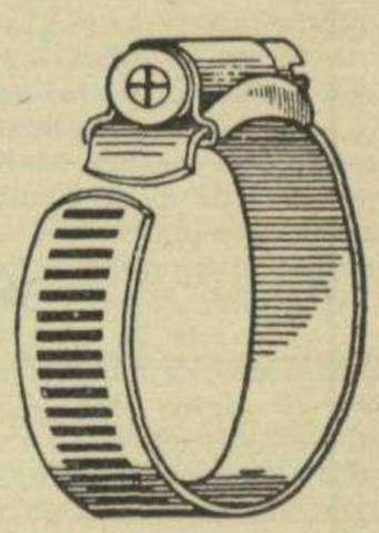
Triumphs have pulled off a splendid " double " in Australia. In New South Wales the Castrol Trophy is awarded annually for the best performance in a series of events, and this year has been won by a Triumph Again, in Victoria a championship contest is held on the same lines, and once more a Triumph has been judged the winner.

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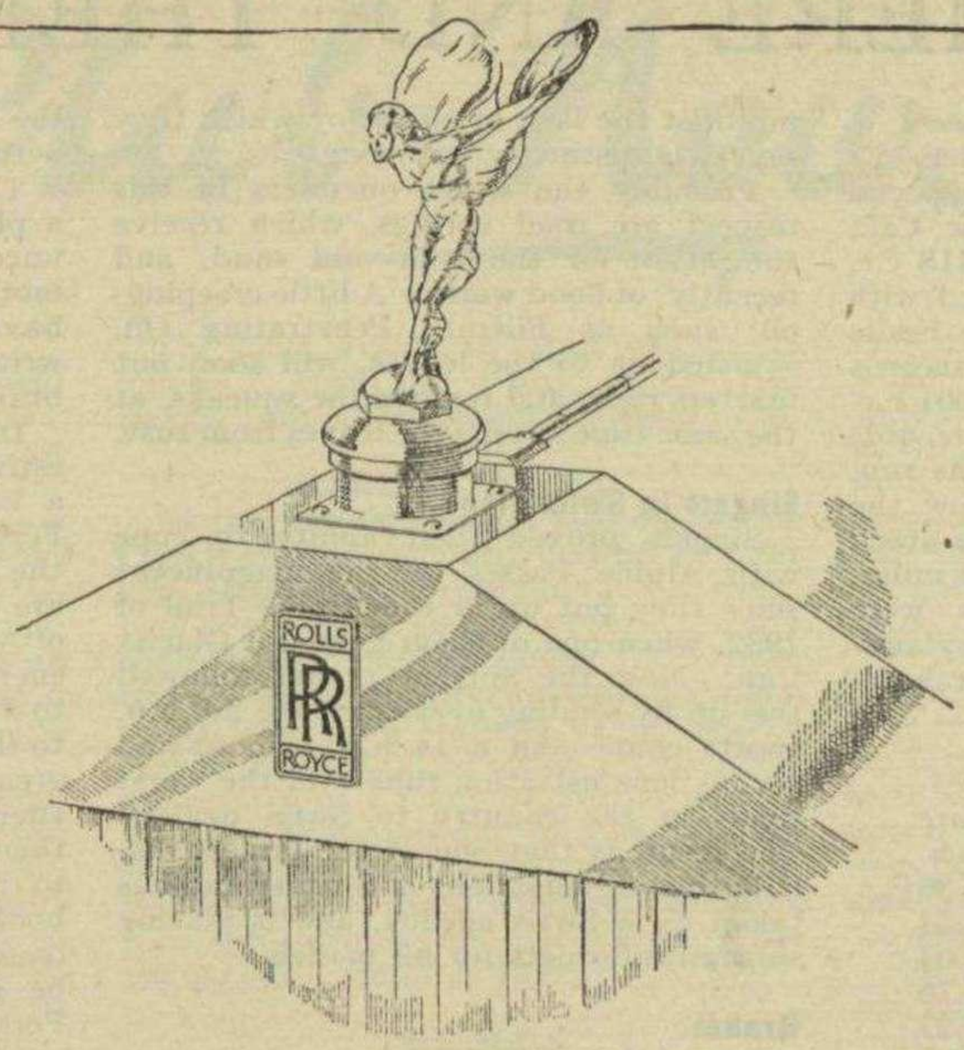


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CHARACTER

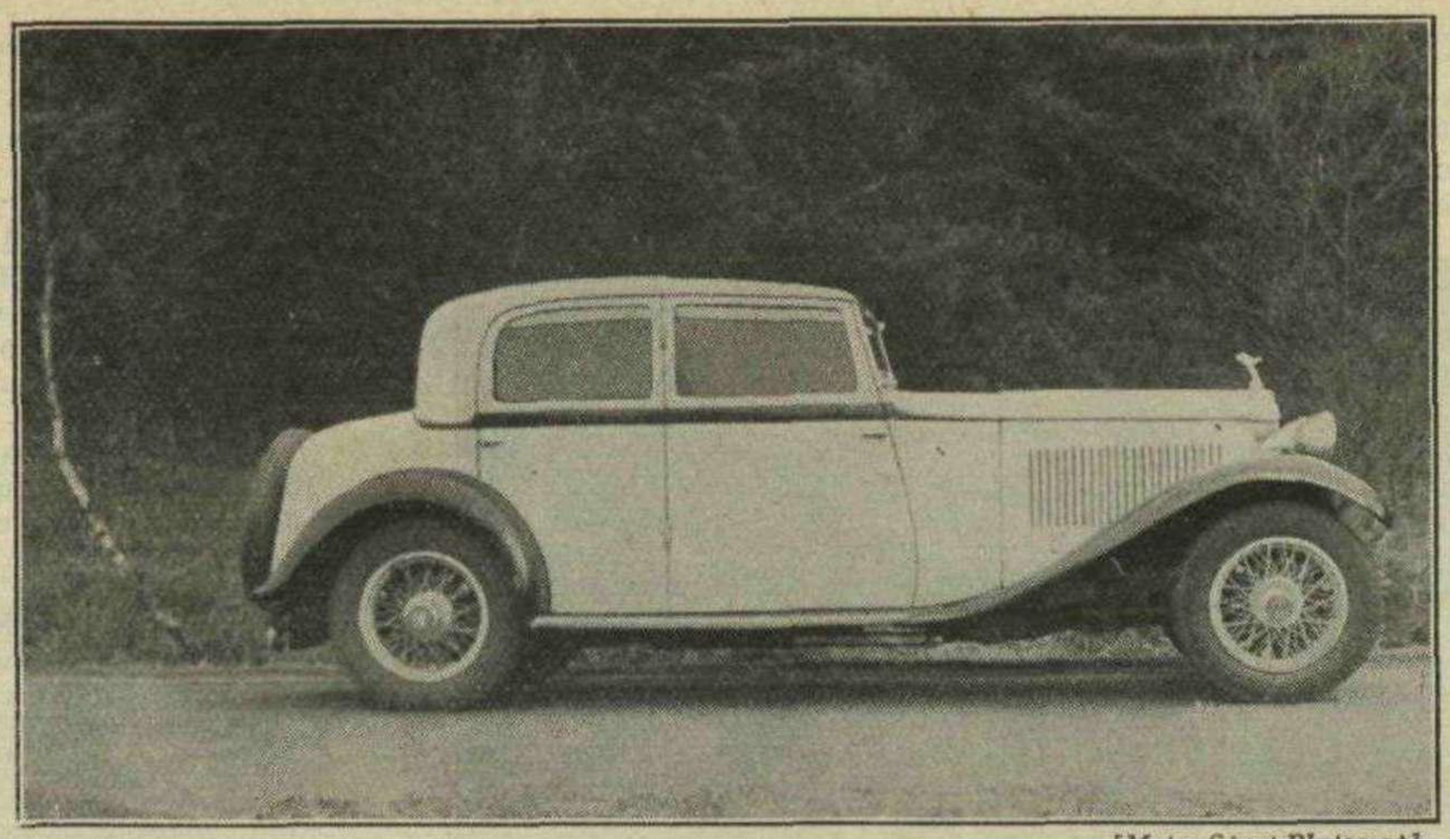
which cannot be equalled. The 40/50 Rolls-Royce has held that proud position for

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[Motor Sport Photograph.

THE 25 H.P. ROLLS-ROYCE

THE TRAITS OF THE LARGER CHASSIS, ACKNOWLEDGED TO BE THE BEST IN THE WORLD, EMBODIED IN A DIGNIFIED, YET BRISK MOTOR-CAR

LONG acknowledged supreme in the realm of large motor cars, Messrs. Rolls-Royce in 1922 recognised the demand that existed for a smaller and less costly vehicle particularly suited to the owner driver, and the 20 h.p. made its *début*. The engine size was increased in 1930, and by this alteration and other slight modifications the performance of the smaller car, the 20-25 as it is officially termed, has been made little inferior to its larger brother, though of course the maximum speed is not so great. We were privileged to try one of these delightful cars after its return from a six months' strenuous tour of the Continent. The successful test was ample proof of the stamina which is allied to the more equally important Rolls-Royce qualities of silence and good performance.

The six-cylinder engine is mounted in unit with the four-speed gear-box, and the unit is suspended from four points. Two arms, one from each side of the front end of the crankcase, join in front of the engine and rest on a pivot on a cross member. Two more arms at the rear end of the engine take the weight of this part and a fourth support on the gear-box complete the suspension. Special dampers on either side of the engine limit the movement, and all these precautions make the power unit as smooth at high speed as at low.

A monobloc casting is used for the cylinders, and the detachable head carries push-rod operated overhead valves. Two valves per cylinder are used, and a single sparking plug is placed on the off side. Coil ignition manufactured by Rolls-Royce Ltd. is used for normal running, but in the unlikely event of its failure a Watford magneto can be brought into operation by moving a hand-adjusted coupling into engagement with a dog on the end of the dynamo. The lead from coil to distributor is detached and replaced by one from the magneto, and the car is ready to proceed.

A large Autovac tank on the dash supplies fuel to the Rolls-Royce carburettor, a precision instrument which can be dismantled practically without the use of tools. It is fitted with an economy control operated by a lever on the steering column, and an auxiliary starting carburettor supplies a rich mixture which ensures an instant start even after the car has been idle for several weeks.

Brief Specification.

Engine : 6-cylinder 3¼ *in. and* 4½ *in. bore and stroke* (81.6 *mm. and* 114.3 *mm.). Capacity* 3,699 *c.c. R.A.C. Rating* 25.3 *h.p. O.H.V. push rods. Single Rolls-Royce carburettor. Coil ignition with emergency magneto.*

Gearbox , 4 speeds and reverse : Silent third. Easy change mechanism for third and top gears. Ratios 4.55, 6.25, 9.41, *and* 15.04 *to* 1.

Rear Axle : Spiral bevel. Full floating.

Suspension : Half elliptic, with hydraulic shock absorbers.

Dimensions : Wheel base 11*ft. Track* 4*ft.* 8*in.*

Price : Chassis £1,050. *Hooper Sports Saloon as tested* £1,625.

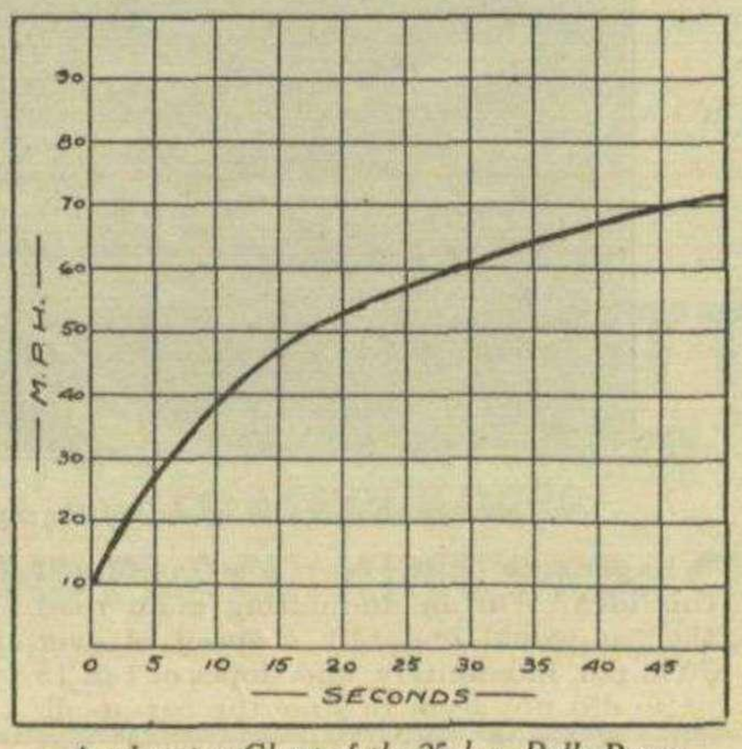
The carburettor is mounted on the off-side of the block and the mixture is warmed by its passage to the induction pipe on the near side. A centrally disposed exhaust pipe keeps heat and fumes well away from the driving compartment.

Alloy pistons which are as silent when the engine is cold as when it has warmed up, and a seven-bearing crank-shaft, complete the specification of the magnificent power-unit. The detail work, such as the lay-out of the control rods and the large number of securing bolts or studs used for securing any parts which are subject to strain help to maintain the Rolls-Royce reputation for longevity and freedom from trouble.

The single-plate clutch is of normal design, and behind it is the four-speed gear-box. An easy-change mechanism is fitted to third and top gears, which are true silent ratios.

On the near side of the gear-box is mounted the mechanical servo-braking system. A cross-shaft driven by worm gears carries a disc ; when the foot-brake is depressed, a clutch is forced into contact with the revolving disc, and the ensuing pull is used to apply the front and rear brakes. In addition, the brake pedal has a direct connection to the rear brake operating shaft, so that the pair on the rear wheels receive twice as much pressure as those on the front. With this arrangement, should the servo-mechanism fail, the pedal is still coupled directly to the rear brakes. A swinging lever balances the pull transmitted to the front and rear sets, and special compensators, which embody a bevel and pinion mechanism similar to that of a differential, equalise the effort between the individual brakes. The hand-brake operates separate shoes in the rear brake drums.

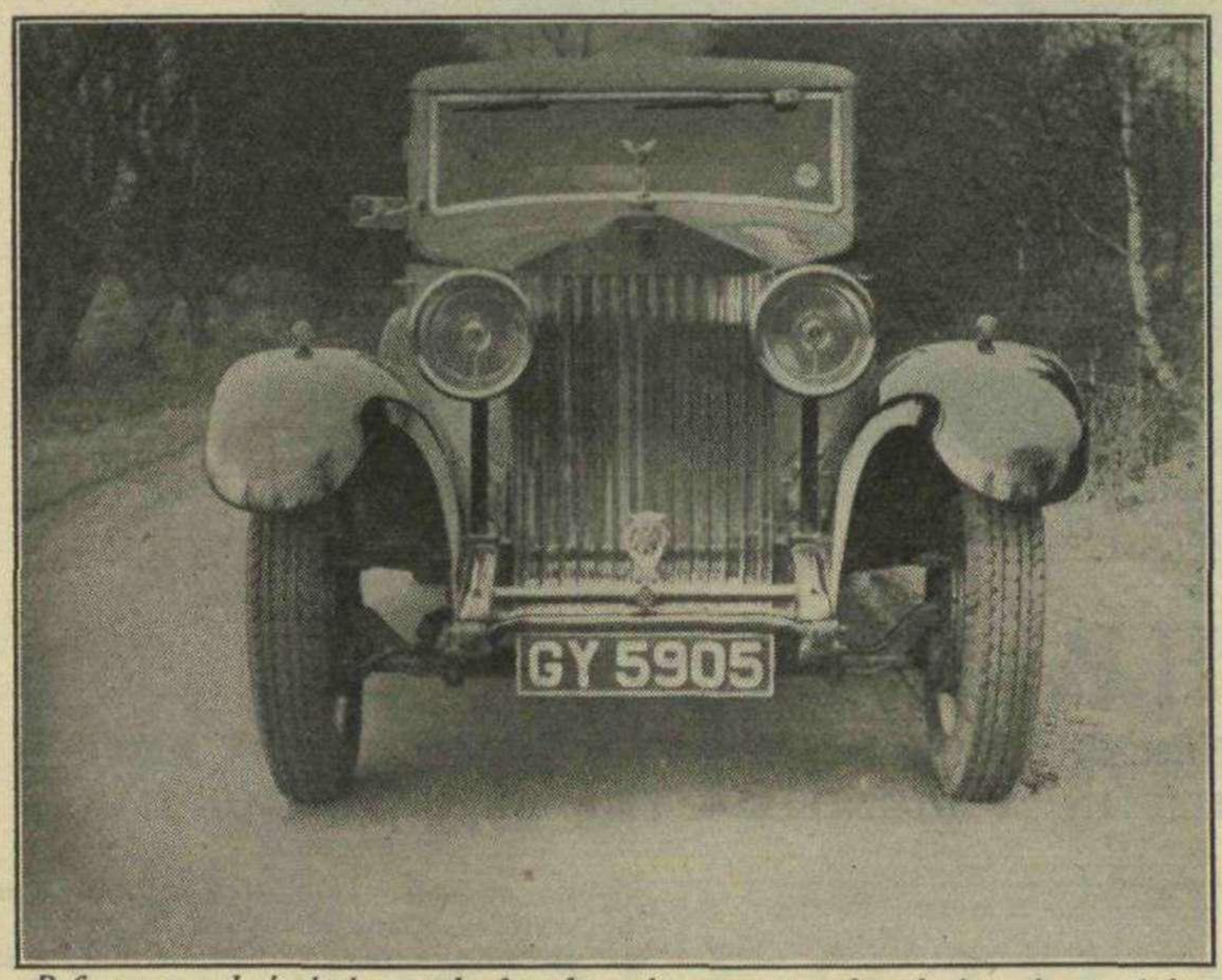
An open propellor shaft with two special



Acceleration Chart of the 25 h.p. Rolls-Royce.

THE 25 H.P. ROLLS-ROYCE—continued.

metal universal joints drives the back axle, through spiral bevel gears. The back-axle is of the fully-floating type in which the weight of the car is carried by the



Refinement and the highest grade of workmanship are conveyed in the frontal view of the 20/25 h.p. Rolls-Royce.

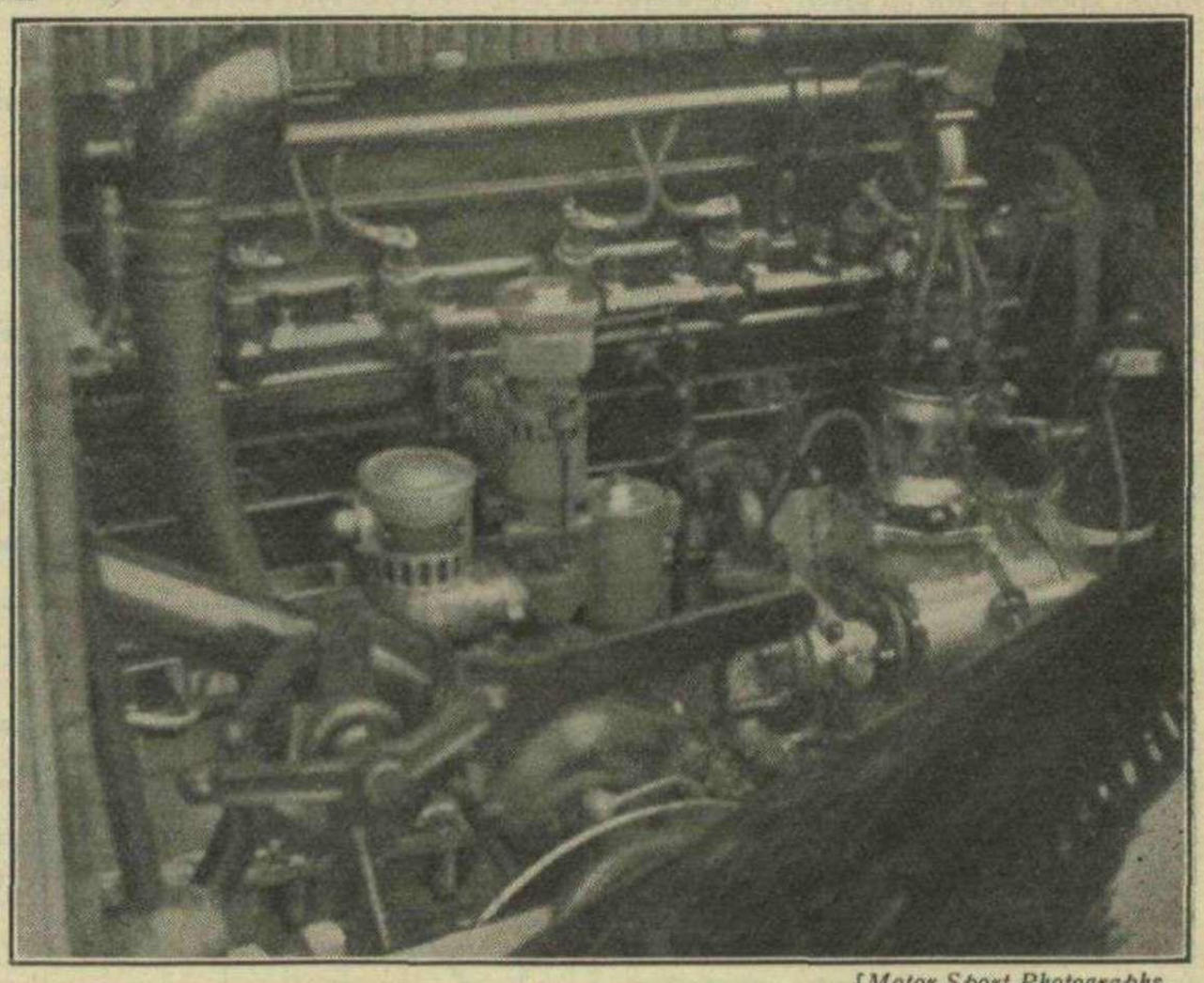
casing, and the closely spaced bolts round the bevel casing ensure long life and a freedom from oil leakage.

The chassis is of orthodox type, dropped in the centre to lower the centre of gravity, and extremely rigid. The road-springs are of exceptional length and pass underneath the axles. Hydraulic shock-absorbers are fitted. The brake drums are of large size, and the brakes are cable operated.

We took over the " 25 " in a fairly busy part of London, and from the moment we occupied the driving seat we were impressed with the car's smoothness and ease of handling. Second gear is used for for starting, and the clutch is finger light and absolutely smooth. The brakes were powerful and came on steadily with increasing pressure of the pedal. Third and top gears, the ones generally used, were inaudible, and changing was rendered quite fool-proof by the synchro-mesh mechanism. The change to second gear, which ran with a well-bred and faint hum, was as easy as could be contrived with sliding pinions.

The steering wheel came right into the lap, and a correct driving position was easily found with the readily adjustable front seats. The hand-brake and gear levers were within comfortable reach, and the fact that the near side wing is clearly seen is a great help in traffic.

By the time Brooklands was reached the control of the car had become instinctive. There the usual timed tests were carried out, and showed that the performance of the Rolls was definitely up to sports car standards, but in this case accomplished in almost complete silence. A figure which gives a true indication of the car's potentialities was that of 10-60 m.p.h. in top gear, which, as will be seen, was only 2 seconds more than the figure achieved by using the gears. Interpreting these figures aright we find that the designers of the Rolls-Royce car have produced a car that will put up a fine performance without constant gear-changing, this operation being therefore only required—unless the driver enjoys playing tunes with the gear-box—where gradients or traffic bring the engine speed down to the neighbourhood of 500 r.p.m.



[*Motor Sport Photographs.*

This photograph shows the off-side of the engine, with the carburettor and distributor.

Experience on the open road confirmed this idea. On an undulating main road the car would maintain a speed of over 70 m.p.h. indefinitely, and slopes of 1 in 15 or so did not seem to slow the car at all. This untiring travel on top gear was equally noticeable at a slower gait, the high torque at low engine speeds making it unnecessary to rush hills in order to avoid changing. The maximum speed on the level was found to be 76 m.p.h., while on favourable gradients 80 was attainable without fuss. On winding side-roads the gears were used to some extent, 45 and 55 being reached comfortably in second and third.

These figures, satisfactory as they are for a touring chassis carrying a luxurious saloon body, only express a small part of the charm of the 25 Rolls-Royce. An equally important feature of the car is the way in which it responds to the controls and the untiring way in which its passengers are conveyed on their journey.

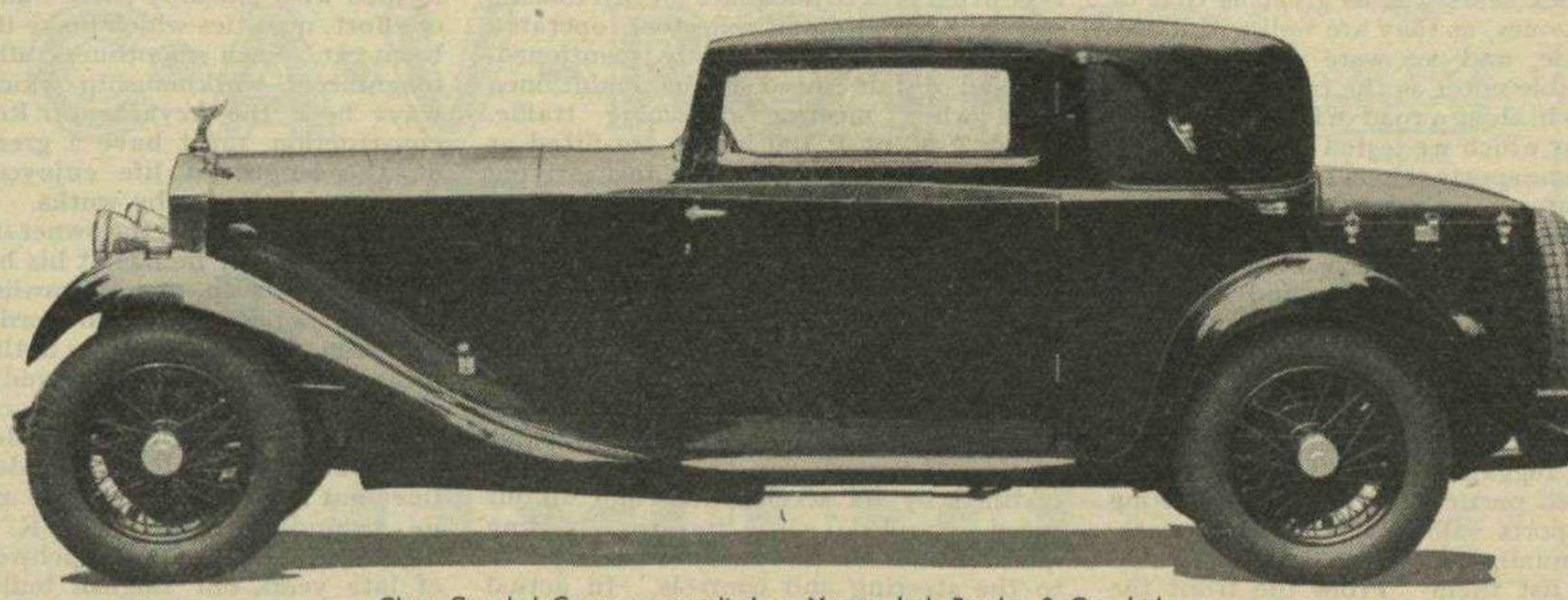
Take, for instance, the steering. Light enough to be handled effortlessly by the so-called weaker sex, it yet combines the high gearing and self-centring action which one expects on the race-bred sports car. An upright driving position with excellent visibility help to make prolonged driving effortless, and the controls come to hand with the minimum of movement. The lightness and delicacy of action of the clutch and brakes have already been remarked on. From 40 m.p.h. the brakes brought the car to rest in 58 feet, in spite of the locking of one of the back wheels. This trouble was probably due to oil in one of the drums, which would normally have been attended to when the car came in for overhaul after its Continental trip.

With his left foot the driver can reach the one-shot lubrication pedal, which is carried to all but four chassis points, none of which requires frequent attention. Closer are the starter pedal and the dipping switch for the headlights. This latter arrangement is very convenient, the only disadvantage being that one is liable to depress the starter switch when wishing to dip the lights. On the latest cars the starter is controlled from the dash.

The suspension is such that throughout the speed range the passengers are un-

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THE 25 H.P. ROLLS-ROYCE—continued.

conscious of the nature of the road surface. This suppleness is achieved without a trace of the objectionable rolling which is often the companion of flexible springing, and the car can be taken round fast bends in the most satisfying way. The comfort of the back seats was as great as that of the front ones, as they are well within the wheel-base, and we were able to make quite legible notes as the car was running at 60 m.p.h. along a road of inferior surface.

The car which we tested was fitted with a handsome sports saloon body by Hooper, painted cream, luxuriously upholstered in olive green furniture hide. This particular leather has the advantage of being quite as comfortable as fabric, and is easily cleaned. The coachwork maintained the high standard of silence one expects on Rolls-Royce cars. The back seat is wide enough for three people, and by tilting forward the squab one gains access to a spacious luggage container. The "25" lends itself particularly well to the fitting of the sports saloon type of bodywork, and a number of well known coach-builders list them. From the front the plated shutters on the deep radiator give the car a dignified appearance, while the 11 foot chassis allows smart yet roomy bodies to be fitted inside the wheelbase.

Turning from the body to the accessories, one of the most important items are the lamps. Part of our joureny was accomplished in darkness, and the Lucas Biflex type fitted proved adequate for fast touring speeds. The dipping reflectors, operated by the foot switch already mentioned, enabled a fair speed to be maintained even when meeting oncoming traffic. Lucas P 80 or P 100 lamps are fitted as alternatives, and for really fast driving on the Continent their more powerful light would be agreeable. The windscreen wiper was a new pattern Lucas, in which the motor is carried at the near side of the screen, well above the line of vision of the passenger, and drives two large blades by means of a neatly enclosed shaft.

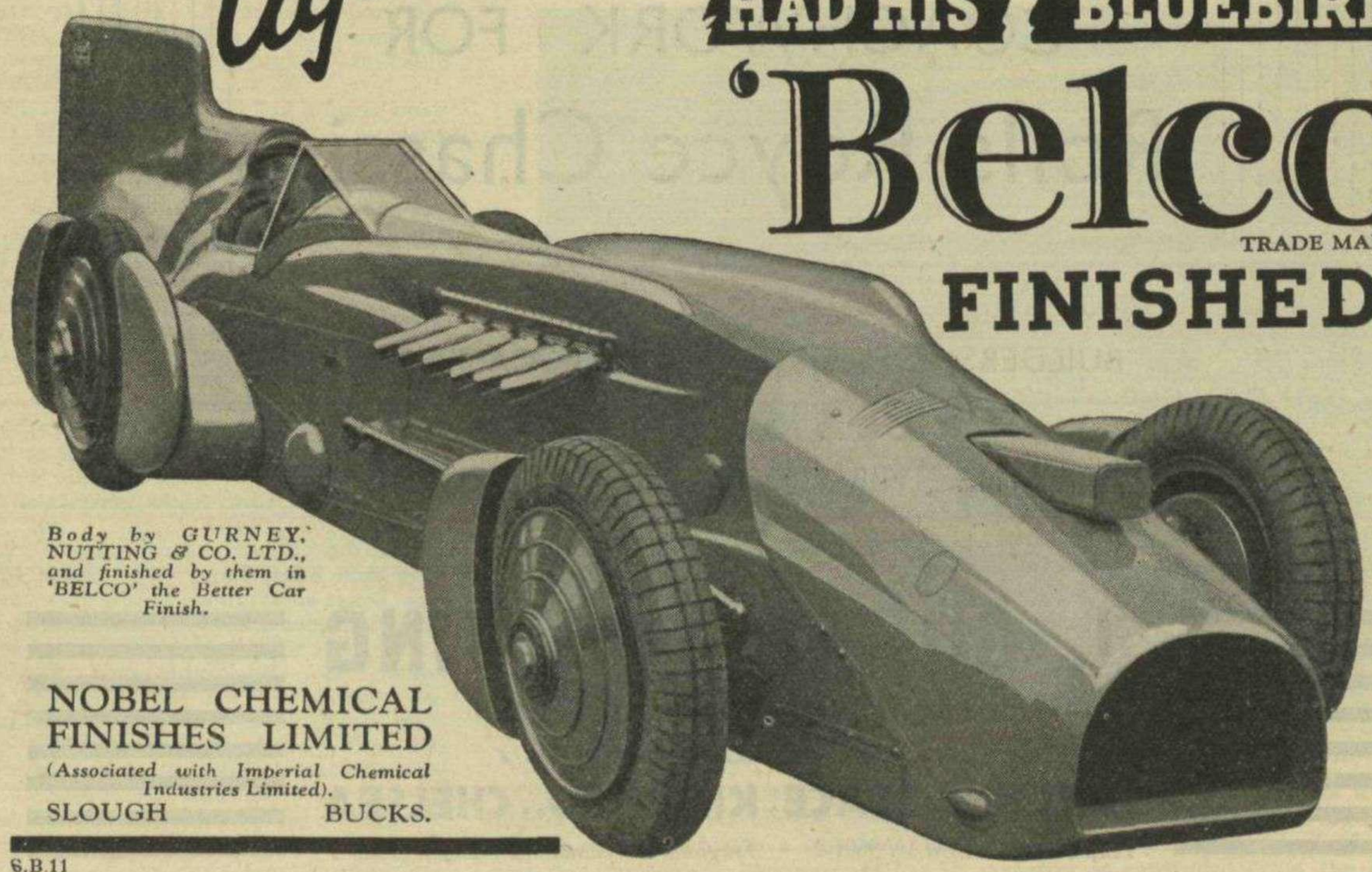
In this road-test we have considered the 25 Rolls-Royce simply from the point of view of a sports car, an attitude amply justified by its acceleration, and all-out speed coupled with its road-holding qualities and the liveliness of its response to the steering and controls. In actual fact these sporting qualities are present not as an end in themselves, but as a result of the essential soundness of the car as a whole. It is built simply as a refined vehicle of the utmost smoothness and flexibility, and it is equally happy at high speeds and when moving at a walking pace on top gear. All its work is performed with uncanny silence and absence of effort, qualities which make it the ideal town car. Such smoothness, allied to the magnificent workmanship which has always been the keynote of Rolls-Royce construction, must have a great bearing on the length of life enjoyed by the products of the Derby works.

Fortunate, then, is the owner of a 25 h.p. Rolls-Royce, for he has at his behest two or three cars in one. Crawling slowly through London traffic to Lord's or Roehampton, cruising at 40 m.p.h. through the pleasant countryside of England, or all out along N 7 en route for Juan or Cannes, the occupants enjoy the same silent travel. The handsome radiator, modernised in line but still symbolic of the aims which lie behind the initials "R.R," and the dignified and graceful coachwork which of late years our English builders have learnt to produce, together combine to form the Best Car in the World.

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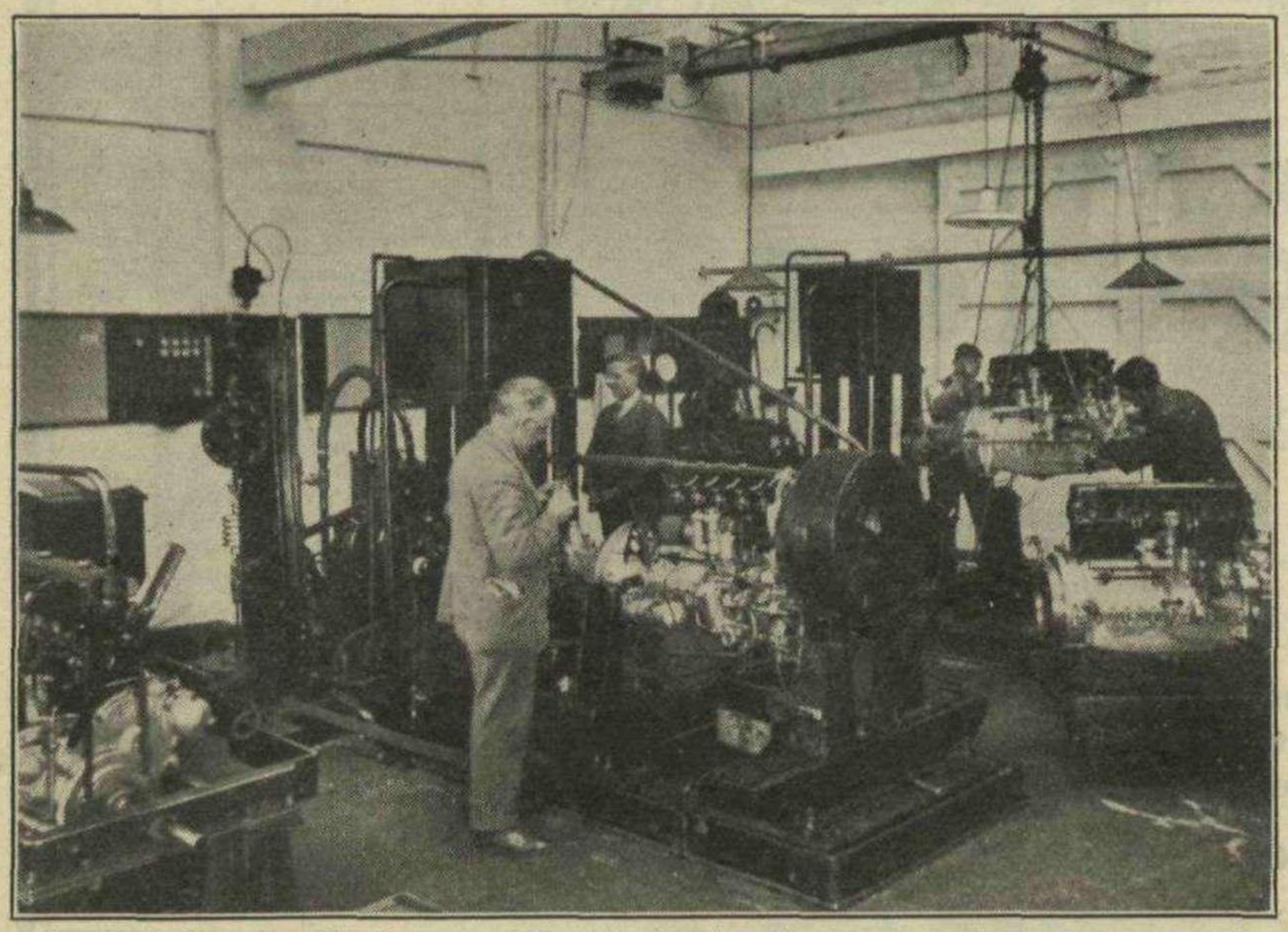
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THE HOME OF CRAFTMANSHIP

THE BUILDING OF ROLLS-ROYCE CARS.

BEHIND an institution as famous as that of the Derby works of Rolls-Royce one always finds an interesting history. Even to deal briefly with the present-day routine of manufacture of the world-renowned cars requires a lengthy article, so nothing more than an outline of the foundation of the firm can be given here, leaving the sporting and technical development of the cars to be treated at a later date.



One of the Car engine Test houses. Engines are run here for a number of hours at varying speed and loads prior to fitting into the chassis.

The story opens with Mr. F. Henry Royce who was engaged in making high-grade electric cranes in Manchester. Finding that the competition of lower priced goods from the Continent had undermined the market, he turned his attention to the making of motor-cars. From experience gained with various makes which he had owned and tried, he found out the various faults which beset them, and his first production, a two cylinder car which appeared in 1903, showed such an appreciation of the finer points of control, finish, and silence that it equalled the four cylinder machines of the day and drew unstinted praise from all who tried it.

The Hon. C. S. Rolls, whose name later became the first of the two in the famous "R.R." monogram, was at that time running a motor agency in London, and recognising at once the merit of the Royce cars, arranged to take the entire output. His racing and commercial experience supplemented the engineering knowledge of Mr. Royce and the cars appeared successfully in all sorts of competitions.

Royce cars were second in the 1905 T.T. race, and first in the race of 1906, and the business expanded so rapidly that in the following year the Rolls-Royce Company was founded, with plans for moving to Derby to an enlarged factory. The move was completed by 1908, the factory buildings, like every other matter appertaining to the cars, being designed by Mr. Royce. Their area at that time was about one acre, which has grown steadily year by year, increased of course also by the space required for manufacturing aero engines, till it now totals about 16 acres, and between five and six thousand workers are employed there.

Of the firms, two founders, only one remains. Charles Rolls was killed flying at Bournemouth in 1910, though not before the Rolls-Royce car had gained recognition as the world's supreme automobile production. Sir Henry Royce, who was knighted by the King in 1931 after the Schneider Trophy in recognition of his services to British Aviation, still remains Engineer in Chief, and apart from the new designs and improvements which he still originates, no new departure appears on a Rolls-Royce car or aero engine until it has passed the scrutiny of the engineering genius whose attention to the smallest detail has made the car supreme.

In order to retain complete control of the quality of the components, every part of the Rolls-Royce car, excepting a very few specialised accessories, is made at the Derby factory. The first department we visited was the aluminium foundry, where crankcases, gear-boxes, and various smaller components were being cast.

The various alloys are delivered in pigs, and are melted in great oil-fired furnaces, around which red flame is always licking. The molten metal looks rather like solder, and is poured from the furnace into a fire-clay vessel with long handles and is then taken by two men to the place where the moulds have been set up. The temperature of the molten metal is determined by means of a pyrometer, and when it has cooled to the correct pouring heat, the jar is tipped and the

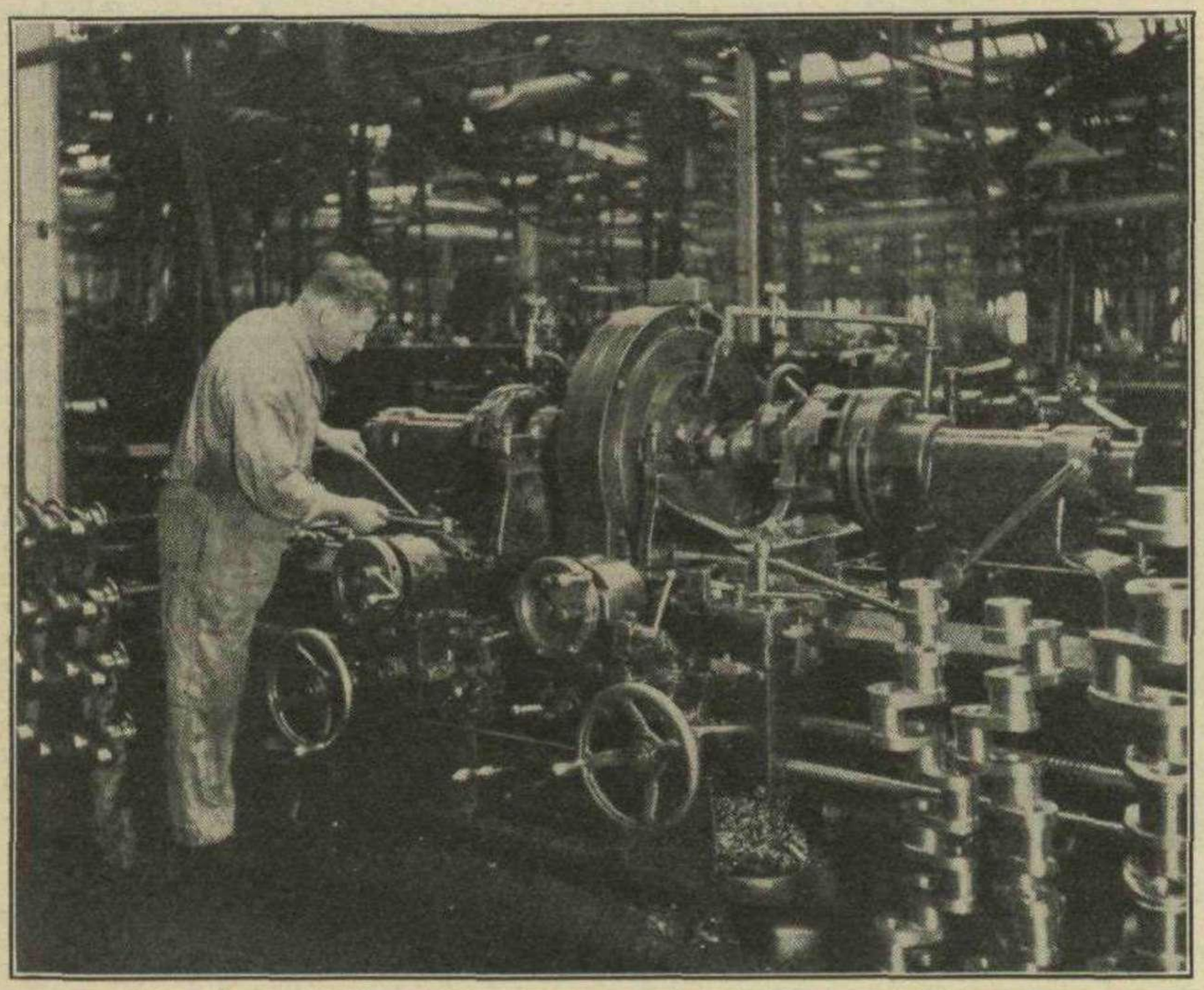


This photograph shows a section of one of the Milling Departments, which is chiefly engaged on large casting machining.

THE HOME OF CRAFTMANSHIP—continued.

silvery looking metal is poured steadily into the mould until it appears through all the vent holes. The correct pouring temperature has a great influence on the properties of the casting, and proper venting of the moulds is essential to avoid blowholes and weak spots. The moulds and cores are works of art in themselves, the surfaces being finally smoothed over with a mixture of French chalk and water, and the castings when they appear are so smooth that they only require the minimum of cleaning up.

We were unlucky in our visit to the iron foundry, as the actual casting is carried on only on alternate days. Instead we saw cores and patterns being made. The men engaged in making the former become so skilled that they can work almost without having to refer to drawings or patterns, their sense of touch



Above which shows a centrally driven lathe machining car crankshafts.

becoming so highly developed. The making of moulds is an equally skilled job, and the expert can transfer the imprint of an incredibly complicated pattern to comparatively crumbling sand. Cylinder blocks are the most important components which emanate from the foundry and the Rolls-Royce engineers have evolved a special chilling treatment which makes the bores unusually tough. They are finished by honing and outlast the car without showing signs of wear.

The drop-forging shop is one of the most striking features of the Works. Coming in from the daylight, at first all one can see is the glow of the gas furnaces, where the steel is being heated preparatory to being forged, and the dim figures of men grouped round glowing pieces of metal on the anvils of the drop hammers. The hammer descends and the metal alters shape. It is taken to another anvil where it is hammered between dies of a different shape, then to a third where the surplus metal is trimmed off. Back again to the first, an application of gauges and a final blow and the finished part, now seen to be a valve rocker, joins the pile below the hammer. The operators develop an uncanny skill in controlling these ponderous tools, and as in the case the foundries, the parts, steering arms or whatever they may be require little more than cleaning up to bring them to the right side.

The two-ton steam hammer which was housed in the same buildings as the drop hammers was even more impressive, flattening a six-inch billet into a mushroom shaped forging ready for making into a propellor boss with a couple of blows which shook the building.

In a nearby bay we saw the first signs of anything which suggested car construction. Side members for the various chassis were arranged on the floor and were linked up by the front and rear cross members. Then each in turn was laid on a suitable platform, a cord was run from the centre point of the back cross-member to the front one, and the process of checking alignment began. Before the holes are drilled in the side-members, the dimensions of each is checked and those which are not perfect are rejected. Once again when the side members have been connected, the unhurried inspector with his trammels measures up the distance either side of the centre cord a score of times, and it is not until he has satisfied himself that every part of the frame is symmetrical about the centre line that it is allowed to return to the erectors for the fitting of the sturdy tubular cross-members which re-inforce the centre part of the frame.

Almost every tool in the machining shop, which comprise anything from automatics making nuts and bolts to milling machines for finishing crankcases and the like is worthy of mention, but we can only refer here to a few.

The finished Rolls-Royce crankshaft is a beautiful piece of work, machined all over. It is first turned on a centrally driven lathe, and the webs are then ground all over by a more than human machine in which the grinding wheels swing backwards and forwards as the crankshaft revolves until the exact contour is reached. Cams are ground on camshafts in the same way, the rocking arm carrying the grinding wheel following the shape of a master cam at the rear of the machine.

The centre of the crankshafts are drilled, also the camshafts, using drills about four feet long. This centre passage is used as an oil channel, and also lightens the components.

The big-end journals of the crankshafts are also hollow, the three throws being drilled simultaneously. Channels are then drilled through the webs to carry the oil from one journal to another, and tapered aluminium caps close the outside of the holes through the journals.

Gear Cutting.

An immense amount of care is devoted to perfect gear-cutting, and the teeth of every gear-wheel are ground all over. The formation of bevels is a most interesting process, cuts being taken from either side of the tooth by two knife-shaped cutters, which work in an inch-wide jet of oil, and when they have finished the formation of one tooth, lift up and pass to the next. The gears are then heat-treated to normalise any stresses which may have arisen in machining, and are cooled in oil-baths under pressure to prevent them warping. Then like the straight tooth type they are taken to the grinding department, where thin specially shaped stones bear on all the working surfaces. The grinding wheels are re-faced after each gear has been treated, in order to make sure that they shall not vary, and in the case of the timing wheels, the teeth are finished off by hand to ensure complete silence of operation.

Checking for accuracy.

Although the material from which the various engine and other parts are made is very carefully selected, and samples from every batch undergo tests in the laboratory, slight flaws are bound to occur, and in the machine shop as in every part of the factory, a considerable part of the department is devoted solely to examination of each article which is used. Each component is checked with delicate gauges and micrometers and every part of it examined under a magnifying glass. Even this scrutiny cannot always detect hair-cracks almost invisible to the human eye, so additional tests are undertaken.

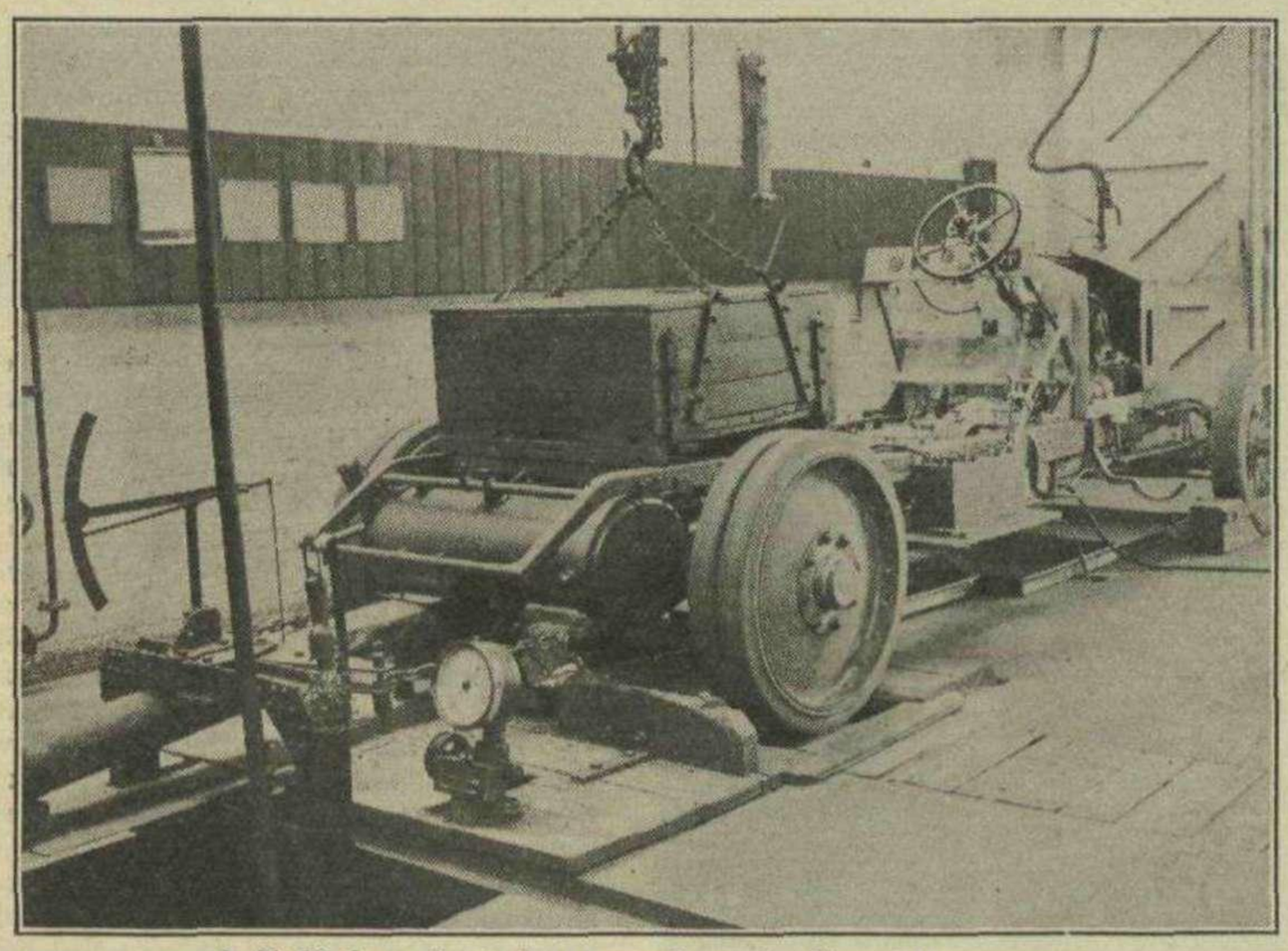
In the case of material such as iron or steel, which can be magnetised, the part to be examined is placed within the field of a powerful electric magnet. It is then dipped into a bath of paraffin containing very finely divided iron filings and taken out and allowed to dry slightly. If there are any flaws in the metal, the iron filings collect along the line of the defect and

THE HOME OF CRAFTMANSHIP—continued.

reveal the otherwise undetectable weak spot.

This method of testing is of course not applicable to parts made of non-magnetic metals, such as brass or aluminium. In this case the object to be tested is placed in a bath of warm oil, and then as much as possible is wiped off. French chalk is dusted over the surface, and in a short time any crack which may exist is revealed by an oil speck in the chalk dust.

The Cloudburst process is used for checking over the hardness of such components as valve rockers and it also increases the hardness produced by heat-treatment. The rockers are clamped with their hardened surfaces upwards under a vertical shaft, and steel shot is allowed to fall continuously from predetermined heights. The slight hammering effect caused by the falling shot closes up the pores of the metal and increases the hardness. On the other hand if the heat-treatment has been unsuccessful, the falling shot produce a mottling effect which is easily detected by the practised eye.



A 40/50 h.p. chassis being tested on the Prony dynamometer.

The next stage is the engine-assembly shop, and here unhurried workmen erect the engine and gearbox units. "Always be certain," said a notice-board, and "above all thorough" said another. The finish of all the parts is amazing and we stroked them out of sheer admiration. The crankshafts are especially notable, and those used in the 25 h.p. engine are fitted with balance weights owing to the higher speeds at which this engine runs. Crankcases and gearboxes have a peculiar brown appearance inside. This is caused by the boiled-oil process, which seals the pores and prevents the formation of the sludge which one usually gets on new cars.

In another part of the shop, car steering-gears are being "run in." The worm is first of all polished with French chalk and then its shaft is fixed vertically in a machine which rotates it alternately first in one direction, then the other. The nut which is the other steering member is threaded on, and then weights totalling nearly half-a-ton are fixed to it. With chalk and oil as a lubricant the worm is rotated backwards and forwards, raising and lowering the weights each time. After a period of such treatment any stiff spots are eased, giving light and perfect steering throughout the life of the car.

After the engines have been erected, they are given a five-hour run. A continuous supply of oil is forced through the bearings, flushing out any foreign matter, and is cleaned and filtered before being used again. Coal gas is used as the fuel, to avoid any chance of washing the oil from the cylinder walls. After this flushing process the engine is taken down and the parts washed and examined. Coming satisfactorily through this inspection, the unit is re-assembled and brought to the engine test house, where it is given seven hours' running. Horse power readings are taken at various speeds. The "25" gives 85 h.p. at 3,500 r.p.m. and the Continental about 135 at 2,500, which goes far towards explaining its phenomenal pick-up on top gear.

The gear-boxes are built up with the same care as the engine, particular attention being paid to silent running. They are then fitted to the engines, and the unit is erected into the chassis, ready for the chassis dynamometer test. In this the chassis is fitted with solid tyres at the rear, which bear on steel drums. The shaft on which the drums rotate can be braked to varying extents by adding or removing weights to balance the pull exerted. The chassis is fixed in position with chains and blocks, and the engine is then started. It is tried in turn on all gears, and the readings attained show up any tightness or other defect in the transmission. As in every other department of the Rolls-Royce works, the most extreme precautions are taken against errors of any kind, and the barometric reading, the diameter of the driving tyres, and the variation of tension of the brake band are all allowed for.

After the dynamometer test, which is equivalent to about 100 miles running, the chassis is allowed on the road for the first time carrying simply a seat and a wooden box which contains weights equivalent to that of the body for which the chassis is intended. In this way the tester is able to find out whether springs of the correct stiffness have been fitted, in addition to the usual carburettor and other adjustments which have to be made on a new car. After 150 miles the car is brought in again and fitted with a special body known as a test-rig or more disrespectfully "bread-van," designed to magnify any mechanical noises which may be present. It is taken over the worst possible roads for 50 miles, and if no complaints are forthcoming the car then passes to final test, where a similar trial takes place. The Quality Department refuse to pass a car which does not seem to them perfect in every respect, even if it has gone successfully through all the preliminary tests, so that when a Rolls-Royce chassis receives its final approval, it is as perfect as human skill and craftmanship can make it.

The Aero-engines.

Any article on the Rolls-Royce Works would be incomplete without a mention of the aero-engines produced there. The standard of workmanship used in manufacturing the cars is so high that no special precautions need be used in making the aircraft units, and the same tools and the same operatives work indifferently on one or the other. The engines are tested in a great row of test-houses, and even when their exhaust gases are led away through enormous water cooled silencers it is almost impossible to hear oneself speak and the testers wear cotton wool in their ears. Nearby are special open air test beds which can be tilted or inclined to give the conditions under which the engine works in the air, and tremendously strong wire torpedo netting protects workmen from the possibility of a broken propellor.

Radiators and Tanks.

In an article of this length it is impossible to do justice to the various subsidiary activities which play a part in the perfection of the cars, but one must mention the tank shop, in which sheets of tinned steel are double-rivetted and sweated to form the immensely strong petrol tanks and other articles of this sort. The famous Rolls-Royce radiators are also made at Derby, dozens of copper tubes being fitted in a frame and dipped in molten solder to a depth of ⅜ inch, the same treatment being then given to the other end. The tubes are hexagonal at the ends and circular in the centre and have a series of projections inside. These projections break up the air stream and greatly improve the efficiency of the radiator.

Every department of the Derby Works reveals its own example of the care and skill which go to the production of the finished car, and the elimination of any possible sources of trouble or wear. The silence, long life, and perfection of performance and control of the Rolls-Royce are the inevitable result of this craftsmanship and attention to detail.

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THREE DISTINCTIVE BODIES ON THE ROLLS ROYCE CHASSIS

THE Hastings Rally was notable for the fine specimens of closed coachwork which were seen in the Coachwork Competition. The winning car in the large car class was the 25 h.p. Rolls-Royce, illustrated below, fitted with a four-door Touring Saloon by Park Ward.

The car is finished in pastel blue with a dark blue belt rail and silver roof and upper parts. The interior is upholstered in pastel blue leather. The colour scheme imparts to the car an unusual lightness of appearance in keeping with the lively performance of the chassis.

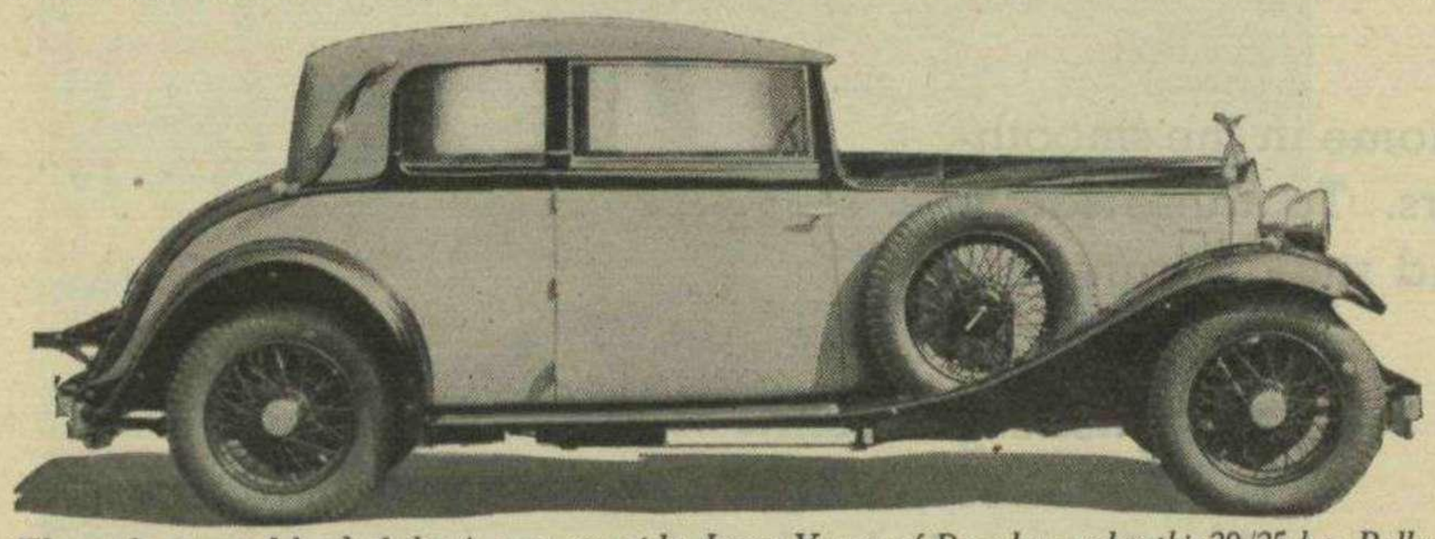
There are two sliding bucket seats in the front and the rear seat carries two or three persons. A large trunk at the rear is built integral with the coachwork and contains three suitcases. A picnic table and stools are also stored there. A luggage grid is provided and folds away when not required behind a hinged flap at the bottom of the trunk.

A sliding sunshine roof is fitted, stainless steel wheel discs, two spare wheels with special covers, and the four-wheel jacks are operated by a detachable handle which is kept under the bonnet, together with the road tools. Spare petrol and oil is carried in a box in the chassis frame and reached through a hinged door in the running boards, likewise a fire extinguisher.

The lighting equipment includes besides Lucas P100 lamps a fog lamp and two spotlamps in the windscreen. The dual windscreen wipers are driven by cable from a distant motor, thus causing no obstruction of vision. The off-side window is of quick drop type and semophore indicators are recessed into the rear quarters.

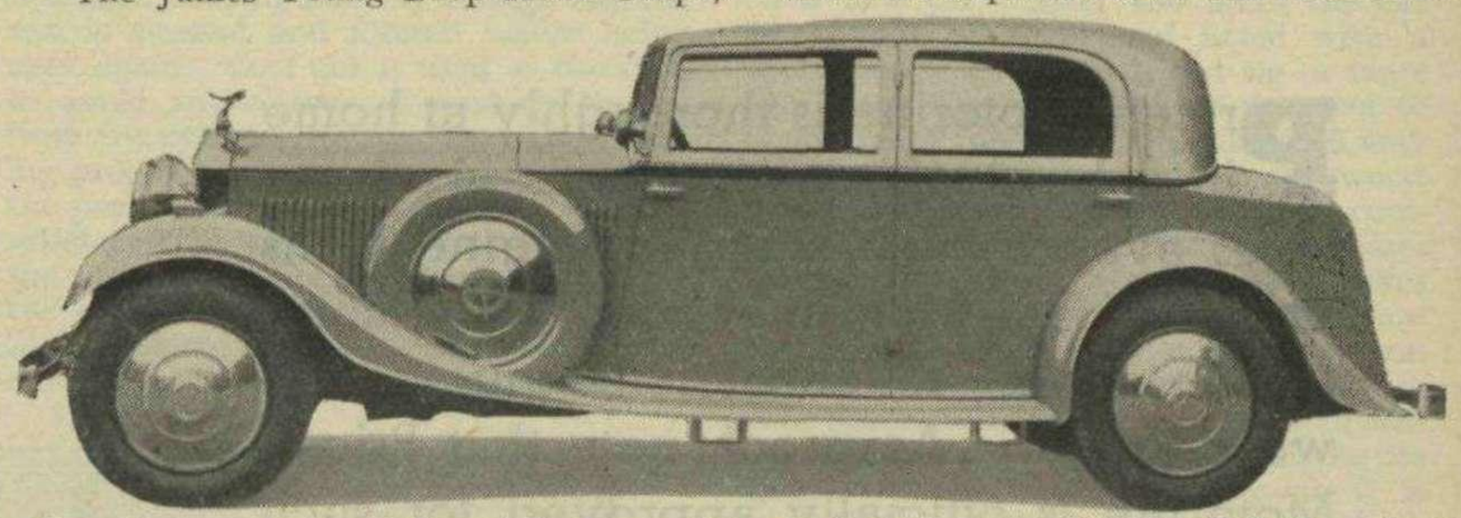
Folding tables are fitted to the back of the front seats. When opened they reveal writing sets and companions. A car heater which derives its heat from the water supply can be controlled by hand.

The James Young Drop Head Coupé, also fitted on a 25 h.p. chassis, should be an ideal car for the owner-driver. It is carried out on quiet, graceful lines, and provides comfortable accommodation for five persons, with a large luggage locker formed in the back of the body. The folding head is exceptionally easy to operate, and is designed so that it can be thrown back without having to get out of the car to fold away any of the hood material.



The easily operated head of this 4-seater coupé by James Young, of Bromley, makes this 20/25 h.p. Rolls-Royce particularly suitable for the owner-driver.

More formal in treatment is the sedanca body built by Gurney Nutting on a 40-50 h.p. Continental chassis. The body is finished in black, relieved by a thin silver line at the waist line and on the bonnet louvres. The sweeping lines of the wings which continue into running boards without a break, are most effective, the latter being set off by chromium-plated slats. The forward extension of the hood fits on to cant rails, giving the car, when closed, the smart appearance of a saloon. When not required the rails fit into lockers



In perfect proportion are the lines of this Touring Saloon by Park Ward, on a 20/25 h.p. Rolls-Royce chassis.

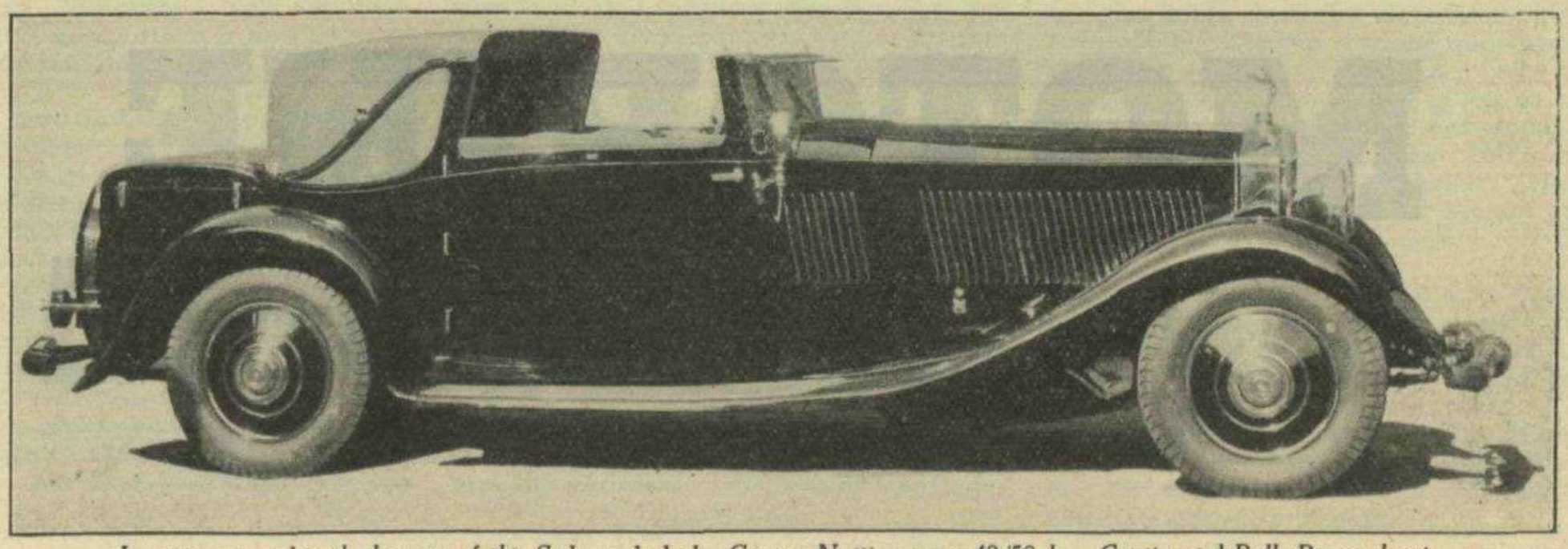
in the doors, and the forward extension folds imperceptibly into the fixed-head portion at the rear.

The front of the car is striking in appearance with its large P.100 lamps, and an unusual radiator stone guard of diamond-section plated strips. The Chromos bumpers have moulded rubber ends saving the bumper bar from breakage.

A luggage trunk is fitted with suitcases, also a compartment for golf clubs and a spare supply of petrol and oil, and tools are stored in the lid, and a lamp inside it lights up the interior of the trunk.

Two windscreen wipers driven by concealed motors are used, and a Grebel spotlight is carried on the off-side. Map-reading lamps are fitted under the scuttle, and the indirect lighting of the instruments is controlled by a Eural horn ring on the steering-wheel, while a larger one is used for the horn. A Philco wireless set is carried in the forward compartment, and its controls are finished uniformly with the other instruments.

A folding arm-rest invisible when not in use, makes the rear seat suitable for 2 or 3 passengers. Tables with mirrors are fitted to the back of the front seats and cocktail sets are found in the rear quarters. The rear window can be lowered by means of a handle concealed in the arm-rest recess.



Luxurious travel is the keynote of this Sedanca body by Gurney Nutting, on a 40/50 h.p. Continental Rolls-Royce chassis.

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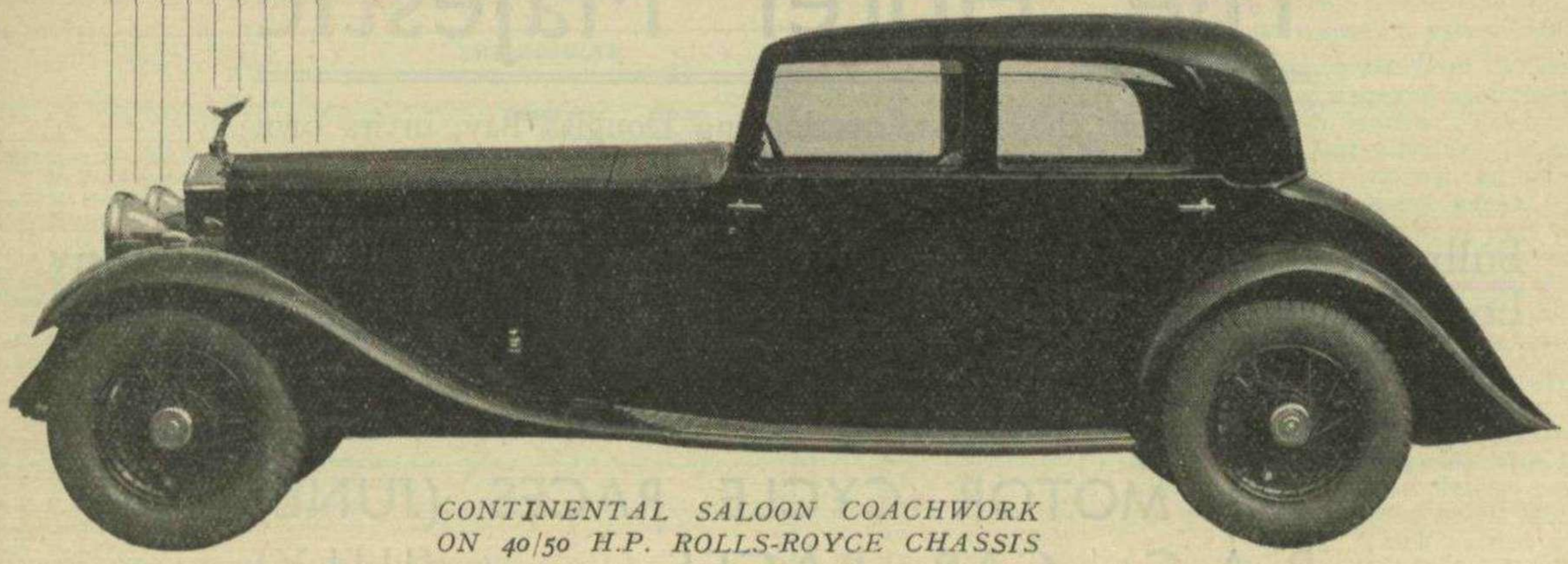
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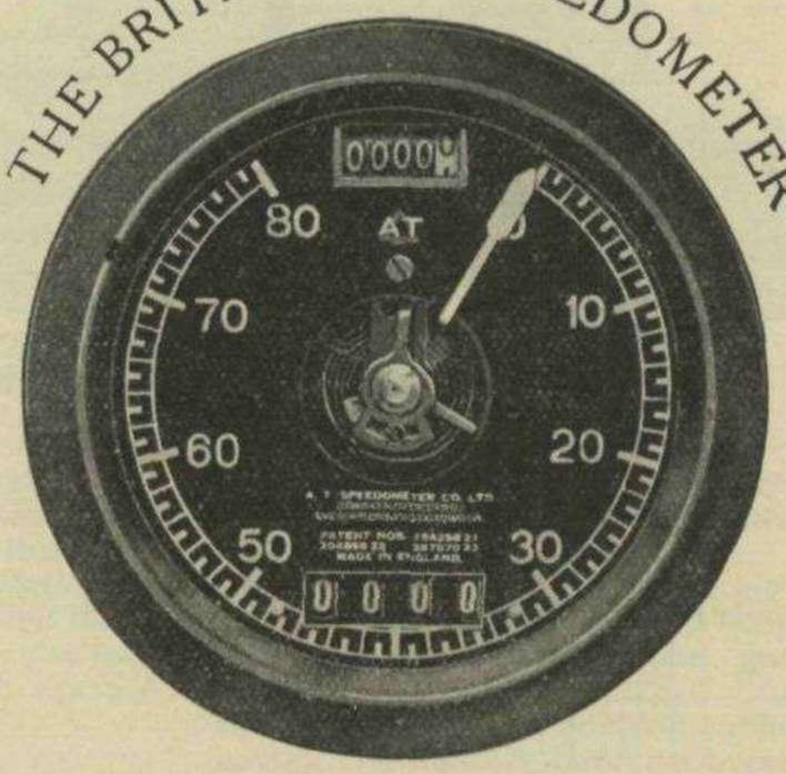
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T.T. MOTOR CYCLE RACES (JUNE)

R.A.C. CAR RACES - - (JULY)

THE R.A.C. RALLY—continued from page 253.

THE WINNERS.

The awards were divided this year in accordance with the three horse-power categories. Starting with 200 marks plus bonus, if any, for passengers above two, points were deducted for condition, as has already been explained. In the slow-running test, points were deducted at the rate of 5 marks per second for cars exceeding 25 seconds with a maximum loss of 20 points. In the second and third tests the mean time of the class was taken and one mark added or substracted for each 1/5 second under or over the mean time.

In Class I, Weston and Healey gained the same number of points, but the First Prize was awarded to the former on account of his superior performance in the Acceleration and Braking Test.

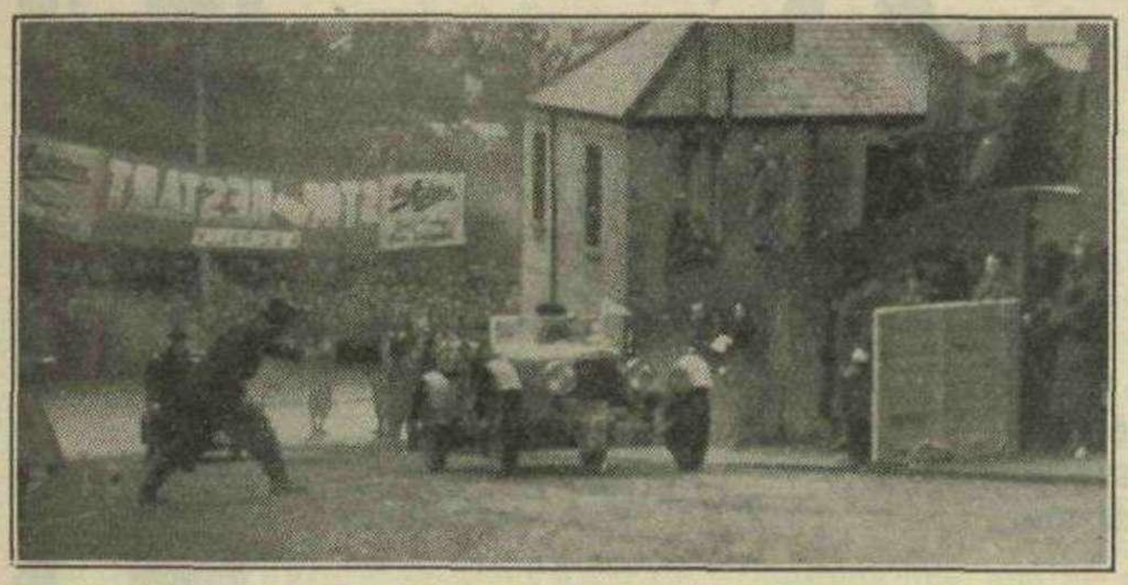
In Class II, Miss K. Brunell, though she did not "win the Rally," as some of our less informed daily papers put it, attained a higher total of marks than any other competitor, and she and the A.C. car deserve all credit for the performance.

In the smallest class Rileys repeated their victory of last year, with four places in the first six, and Singers enhanced the reputation they have already earned in trials by taking second and third positions.

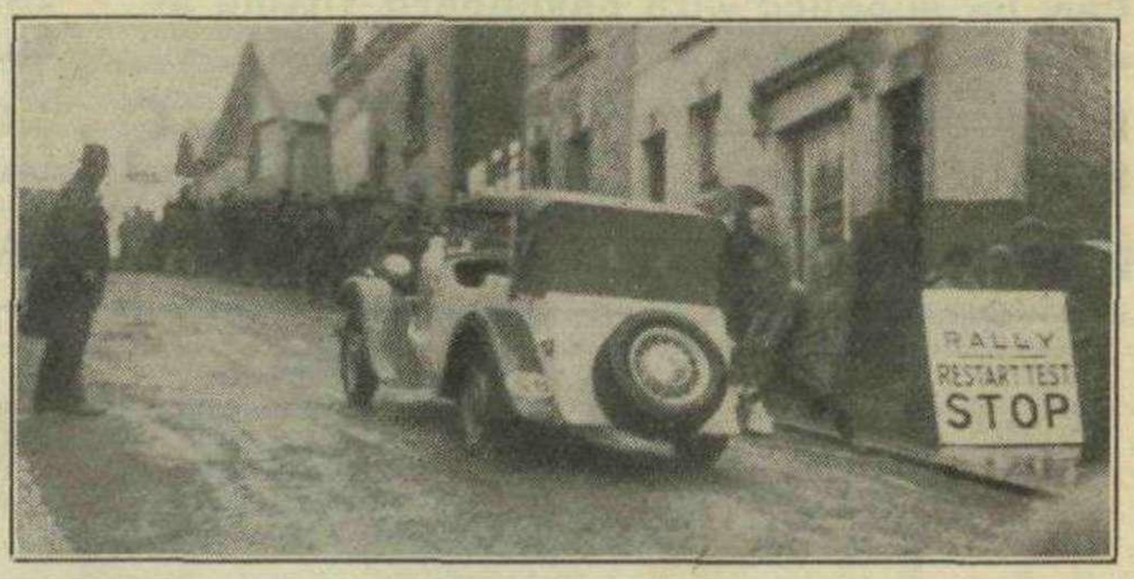
As a chance for friends to get together at the beginning of another season, and as a competition in which owners of touring motor-cars could hope to compete with their more fortunate brethren in sports machines, the Rally was a widely appreciated. The Underground Garage allowed competitors to park their cars without delay and the R.A.C. organisation worked without a hitch.

The Tests were interesting and provided interesting data about the performance of drivers and cars. Some of the officials seemed to take a long time to make up their minds when exactly the cars had crossed "Line B," while another year number boards back and front would make it easier to follow each car from a central point. Small items these, and they do not detract from the credit which Capt Phillips and his fellow officials deserve.

The Hastings Corporation gave the competitors a splendid welcome, both from the point of the entertainment provided and the feeling of hospitality which prevailed. England has nothing to learn on that score.



C. M. Anthony, (Aston - Martin), who drove outstandingly well in the standard restart tes'.



Norman Black (Essex Terraplane) in the stop and restart test.

THE RESULTS.

	Passenger Bonus	I Slow Running	II Acceleration & Braking	III Stop & Restart	Marks Gained II & III	Total
Class I.						
1. T. D. W. Weston (2565 Rover), Bath	4	-5	19	7.8	45	244
2. D. M. Healey (4467 Invicta), Bath	2		19.6	7.8	42	244
3. K. Hutchison (3633 Ford), Newcastle... ...	2		19.2	8.6	40	242
4. Hon. Mrs. Chetwynd (3633 Ford), Bath ...	4		20	8.4	36	240
5. H. E. Symons (4960 Siddeley Special) Leamington	4		19.8	9	35	239
6. Miss Fay Taylour (3622 Ford), Leamington ...	2		19.6	9.6	33	235
Class II.						
1. Miss Kitty Brunell (1991 A.C.), Newcastle ...	4		20	8.4	49	253
2. C. M. Anthony (1493 Aston Martin), Liverpool			20.6	8.4	46	246
3. M. C. Wilks (1577 Rover), Buxton			19.8	10	42	242
4. C. F. Hurlock (1991 A.C.), London	4		22.2	9	35	239
5. G. F. Searle (1577 Rover), Norwich			20.8	9.8	38	238
6. W. A. E. Hurlock (1991 A.C.), Norwich ...	4	-5	22	10	31	230
Class III.						
1. G. Dennison (1089 Riley), Harrogate	4		21.4	8.4	47	251
2. F. R. G. Spikins (972 Singer), London ...			21.4	8.4	47	247
3. F. C. Rolfe (972 Singer), Leamington			21	9	46	246
4. J. Hobbs (1089 Riley), London	4		23.2	9.2	34	238
5. V. E. Leverett (1089 Riley)	4		23.2	9.4	33	237
6. Miss D. C. N. Champney (1089 Riley) Harrogate	4		23.6	9.6	30	234

The Mean Times were:—

Class I.	Acceleration & Braking	24.6 sec.	Stop & Restart	11.2 sec.	
Class II.	,, ,,	26 ,,	,, ,,	12.2 ,,	
Class III.	,, ,,	27.4 ,,	,, ,,	11.8 ,,	

THE COACHWORK COMPETITION

IN view of the unsettled weather, the R.A.C. very wisely decided to hold the final item of the Rally, which began at 9.30 on Saturday, in the Underground Garage. The rather dim light which prevailed there made it difficult to appreciate the numerous fine exhibits which were entered for the Competition, but bright sunshine happily prevailed in the afternoon, and the winning cars were displayed on the Promenade.

There were six classes in all, each of them sub-divided into the three horse power categories used for the road section. There were also awards for the best car in each category. Marks were awarded primarily for appearance, condition, and comfort with a few marks for gadgets. This allotment of marks seems a considerable improvement on some of the ones ruling in last year's competitions, where the organisers rather lost sight of the fact that the primary idea of a car body is to look and feel right.

The two-seater section was not well supported, the only interesting car in the (a) class being a V8 Ford with a streamlined body by the Chaseside Motor Co. of Enfield. The rear part of the body swept right down to the ground and was enlivened by a vertical fin, in the style of the record-breaking cars. By removing a panel, two rear seats were disclosed and the disappearing hood extended over all the passenger space. The streamlining appears to have a useful side too, as the makers claim a speed in excess of 80 m.p.h.

All the cars in the next division were neat, including a grey Fraser Nash and a Le Mans Aston Martin. The prize was awarded to a Marendaz Special in which the black coachwork was set off by the plated outside exhaust pipes. In the smallest category the light grey and red Riley Gamecock was very workmanlike, while the Trinity Special on a Midget chassis revealed no trace of the coupe head which folded away in the rear locker.

The four-seaters were mostly well-established models such as the Vanden Plas body on Lord Curzon's Alvis, and Miss Watson's old-type 4½ litre Invicta, which was very completely equipped. The prize was awarded to H. E. Symons Siddeley Special, which carried a roomy and distinguished looking Vande Plas body. The (b) class was hotly contested by 22 entrants, and was won by G. W. Olive, with a Standard Avon. This car

(*Continued on page 290*)

SANOR HORNS

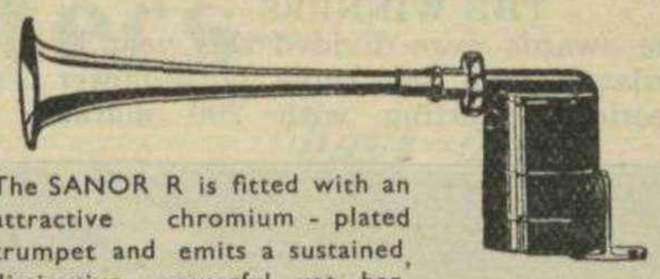
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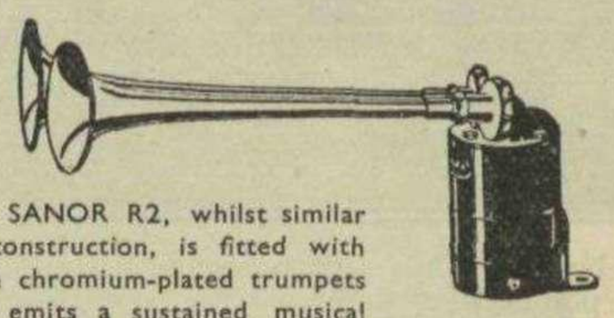
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The SANOR R is fitted with an attractive chromium - plated trumpet and emits a sustained, distinctive, powerful yet harmonious note.

A lock nut at the base of the trumpet enables the tone to be adjusted to any individual requirements.

Price £6 15 0



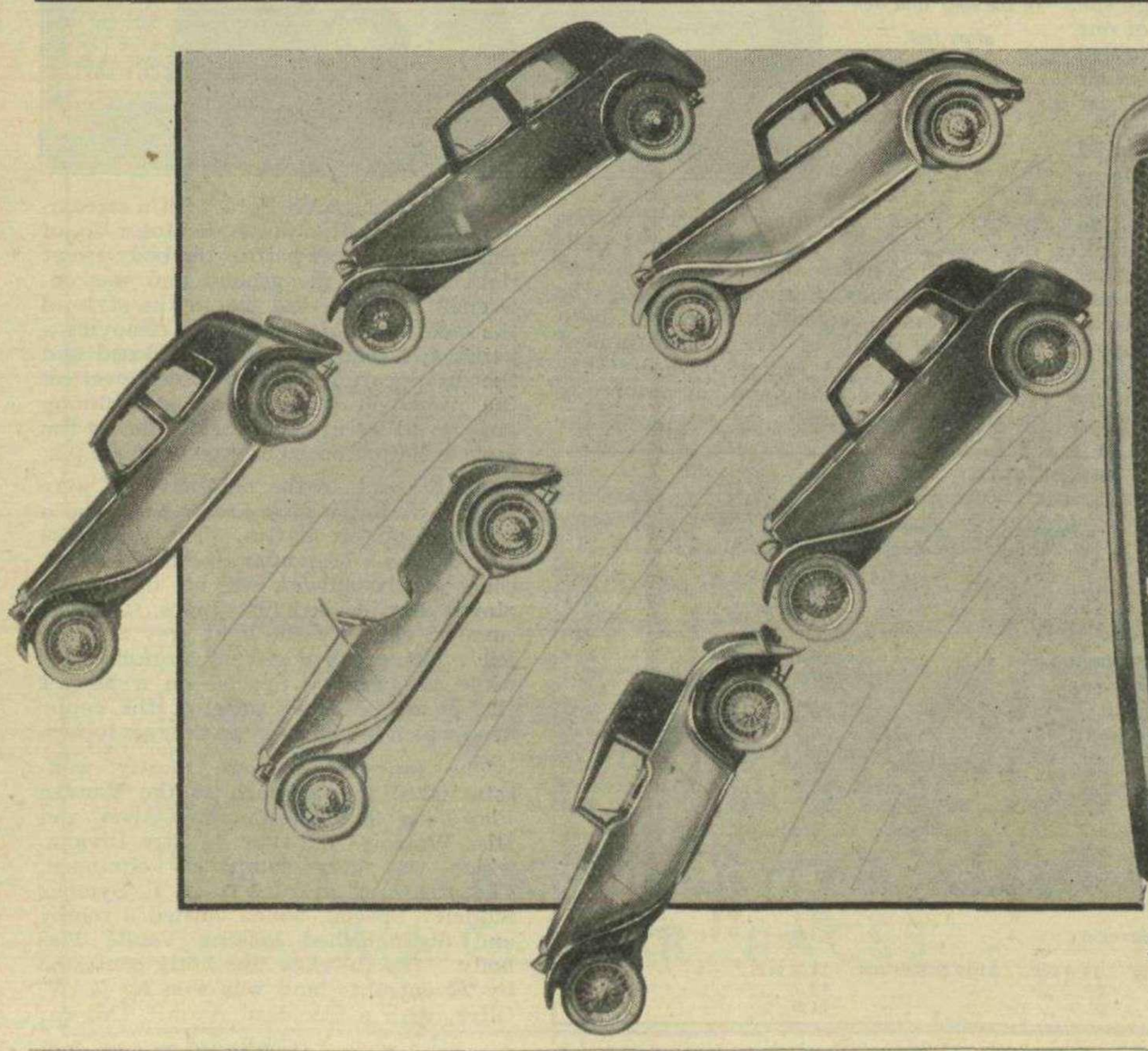
The SANOR R2, whilst similar in construction, is fitted with twin chromium-plated trumpets and emits a sustained musical dual note which commands attention.

Each trumpet is fitted with a similar nut by means of which it can be separately tuned to provide various harmonious chords.

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THE VARSITIES AT EYNSHAM.....

ANYONE who attended the Inter-Varsity Acceleration Tests on the wind-swept Eynsham By-Pass in 1932 was not a bit surprised that the most appalling weather conditions should prevail for this year's event. On the night before Saturday, February 25th, snow fell steadily, so that the majority of competitors and intending spectators decided to keep away from the chilly By-Pass, with the result that only 22 starters out of 96 entrants materialised.

Miraculously, the snow melted on the Saturday morning, so that in spite of a certain amount of slush some very good times were put up. The Oxford Club is well-known for a pronounced inability to link up the time they intend to start their meetings with the moment when the proceedings are actually begun. This year, in spite of only a quarter of the scheduled entrants turning up, the delay was merely a matter of 2½ hours, and it is difficult to imagine what would have happened if 96 instead of 22 competitors had been present. Of course, the timing apparatus was to blame.

W. Burke pulled off the 850 c.c. class for semi-sports cars, drawing first blood for Oxford, but the score was quickly equalised by the Cambridge Secretary, A. C. Fairtlough, whose Salmson was unopposed in the 1,100 c.c. division. Then G. A. D. Smith put Oxford ahead again by recording 49.8 seconds with his Wolseley Hornet, and L. F. Von Liergardt (Ford V8) clinched matters still further by winning the unlimited class. His time, 39.5 seconds for the standing kilometre, was the best so far, Michael May's Silver Eagle Alvis being a little slower in 41.6 seconds, in spite of a good get-away.

The 1,100 c.c. sports cars were not as fast, S. W. Jackson (Riley) being the winner in 42.1 seconds. The 1,500's were slower still, but Von Dierdgardt enlivened things a little once more by carrying off the unlimited sports class from Commander Fowle's Talbot " 105."

Then a very different sound was heard from the starting line, as the Super Sports cars got into action. Fastest of all was the 500 Mile Race M.G. Midget driven by Kenneth Evans, which sounded in the pink of condition, and was 5 seconds faster than Kim Collett's similar car. Evans was travelling really fast over the finishing line, and his time, 33.6 seconds, was very near to the International Class Record held by E. R. Hall in 33.285 seconds. No one else approached this time, second man being R. R. K. Marker with his Le Mans 4½ litre Bentley, with a time of 37.2 seconds. The Duke of Grafton had bad luck with an old G.P. Sunbeam once owned by Oliver Bertram, the car suffering from severe clutch slip.

The organisation of the Oxford Club does not include official information of the results to the Press, but the following is a rough idea of what happened :

THREE-WHEELERS : 1, A. L. Hicks (Morgan), 41.1 secs.

SEMI-SPORTS UP TO 850 C.C. : 1, W. Burke (M.G.), 49 secs. ; 2, A. L. Watson (M.G.), 50.9 secs.

SEMI-SPORTS UP TO 1,100 C.C. : 1, A. C. Fairtlough (Salmson), 47.1 secs.

SEMI-SPORTS UP TO 1,500 C.C. : 1, G. A. D. Smith (Wolseley Hornet), 49.8 secs.

SEMI-SPORTS OVER 1,500 C.C. : 1, L. F. Von Diergardt (Ford V8), 39.5 secs. ; 2, M. W. B. May (Alvis), 41.6 secs. ; 3, I. M. Bowles (Ford V8), 44 secs. ; 5, M. Burton (Essex), 44.7 secs.

SPORTS UP TO 1,100 C.C. : 1, S. W. Jackson (Riley), 42.1 secs. ; 2, R. A. Mitchell (Riley), 45 secs. ; 3, A. C. Fairtlough (Salmson), 47.1 secs. ; 5, J. R. G. Finch (Alta), 49.3 secs.

SPORTS UP TO 1,500 C.C., 1, R. Bickford (Alvis), 44.3 secs. ; 2, H. W. Inderwick (Frazer-Nash), 44.9 secs. ; 3, A. M. Laing (Aston Martin), 45.1 secs,

SPORTS OVER 1,500 C.C. : 1, A. Baker-Carr (Bentley), 37.7 secs. ; 2, L. F. Von Diergardt (Ford V8), 39.5 secs. ; 3, Comm. R. G. Fowle (Talbot), 41.1 secs. ; 4, M. W. B. May (Alvis), 41.6 secs. ; 5, I. M. Bowles (Ford V8), 44 secs. ; 6, M. Burton (Essex), 44.1 secs.

SUPER SPORTS UP TO 850 C.C. : 1, K. D. Evans (M.G.), 33.6 secs. ; 2, K. Collett (M.G.), 38.2 secs. ; 3, J. G. C. Ruston (M.G.), 43 secs.

SUPER SPORTS UP TO 1,100 C.C. : Same as 850 c.c.

SUPER SPORTS UP TO 1,500 C.C. : Same as 850 c.c.

SUPER SPORTS OVER 1,500 C.C. : 1, K. D. Evans (M.G.), 33.6 secs. ; 2, R. R. K. Marker (Bentley), 37.2 secs. ; 3, A. Baker-Carr (Bentley), 37.7 secs. ; 4, Duke of Grafton (Sunbeam), 46.2 secs.

.....AND AT GOPSALL PARK.

As if to demonstrate just how speed trials *should* be run, the event organised by the Cambridge Automobile Club at Gopsall Park was well up to schedule throughout the day.

The course was half a mile in length, with a poor surface of sandy gravel, slightly uphill, with two gradual curves. After a rainy dawn the weather steadily improved, and later the sun came out to help make matters more cheerful. Of the sports cars S. W. Jackson's Riley went very well and made best time (37.3 secs.) of all until Whitney Straight came along with a magnificent eight-litre Bentley and streaked up the course in 30.6 seconds. R. R. Marker's Bentley clocked 36.3 secs., and a very good performance was that of H. H. Villard's Chrysler in 37.0 seconds.

The racing cars' classes opened with a duel between Kenneth Evans' very fast M.G. Midget and R. R. Jackson's car of a similar type, resulting in a clear win for Evans by 2½ seconds—a good effort against such a redoubtable opponent. Bolster's G.N., after a spot of magneto bother, made a very good run in 33.4 seconds to win the 1,100 c.c. class. In the 1,500 c.c. division R. G. J. Nash's new machine, " The Spook " (the remains of " Rikki-Tikki " and " the Slug " thoroughly intermingled) was making its first canter, but could not do better than 32.2 seconds in spite of an impressive get-away. R. J. W. Appleton's Bugatti, driven by R. Bickford, put up a very good time for an " unblown " 1½ litre, being only .3 seconds slower than the much lighter " Spook."

The 3 litre class was a fairly easy thing for R. R. Pelham-Burn's 2 litre Bugatti, the next man, M. F. L. Faulkner, being 3 seconds slower with his " blown " Lagonda. The over 3,000 c.c. class produced the awe-inspiring sight of Oliver Bertram with the 10 litre Delage (or " Lelarge " as the C.U.A.C. spell it in their list of results). As was expected, the car made easily the fastest time of the day, 26.8 seconds, 4 seconds faster than Straight's Bentley. Bertram handled the car with restraint and skill on the narrow drive. The Duke of Grafton, having remedied the clutch slip on his old 5 litre G.P. Sunbeam, made a very good run in 31.6 seconds.

Finally, an " any capacity " class was held, and produced some interesting results. Fastest time, of course, went to Bertram's Delage, second being Whitney Straight's massive 8 litre Bentley, a car which was deceptively fast. By comparison with these giants, the M.G. Midget driven by Kenneth Evans seemed diminutive, but nevertheless it made third fastest time in 31.1 seconds.

RESULTS.

Sports Cars. Up to 850 c.c. class.
1. I. M. Clark, Austin (747 c.c.), 52.8 secs.

851-1,100 c.c. class.
1. S. W. Jackson, Riley (1,089 c.c.), 37.3 secs.
2. M. F. L. Falkner, Salmson (1,087 c.c.), 46.2 secs.
3. A. Vincent, Riley (1,089 c.c.), 46.3 secs.

1,101-1,500 c.c. class.
1. P. F. Jucker, Frazer Nash (1,496 c.c.), 37.4 secs.
2. T. A. W. Thorpe, Frazer Nash (1,496 c.c.), 38.3 secs.
3. N. A. Watkins, Frazer Nash (1,496 c.c.), 38.5 secs.

1,501-3,000 c.c. class.
1. Lieut. Comdr. R. G. Fowle, Talbot 105 (2,969 c.c.), 38.1 secs.
2. M. W. B. May, Alvis (2,148 c.c.), 38.6 secs.
3. T. S. Fothringham, Talbot 105 (2,969 c.c.), 39.2 secs.

Over 3,000 c.c. class.
1. Whitney Straight, Bentley (7.912 c.c.), 30.6 secs.
2. R. R. K. Marker Bentley (4,398 c.c.), 36.3 secs.
3. Baron L. von Diergardt Roland, Ford V8, (3,560 c.c.), 35.5 secs.

Any capacity class.
1. Whitney Straight, Bentley (7,912 c.c.), 30.6 secs.
2. R. R. K. Marker, Bentley (4,398 c.c.), 36.3 secs.
3. Oliver Bertram, Vauxhall (4,234 c.c.), 37.0 secs.
4. H. H. Villard, Chrysler (4,624 c.c.), 37.0 secs.

Racing cars up to 850 c.c. class.
1. K. D. Evans, M.G. (S) (746 c.c.), 31.1 secs.
2. R. R. Jackson, M.G. (S) (746 c.c.), 33.6 secs.
3. K. Collett, M.G. (S) (746 c.c.), 35.4 secs.

(*Continued on page 288*).

SAND RACING AT SOUTHPORT.

GOOD PERFORMANCE BY J. FIELD (BUGATTI) AND P. STEPHENSON (AUSTIN).

THE Southport Motor Club were fortunate in the weather for the opening meeting of the year, held on March 4th. Although a cold wind was blowing along the course, the sun shone from time to time and altogether conditions were very pleasant. The attendance was very small, but well behaved as usual, so that no difficulty was experienced in keeping the course clear.

There were 20 races for cars and motor-cycles, but these events are contested by a small group of competitors who therefore have plenty of opportunity of deciding exactly who has the fastest motor-car on that particular afternoon. At this meeting two car competitors stood out above the rest. These were Jack Field's single-seater Bugatti, that weird machine with a 2.3 litre engine in a small chassis, and lacking front springs, and P. Stephenson's Austin Seven, a famous performer at Southport, and always well handled.

The meeting opened with a series of straight-mile races, all classes up to 2,000 c.c. going to the all-conquering Stephenson. C. D. Parish and W. L. Thompson, two other regular performers at Southport, both on Austin Sevens, were unable to cope with Stephenson at all. The 3 litre and unlimited categories went to Field, the old G.P. Sunbeam driven by G. J. Jackson being slower in getting off the mark.

The 3-mile races produced the same results, with the exception of the 2,000 c.c. class, which was won by H. B. Prestwich (Frazer-Nash). In the eleven mile races J. Walker did well with his Bugatti, finishing second to Field, and winning the 1½ litre class. Finally, came the 25 mile race, and Thompson's turn to have his long-awaited revenge on Stephenson. The cornering methods at the turns each end were always worth watching, and we noticed some particularly good performances being put up by J. Walker (Bugatti) and R. Sparrow (Austin). Field got so far ahead that he could afford to ease up, so that his cornering was safe and steady. Some of the others, however, were forced to accomplish the change of direction with an absolute minimum of wasted time, with corresponding interest on the part of spectators. Unfortunately Jackson's Sunbeam had retired in the 11 mile Race, so that Field had things all his own way. In the smaller classes, however, a great struggle took place between Stephenson, Thompson and Parish, on Austins, the former keeping the lead right until the end, when he was forced to retire, leaving the honours in the 750 and 1,100 c.c. classes to Thompson.

RESULTS.

STRAIGHT MILE.

Up to 750 c.c.—P. Stephenson (Austin), C. D. Parish (Austin), W. L. Thompson (Austin).
Up to 1,100 c.c.—P. Stephenson (Austin), W. L. Thompson (Austin), C. D. Parish (Austin).
Up to 1,500 c.c.—P. Stephenson (Austin), C. D. Parish (Austin).
Up to 2,000 c.c.—P. Stephenson (Austin), walkover.
Up to 3,000 c.c.—J. Field (Bugatti), G. J. Jackson (Sunbeam).
Unlimited.—J. Field (Bugatti), G. L. Jackson (Sunbeam).

THREE MILES.

Up to 750 c.c.—P. Stephenson (Austin), W. L. Thompson (Austin), C. D. Parish (Austin).
Same placings for up to 1,100 c.c. and 1,500 c.c.
Up to 2,000 c.c.—H. B. Prestwich (Frazer Nash).
Up to 3,000 c.c.—J. Field (Bugatti).

FIVE MILES.

Up to 750 c.c.—P. Stephenson (Austin), W. L. Thompson (Austin), C. D. Parish (Austin).
Up to 1,100 c.c.—Same placings.
Up to 1,500 c.c.—P. Stephenson (Austin), J. Walker (Bugatti).
Up to 2,000 c.c.—P. Stephenson (Austin).
Up to 3,000 c.c.—J. Field (Bugatti), G. J. Jackson (Sunbeam).
Unlimited.—Same placings as up to 3,000 c.c.

ELEVEN MILES.

Up to 750 c.c.—P. Stephenson (Austin), C. D. Parish (Austin), W. L. Thompson (Austin).
Up to 1,100 c.c.—Same placings.
Up to 1,500 c.c.—J. Walker (Bugatti), P. Stephenson (Austin).
Up to 2,000 c.c.—P. Stephenson (Austin).
Up to 3,000 c.c.—J. Field (Bugatti).

TWENTY-FIVE MILES.

Up to 750 c.c.—W. L. Thompson (Austin), P. Stephenson (Austin).
Up to 1,100 c.c.—Same placings.
Up to 1,500 c.c.—J. Walker (Bugatti), W. L. Thompson (Austin).
Up to 3,000 c.c.—J. Field (Bugatti), J. Walker (Bugatti).
Unlimited.—Same placings.

THE VARSITIES AT GOPSALL PARK (*continued from page 287*).

851-1,100 c.c. class.
1. R. V. C. Bolster, G.N. (1,086 c.c.), 33.4 secs.
2. G. B. C. Sumner G.N. (1,086 c.c.), 36.8 secs.
3. R. Dobson, Riley (1,089 c.c.), 43.7 secs.

1,101-1,500 c.c. class.
1. R. G. J. Nash, Anzani Nash (S) (1,496 c.c.), 32.2 secs.
2. R. Bickford, Bugatti (1,496 c.c.), 32.5 secs.
3. N. A. Watkins, Frazer Nash (1,496 c.c.), 38.5 secs.

1,501-3,000 c.c. class.
1. R. R. Pelham Burn, Bugatti (1,990 c.c.), 34.3 secs.
2. M. F. L. Falkner, Lagonda (S), (1,954 c.c.), 37.7 secs.
3. M. E. King, Bugatti (1,990 c.c.), 42.6 secs.

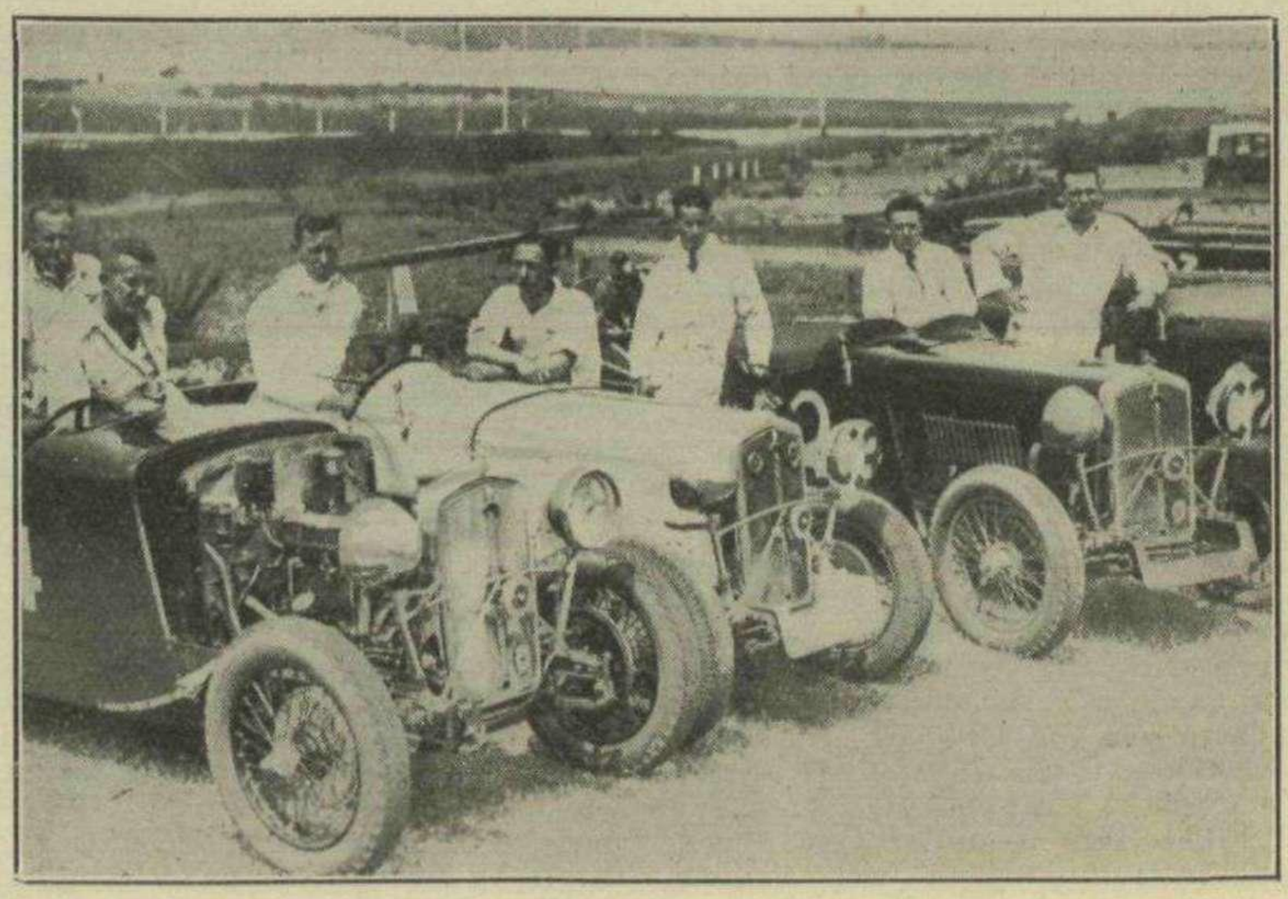
Over E 3,000 c.c. class.
1. Oliver Bertram, Delage (10,688 c.c.), 26.8 secs.
2. Whitney Straight, Bentley (7,912 c.c.), 30.6 secs.
3. The Duke of Grafton, Sunbeam (4,914 c.c.), 31.6 sec.

Any capacity class.
1. Oliver Bertram, Delage (10,688 c.c.), 26.8 secs.
2. Whitney Straight, Bentley (7,912 c.c.), 30.6 secs.
3. K. D. Evans, M.G. (S), (746 c.c.), 31.1 secs.
4. The Duke of Grafton, Sunbeam (4,914 c.c.), 31.6 secs.
5. R. G. J. Nash, Anzani Nash (1,496 c.c.), 32.2 secs.
6. R. R. Jackson, M.G. (S) (746 c.c.), 33.6 secs.
7. K. Collett, M.G. (S) (746 c.c.), 35.4 secs.
8. J. G. C. Ruston, M.G. (S) (746 c.c.), 41.2 secs

ROLLS-ROYCE HAVE A GOOD YEAR.

THE Directors of Rolls-Royce, Ltd., at their Meeting on March 10th, decided to recommend at the Annual Meeting at Derby on April 7th, 1933, that a dividend be paid at the rate of 8% per annum together with a bonus at the rate of 2% per annum for the 12 months ended December 31st, to be due and payable on May 19th, 1933.

The profits for the 12 months ended December 31st, 1932, were £150,978 13s. 4d.



The team of Wolseley Hornet Specials which recently won the 100 Miles Relay Race organised by the N.S.W. Light Car Club in Australia, on the Maronbra Speedway. The lap speed of each car was 71 m.p.h.

NEWS FROM THE U.S.A.

THREE AMERICANS TO CHALLENGE ENGLAND'S SPEED SUPREMACY?

By our American correspondent
T. Meriwether-Smith.

AFTER having been absent from competition for the world's one mile speed record for five years, it now appears that the United States will make a determined effort to wrest the record from Great Britain in 1934. Three famed figures in the American motor-racing world intend constructing machines for this purpose. They are Gar Wood, International speedboat champion, J. M. White, builder of the ill fated Triplex that set a 207 m.p.h. in 1928, and Harry Miller, well known race-car designer and builder. America's failure to stage an attempt to regain the record has not been due to lack of courage in its drivers, or initiative among its designers. The greatest cause for this failure is the present economic depression.

In addition, the deaths of Frank Lockhart in 1928, and Lee Bible in 1929, cast a pall of gloom over American lovers of speed, and the belief spread that high speed trials were impractical and did not contribute to the progress of the automotive industry. Now, the ease with which Sir Malcolm Campbell has catapulted down the beach has revived interest.

Gar Wood has offered to loan his giant Packard super-charged motors to young Billy Arnold for the purpose of building a challenger for the land record. Arnold and Wood have not yet announced plans for the car, but it is expected to be one of the largest speed mammoths ever to skim Daytona sands, if built.

J. M. White brought a crude-appearing machine, known as the 36 cyl. Triplex, to Daytona in 1928, and in March 1928, Ray Keech flashed down the beach to a new record of 207 m.p.h., astounding critics and fans alike.

The next spring, the late Sir Henry Segrave set a record of 231 m.p.h. in his "Golden Arrow," and White announced his Triplex would shoot for the record in a few days. Bob McLonogh had been offered the car, but turned it down on the advice of his manager, Tommy Milton. Wilbur Shaw, a new comer to racing, was offered the mount, but was under suspension of the A.A.A. at the time, and could not drive. Finally, White turned the car over to Lee Bible, a garage owner in Daytona Beach, with little racing experience. The test ended in tragedy, when Bible lost control of his car at over 200 m.p.h., being killed instantly.

Three or four years ago, White said he was drawing up plans for a racing machine to regain the speed title. It would be a four-wheel-drive giant, capable of 500 m.p.h. (?). Then the Philadelphia truck designer disappeared from the public eye. This year, as Sir Malcolm set his new record at Daytona, White announced that he would have his car ready for the 1934 trials. No details were given.

Barney Oldfield announced his intention of trying for the record over a year ago, in a machine to be built by Harry Miller. Oldfield has indicated recently that he has far from dropped his plans, and it seems that 1934 will find the veteran at Daytona with a 24-cylinder, 6,500 pound car.

Original plans for the machine called for a super-streamlined car, with glass enclosed cock-pit, of 24-cylinders, developing 3,000 h.p. at 4,000 r.p.m. It would be a four-wheel-drive car, with three superchargers and six magnetos on its three banks of eight cylinders each. The car would be approximately twenty-six feet long, five feet less than Kaye Don's "Silver Bullet."

Oldfield announced his intention of driving this car himself, but it is believed that some young driver will get the car if it is ever built. "Stubby" Stubblefield, husky California star, seems to be the logical choice, as he has had world's of experience in all types of driving. Oldfield completed models of his car, and subjected them to exhaustive wind-tunnel tests last year.

The announcement of Hubert Scott-Payne's challenge for the Harmsworth motorboat trophy this year has caused widespread interest throughout the United States. It has been feared that no challenge would be made this year. Gar Wood is expected to use exactly the same Miss America that defeated Kaye Don at Detroit last summer. There is much speculation here as to the mechanical features of the new English boat.

Egbert "Babe" Stapp is busy completing a car in which he hopes to shatter Stubblefield's 148 m.p.h. record for 4-cylinder, non-supercharged cars. The machine is powered with a Miller motor, and has a unique, streamline body. Stapp is expected to drive the car in the Indianapolis classic in May, also.

Prominent racing drivers are very busy these days, preparing cars for the opening of the A.A.A. Championship season. The first race, which takes place on April 23rd, will be held over the Oakland Speedway in California. Bob Carey, National Champion of 1932, will be defending his honours for the first time, and is undecided whether to use his new 4-cylinder motor, or his old "8," which carried him to last season's victories.

There are no indications thus far, that foreign competition will be seen at the Indianapolis race. It is possible, however, that three American drivers will compete abroad this year, one at the Nurburg Ring in Germany, the remaining pair at Monza, Italy.

Announcement

In response to many requests from our readers for a regular bulletin of motor racing news from the United States, we have pleasure in announcing that we have secured the services of Mr. Taylor Meriwether-Smith as our American Correspondent. Mr. Meriwether-Smith has been intimately connected with motor racing for some years, and his notes will form a regular feature in "Motor Sport" in the future.

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"Beautiful, satisfying, sincere. The story is splendidly told and there is no doubt that it grips."—*The Tatler.*

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THE COACHWORK COMPETITION—continued from page 285.

was fitted with unusual faired wings, and was strikingly finished in orange and yellow. Other interesting cars in this class were an Alvis Firefly, Major Douglas Morris's Invicta, fitted with a Salmons convertable body in which even the screen folded down, and which received a prize at Monte Carlo. A Magna finished in blue showed that its body lines could still compare with the newer designs.

The smallest class comprised a good number of Singers, but was won by a Lanchester similar to the one which appeared at the Olympia Show, fitted with a sporting body by Mulliners. The owners reported an excellent turn of speed for this combination.

The two-door coupe class did not produce much of interest, the winners being an Avon Standard, an A.C. and a Singer.

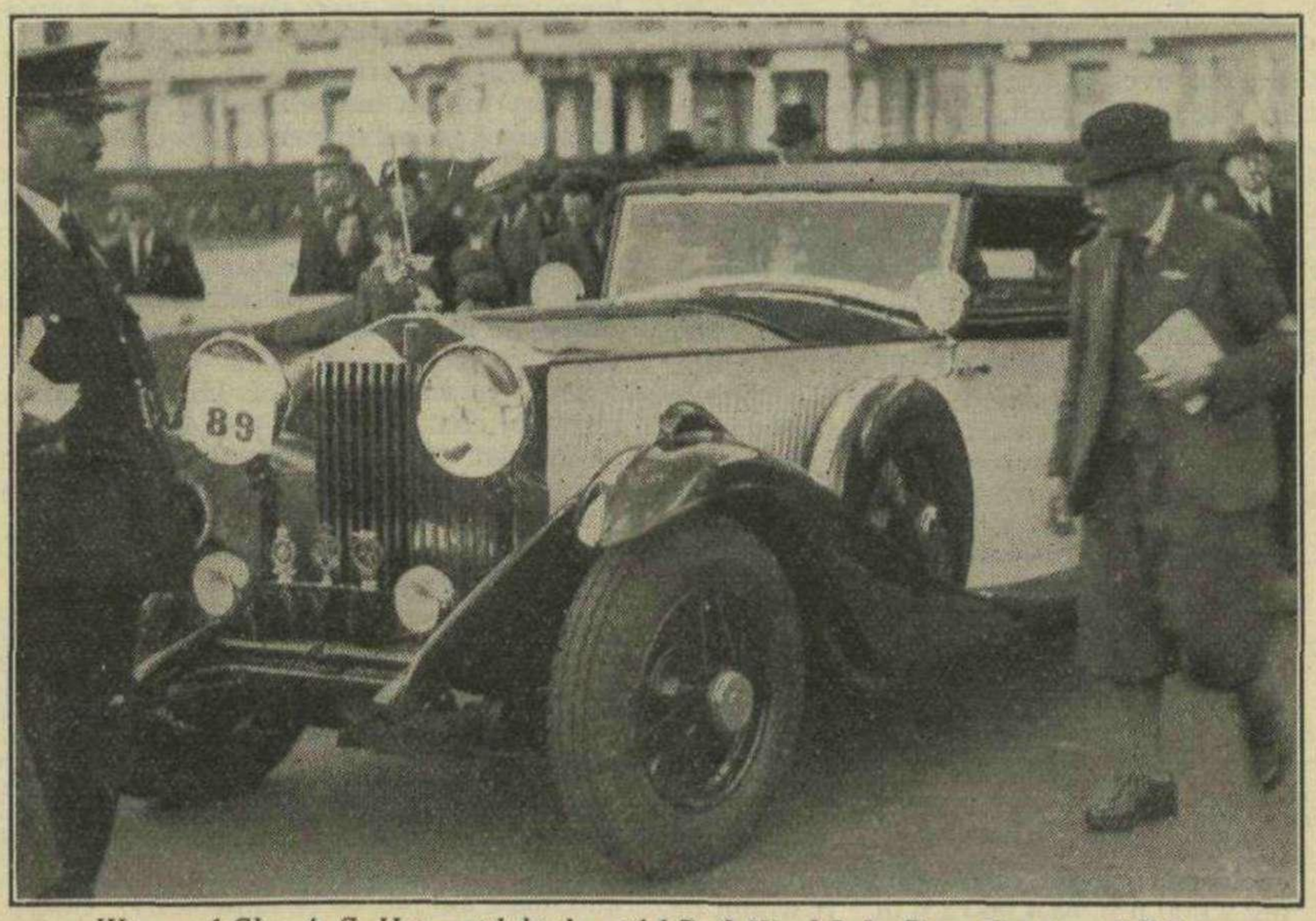
The occasional four seaters and short sports saloons were obviously dominated by the two Rolls-Royce cars entered, and it must have been a difficult task deciding between a Phantom II with a James Young body, and a very fine sedanca designed by H. R .Owen and built by Gurney Nutting. The winning car had a cream body and black bonnet top and wings, and the sedanca all-black relieved with chromium strips on the running board. The removable portion over the driver's seat folded quite invisibly into the fixed head over the rear seats.

The 16 h.p. class provided a class winner in S. B. Wilks' Rover Sports Saloon, a low built and compact car which nevertheless had a surprising amount of room inside. C. J. Joyce's Crossley 10 repeated its Torquay success and was also judged the best car in the 10 h.p. class.

Rolls-Royces were again supreme in the four door sports saloon class, first prize and winner of its category being awarded to C. W. Ward's graceful light blue and silver 25 h.p. car, which was built by Park Ward. It was equipped with a number of useful items, such as windscreen wipers driven by cable from a distant motor, permanent four-wheel jacks, fire extinguishers in the valance, very complete luggage accommodation in the rear, tools in neat cut-out trays, and even a Clayton ventilating fan for warming or cooling the interior at will. The interior appointments were equally lavish. In appearance and equipment this car well deserved its premier award. The car which won its class at Olympia last year, also with a Park Ward body, was second.

The middle-weight category was won by F. Gordon Crosby's Riley, fitted with a graceful body finished in an attractive light brown shade. The swivelling spotlight on the roof was a practical fitment for easy reading of signposts. A Riley also won the smallest class, a neat black car with aluminium finished wheels.

The full saloons showed little of sporting interest, but it is interesting to note that Stott's car was the one which he drove to Monte Carlo.



Winner of Class 4, S. Hains with his beautiful Park Ward Roles-Royce Continental Saloon.

RESULTS.

COACHWORK COMPETITION RESULTS.

(In each class (a) signifies over 16 h.p. (b) 10 h.p. to 16 h.p. (c) up to 10 h.p.)

Class 1. Open two-seaters.—(a) M. L. Curtis (Ford); (b) Mrs. N. A. Moss (Marendaz Special); (c) W. Waddicor (Riley).

Class 2. Open four-seaters. (a) H. E. Symons (Siddeley Special); (b) 1st, G. W. Olive (Standard Avon); 2nd, T. C. Mann (Lagonda); (c) 1st, J. M. Archer (Lanchester); 2nd, F. S. Barnes (Singer).

Class 3. Two-door two-seater coupes.—(a) E. Ainsworth (Standard Avon); (b) Mrs. G. Daniell (A.C. Ace); (c) F. R. G. Spikins (Singer).

Class 4. Occasional four-seaters and two-door sports saloons.—(a) 1st, S. Harris (Rolls-Royce); 2nd, Major N. Stewart-Dawson (Rolls-Royce); (b) 1st, S. B. Wilks (Rover); 2nd, Miss L. M. Roper (Armstrong Siddeley); (c) C. J. Joyce (Crossley).

Class 5. Four-door sports saloons.—(a) 1st, C. W. Ward (Rolls-Royce); 2nd, F. Bilton (Rolls-Royce); (b) 1st, F. Gordon Crosby (Riley); 2nd, D. Pamphlett (Talbot); (c) 1st, Mrs. R. Gough (Riley); 2nd, Lt.-Col. A. M. Wilkinson (Crossley).

Class 6. Full saloons, limousines, landaulets and coupes de ville.—(a) G. E. Stott (Daimler); (b) 1st, R. W. Cracknell (Daimler); 2nd, W. G. McMinnies (Armstrong Siddeley); (c) 1st, Miss M. E. Mein (Lanchester); 2nd, Miss P. Naismith (Standard).

Champion car over 16 h.p.—C. W. Ward (Rolls-Royce).

Champion car, 10 h.p. to 16 h.p.—S. B. Wilks (Rover).

Champion car up to 10 h.p.—C. J. Joyce (Crossley).

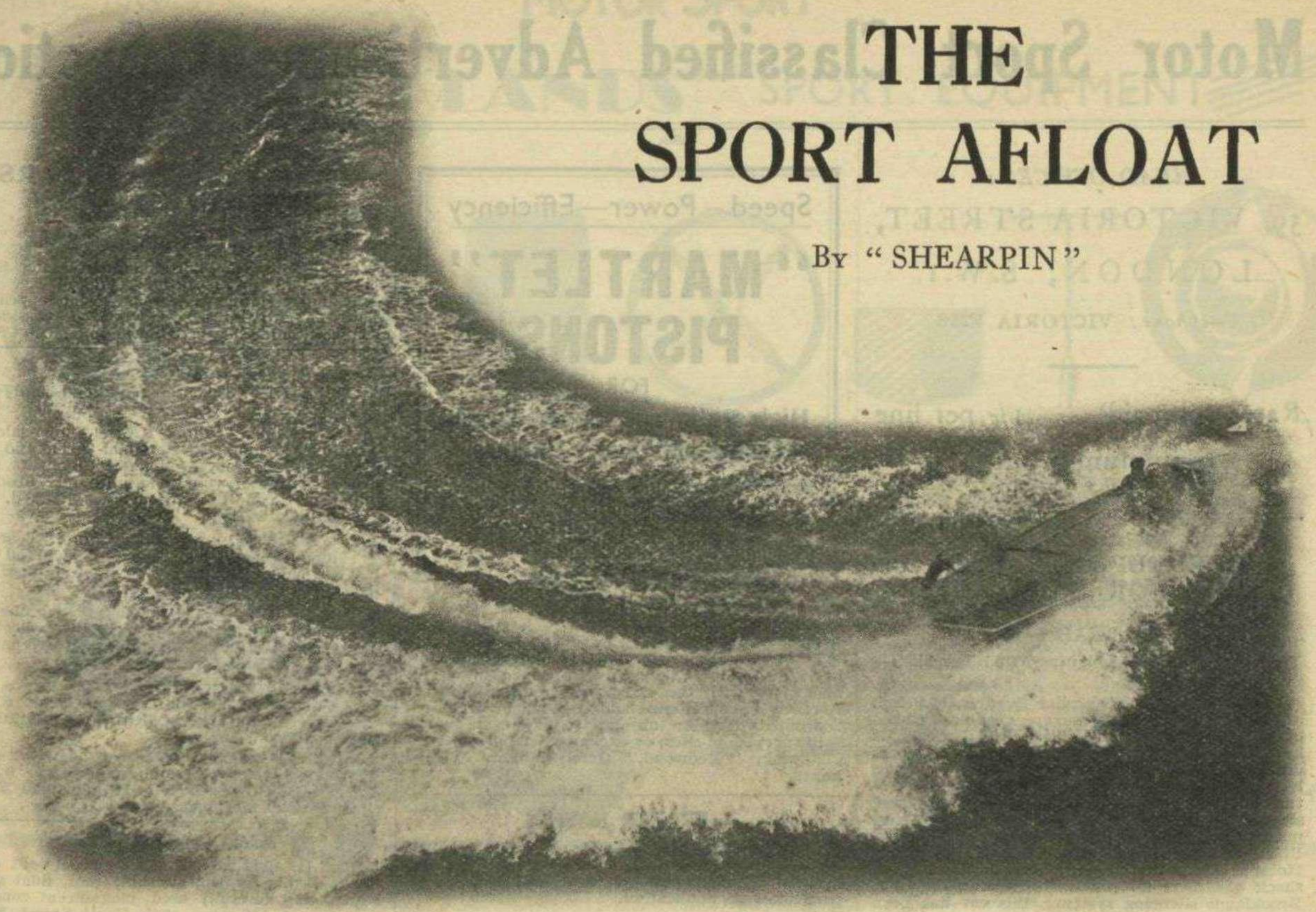
A NOTE OF WARNING

A clear, penetrating horn is an essential part of a sports car's equipment, and the note of the new Sanor R2 is of such volume that it positively commands attention. In addition, the Sanor horn is a striking ornament to a car's appearance as will be seen from this illustration. The model R2 has twin chromium plated trumpets, with variable note, and is sold by C.H.S. Supplies Co., Ltd., 32, Shaftesbury Avenue, London, W.1, for the sum of £9 : 15s. : 0d.



THE SPORT AFLOAT

By "SHEARPIN"



A FAST LIFE

A REALLY FUNNY MOTORBOATING FILM.

IN the little M.G.M. Theatre there issued a series of guffaws punctuated by roars of hearty laughter. A group of sour-looking critics and representatives of motor sport sat watching one of the funniest films to be shown recently.

Many of us have often thought what an amusing film could be made around a motorboat story, but few could have visualised the wealth of glorious fun in "A Fast Life." Can you imagine William Haines hanging onto the side of a yacht while his mechanic in a hydroplane is being chased round and round by a police boat? Visualise the mechanic, who has not said a word, being 'socked' on the jaw by a girl mind-reader; and William Haines selling a joy ride to the owner of the runabout in which he is taken!

The technical side of the film is appalling. Not that it matters in the least. But, of course, a supercharger does not "build up so much compression that the boat catches fire." Nor is a "petrol turbine" a great success at the moment. The mechanic, Ukalele Ike, produces the same carburettor top, and screws on the same union, eight times in one scene, while William Haines mounts and unmounts the same dynamo seven times. Between every one of these slightly unsound operations, there is, however, a rich and fruity "wisecrack", and you find yourself wishing that the supply of dynamos and unions were unlimited.

Although the racing scenes are perfectly shot, the technical side is again inaccurate. The big race is obviously meant to be the Harmsworth Trophy, but all the boats but one are hard-chine runabouts, Chris Craft, Dodge, Harker Craft and all the rest of them. We shudder to think what Mr. Scott Payne will say when he sees the Hollywood idea of "Miss Britain."

There is also a girl in the picture, but this of course, does not interest MOTOR SPORT readers. What? It does? Well, her name is Madge Evans.

R. C.

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F.O.C.H. 1929 (late) 7 h.p., "Black Prince," long 4-door de luxe saloon, black and cream, F.W.B., wire wheels, bumpers, excellent tyres, exceptionally good condition. 52 gns.

F.O.C.H. 1925, 7 h.p., short chassis 2-seater, starter, very good running condition. 9 gns.—3/5, Heath Street, N.W.3. Hampstead 2215/6. Open Sunday mornings.

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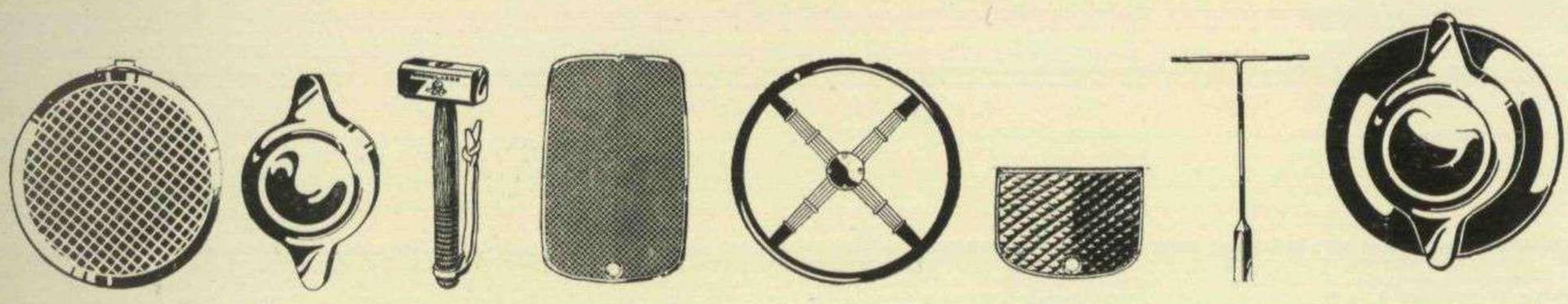
WANTED.—ANZANI engine. Boulogne type or similar, suitable for Frazer Nash.—Johnson, Ashley, Dunmurry, Belfast.

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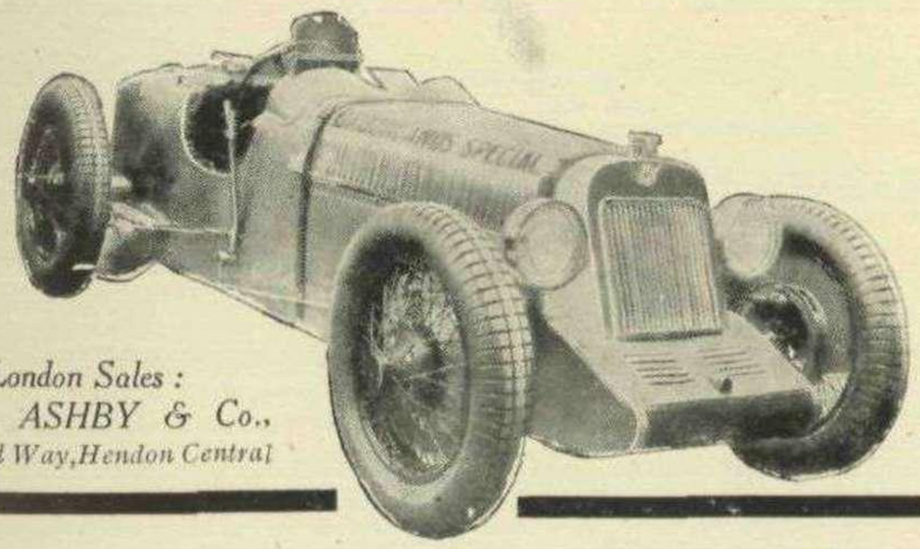
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