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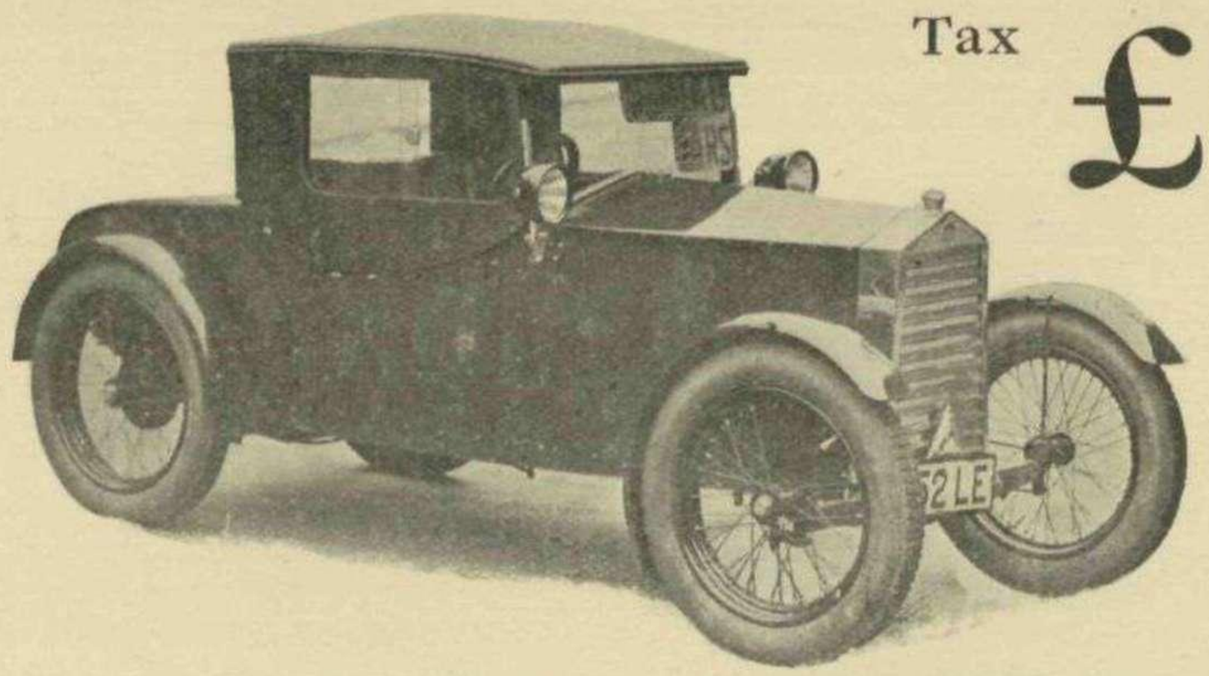
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Edited by RICHARD TWELVETREES, A.M.I.MECH.E., M.S.A.E., M.SOC.ING.CIV. (France).

FEBRUARY, 1927.

EDITORIAL NOTES.

Ramblings, Rumours and Reminiscences.

Being Asides About All Sorts of Things..

IT is the little things which count for so much in motoring and one always sympathises with the individual who insists on doing everything to his car by himself. Perhaps the washing of one's own car may be considered as carrying things to an extreme, but during a somewhat messy operation many useful observations can be made, and at such times elusive squeaks and rattles, otherwise baffling, can be detected. Personally, I think, the washing of cars is a much neglected art, for the average garage hand does not care a tinker's cuss for the reasons for car cleanliness; an external rub and polish passing as a method for collecting a few shillings from the owner for a perfunctorally performed job.

In the days when coachmen were trained as chauffeurs the standard of car appearance and longevity was much higher than it is to-day and if people would only spend a little time with hose, sponge and leathers, it is certain that greater all round improvement would result.

Speaking of doing things oneself, I had a sharp reminder quite recently. Having my car filled at a pump, my journey was continued, when suddenly without any warning a sheet of flame burst through the floor-boards. The car was stopped hurriedly and on opening the bonnet the whole engine was discovered to be ablaze and not due to an ordinary carburettor conflagration either. It looked a case for retiring whilst the petrol tank blew up, but a few seconds hectic efforts with my cap and gloves quelled the flames. Then the cause was discovered. The man who filled the tank neglected to screw the filler cap down tightly and it had worked off, swamping the engine as the car accelerated. Theoretically, I believe petrol will not ignite in the open without an exposed spark or flame, but if the latter did not exist theoretically, the equivalent was there in fact and but for the merest stroke of luck my car would have become a charred ruin at the side of the road some eighty miles from home.

If tackled in the right way, there is no cause for great alarm should a backfire cause the carburettor to catch on fire; but things become complicated when there happens to be a collection of oil and waste petrol in the undershield—another argument in favour of cleanliness. Directly the flames are observed, the petrol tap should be closed and then on accelerating the engine to its fullest extent, a few seconds will suffice to exhaust all the fuel in the float chamber and the fire becomes automatically extinguished. Apart from all that, there is much to be said in favour of including a Pyrene extinguisher as part of the car equipment. It may never be wanted, but when an emergency does arise it is wanted very badly. The replacement of a burnt out car may be covered by your insurance, but one generally prefers to save the bus, be the insurance company never so generous.

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EDITORIAL NOTES—continued.

By the time these lines are in print we all hope that Capt. Malcolm Campbell will have overcome the experimental difficulties with his Napier-Campbell. Campbell is nothing if not enterprising, but one wonders just what induced him to start out for hitherto unattained speeds with a gear box so tremendously unorthodox in design. Progress, of course, depends on experimental research, but Pendine Sands and 200 m.p.h. sprints hardly seem ideal for the purpose. There *may* be advantages in epicyclic gearing for racing monsters, but at the risk of appearing conservative one would suggest something less experimental than the change speed gear used by Capt. Campbell on his unlucky attempt to beat Parry Thomas' "Babs", which is a super-tuned giant built on well tried lines.

Then again, from a practical point of view, how far do such performances benefit the motoring public, or even the sporting motorist? The whole idea seems to be wrong for cars in general use are never likely to develop on the lines of these huge speed monsters. Too much, it seems, is being offered upon the altar of Publicity and if the cost of the Napier-Campbell and the brains devoted thereto had been exerted in producing a really British sporting car, such as is really needed to cope with foreign competition, one could get quite enthusiastic about the proposition. Aero engines have their proper sphere, their influence on car design has been accepted, but attempts to use them for 200 m.p.h. sprints in dangerous and unwieldy cars, do not appear likely to benefit the development of the class of car needed for modern motoring conditions.

* * *

The new B.S.A. "special sports" 493 c.c. side valve model, a photograph of which appears on p. 246 should prove of great interest to the competition rider and the clubman. The idea has been to provide a machine having a distinctly lively performance without the added expense and complications of overhead valve engines, and as far as one can see, the new model should make a very strong appeal to the class of rider for whom it has been produced.

A light aluminium alloy sports type two-ring piston gives a much higher compression ratio than the standard piston and further efficiency is secured by the careful polishing of both ports. The top gear ratio is 4.8 to 1 and the engine is capable of revving to a high rate, thus ensuring a maximum road speed calculated to delight the speedman. In appearance the whole machine is exceptionally neat and workmanlike and the specification includes a Terry saddle, knee grips on the petrol tank, new pattern quickly detachable carrier, steering damper, plated silencer and exhaust pipe, and special sports handlebars. Standard up-to-date practice is followed in such items as mechanical pump lubrication, shock absorbers on the front forks, internal expanding brakes on both wheels and 27in. by 2.75in. Dunlop cord tyres. The complete machine weighs 265 lbs. and is listed (ex works) at £49 10s.

There must be some basic reason for the horrible state in which many of the motor firms in this country find themselves and all sorts of commissions set out for America from time to time in order to study the conditions that make things so successful over there. Speaking as an ordinary individual with very little experience of *business* on the lines in vogue in this country, I could suggest a remedy for much of our industrial trouble. We grouse at the workman who endeavours to limit output and perhaps with reason; but have you ever tried to do any business with anyone of importance in any motor or allied firm at 9 a.m. or 9.30 a.m. in the morning? Of course not, because he will not be out of bed. You might want to buy a car at that hour, but even in Great Portland Street I doubt if the chinking of gold or the rustling of notes would strike on any ears but those of the cleaning ladies.

No, at 10.30 the captains of industry begin to arrive; at 11.30 or, as soon as possible, something round the corner requires attention; then lunch, the real business of the day, begins at 12.30 and lasts until about 3.0. A murrain on your commissions to America, gentlemen, begin work sooner and pull your weight in the boat like the *marvellous* Yankees do. I remember a man who was associated with Sir Herbert Austin in the early days, talking of the example that great pioneer set to all his subordinates. "The chief worked so darned hard all the time," he said, "that one felt an absolute fool if assailed by any inclination to slack." As far as one can see the missing ingredient in the recipe for success in the motor world is ginger, manufacturers, agents, repairers all suffering from the same complaint to a greater or a lesser degree.

* * *

Rumour is busy again anent the coming racing season. Glen Kidston, if the reports are true, intends to race again with something very special from Molsheim. Major Coe will probably be seen at the wheel of a new Alfa Romeo and there are quite a lot of promising aspirants for worlds records in the 1,100 c.c. class.

* * *

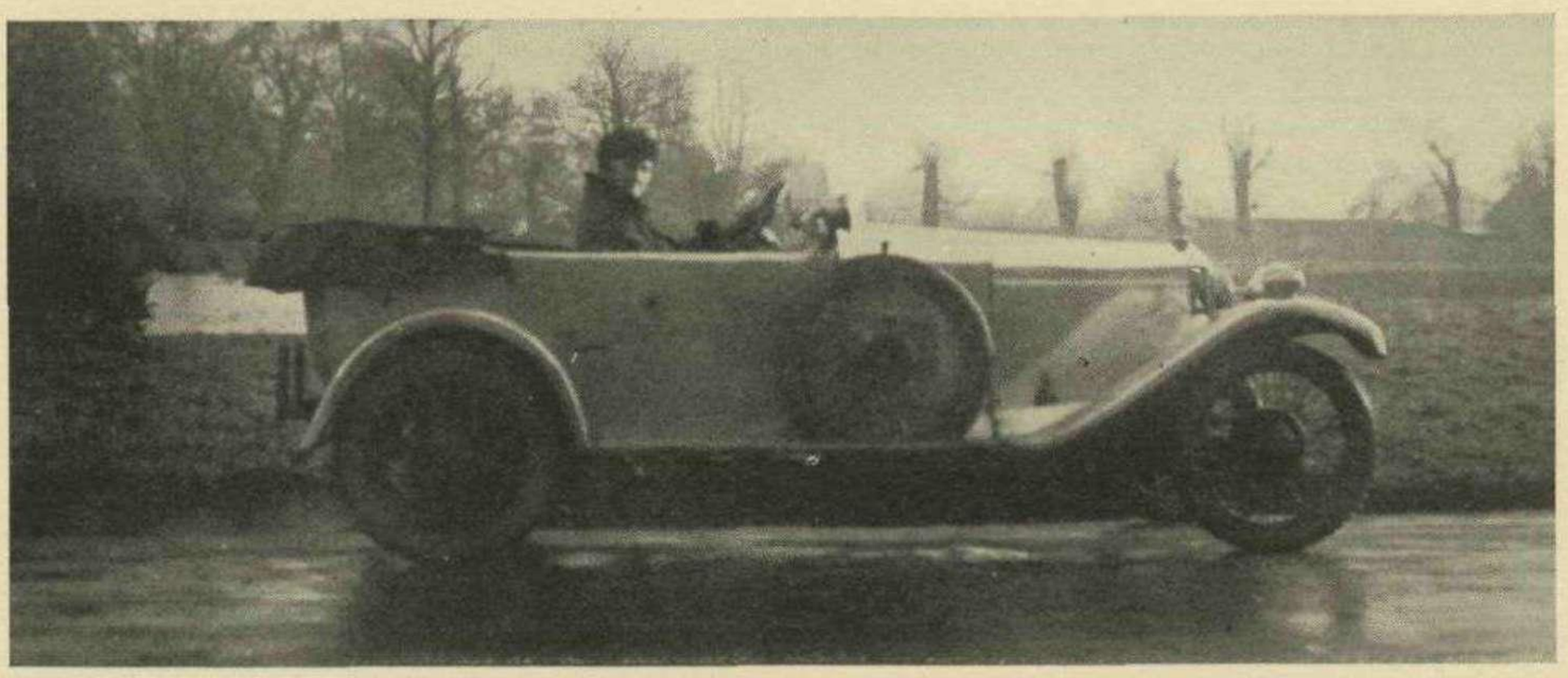
Among the speeches at the Annual Banquet of the Essex Motor Club were two worthy of special mention, the first being by Mr. Bertram Marshall who in proposing the toast of the R.A.C. and the A.C.U. stated that not only were club members suffering under the ban of the S.M.M.T. on competitions, but also the trade was being seriously affected. Pointing out the interest displayed by the public in motor trials Mr. Marshall asked if the time had not arrived for a revision of the ruling on this vital matter.

In his reply Commander Armstrong of the R.A.C. stated that the Royal Automobile Club was entirely sympathetic with regard to the promotion of trials but they had no voice in the matter, as the decision was arrived at by the Council of the S.M.M.T., who, it was stated, still maintained the same views which led to the banning of most of the events hitherto participated in by their members.

SPORTING CARS ON TEST.

THE FRAZER NASH SPORTS-TOURER.

By RICHARD TWELVETREES.



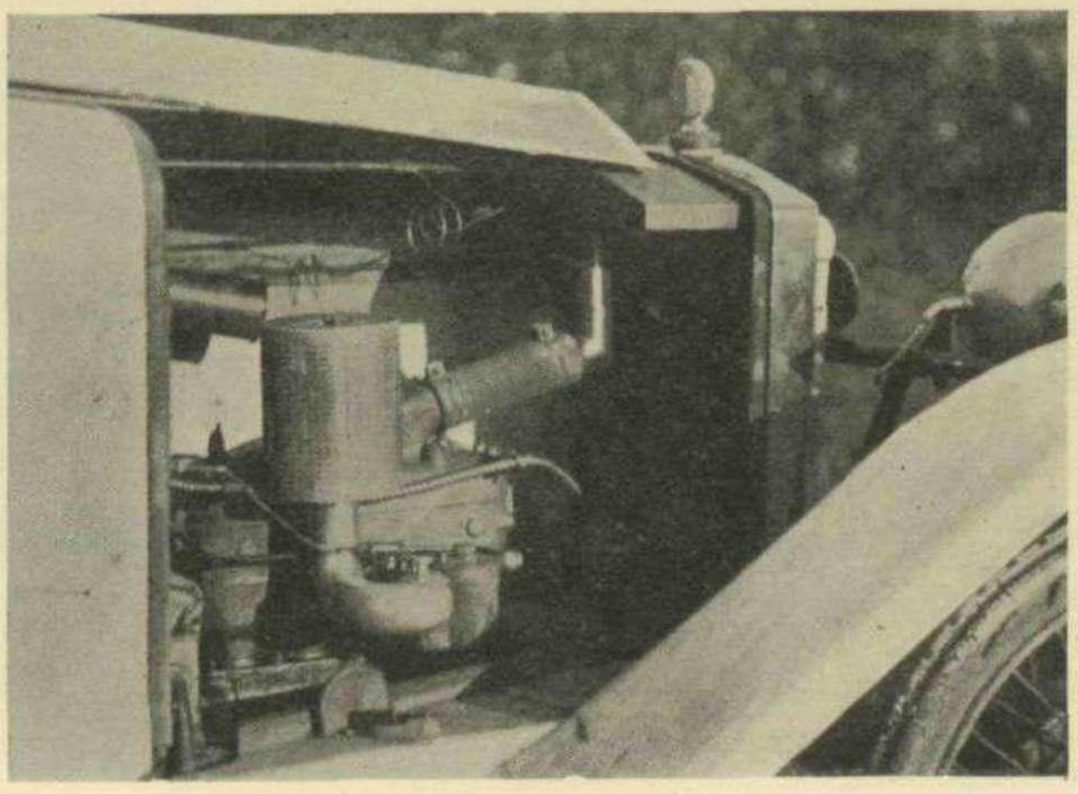
TO many motorists the term of "sports" as applied to a car conjures up one of two things, either a small, speedy and somewhat uncomfortable machine, or a highly expensive model capable of great acceleration, high maximum speed and a reasonable amount of body accommodation; but the advantages of the latter are seldom to be found in cars within the purchasing powers of the man of moderate means.

Like many another motorist, my own leanings are in the direction of a car with an attractive turn of speed, reliability of the M.C.C. order and such regularity of performance that will ensure road service for seven days a week. When one has a small amount of cash available, there are many nippy little cars waiting to be bought, mostly of the two and three seater class. There are also machines of the ultra-sporting category which make constant demands upon one's time and purse in order to maintain the maximum efficiency and sometimes to keep in roadworthy condition at all; but directly a selection is directed towards any real combination of speed and service, it becomes obvious that this can only be secured for a relatively high initial cost.

In looking round for a car to fulfil the above requirements, my choice fluctuated between the delightfully mischievous Bugatti, the Amilcar, the Salmson and the Senechal. The first was rejected because of its need for more attention than my lazy disposition permits and the others owing to the limited body space available in the fast models. Having had but little experience of the Frazer Nash car, I classed it as an admirable machine for competition work but regarded it somewhat as a "bag of nails" unsuited to hard work for ordinary purposes. In this I was wrong, for though like other cars the Frazer Nash has its faults, some 7,000 miles hard work in the last three months has increased my respect with regard to its general reliability. Having had this experience, I could of course give far more details than has been possible with other makes dealt with previously in this journal, but the review must be treated in the same way as the others, where the observations have been made during ordinary test runs.

My first run on a Frazer Nash four seater was made in October last, when it occurred to me that a slight increase in the size of the body would be an improvement from my point of view. On mentioning this to Capt. Frazer Nash he immediately offered to build a special body and fit a wider rear axle to give the necessary clearance. Even the request to design a special facia board equipped with a goodly array of instruments did not dismay him and what is more to the point he promised delivery and completed the car within three weeks of receiving the order. Most other makers were willing to add my name to a long waiting list, but could only supply standard models in all respects, none of which quite filled the bill.

As there may be readers who require a sports-cum-utility car I will give a few details of the special Frazer Nash illustrated by the accompanying photographs.



A PROTECTOMOTOR AIR FILTER IS FITTED TO GUARD AGAINST CYLINDER WEAR.

SPORTING CARS ON TEST—continued.

The chassis is a standard super-sports model with an Anzani engine and a 4.1 to 1 top gear ratio on account of the extra weight of the body and equipment, the various late improvements including a modified clutch, special road springs, front wheel brakes, a new mounting for the radiator and a sturdy arrangement for the support of the front wings and lamps.

Ample leg room is provided in the front seats, which with their pneumatic upholstery and sliding adjustments are extremely comfortable. Two adults can travel with comfort in the rear seats if they are not addicted to sprawling their legs and if the driver and his front passenger are not too fat, extra room can be afforded to those at the rear by sliding the seats well forward. The large single door on the near side gives easy access to all seats and also permits of a very rigidly constructed



ALWAYS A " GOOD LOOKER " THE APPEARANCE OF THE FRAZER NASH IS ENHANCED BY THE BENJAMIN RADIATOR SHUTTERS.

body, the bodywork of a the Frazer Nash car having previously been somewhat on the flimsy side, according to my information. The new lines of this four-seater body are distinctly pleasing as the " hump " between the end of the bonnet and the windscreen has been avoided, thus giving a very graceful appearance. It was originally intended to fit a flat double windscreen as illustrated on the model described in an earlier issue, but at the risk of sacrificing a little comfort for appearance the Vee screen shown was finally decided upon.

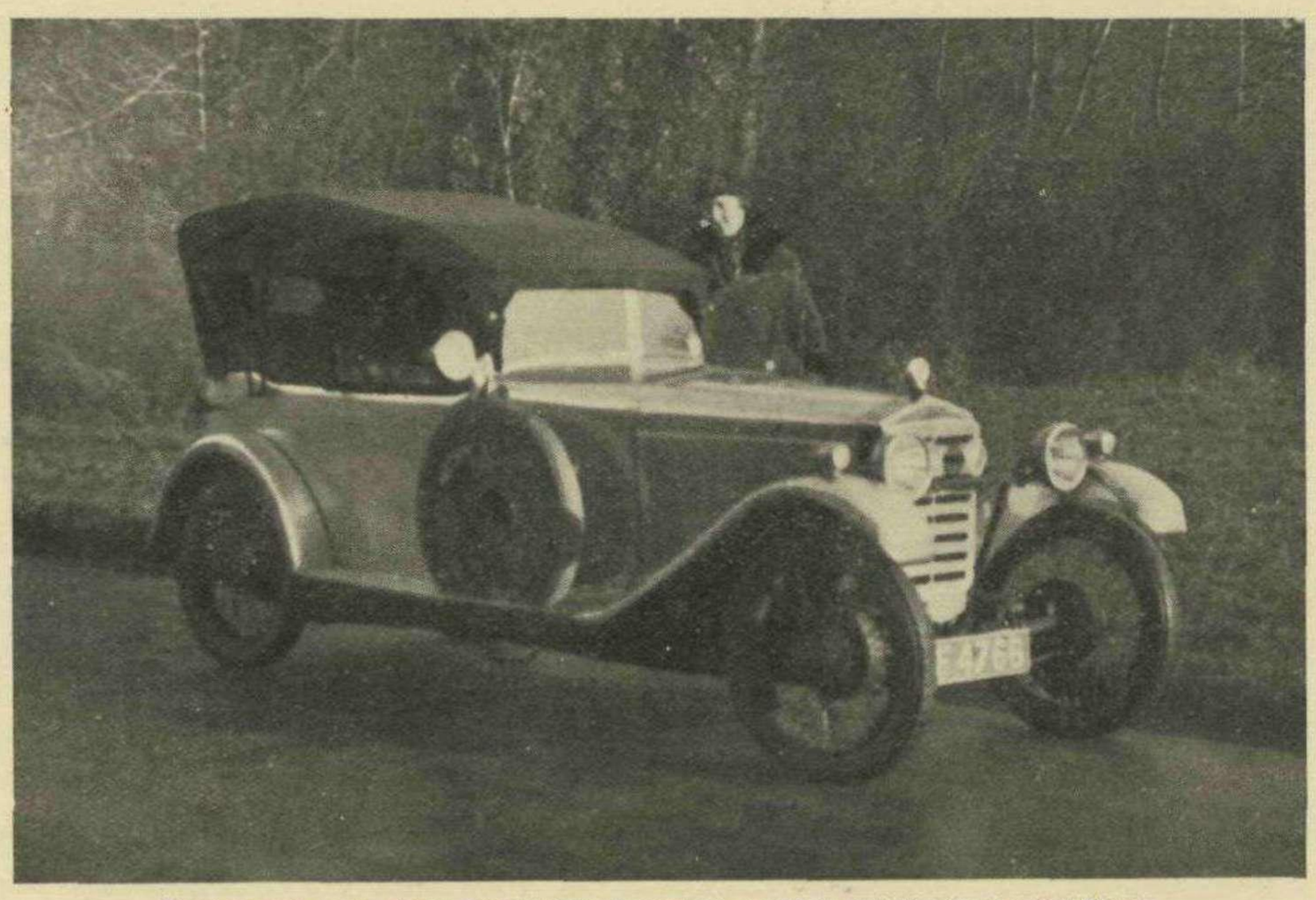
As a matter of fact this screen is entirely satisfactory and keeps out all but a few drops of rain in the worst showers. The low hood and side curtains turn the open sports car into a very cosy little all weather car, which if a little warm when closed up, certainly excludes all draughts and rain.

Running the car during the winter months convinced me as to the desirability of maintaining the correct engine temperature, for the radiator is actually too efficient and the cooling water seldom reaches 70 deg. centigrade. By the combination of a Benjamin radiator shutter and a Boyce motormeter, however, it is easy to keep the engine nicely warm, which makes a decided improvement both as to efficiency and fuel economy. This form of shutter, which incidentally is the least expensive on the market, is free from rattles and works admirably in all respects.

To guard against possibilities of cylinder wear, reported to be one of the weak points in the Anzani engine, a " Protectomotor " air filter was fitted, which supported from the carburettor by a neat aluminium cast pipe, makes a very workmanlike job ; but, of course, its true worth will not be discovered until the rain gives place to dusty roads.

As the capabilities of the Frazer Nash are well known to our readers it is unnecessary for me to dwell at any length on the subject, especially as with this particular car the highest ultimate speed has been sacrificed to general utility. But, nevertheless, it can travel quite fast and recently in a twenty-four mile " all out " run, with four aboard, the car showed a clean rear number plate to the two occupants of a more expensive super-sports two-seater of known performance and touched an accurate 73 m.p.h. on several parts of the trip. At this speed it ran dead steady, steered without effort, took corners fast and could be slowed down, giving a feeling of the greatest security. Though remarkably steady on greasy surfaces, the car possesses the pleasing peculiarity of skidding when required to turn sharp corners, but always straightens up at the will of the driver at the correct instant required, which makes quick cornering a most fascinating manœuvre.

SPORTING CARS ON TEST—continued.



THE HOOD AND SIDE CURTAINS PROVIDE AMPLE WEATHER PROTECTION.

With a little pactice, gear changing can be done without using the clutch, and the dogs will engage so smoothly that passengers suspect friction drive, which is excusable owing to the entire absence of transmission disturbances on all ratios. Some attention, however, must be given to the accurate adjustment and lubrication of the clutch operating mechanism as failure of the clutch shaft to stop causes damage to the corners of the first gear dogs on engagement. Thus the slight rounding of the dogs causes the first gear to jump out of mesh when the engine runs fast—a very disconcerting thing when hill-climbing at high speeds on first gear. Correct chain adjustment is, of course, very important, but in regulating the tension of the chains a compromise has to be effected, as usually the second gear chain is rather on the tight side, unless the others are left a little slack. This, apparently, is due to some slight inaccuracy of the chain centres, which, however, is not of any serious magnitude.

The lining of the brakes has good wearing properties but emits a peculiar smell when long application is made, but on the whole the brake mechanism is entirely satisfactory.

One of the mechanical peculiarities of the Frazer Nash transmission is that the feathers, or keys, on the countershaft carrying the driving sprockets must fit loosely as otherwise the act of gear changing is said to create burrs which will cause the sliding dogs to stick. Theoretically there is no reason for such an argument, but one must be guided by the experience of the manufacturers, though personally I should like to try properly proportioned splined shafts in place of those hitherto fitted. My experience of the chain transmission has been entirely satisfactory and given proper attention to lubrication there seems no reason why the chains should not give very great mileage before any replacements become necessary.

Petrol and Oil Consumption.

In the matter of fuel consumption the Frazer Nash is quite satisfactory and as fitted with a mixture to give the maximum speed and acceleration, using the car largely for town as well as long distance work, an average of nearly 30 m.p.g. to obtained. This can be increased to 35 or 40 m.p.g. if one is content with a less powerful kick on starting and a maximum speed of about 60-65 m.p.h.

When supplied the oil pressure was set at about 80lbs. per square inch, but as soon as the first 1,000 miles was covered, a weaker spring on the pump reduced it to 30lbs. per square inch and since then the oil consumption has been quite normal, i.e., about 1,000 m.p.g. This is very good for a Frazer Nash car and is probably due to the care taken during the running in process and frequent renewals of oil in the base chamber.

The ultra-rapid acceleration coupled with the absence of a differential is apt to create rather excessive wear on the treads of the rear tyres, but with reasonable luck, one should get about 10,000 miles from a set of covers.

Advantages of Aluminium Finish.

On the question of finish for the bodywork, some people are averse to aluminium, firstly on the score of the trouble in keeping the metal clean and, secondly, because it is supposed to attract unwelcome attentions from the police. Agreed, that aluminium for the wings is somewhat of a mixed blessing owing to the possibility of cracks developing, the use of the metal generally unadorned with paint has many advantages. It is easy to wash and requires far less attention than paint and varnish, though more elbow grease is required. Even through the muddy season an all-aluminium car is, in my experience, easier to keep clean than any other, and certainly nothing looks quite as smart.

(Continued on page 242).



MOTORING SPORTSMEN.

Mr. S. G. Cummings.

By THE EDITOR.

KNOWN to the younger motor sportsmen as an energetic official at the leading motor events at Brooklands and elsewhere, Mr. Sidney George Cummings figured successfully at the wheel in pre-war days, and though no longer participating in trials and races, his keen interest and valuable assistance goes far in maintaining all the best traditions of the great game.

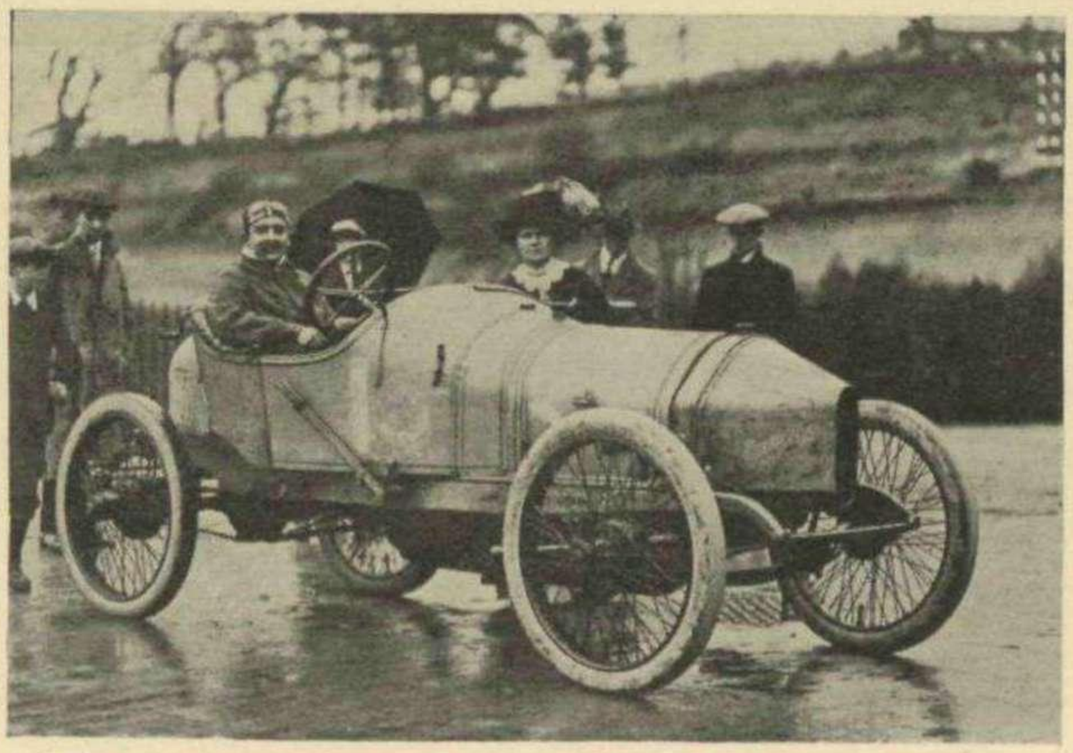
Educated at a private school, Sidney Cummings began his career in the counting house of a city merchant, and sticking the job for as long as was humanly possible in deference to his parents' wishes, a term of twelve months found him thoroughly convinced that this was not his right *metier*. Looking round for some occupation more suited to his natural inclinations, he was offered a start in a small cycle factory, which was much more to his taste. Thus at the age of seventeen years he began to acquire a fair amount of mechanical skill ; for at that time cycles were built throughout by small firms, similar to that in which he was employed. Frames were built up and brazed without much in the way of jigs and such jobs as wheel building called for that degree of accuracy which he afterwards used with good effect on motor vehicles.

Mr. Cummings was in his younger days a very keen cycle racer and gained numerous successes on machines of his own make. His trophies comprise a large collection of cups, medals and other awards won as an unattached rider on most of the grass and cinder tracks all over the country.

In the year 1894 Sidney Cummings migrated to Lincolnshire as he had heard of a firm with which there was a chance of a start in the new motor industry, and taking on a job as improver, he put in four very useful years in gaining experience. In those days there was some romance in the motor business, the very design and construction of the early vehicles being weird and wonderful. Motor cycles had not yet appeared in a commercial form, but anyone in search of mechanical excitement could have all they wanted astride the early makes of tricycles with cumbersome engines, exposed gears, tube ignition and the glorious uncertainties of the primitive apparatus known as the surface carburettor.

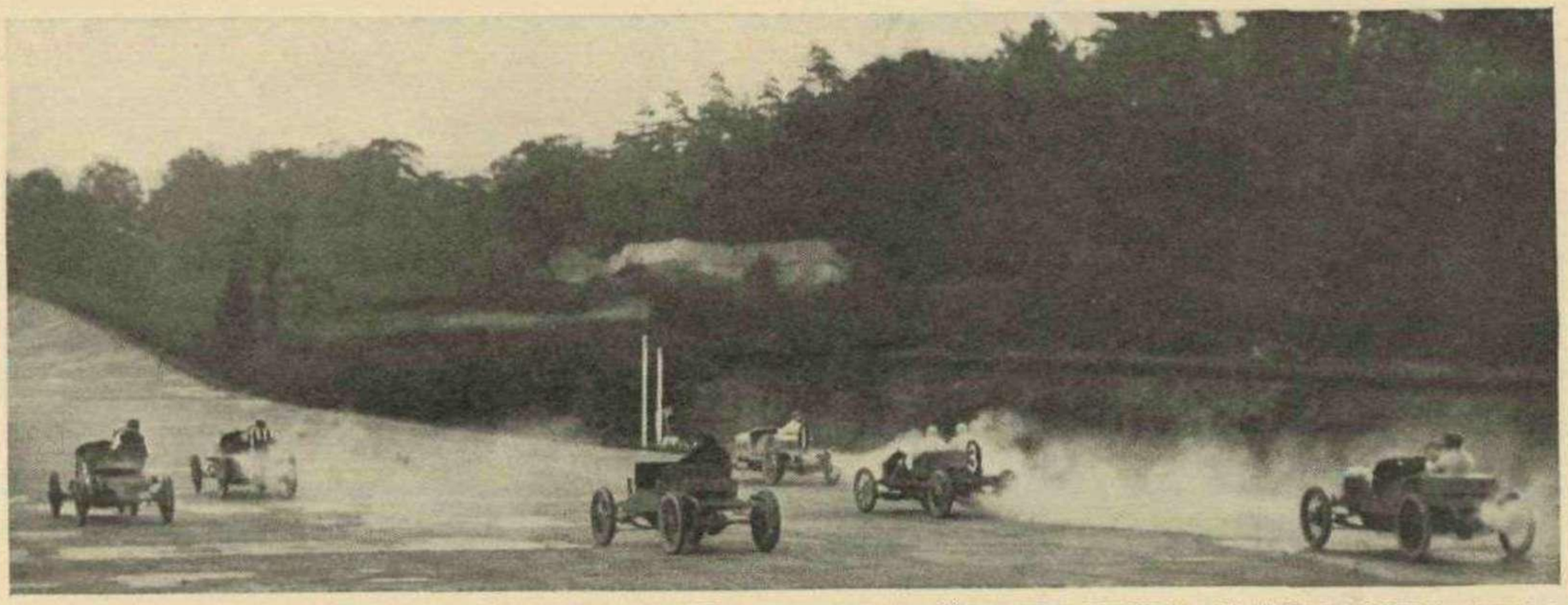
In the voiturette category the predecessor of the Morgan was represented by a quaint vehicle built by Bollée, which had a horizontal air cooled engine, coffee mill steering and an adjustment for moving the rear wheel to tighten the belt, in lieu of a clutch. The Bollée would certainly go sometimes, but which end went first depended upon the state of the roads for skidding and *volte faces* were amongst its more noteworthy achievements. Benz, Star and Marshall dogcarts were the chief makes of car claiming Mr. Cummings' attention and by studying their peculiarities from a practical mechanic's standpoint, much valuable knowledge came his way, though possibly making them go at all was more important than securing " tune " as we know it to-day.

By the end of the year 1898, Mr. Cummings saw great promise in the motor business and resolved to commence on his own account, so returning to London, he rented a small shop in College Street, South Kensington and began dealing in motor cars. Since that time he has conducted business much on the same lines in the district, occupying premises at 101, Fulham Road to-day.



S. G. CUMMINGS AT THE WHEEL OF ONE OF HIS OWN PRODUCTIONS, A 1912 CUMMIKAR.

MOTORING SPORTSMEN—continued.



THE START OF A RACE IN THE EARLY DAYS OF BROOKLANDS. FOR THE NAMES OF THE DRIVERS, MANY OF WHOM ARE FAMOUS, SEE BELOW.

In the early days of the motoring movement, a trader had to perform far more for his clients than is the case to-day. When a car was sold it had to be delivered, often to some remote part of the country and as salesmen-demonstrators were few and far between Mr. Cummings usually had to drive the cars to his customers' residences himself. Now, a journey of one hundred miles or so on a single cylinder Decauville or a spluttering Benz with a modified form of gas engine tucked away under a piano-like back, called for a large amount of practical knowledge, to which had to be added the aptitude for imparting such information as would enable the purchaser to handle his machine on the road; so that the qualifications demanded by a motor dealer were of a very comprehensive nature. Mr. Cummings, nevertheless, managed to carry his job to a successful issue where so many others failed, and later on obtained the sole concession for Scar cars, manufactured at Rheims, which he introduced into this country.

Early Competition Experiences.

Recalling his experiences as a trials competitor, Mr. Cummings told us of his adventures in the Scottish Six Days Trials in 1909, in which he drove the smallest car entered, a 10 h.p. Martini. After many vicissitudes he managed to complete the route, and though his car caught fire on the moors he was not defeated and finished the last three days' journeys with high tension ignition wires completely denuded of all their insulation.

As a progressive business man, with a strong sporting instinct, Mr. Cummings recognised Brooklands both as an opportunity for bringing his cars before the public, and for enlarging his technical experience, while also providing a useful hobby soon caught him in its spell.

From the year 1910 until the track was taken over by the military authorities at the outbreak of war, Sidney Cummings raced standard Scar cars at every meeting and gained many successes. At first capable of lapping at 65 miles per hour, these cars were tuned by Mr. Cummings until the lap speed was increased to 78 miles per hour. His example was soon emulated by other enthusiastic Scar owners, mostly Cambridge men and among others Mr. O. D. Pollack, Mr. J. H. Whitlark, Mr. Clive Joicey and Mr. McCormack took part in races at Brooklands.

Quite in advance of the times in his views concerning the car of the future, Mr. Cummings designed and manufactured a four cylinder light car, known as the Cummikar, in 1912. This was a smart little vehicle built on very advanced lines with a Ballot engine and assembled components. During the first two years after its appearance some two hundred and seventy Cummikars were sold, but the production was stopped by the war and never re-commenced.

One of our photographs depicts Mr. Cummings at the wheel of a Cummikar tourer, tuned up for racing, at the conclusion of an event at Brooklands. The method of increasing the gear ratios by fitting large diameter road wheels is interesting, as is the early interpretation of a streamline body.

Another interesting souvenir of Mr. Cummings' racing exploits is to be seen in the view at the start of a race on this page. Reading from left to right the competitors are Armand Bovier, of Salmson fame, on a Schneider; Sidney Cummings on a Scar; the driver of a Vivinus', Boissy on a Peugeot; Bayliss and Coatalen, the Sunbeam designer, both on Sunbeams.

Mr. Cummings only raced once at Brooklands since the war, when he appeared at the wheel of his daughter's



ONE OF MR. CUMMINGS' DUTIES, CLEARING THE COURSE AT SKEGNESS.

MOTORING SPORTSMEN—continued.



MR. CUMMINGS CHATTING TO MISS LISTER, A WELL KNOWN BROOKLANDS COMPETITOR.

Sunbeam and ran into the third place in one of the 90 m.p.h. long handicaps.

Since giving up actual participation in racing Mr. Cummings has maintained the greatest enthusiasm for the sport, and is one of its most loyal adherents, being much in demand as an official by many clubs apart from the Essex Motor Club of which he has been president for sixteen years. It is largely due to his efforts, in conjunction with those of Mr. E. Bass that the combined Essex M.C. and Automobile Club de Nord de France meetings at Boulogne have become such successful and popular events, now figuring in the list of International meetings of the year.

Among the trophies competed for at this meeting are the Cummings Cup for the first British car to finish in the Coupe Boillot race, won in 1925 by Major C. M. Harvey on his Alvis and in 1926 by Dr. Benjafield on his Bentley. Mr. Cummings also presented another cup for the best British performance in the light car Grand Prix, which was awarded to Mr. G. E. T. Eyston on a Bugatti.

As an advocate of long distance racing Mr. Cummings suggested the Hundred Miles handicap to the committee of the Essex Club, the idea being eagerly taken up and put into effect, as our readers know.

Amongst his hobbies, the tuning of his daughter's racing cars occupies a very prominent place and in his opinion the Bugatti is first favourite for long distance racing, the Frazer Nash being indisputably the best proposition for sprint work. Fishing is one of Mr. Cummings' recreations and yachting also claims his attention, his large yacht with a 50 h.p. engine and accommodation for twelve persons being largely used for coastal voyages in holiday periods. An enthusiastic Mason, Mr. Cummings holds high rank and devotes a good deal of time to various masonic duties.

We feel that the interests of sporting motorists generally are all the better for the active support of Mr. Cummings who understands the game from beginning to end.

SPORTING CARS ON TEST—*contd. from page* 239.

As the Frazer Nash is a neat and unobtrusive little vehicle, capable of rapid deceleration as well as acceleration it does not get its owner into trouble on sight, as do some sports models; but if fitted with the Brooklands type silencer and fishtail exhaust pipe, it is advisable not to accelerate rapidly on the lower gears in police infested areas.

There are certain mechanical details that might be criticised and the car would be better for improved methods of manufacture; but once the owner has overcome what may be described as analagous to "teething" troubles by tightening up things generally, no better little sports car could be desired. For riding comfort, ease of control, road holding and maintenance of tune it is unquestionably excellent. Perhaps it is somewhat on the expensive side; but still, in my opinion, it occupies a class quite on its own and is always ready to go anywhere at a moment's notice, be it to Lands End on an M.C.C. trial or a quick run to the other end of the country in pursuit of "tripe" connected with journalistic affairs.

At present the car is doing about 2,000 miles a month, but as soon as the sporting season begins it will have to work really hard and as far as I can see at present, it is likely to acquit itself very creditably, in the tasks it will be called upon to perform.

"COLONIAL" TRIALS ABROAD.

Recent reports from the Straits Settlements tells that the enthusiasm of motor-cyclists for mud-splashing trials is not confined to this country. The Singapore A.C. held a reliability trial a short time ago, in which fifty competitors, European and native, took part. The route led through a very boggy section, in which the machines sank hub deep. A decided English flavour was lent to the occasion by rain, which persisted throughout the trial. The premier award, the Goodyear Cup, was won by Loke Yaik Foo mounted on a B.S.A. He completed the difficult course with a total of ninety-eight per cent. marks.

SPORTING MACHINES ON TEST.

The 4-valve Sports Rudge-Whitworth.

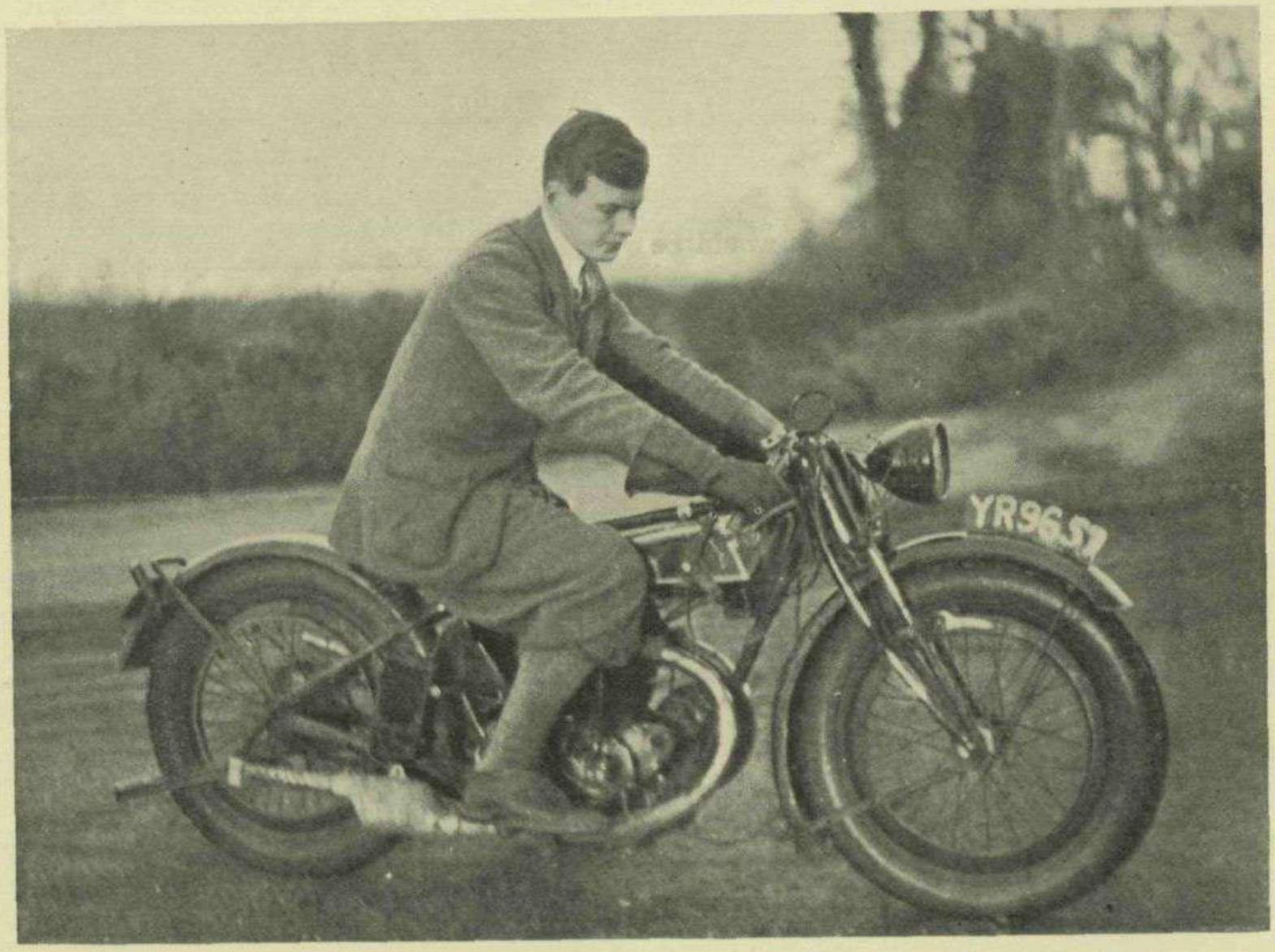
By "THE RABBIT."

IT is with very mixed feelings that we attempt to record our impressions of the Sports Rudge; sometimes we feel disposed to being thoroughly rude, sometimes to being glowingly fulsome in our praise of the machine. This paradoxical state of affairs is due largely to temper and moods. There are times when any motorcycle is anathema to the writer, whether it be the best or the worst machine in the world; at other times even the sorriest of crocks seems possessed of at least a few virtues.

Having had the Rudge in our possession for several weeks we naturally experienced all these moods, and strange as it may sound, the Rudge actually seemed to pass through different phases of behaviour too. This was not merely a question of something becoming out of adjustment and then being readjusted. Deeper issues than mere engine performance were concerned, as will be seen.

The writer himself would have said that the machine steered very well at all speeds on reasonably good surfaces, and was quite manageable at speed over bumps—yet, amazing fact,—two different and thoroughly experienced riders were thrown heavily after experiencing full lock-to-lock wobbles. The circumstances of both crashes were carefully investigated; neither road was unduly bumpy; one rider was doing a mere 30 m.p.h. and had both hands on the bars; the other rider was changing gear from 3rd to top at about 50 m.p.h. when disaster overtook him. The only light thrown on the matter was that both riders admitted that they were not holding on particularly tightly, so that a slight bump, combined in the one case with the gear changing operation, upset the balance of riders and machine and wrenched the bars out of their grasp.

It speaks volumes for the machine that these two crashes did no more than damage the lamp stays, footrest and front number plate, although we measured, that in the 50 m.p.h. episode, the Rudge rolled and slid for a genuine 60 yards before coming to rest in the hedge. Nothing vital was bent or broken, and the steering was not affected. As mentioned above, the writer had no trouble with the steering of the machine, probably because, being of a timid nature he invariably and almost unconsciously holds the bars somewhat more tightly than his more care-free and dashing acquaintances. He was at no time aware of any undue fatigue or strain through riding the machine for long distances as fast as circumstances permitted, and at no time did the machine



SHOWING THE GENERAL LINES OF THE MACHINE, THE RIDING POSITION AND THE LARGE BRAKE RIMS.

SPORTING MACHINES ON TEST—continued.



CORNERING AT SPEED IS ONLY LIMITED BY THE FOOTRESTS.

attempt to get out of hand.

In connection with the steering we must mention a small criticism ; in the event of the machine becoming at all restive on a bumpy road, the rather dropped handlebars do not permit of a comfortable position consistent with the extra control necessary on any motorcycle under these circumstances. These bars would be suitable for track racing in conjunction with a rearward saddle position, but for fast road work with the standard saddle, a flatter and higher bar would be better. Another way in which the Rudge seemed capricious (apart from its playful throwing of riders) was in slow running. At times it had the most gentlemanly tick-over and ran most sweetly on a high gear at low speeds ; without any alterations, at other times it would not run slowly at all, misfired and knocked painfully when pulling slowly on small throttle openings. An interesting fact that came to light with regard to this matter was that Power Petrol seemed to give by far the best results, eliminating the knocking to which most high compression engines are addicted when suddenly accelerated, and giving much sweeter running at low speeds.

Benzol mixture gave almost equally good results but the compression ratio, even with the reducing plate under the cylinder is too high for comfortable running on " straight " petrol.

Let us now turn to the description of some of the machine's virtues, and it had many ; during the course of a month we used it as an all weather runabout, not sparing it in any way and never cleaning or adjusting anything. At the end of this period, when the machine was excavated it was found that two small bolts (mudguard stay and silencer) had been shed, the front chain needed adjustment and the tappets could just be taken up very slightly. We considered this very creditable in view of the constant state of filth in which the machine was run, the rough roads and farm tracks covered, and of course the two crashes. There appeared to be no positive method of shifting the gearbox to adjust the chain ; a pity, as a simple drawbolt mechanism is very easy to arrange.

The chief virtues of the machine, however, come mainly under three headings, (1) Reliability, which we have already dealt with, as apart from the points mentioned above no tools were needed or used. (2) Economy, and (3) road holding under slippery conditions.

With regard to economy, on a long fast run, using Power Petrol or Benzol mixture, the consumption of fuel was at the rate of roughly 90 m.p.g., while the mechanical pump supplied adequate lubrication to the engine at the rate of a gallon for every 800 miles. These figures are very creditable when it is considered that the Rudge is a heavy and powerful machine and was driven fairly hard all the time.

We can safely say without exaggeration that we have never felt more safe on greasy corners than when we were astride the Rudge ; it was possible to completely ignore mud and wet and to bank the machine as far as the footrests permitted (not quite far enough for really fast work) without fear of a skid. In addition to this it was possible to brake hard with certainty and safety on all conditions of road surface without provoking a side slip ; at the same time both brakes were extremely powerful when worked independently, though with the patent interconnecting system, the front brake did not seem to do its fair share of work.

The Rudge sports silencing system employs two long exhaust pipes with cast aluminium expansion chambers, slung from the chain stays, from which the gases escape through drilled and flattened tail pipes ; the resulting note was deep and pleasant and by no means unpleasant to the most jaundiced motorphobe. Mechanical silence was good except for a slight noise from the overhead valve gear and a worse noise when the chains became slack !

With regard to maximum speed, in standard tune, with compression plate in, we do not think the Rudge was capable of very much more than 70 m.p.h. ; we always felt that top gear was somewhat on the high side, since the engine seemed to revel in 3rd gear work. On this gear, which was not particularly high, nearly 60 m.p h. seemed possible. We did not time the Rudge for maximum speed, the above figures are merely guess work, and it is quite possible fhat the high top gear led us to underestimate the maximum speed attained. The only definite information we can give concerns a run of 98



THE 4-SPEED GEARBOX RENDERS THE RUDGE A GENUINE " GO ANYWHERE " MACHINE.

SPORTING MACHINES ON TEST—continued.



" ROAD " CONDITIONS OF THE TYPE SHOWN DO NOT WORRY THE RUDGE RIDER.

miles in the Eastern and Home counties, on a day when the roads were peculiarly greasy and when a strong wind blew in our face for a large proportion of the journey. This journey, including a thoroughly sedate negotiation of at least ten towns and villages was covered at an average speed of 38 m.p.h. Anyone who knows the road between Kings Lynn and Cambridge, with its serpentine corners, its own special brand of grease, and the howling wind of the fens, will realise that the Rudge must have been travelling fairly well on the straight at times, besides being remarkably stable on the innumerable slimy bends. Starting was always certain with about two kicks, though a certain amount of strength was necessary. The exhaust lifter was not used as it was inclined to stick; the engine was therefore rotated backwards until it came up against compression and then bounced over by the kickstarter. In spite of a fully retarded ignition lever, considerable energy was necessary to prevent a savage back-fire. The Senspray carburettor fitted to the Rudge seemed to be an altogether admirable instrument, functioning well throughout the range of throttle movement. This latter by the way was rather excessive; in the all out position it was extremely difficult to reach the throttle lever to shut off!

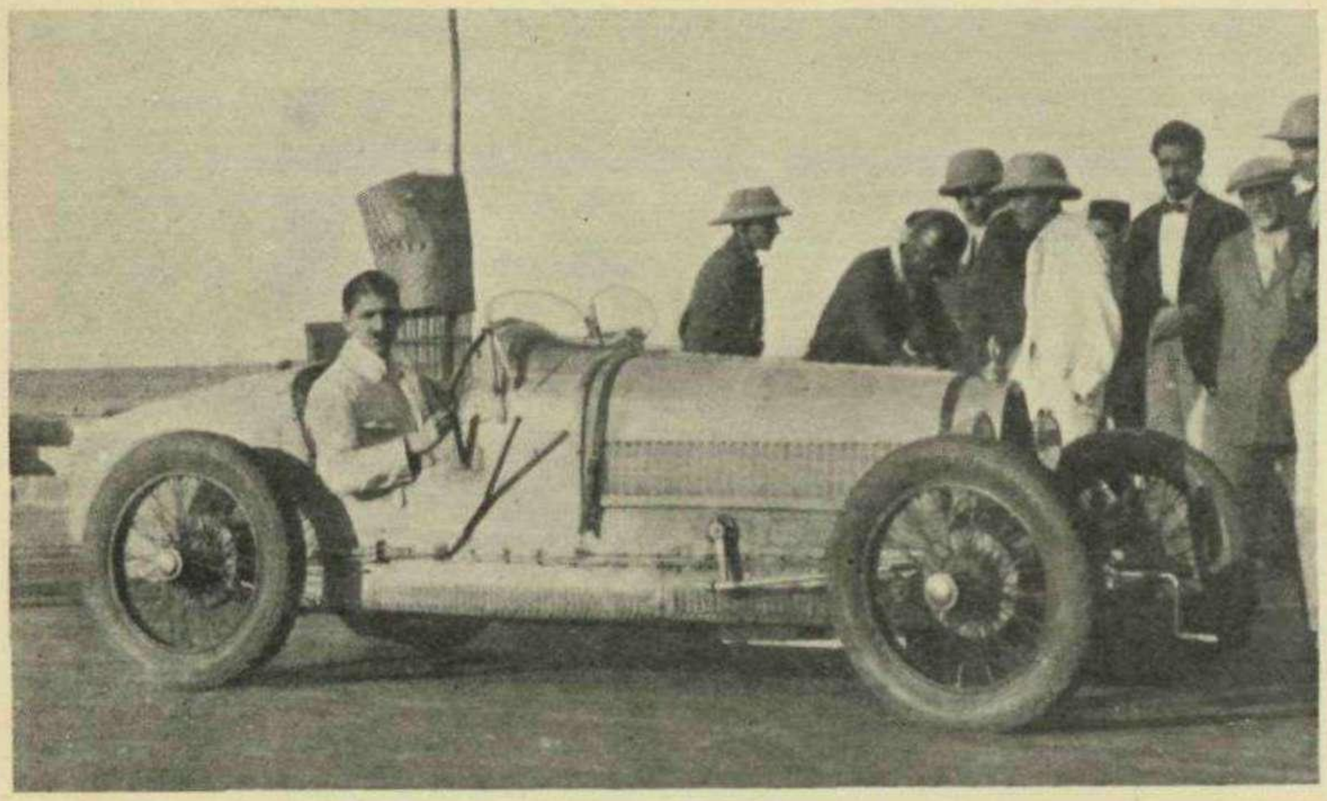
In other respects the riding and driving comfort was distinctly good, as a result of a good saddle, light clutch and accessible brake controls. The method of gear operation dispenses entirely with the normal tank gate or rack, the positions being indicated by numbers on the tank. At first this proved troublesome, but once we discovered that a far easier change up could be made if the throttle was not closed, gear changing became a pleasure. The change between the two intermediate gears was delightfully easy, but a little more care was needed in engaging the two extreme ratios; although we personally felt quite at home without the gate, we imagine that many riders would appreciate a more positive method of locating the lever.

In conclusion let us remind readers that in spite of its thoroughly comprehensive specification the sports Rudge sells at the extremely modest figure of £56, while an extremely cheap and efficient electric lighting set is included in the Rudge-Whitworth equipment, nor must it be forgotten that during 1926 the few racing Rudges having performed with great reliability in the T.T., Ulster Grand Prix, Belgian Grand Prix and other important events, several times running among the first three at the finish, and always showing a useful turn of speed.

EIGHT DAY HIGH SPEED TRIAL AT MONTLHERY.

Of late years the reliability test round France, known as the Tour de France, has failed to interest makers, probably because it was too costly for the returns it gave. In consequence, this year it will be replaced by an eight-day reliability trial, known as the French Tourist Trophy, to be held from April 2nd-10th on the Montlhery circuit. The competitors will probably be required to put up a high average for ten hours a day on eight consecutive days, with penalisations for irregular running and mechanical work on the cars. At the end of the day the machines will be placed under lock and key, and there will be two drivers allowed per car.

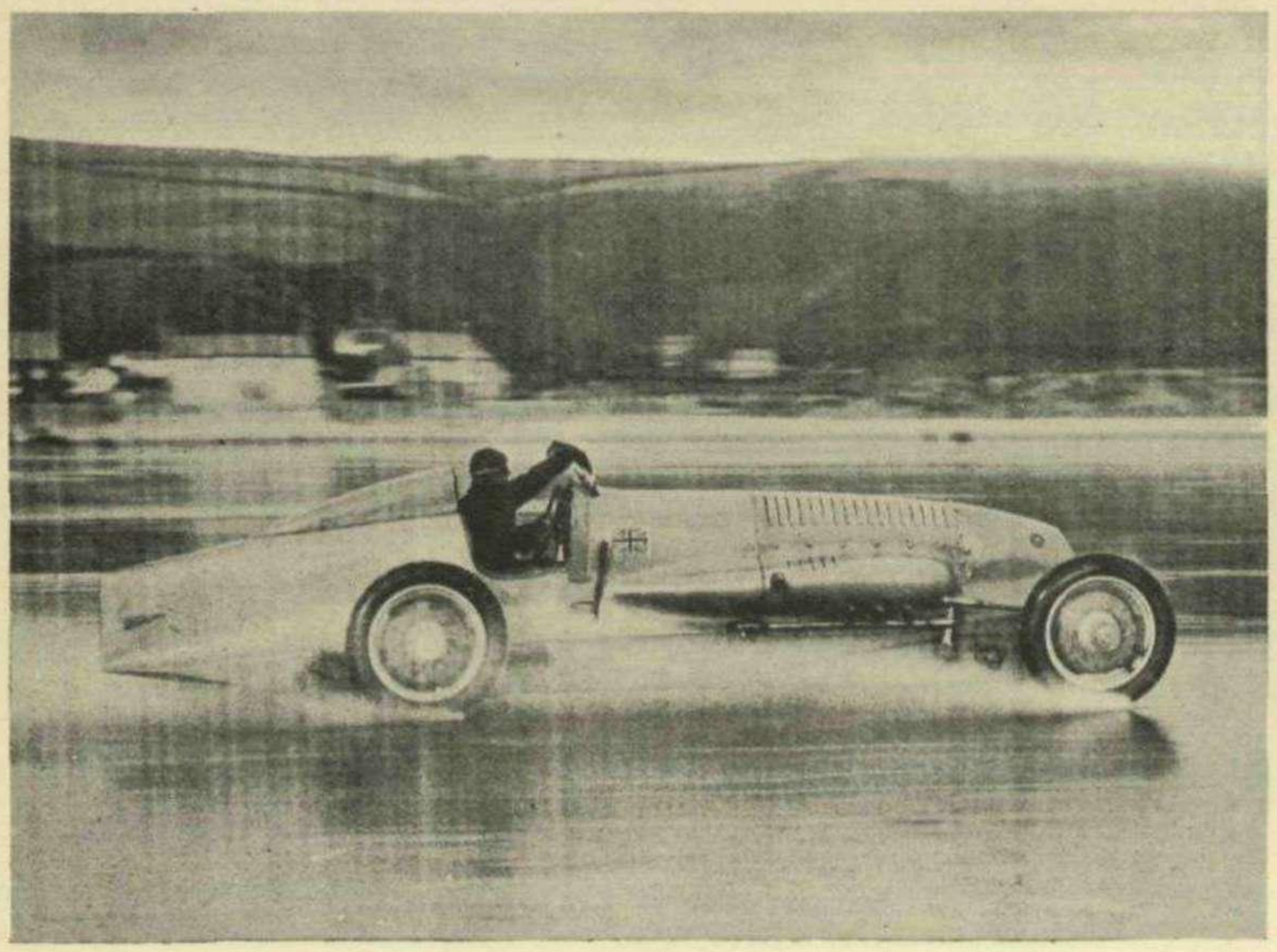
Recent Sporting



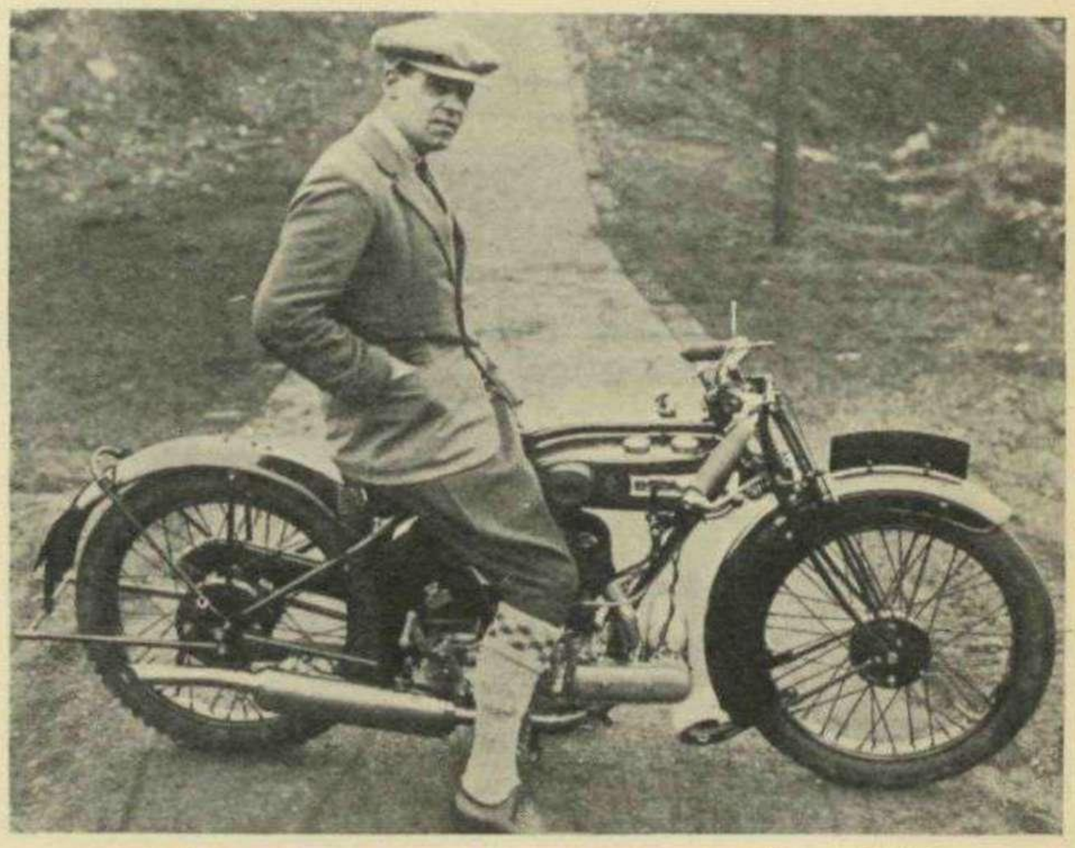
J. R. D. TATA WHO MADE FASTEST TIME OF THE DAY AT THE BOMBAY SPEED TRIALS ON HIS BUGATTI.



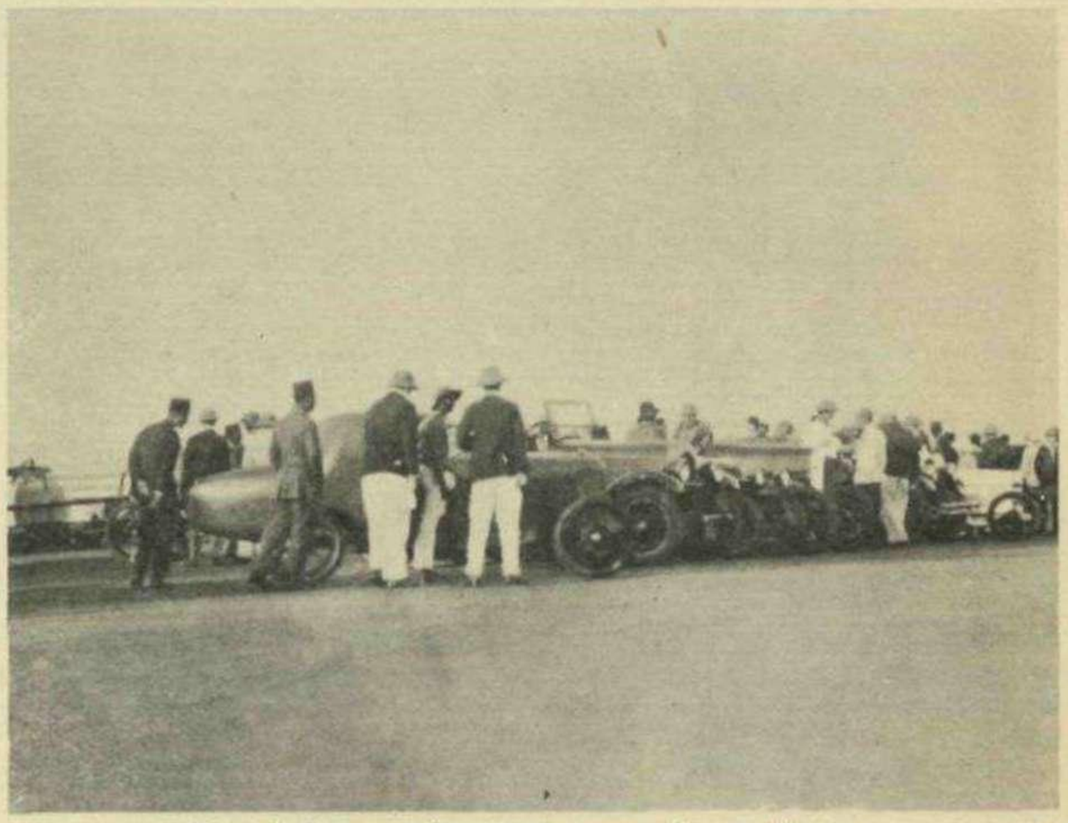
AFTER ITS UNSUCCESSFUL ATTEMPT ON WORLDS RECORDS " BLUE BIRD " IS TOWED OFF THE BEACH.



A FINE IMPRESSION OF CAPTAIN CAMPBELL RACING ACROSS THE WATERY SANDS AT PENDINE.



P. CRANMORE ASTRIDE THE NEW SIDE VALVE SPORTS B.S.A.

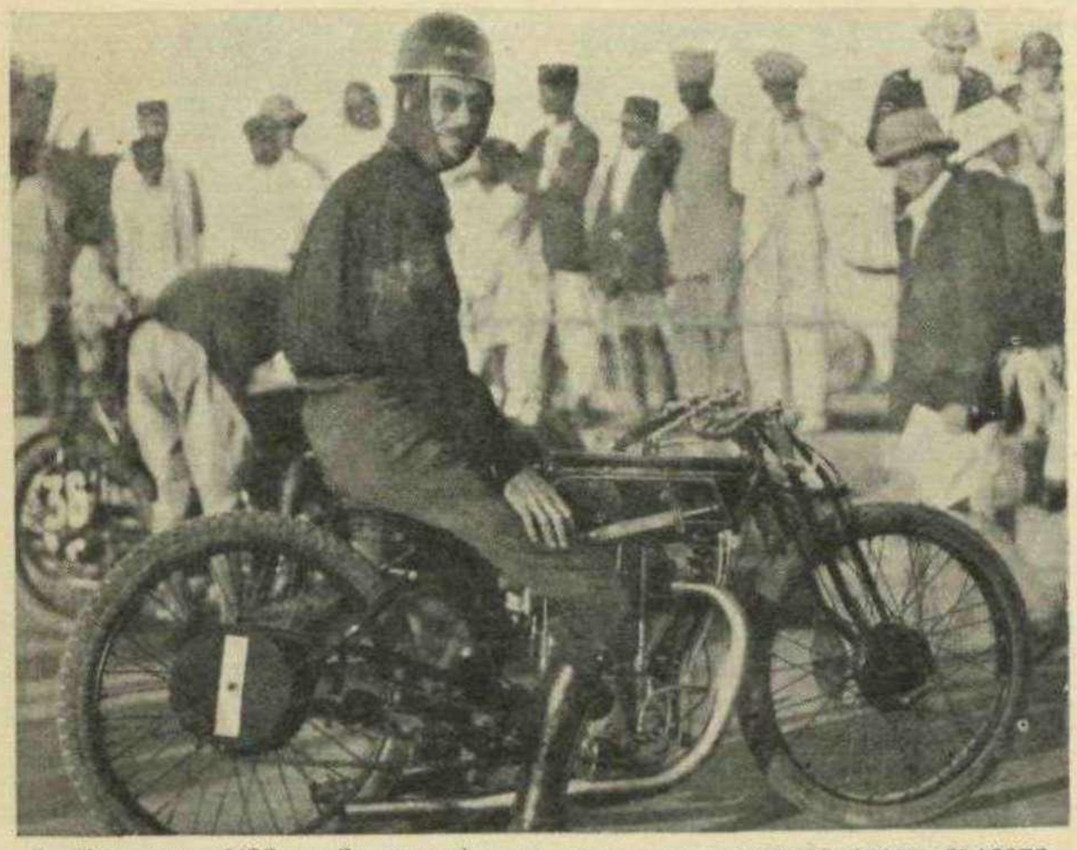


THE " PADDOCK " AT BOMBAY SPEED TRIALS.

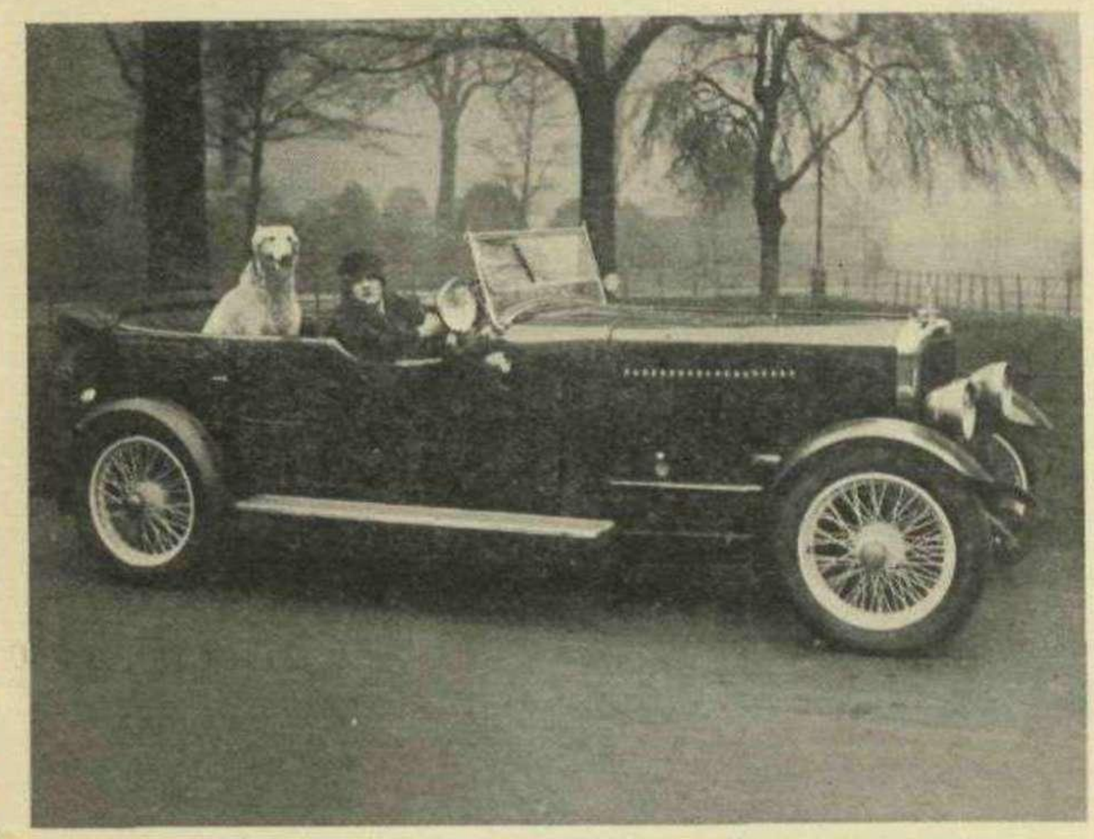


CAPT. WANDERWELL WHO IS USING AN INDIAN IN THE COURSE OF HIS WORLD TOUR LECTURING FOR THE FORMATION OF INTERNATIONAL POLICE.

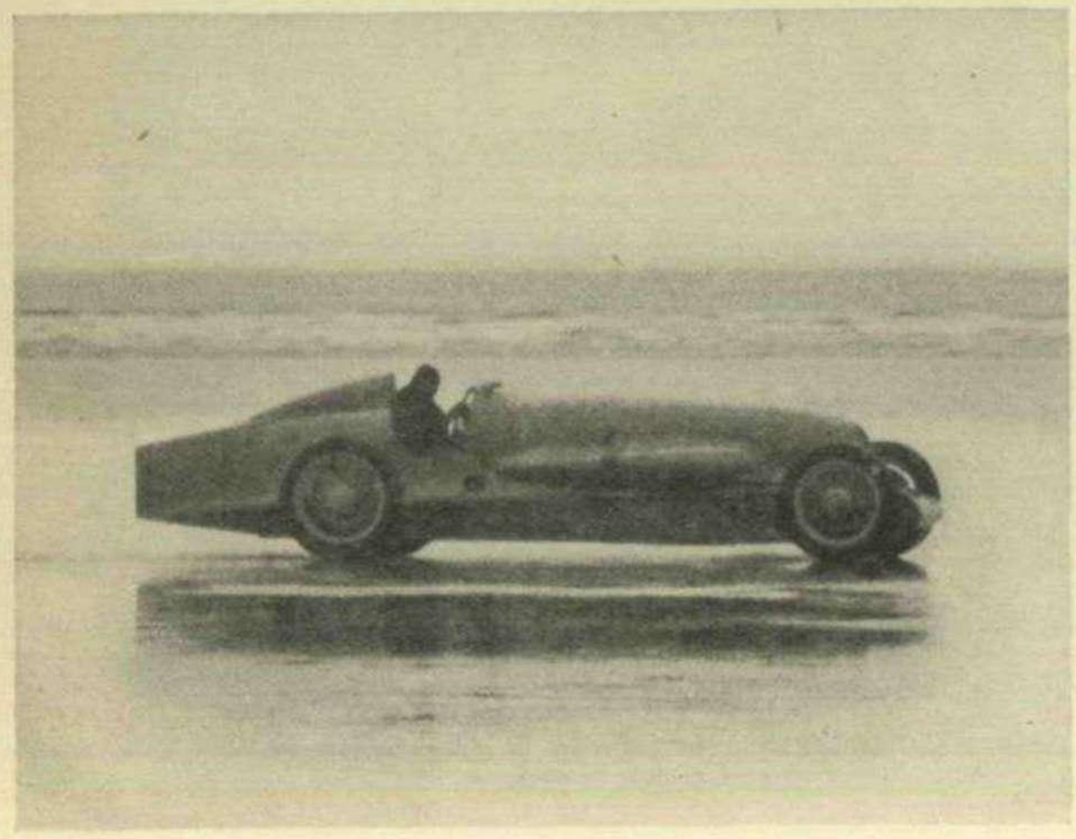
Events in Pictures



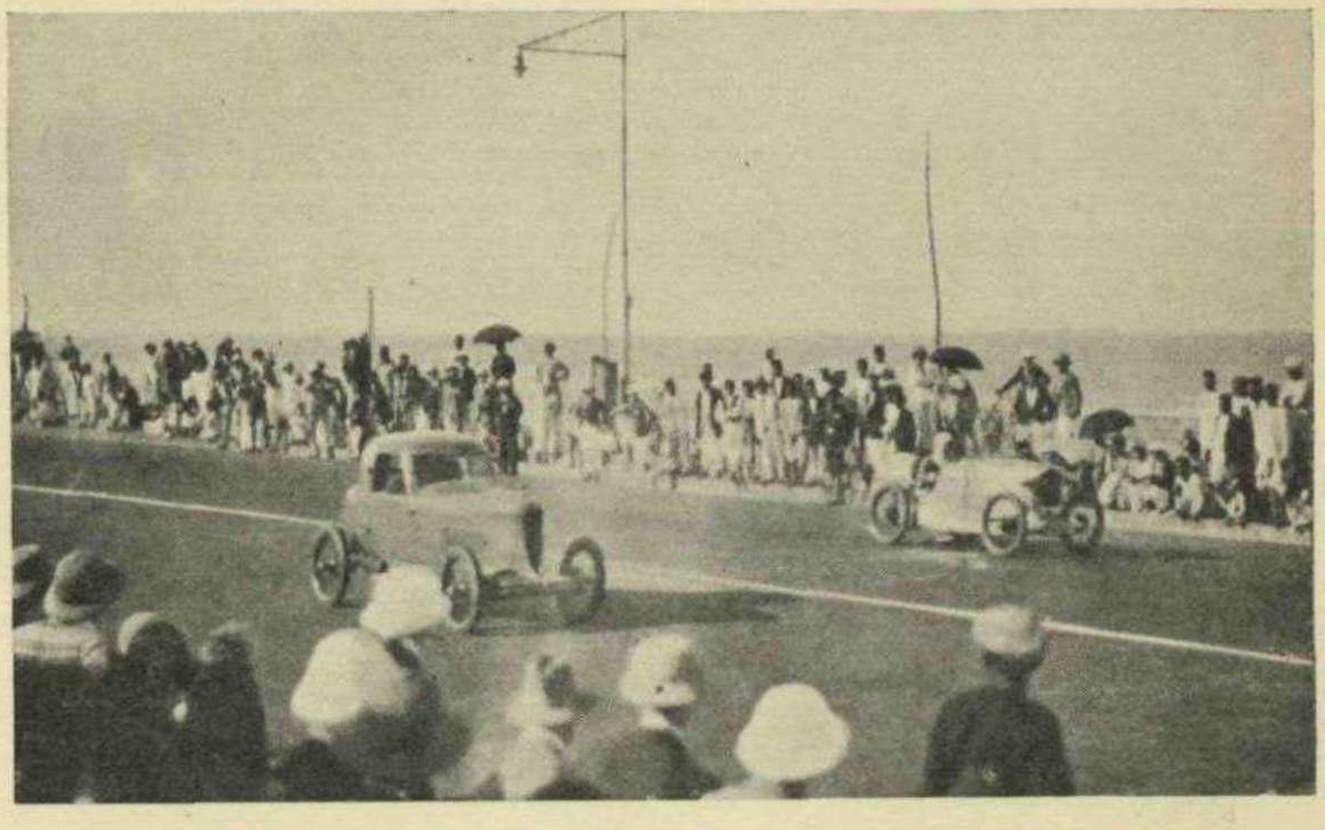
L. COLONNA (493c.c. SUNBEAM) WHO WON THE STANDING START CLASSES AT BOMBAY.



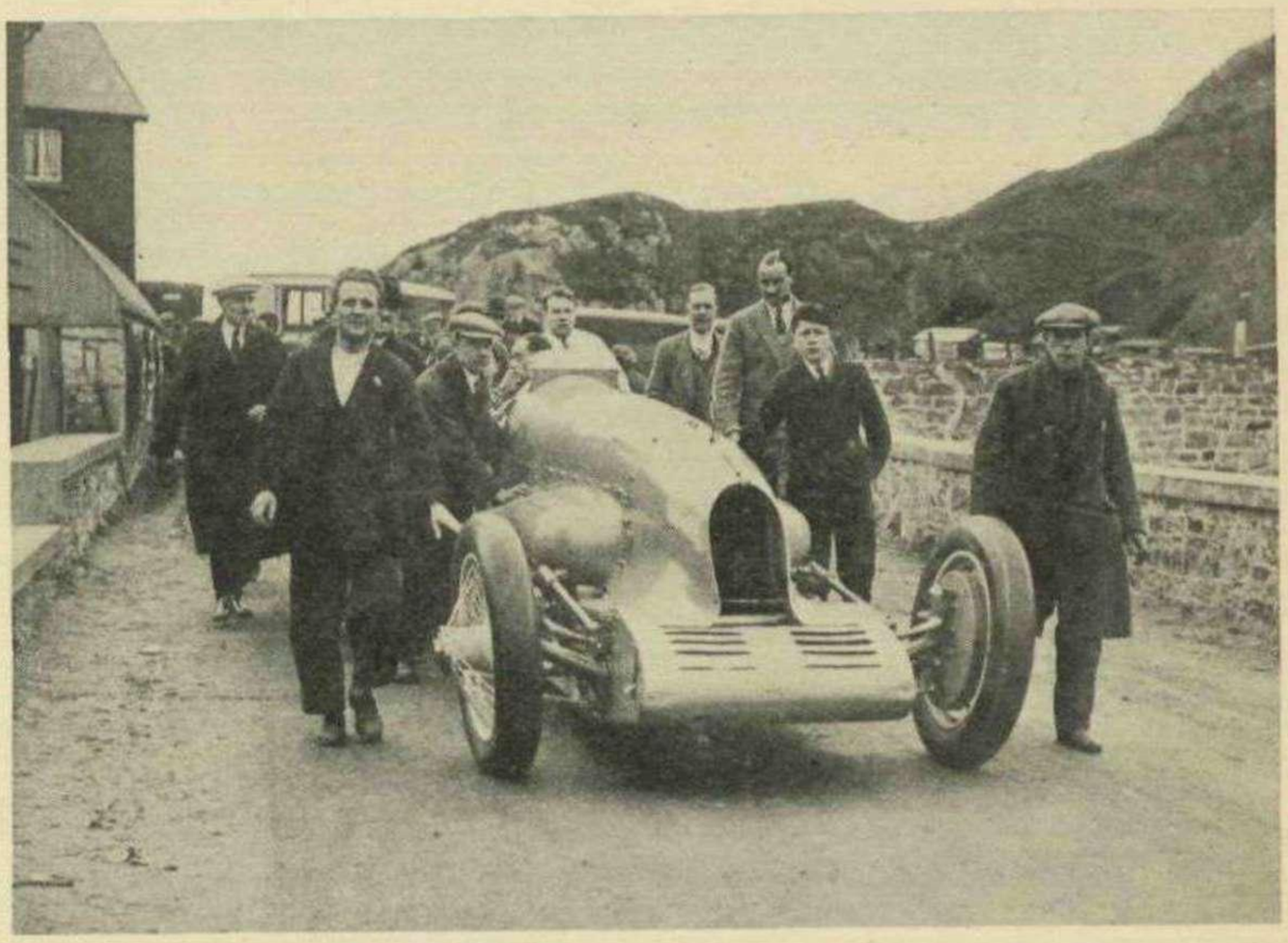
PRINCESS GALITZIN WHO INTENDS TO PRODUCE A BRITISH FILM INCORPORATING MOTOR RACE THRILLS.



CAPTAIN MALCOLM CAMPBELL SNAPPED AT SPEED ON PENDINE BEACH.



J. MEHTA (AMILCAR) AND D. R. D. WADIA (AUSTIN 7) NECK AND NECK AT BOMBAY.



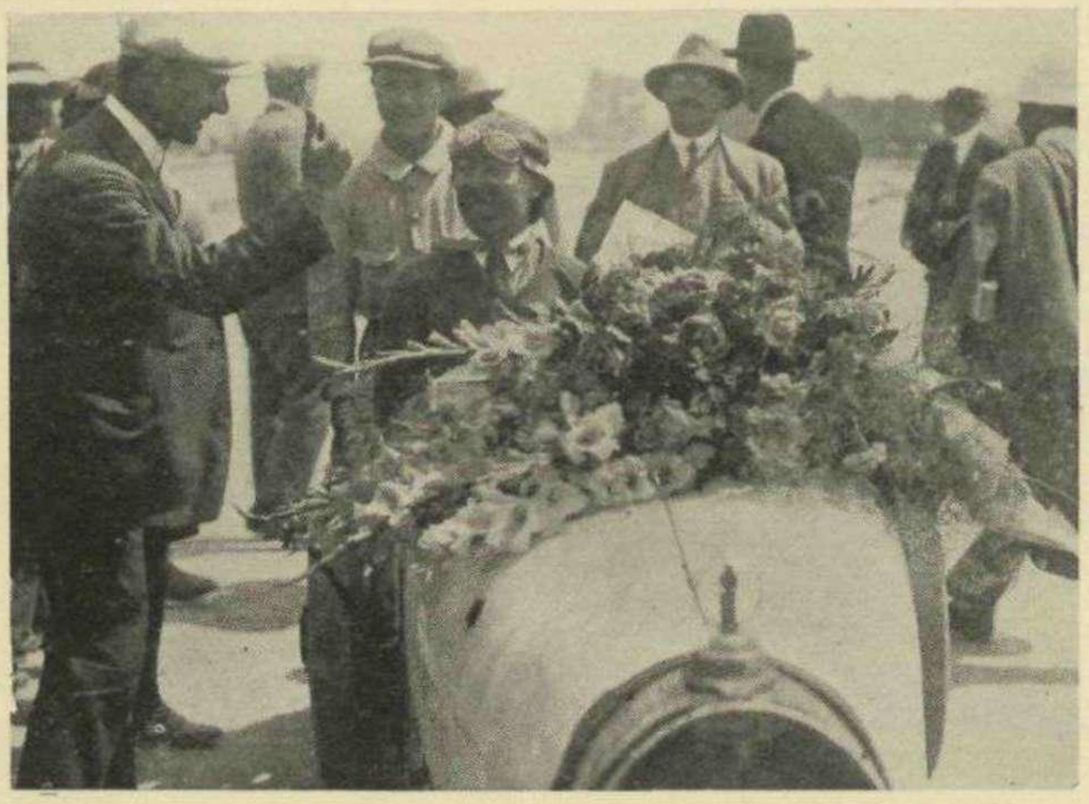
WILLING HELPERS PUSH THE NAPIER CAMPBELL FROM ITS GARAGE TO THE SANDS AT PENDINE.



ANCIENT AND MODERN. A CONTRAST IN TRANSPORT METHODS IN ALBERTA.

RACING NEWS OF THE MONTH.

E. K. H. KARSLAKE.



JULES GOUX, WHO IS DECLARED CHAMPION OF FRANCE FOR 1926.

Goux Champion of France.

The title of Champion of France for 1926 has been conferred on Jules Goux, whose wonderful performances with the Bugatti have well deserved him the title. He succeeds Albert Divo, who was champion for 1925.

Many will regret the decision of Goux's team-mate, Costantini, to abandon motor racing in future. The dashing Italian, however, evidently considers that it is better to retire at the height of his fame, than to spoil his record by less magnificent performances in the future.

The German Grand Prix and the Nürburg Ring.

The German Grand Prix for cars of the sporting type on 17th July will not take place as formerly on the Avus track, near Berlin, which has been declared unsafe for present day speeds, but on the new road circuit which is being constructed near Adenau, and which will be known as the Nürburg Ring, from the remains of an old castle inside the course.

The project is of particular interest in connection with the road circuit which is being constructed near Brighton. In the Eifel province there has long been an area of extremely mountainous country which is quite uninhabited and put to no useful purpose. Latterly, therefore, the local authorities have had the happy idea of using it as a site for a road track. As Adenau is but 43 miles from Cologne, the new circuit will be by no means inaccessible.

The course will be over 18 miles in length and will take the form of an 8. Its setting is entirely one of mountains and forests, without even a house on it. The road will be over 29 foot broad, with a special surface, which is said to be very skid-proof without being hard on tyres. The straight run on which the starts and finishes of races will take place, will be actually over 65 foot broad and three kilometres in length. This very difficult circuit will contain no fewer than 172 corners, 88 to the left and 84 to the right, and differences in altitude of over 2,150ft. Some of the gradients will attain 1 in 6, while in one place the road ascends as steeply as 1 in 3.4. The design of the course allows four separate circuits to be used, of $1\frac{1}{4}$, 5, 13 and the full circuit of 18 miles respectively.

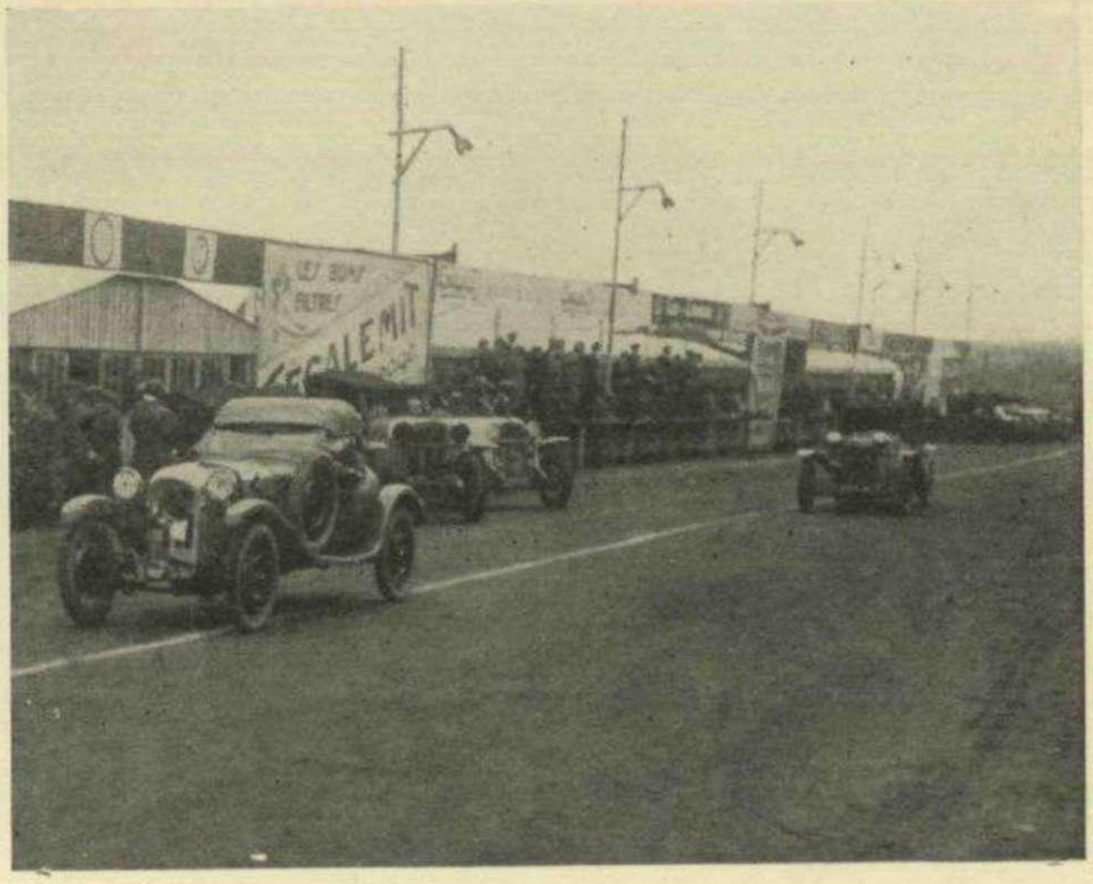
Two thousand men have been working on this track for more than a year—incidentally one of the objects of the originators was to provide work for the unemployed, and it is hoped that it will be ready for the opening race on 11th June.

The Grand Prix d'Endurance.

The policy of the Automobile Club de l'Ouest to encourage early entries for the le Mans 24-hour race by allowing them to be made at reduced fees, has met with considerable success, as quite a large number of cars have already been entered. For the final of the third triennial Rudge-Whitworth cup, S.A.R.A. have entered 2 cars, and Rolland-Pilain, Salmson and E.H.P. one each; while for the first round of the fourth triennial cup, Rolland-Pilain and Fasto have entered three cars each, Salmson, E.H.P. and S.A.R.A. two each, and Steyr and Tracta one each. Airès, Th. Schneider, Excelsior and the two new firms of Gérard and Simille-Péquignot have also expressed their intention of entering at least three cars each, so that the race would seem likely to achieve its customary measure of success. Entries at ordinary fees may be made up till 28th February, and at double fees up till 30th April, so that there is still plenty of time for more names to be enrolled.

The Targa Florio.

As was reported last month. Alfa-Romeo has already decided to start in the Targa Florio race on 24th April. It is now announced that the famous Milanese firm will be represented in the Sicilian race by examples of its standard 1,500 c.c. 6-cylinder super-sports models, with two overhead camshafts and a supercharger. It will be particularly interesting to sporting motorists



MANY ENTRIES HAVE ALREADY BEEN RECEIVED FOR THE GRAND PRIX D'ENDURANCE.

RACING NEWS—continued.

to see how these standard models perform in what is undoubtedly the hardest road race of the year, and to compare them with the Spanish Ricart cars, if the latter firm uses its standard model of a very similar specification.

O.M. is engaged on the production of a new 8-cylinder racing car of 2,300 c.c. which will probably be used in the Targa, while Maserati has announced his intention of adding his two 1½ litre racers, which appeared in last year's Italian Grand Prix, to the list of these already entered for the race. These cars will also start in the Grand Prix of Tripoli on 6th March and the Grand Prix of Rome.

Incidentally this year's race will probably be the last over the traditional circuit, as the Chevalier Vincento Florio is intending to reduce the length of a lap of the



FOR 1928 IT IS PROPOSED TO SHORTEN THE TARGA FLORIO LAP SO THAT COMPETITORS PASS THE TRIBUNES MORE FREQUENTLY.

course from 67½ to 37½ miles for the 1928 race. This will be done by constructing a new section of road starting half way between Cerda and Caltavuturo, and rejoining the old course at Scillato.

This proposal has aroused considerable adverse criticism in Italian sporting circles, as it will do away with much of the most difficult part of the course. The idea behind it is, however, probably to make the race more interesting for the spectators, as at present each car only passes the tribunes once in an hour and a half.

The 12-Cylinder Italas.

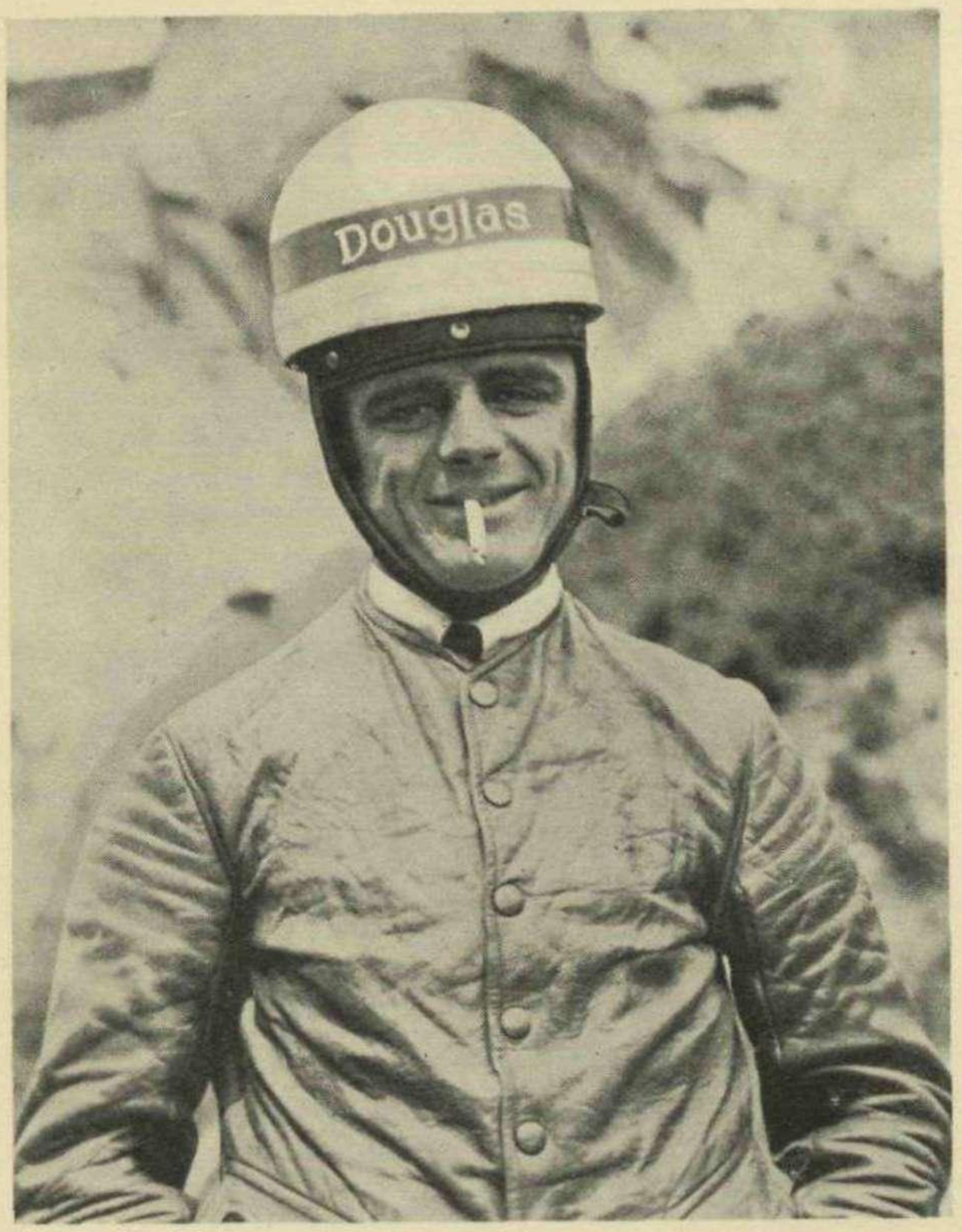
It is sincerely to be hoped that the new 1,100 c.c. and 1,500 c.c. 12-cylinder Itala racing cars will make their appearance this year as their design shows many interesting features. The engine is of 45 x 55 mms. bore and stroke in the case of the 1,100 c.c. unit, while for the 1,500 c.c. the bore is increased to 49 mms. The cylinders are cast in two blocks of six, set at an angle of 60 degrees. Each cylinder has two valves, set on the same side at right angles to the vertical axis of the cylinder. The cam-shaft is mounted between the two cylinder blocks, and carries 12 cams, each of which operate two opposite valves. This camshaft is driven from the crankshaft by three pinions, one on each shaft and one intermediary, and is actually contained in the crankcase.

The unusual arrangement of the valves naturally introduces special problems in the matter of cylinder-head design, and it has been found necessary to make the piston heads of a special shape, which resembles that used in most 2-stroke engines.

These engines use both forced induction and exhaust systems. A Roots type blower is driven through a flexible coupling from the rear of the crankshaft and drives air through a filter direct to the cylinders, entering by a port which is uncovered by the piston when it reaches the bottom of its stroke. At the conclusion of the induction stroke, therefore, compressed air is added to the mixture already contained in the cylinder, while after the power stroke, the air from the blower forces the burnt gases out through the exhaust valves.

An aluminium box on which is mounted the radiator, is bolted to the front of the engine, and contains the clutch, gear box proper and transmission. Thence the drive is taken to the front wheels by lateral shafts, which terminate in spherical joints.

The adoption of front wheel drive allows of a very low build, the highest part of the car being only 86 cms. (about 2ft. 10ins.) above the ground, while the weight of the complete car is only 560 kilogrammes.



MOTOR CYCLE SPEEDMEN:

R. N. Judd.

By The Assistant Editor.

OWING to the modest and retiring nature of many of our leading speedmen, it is often difficult for the inquisitive pressman to obtain any interesting information for the benefit of his readers. Taking advantage of an attack of influenza, however, (from which he is now happily recovered), we were able to corner Rex Noel Judd in his bedroom and extract a few particulars of his brief but eventful racing career, at a time when he had not much chance of escaping our inquisition!

Aged twenty-six Rex Judd, by the inexorable law of anno domini, is essentially a post-war personality so far as racing is concerned, his first experiences of the track being in 1920, when he assisted Dr. M. C. Breeze, an amateur, in setting up some medium and long distance records on a sidevalve Coulson-Blackburne sidecar outfit. In those days belt drive was in great favour for track work, and the gearbox was usually dispensed with. In order to provide a reasonable length of belt and an adequate sized pulley, without raising the gear too much, the Coulson had a plain countershaft arranged in front of the engine, driven by chain, from which a long belt transmitted the power to the back wheel. On the occasion of Dr. Breeze's successful record attempt Rex Judd performed in the rôle of passenger.

All this, however, is somewhat anticipatory, since our subject had already experienced some instructive and amusing adventures in the R.A.F., which he joined in 1916 by the familiar ruse of forgetting his exact age. After making good headway for some months, Judd received a severe set back when the authorities discovered his real age (16)! He was promptly reduced to the rank of "boy" again and had to start from the bottom once more; needless to say this little contretemps did not prevent him from climbing up again, with his characteristic pluck, until at the end of the war we find him a sergeant.

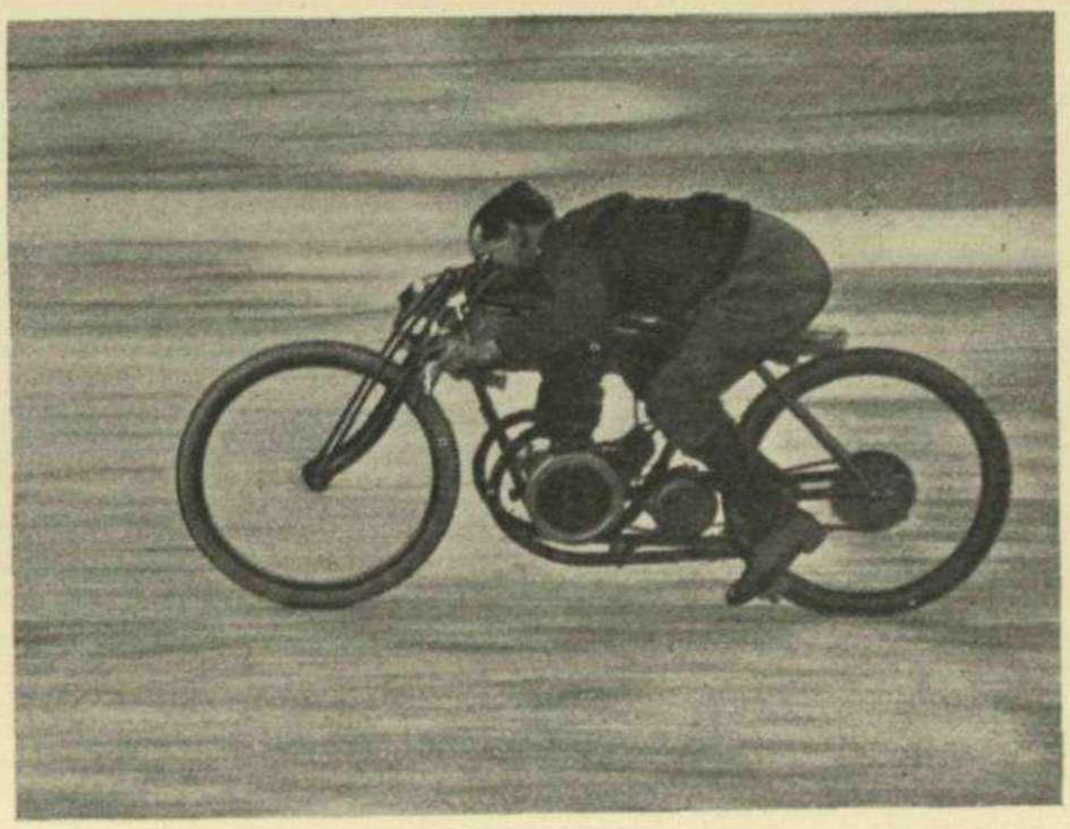
Having gleaned much useful information of motors from his sojourn in the R.A.F. workshops, it was not surprising to find that Judd continued this bent during the early months after demobilisation, his first "job" being with the now defunct Palladium Motors Ltd.

We have now arrived once more at the stage when Judd first became acquainted with Brooklands, in connection with the Coulson records, and shortly after this he joined D. R. O'Donovan, the famous Norton and Velocette exponent.

His chief occupation at this time (1920) was the "passing out" of the certified B.S. & B.R.S. Nortons. These machines were guaranteed to have exceeded 75 and 70 m.p.h. for the kilometre and 70 and 65 m.p.h. for the lap respectively, and it was Judd's business to attain these speeds on some twenty-eight machines each month.

Those who remember that these were single geared machines without steering dampers or shock absorbers will realise what a splendid training this must have been for the racing career that Judd was destined to pursue during the ensuing years.

The next event of importance in Rex Judd's affairs was O'Donovan's decision to give up solo riding, in deference to the responsibilities of fatherhood, and a crash while performing on a Velocette 2-stroke. This gave Judd his chance and he became O'Donovan's nominated rider in solo record attempts and races;



JUDD COVERING THE KILOMETRE AT 70 M.P.H. ON A VELOCETTE 2-STROKE.

More Back Numbers.

August, 1924. Tourist Trophy Races. How to "Vet" a Sports Car. Motoring Sportsmen: Dr. Low. Hill Climbing by Rex Brittain. Brooklands. Arpajon and Shelsley Walsh.

October, 1924. Motoring Sportsmen: S. F. Edge. J.C.C. 200 mile race. Thomas' best race. Sports Cars at Olympia. Sporting Events of the month. 150 m.p.h.

December, 1924. Springing for Speed by J. G. P. Thomas. Motoring Sportsmen: B. S. Marshall. A.C. Sporting Cars, Special Review. Hill Climb Records.

February, 1925. Biography of Dr. Benjafield. Aluminium Piston design. Road Test of Brooklands—Austin 7 and 7/9 Harley-Davidson. Other Technical articles.

May, 1925. Engine Balance. Biography of George Duller. Land's End Trial. Speed events described. Tuning article. Road Test of 3½ h.p. Sunbeam.

August, 1925. How I won the G.P. by A. Ascari. Road Test of s.s. 100 Brough Superior and Bugatti Car. Eldridge v. Thomas. Articles by C. M. Harvey and Dr. Benjafield. Wireless on an M.C.C. Trial.

September, 1925. Biography of Gordon England. 200 mile Motor Cycle Races and 6-days Trial. Road Test of 30/98 Vauxhall. Choosing a Sports Mount.

November, 1925. Capt. Woolf Barnato. Road Test of Sports Crossley and Henderson Motor Cycle. B.M.C.R.C. Championships. M.C.C. Sporting Trial.

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MOTORCYCLE SPEEDMEN—continued.

an appointment which he celebrated by creating a record for the kilometre at 85 m.p.h. on a sidevalve Norton. Riding a 249 c.c. Velocette he attained 70 m.p.h., a speed which to this day has seldom been equalled on a small two stroke.

During 1921 a cup was offered by Messrs. Godfrey's for the first 500 c.c. machine to attain 90 m.p.h. Ever ready to improve the shining hour, O'Donovan and Judd as tuner and rider respectively annexed this trophy comfortably with a speed of over 92 m.p.h. This was about the first time that the partners used a machine with a gearbox—the well known 16H. Norton. During his connection with O'Donovan, Judd usually acted as passenger for "Don" himself and his partner H. H. Beech.

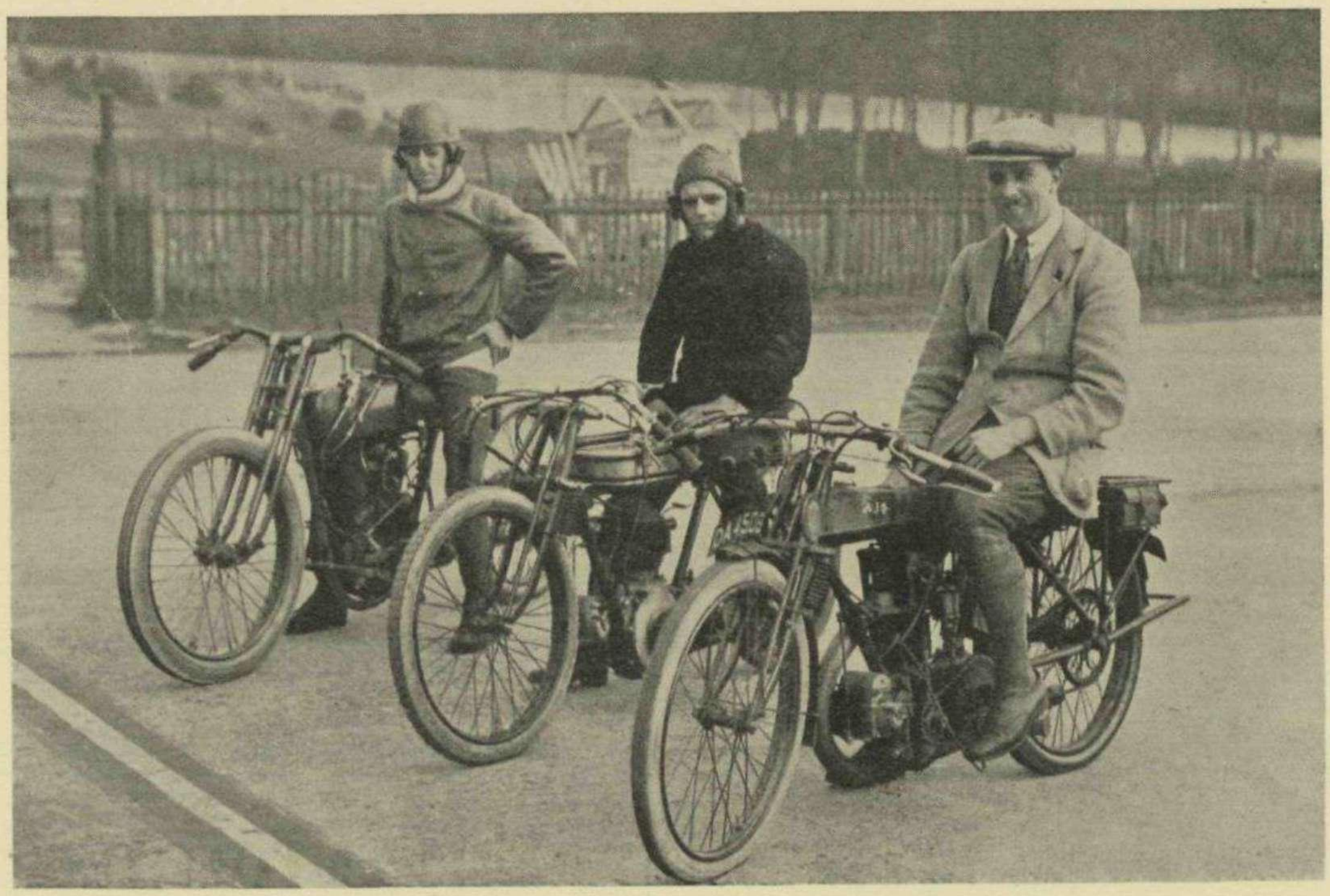
The latter set up many long distance sidecar records, and on one occasion the sidecar wheel became detached with the result that Beech, Judd, Norton and sidecar passed through the railings on the edge of the track. The most serious injuries were incurred by the sidecar body but the incident served as one step in the baptism of dust (or concrete), that is so essential to the upbringing of a speedman!

Another notable performance on the 16H. Norton was the 24 hour record set up by Horsman, O'Donovan and Judd, in which they averaged 64 m.p.h. for the whole period.

During 1922 Judd made a few appearances on the early o.h.v. Nortons and contrived to set up several more records, including the 5 and 10 miles, and also became engaged in a fierce struggle with C. G. Pullin for the honour of being the first rider to attain 100 m.p.h. on a 3½h.p. machine. The result of this contest is well known, how each successively approached a little nearer the magic figure, and how eventually the Douglas exponent managed to earn a certificate for covering the half mile at 100.6 m.p.h. whereas Judd's speed over the kilometre and mile was in the neighbourhood of 98 m.p.h.

At the close of this season, feeling that it was time he sought employment that offered wider scope for his activities Rex Judd joined Douglas Motors Ltd., and was attached to Cyril Pullin who represented that firm at Brooklands.

Judd's first appearance on a Douglas machine was at Kop Hill in 1923, before which he had never been astride a racing Douglas. Owing to unfamiliarity with his mounts it was not surprising that he did not attain great success in the solo classes; in the sidecar events, however, he carried all before him, riding 500 c.c. and 750 c.c. machines. At the first B.M.C.R.C. meeting of that year Judd won the 350 c.c. and 500 c.c. scratch races and during the season annexed numerous records and five out of the seven scratch races entered for.

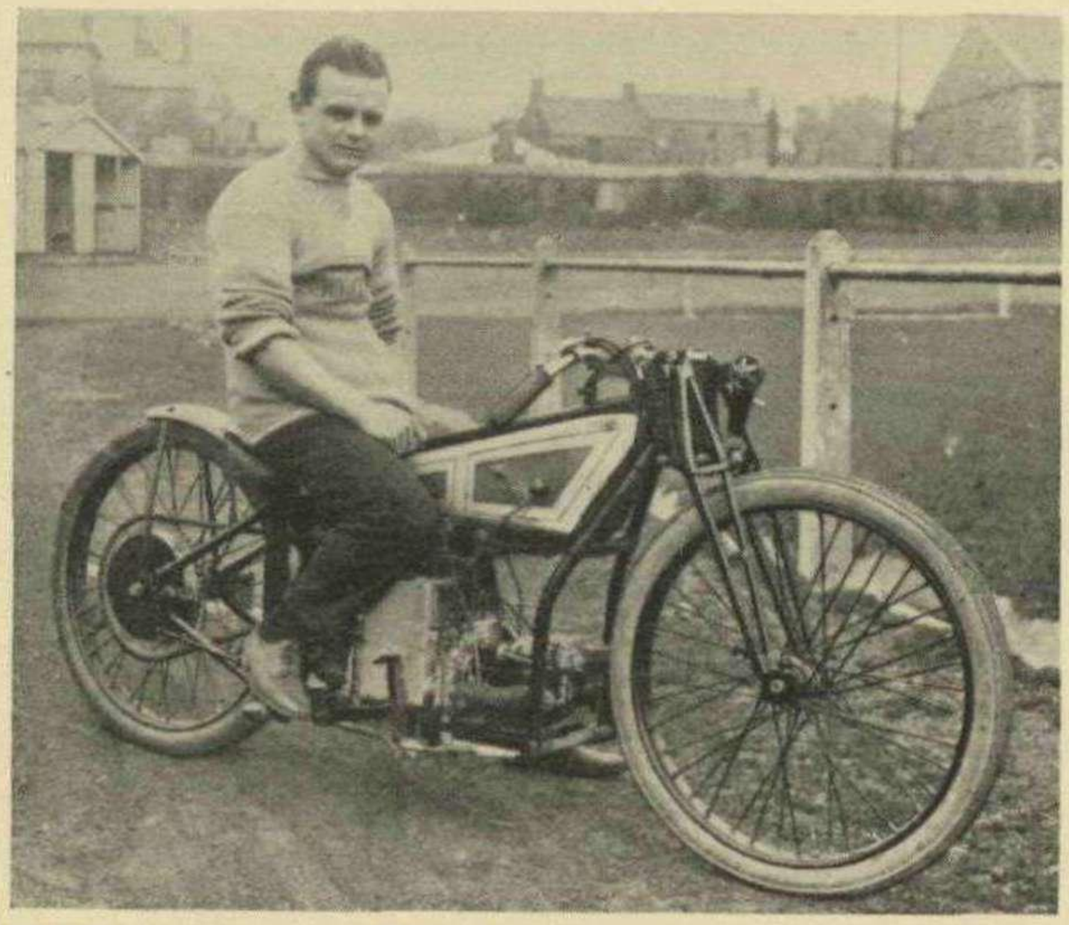


R. N. JUDD, PHOTOGRAPHED WITH THE OTHER GODFREY CUP WINNERS; HE WAS THE FIRST RIDER TO ATTAIN 90 M.P.H. ON A 500c.c. MACHINE.

During 1924 he continued to race with the usual varying success of the speedman, on Douglas machines, and rode the same make in the I.O.M. T.T. races, all the time increasing his knowledge and experience of the ways of fast motors.

1925 proved to be an adventurous year for Rex Judd; in the Senior T.T. he fell in Ramsey and broke a footrest, for the remaining 5 laps he rode under great discomfort with a foot badly burnt through rest-

MOTORCYCLE SPEEDMEN—continued.



R. N. JUDD ON THE DOUGLAS MACHINE WITH WHICH HE IS NOW A REGULAR PERFORMER.

ing on the hot exhaust pipe. For this plucky performance he was awarded the Nisbet Trophy. In the 1925 200 mile solo race at Brooklands he participated in a never-to-be-forgotten "scrap" when 5 riders in a bunch all broke the hour record and covered 100 miles at over 90 m.p.h., though eventually none finished the course. Towards the end of the season Judd had a nasty crash at about 100 m.p.h. when he touched another competitor's back wheel. Luckily he escaped serious injury, though his machine was wrecked.

During 1926 Judd has not been very successful, a fact which he puts down to the works being over-occupied in coping for the enormous demand for the E. W. Douglas, but he has great hopes for 1927, when his activities will be divided between Brooklands, Bristol and his newly found partnership with Bob Newitt at High Wycombe

THE SOUTH AFRICAN T.T.

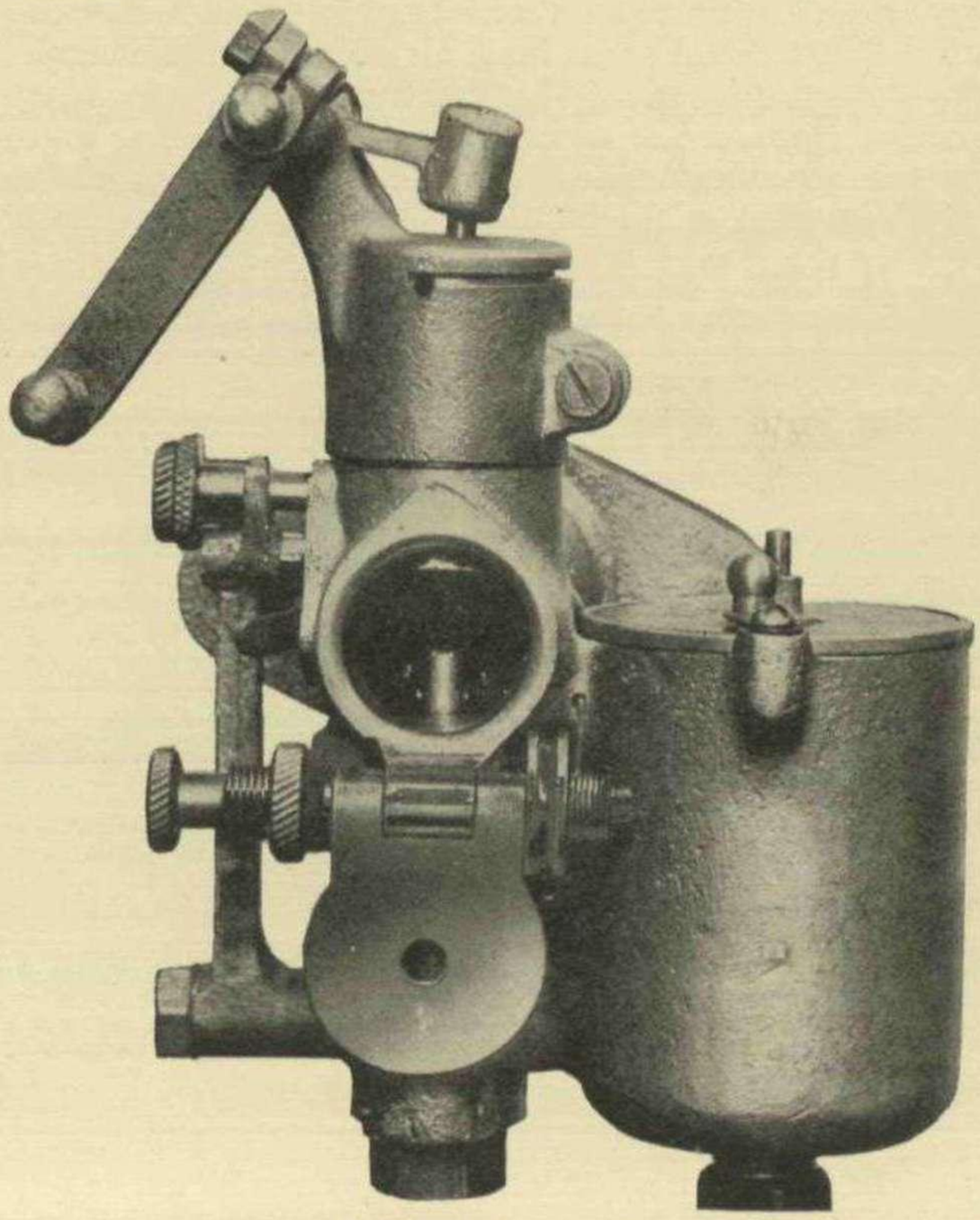
News received last week acquainted us with the results of the South African T.T. races. The first and second places in the Senior (500 c.c. class) were obtained by Percy Flook, a well known rider, mounted on a Norton, and Len Cohen on a 350 c.c. A.J.S. respectively. The latter established a lap record by covering the circuit of twenty miles in 18 minutes 5 seconds. He also won in the Junior event, covering the course of two hundred miles in the record time of 3 hours 20 minutes.

FLEXIBILITY OF HIGH-COMPRESSION ENGINES.

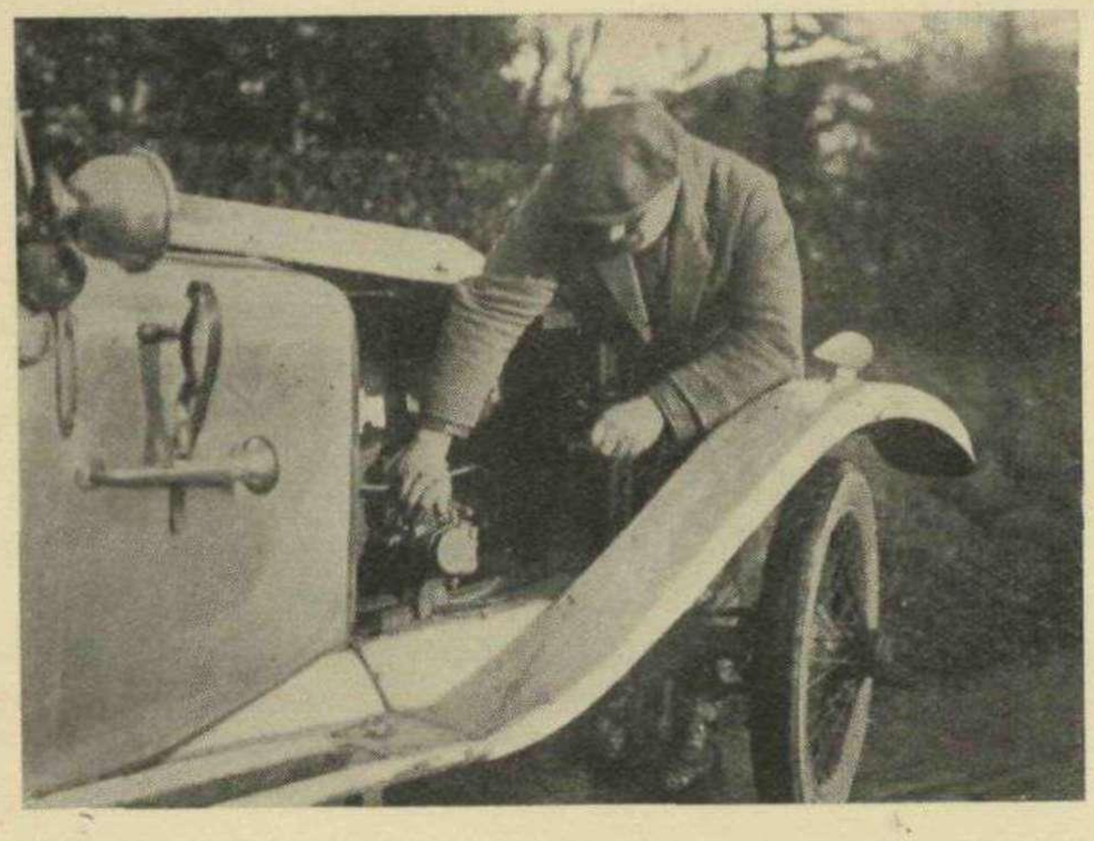
By Professor A. M. Low.

ENGINE flexibility is an important subject and the small motor-cars of to-day have occasional buzzing in the engine. Most of this trouble is entirely due to the fact that high compression engines are not flexible in the true sense of the word. A high compression engine usually means a rapid explosion, and it is obvious that a high rate of flame propagation implies a high piston speed, but power at high engine speeds does not necessarily include the ability to accelerate on top gear, so important for comfortable driving. The problem of economy with a mixture suitable to the ordinary engine has been recently dealt with in a novel manner by a new system of carburation in which the petrol is beaten against a small shroud surrounding a jet of more or less natural appearance. In this instrument, known as the R.A.G. Autometer, the petrol is not heated in any way before passing through a jet, but has its direction of flow rapidly changed by the shroud directly after leaving the jet orifice. After breaking up of the liquid has occurred, the resultant mixture which contains petrol not necessarily in a vapourised form but in a condition of extremely fine division, is passed without heating to a venturi choke where local pressure is low. As vaporisation takes place the mixture is passed up a streamline choke to the engine in the ordinary manner

A photographic examination of the petrol particles has shown them to be smaller and more distorted than those issuing from the ordinary carburettor, even if the examination is conducted at a distance of over 5 centimetres from the orifice. The shape of the particles is not globular, and they are therefore in such a condition that the surface presented to the incoming air is far greater than under ordinary conditions of petrol flow. As a natural corollary to this method of preparing the liquid fuel, it is possible to mix the strong mixture of petrol particles and the air which proceed from the well of the carburettor with any portion of air which is necessary to give the correct explosion speed for any definite r.p.m. of the engine. It is, therefore, possible to obtain a definite response from any particular throttle opening, and to prevent knocking due to high flame rate on ordinary fuels. Leakages on rough engines can be corrected without loss of volumetric efficiency. A high rate of acceleration can also be obtained on a gear which is necessarily unusually correct because the explosion motor cannot always be operated at the correct r.p.m. for every condition of high, speed, wind or loading.



THE R.A.G. AUTOMETER.



TUNING CARBURETTORS FOR COMPETITION EVENTS.

The "Zenith" Carburettor.

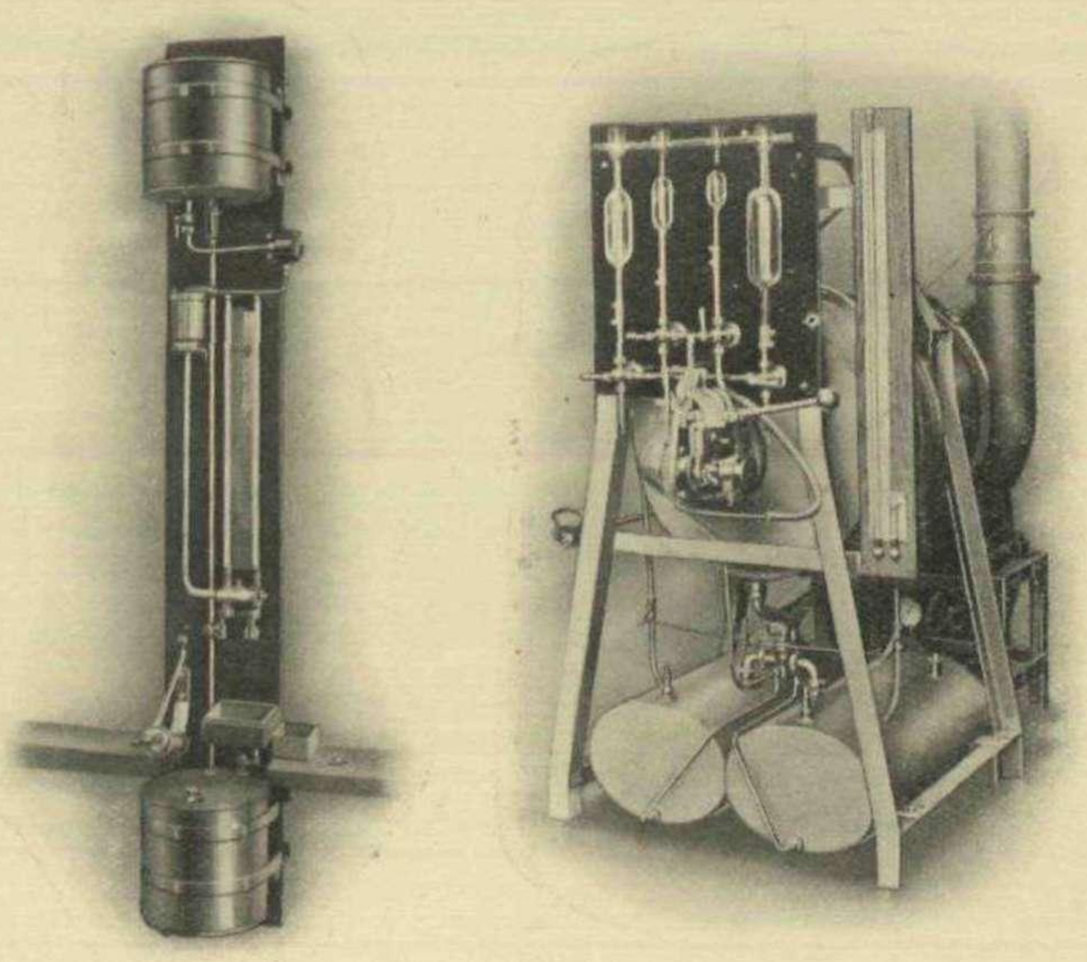
IN this, the second article dealing with tuning carburettors, it will be advisable to consider the action of carburation separately, and though some of the information detailed will be similar to that given in our January issue, it will be best to treat each carburettor individually, so that the article may be complete in itself without any need for back reference.

The Action of the "Zenith."

In order to understand the action of the Zenith carburettor, which is applied in more or less modified form to other types, if is well to realise at once exactly how it happens that simple carburettors frequently fail to produce a correct mixture under all conditions. In the simple carburrettor then—that is one which comprises a fuel chamber, a single air entrance and a single jet—suction created by the action of the engine causes fuel and air from the carburettor to flow into the combustion chamber; but, owing to fuel being more responsive to suction than air, its flow becomes more rapid as the engine speed increases, thus producing an excessively rich mixture. In the Zenith carburettor, however, this difficulty has been overcome by so arranging the fuel jets that they accurately proportion the fuel and air flows in accordance with the suction, this being accomplished by natural, and not mechanical, methods. Thus, in the Zenith carburettor, there is provided a compensating jet, the function of which is *to allow the mixture to weaken under increasing suction*, together with a further combination of two jets in the form of one compound jet, by means of which the carburettor delivers a correctly proportioned mixture at all engine speeds. The accompanying illustration shows the four parts upon which the correct proportions of the mixture depend, the sizes of these parts depending on the specific requirements of individual engines. These are: *a*, the choke tube (x), which measures the amount of air taken into the engine; *b*, the main jet (8), which acts exactly in the same way as the jet on a simple carburettor; *c*, the compensating jet (6), from which the flow is constant, regardless of the amount of suction or speed of the engine; and *d*, the slow-running jet (2), which only operates when the throttle is practically closed and goes out of action automatically as soon as the other jets come into action. As soon as the petrol from the tank is allowed to flow into the float chamber, the needle valve mechanism regulates the petrol level to a height corresponding to the tops of the slow-running jet (2) and the compound jet (4), the compensator jet (6) remaining submerged.

Setting the Carburettor for Starting and Slow Running.

When cranking the engine for starting, the throttle is opened very slightly, allowing strong suction on the orifice (10) and the tube (9) communicating with the slow-running jet (2). Thus a relatively strong mixture is drawn up for easy starting and for allowing the engine to "idle." It is important to observe that slow running does not only apply to the facility with which an engine will "tick over" at low speeds, but also has a considerable effect on the speed with which it will accelerate. If the slow-running mixture is allowed to become too rich, hesitation and choking will occur when the throttle is opened up, whilst, on the other hand, an unduly weak mixture will cause loss of power and misfiring. The adjustment for the slow-running jet is effected by regulating the knurled knob (9), which raises or lowers an internal cone sleeve over the jet proper, thus controlling the amount of petrol passing into the orifice (10). When regulating this adjustment, the knob is first turned



LEFT, THE FLOWMETER USED FOR CALIBRATING JETS, AND RIGHT A BLOWER FOR TESTING ZENITH CARBURETTORS UNDER RUNNING CONDITIONS.

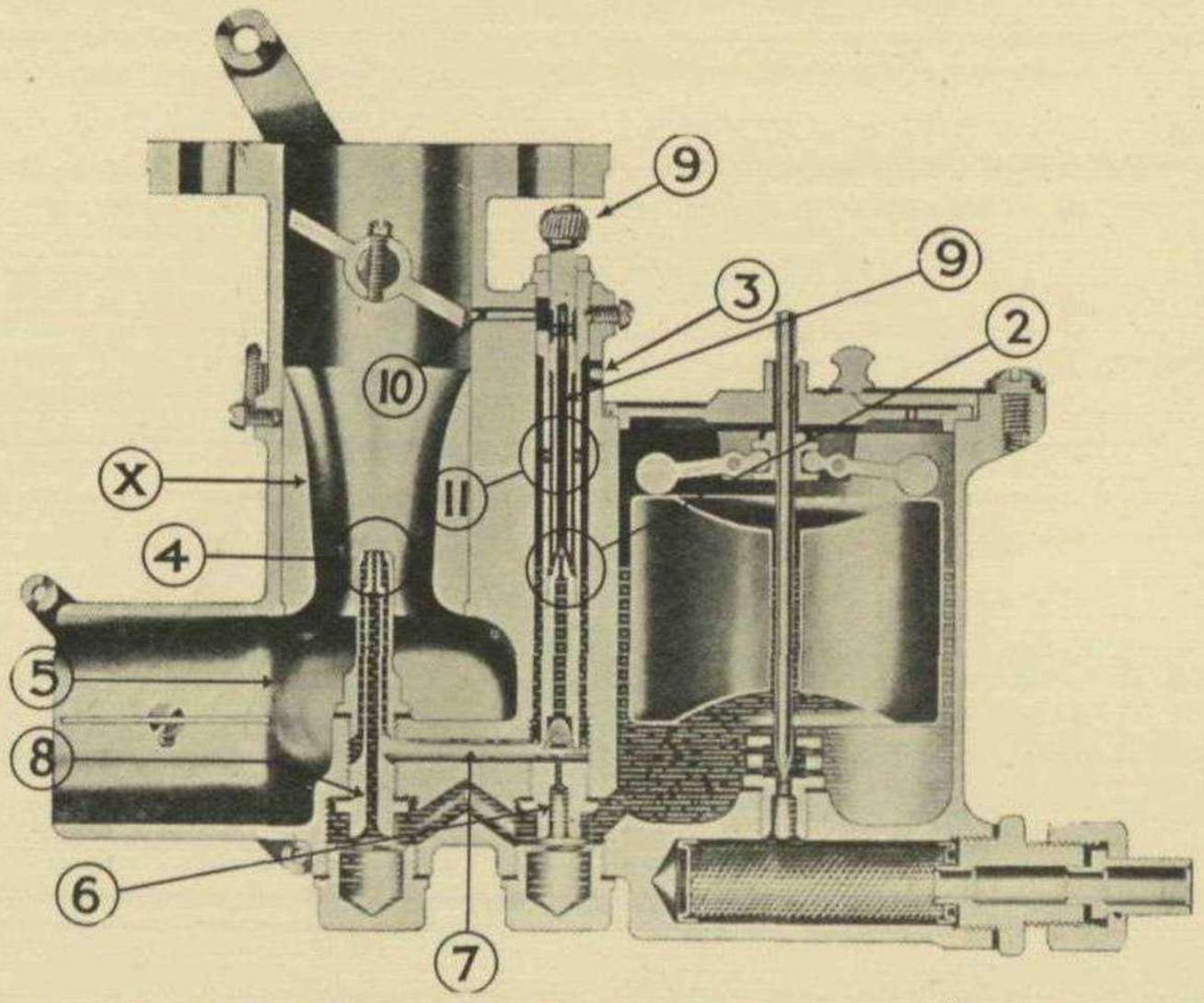
TUNING CARBURETTORS—continued.

in a clockwise direction, which richens the mixture, after which various positions must be tried until the engine runs slowly without any hesitation and will start readily. After having discovered the correct position by trial and error, the adjuster is firmly locked by a nut below the knob. There is no standard adjustment for the knob regulator, the position of which will vary with individual engines. As a rule, however, it is somewhere between the fully closed position and two complete turns unscrewed. When the slow-running jet is correctly set, the well in which it is placed will remain about half-full of petrol, thus providing a reserve for acceleration. When the throttle is fully opened, this fuel rushes through the passage (7), to balance the air passing around the compound jet.

The Zenith compound jet, it will be seen, consists of two distinct jets, the central one, called the main jet, being of the usual type and fed direct from the float chamber. Owing to the fact that, under suction, the flow of petrol from this jet increases more rapidly than the flow of air, this jet gives a mixture which gradually becomes richer as the engine speed increases. The outer jet, which is really a continuation of the compensating jet (6), has an opposite effect in that it supplies a gradually weakening mixture as the speed increases. This is due to the fact that it only delivers the amount supplied by the compensator, which, as explained, is unaffected by suction. In other words, when the main jet is passing too much petrol, the compensator is giving too little, and *vice versa*. Thus the two jets, working in combination, maintain an ideal balance and the result is a constant mixture at all engine speeds. The full action of the compound jet can be more easily grasped by considering that of the compensator jet, which is supplied from the float chamber but feeds petrol into the well above it, and is quite unaffected by the action of the carburettor itself, as both the jet and the well are open to the air through the hole (3). From the compensator jet and its well the petrol passes up the side of the main jet, but as the supply from the compensator cannot increase with the engine speed, while the air passing through the carburettor does, the mixture given by this jet becomes gradually weaker. This also provides the necessary correction. Moreover, the reserve of petrol remaining in the well when the engine is running slowly greatly assists acceleration, as it passes very quickly through the main jet cover and balances the sudden rush of air passing through the carburettor directly the throttle is opened.

Tuning for "Revs." and Power.

Though the Zenith carburettor is so simple in its action, considerable care is necessary in the processes of fitting and tuning. As already stated, the carburettor is adjusted by determining the correct sizes for the choke tube, the main jet and the compensator. The purpose of the choke tube is to determine the correct velocity of air passing the jets in order to obtain the best mixture at all speeds. The main jet has the greatest influence at high engine speeds, and the compensator, which corrects the irregularities of the main jet, exerts the greatest influence at low pulling speeds; that is, when the vehicle is pulling hard or climbing hills. After having regulated the slow-running adjustment in the manner already described, the engine should be allowed to run until it has become thoroughly warmed, which condition is very desirable before any attempts are made to select the sizes of the choke and the two jets. When the choke tube is too large, it will be impossible to get the engine to accelerate rapidly, irrespective of the size of compensator jet. Expert tuners can pick out the correct size of choke tube for practically any kind of engine without taking a road test, but this only comes by long exerience and constant practice. Ac-



A CROSS-SECTIONAL VIEW, SHOWING THE CONSTRUCTION OF THE ZENITH CARBURETTOR.

TUNING CARBURETTORS—continued.

celeration tests can be made by the aid of a Wimperis accelerometer, or by means of an ordinary stop-watch used with the speedometer. If, when the accelerator is fully depressed, the engine slows down or stops completely, a larger compensator jet may be tried; but, should no further improvement be noted, it will be necessary to remove the choke tube and replace it with one of smaller internal diameter. As a rule, the reduction of choke tube diameter tends to a heavier petrol consumption, so that this should be taken into account in order that a very rapid "pick-up" is not secured at the sacrifice of economy. When the choke tube is too small, the acceleration will probably be excellent, but the speed of the vehicle on the level will be inadequate, while a tendency for the engine to choke itself—coupled with a petrol-laden exhaust—will serve as clear indications that a larger size of choke tube is necessary. Any changes in the size of the choke must be accompanied by corresponding changes in the jet sizes.

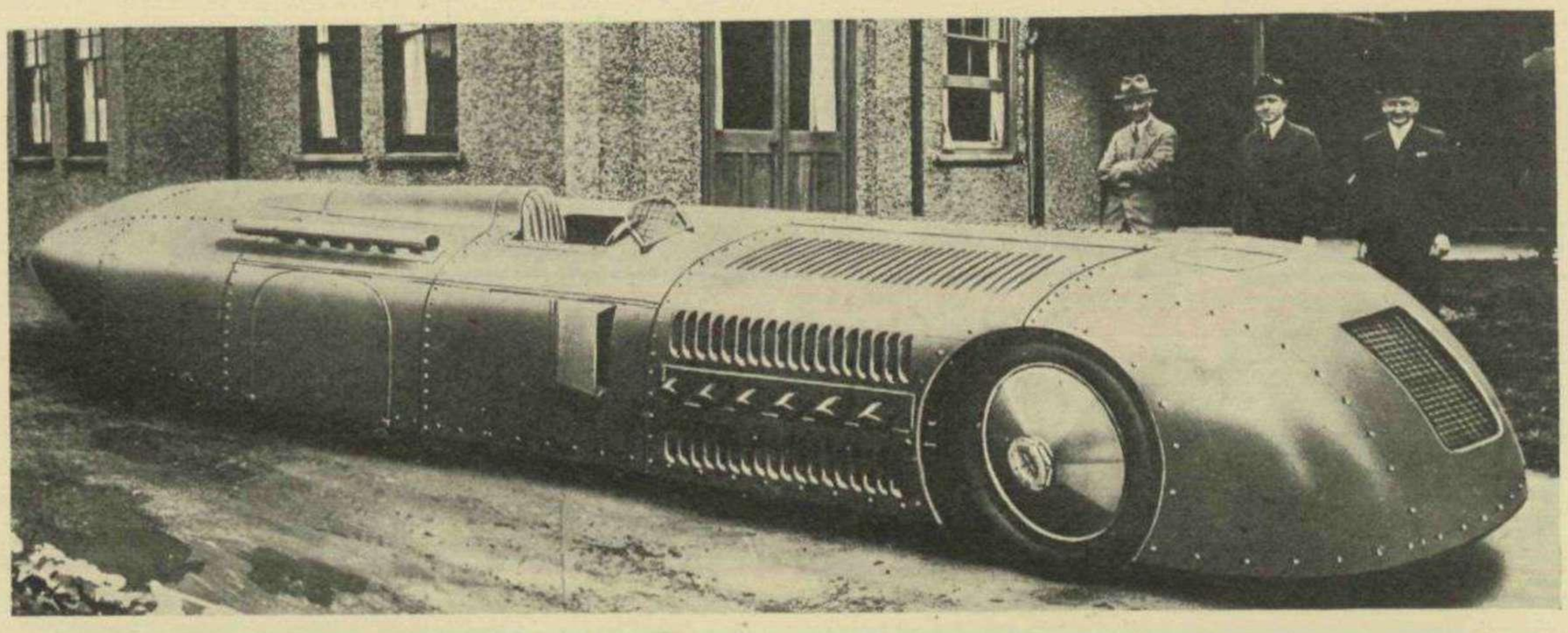
Selection of Main Jet.

The selection of the correct size of main jet must be carried out by tests similar to those mentioned above. A jet which is too large will cause the engine to choke much in the same way as when a very small choke is used, and when any demand for power is made the engine will run irregularly or perform a trick commonly known as "hunting." The best results will be obtained from a size of main jet which gives the best maximum speed on the level, and, should two jets give the same performance in this respect, the smaller should be chosen on the score of economy. The main jet is too small when the acceleration is feeble and when popping occurs in the carburettor as the throttle is opened. This popping occurs at irregular intervals, and the engine will, in consequence, fail to develop its maximum power. The size of main jet should be increased until the popping disappears.

Selection of Compensator Jet.

As already explained, the action of the compensator exerts the greatest influence at low-engine speeds, or when the engine is pulling its full load on an incline. Therefore, the selection should be made when the vehicle is pulling up a hill with the engine speed as low as can be maintained. If the compensator is too large the engine will run irregularly, and the "hunting" which takes place at high speed when the main jet is too large will be found at low speeds if the same fault exists in the case of the compensator. The size of the compensator, therefore, should be reduced until the engine runs smoothly and the exhaust is regular. The symptoms developed when a compensator is too small are misfiring and stopping of the engine.

THE SUNBEAM BID FOR THE WORLD'S SPEED RECORD.



THE TWIN ENGINED GIANT PRODUCED BY THE SUNBEAM CONCERN. NOTE THE AIR SCOOP FOR THE REAR ENGINE RADIATOR BELOW THE SEAT.

The new Sunbeam monster illustrated herewith will shortly go to Daytona Beach, U.S.A., in charge of H. O. D. Segrave, who intends to attack the existing world's records for the kilometre and mile. It is unfortunate that a suitable stretch of sand is not available nearer home, but when it is realised that 200 m.p.h. is aimed at, it is clear that only a really expansive course will suffice.

The car is fitted with two twelve cylinder engines arranged back to back and driving a central assembly of gearbox, clutch and engine coupling shafts. From this assembly the drive is conveyed to the rear wheels by a cross shaft and final chain drive.

An additional clutch is fitted to the front engine which enables the rear engine to start it up; once started the two engines are locked together positively. Starting the rear engine will be accomplished by means of compressed air from bottles.

The total capacity of the engines is 45 litres, the cylinders are arranged in sixes V-wise, each having 4 valves and 2 sparking plugs. Each crankcase is bolted to a sub-frame which in turn is attached at three points to the cross members of the chassis.

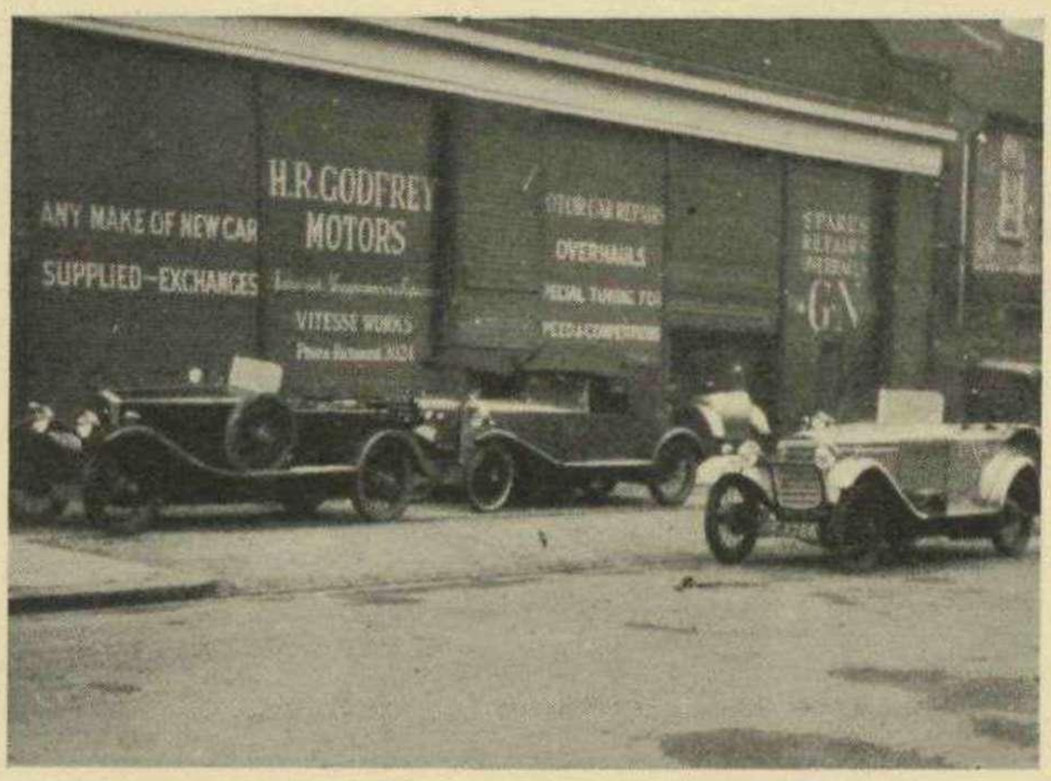
Other interesting features of the chassis are a normal three speed sliding gearbox, Dewandre four wheel braking and a top gear ratio of 1 to 1.

SERVICE FOR G.N. AND FRAZER NASH CAR OWNERS.

Some Activities of H. R. Godfrey Motors Ltd., at Richmond.

THE business of H. R. Godfrey Motors Ltd., of Vitesse Works, Manor Road, Richmond, Surrey, is principally devoted to giving service to owners of G.N. and Frazer Nash cars, for being controlled by experts with both these makes, a very large amount of practical experience is available to all who take advantage of the special facilities offered by the firm.

Mr. H. R. Godfrey, who is known to all our readers as the original designer of the G.N. car and formerly the technical director of the G.N. concern, is the principal director and with him is associated Mr. H. J. Aldington whose long experience with the G.N. and Frazer Nash cars, both on the commercial and technical side, qualifies him as an expert. Mr. Aldington has for many years been a successful competitor in speed events and reliability trials on Frazer Nash cars and is, therefore, fully conversant with all the finer points in securing the maximum efficiency from cars about which his advice is required.



AN EXTERNAL VIEW OF THE VITESSE WORKS.

The works at Manor Road is equipped with the necessary machine tool equipment for effecting all repairs and provides accommodation for about fifty cars. A large stock of spare parts and replacements is carried for all types of G.N. cars and at the present time a considerable amount of business is done in re-building and overhauling machines of this type of which there are still some thousands in daily use.

It is interesting to note that all the second-hand cars of the two above-mentioned makes are entirely re-built before being offered for re-sale and various detailed improvements are effected, so that the company are able to give definite guarantees of the mechanical condition of the machines sold. In addition to the ordinary process of overhauling Godfrey Motors Limited specialise in " hotting up " G.N. cars by fitting special cylinder heads and careful selection of gear ratios whereby it is possible to increase the maximum speeds of standard models to 70 m.p.h.

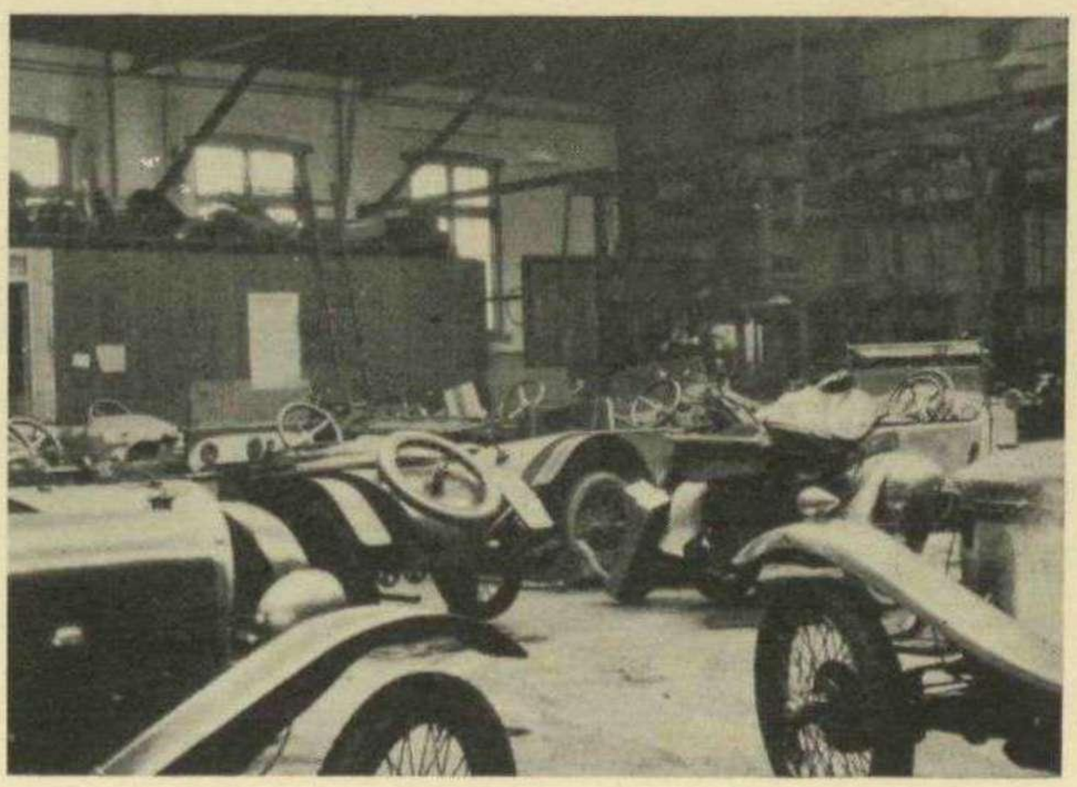
During our recent visit to the Vitesse Works, we took the opportunity of examining several of the jobs in progress and noticed with satisfaction that a high standard of workmanship prevailed, particular attention being paid to the all-important details upon which so much depends, but which are so often neglected. We were informed that the staff of mechanics comprises men of long experience on G.N. and Frazer Nash work, all the work being carefully supervised at all stages. The fact that the whole of the repair work is done in one large and undivided shop renders the supervision a comparatively easy matter.

High Efficiency Tuning.

Much of the work done in the Vitesse works consists in tuning cars for well-known competition drivers, besides which several quite interesting speed machines are in course of construction, amongst these being a special modified type of chain driven chassis with a British Anzani engine which when complete will turn the scale at 10 cwt. and be capable of something very interesting in the way of acceleration and speed.

The company also specialise in the construction of " plank " cars, which may be described as " speed irons " pure and simple, with little or no pretensions to comfort, but having most astounding performances.

Tuning and overhaul work is not confined to the makes of cars mentioned above and very satisfactory results have been secured in " hotting up " other types of sporting cars for racing and competition events. Controlling a small and self-contained concern of this class, the principals are able to give their personal supervision to the work undertaken for customers, who naturally benefit from the wide experience possessed by Mr. Godfrey and Mr. Aldington.



SECOND-HAND G.N. AND FRAZER NASH CARS ARE COMPLETELY REBUILT BY MESSRS. GODFREY'S.



Round the Clubs



HONORARY DISTRICT AGENTS.

AMERICA.	A. M. Leitch, 115, Bank St., Norfolk, Virginia, U.S.A.
BARROW-IN-FURNESS, Lancs.	W. A. Singleton, 114, Sutherland St.
BASINGSTOKE, Hants.	Percy Watson, 1 and 2, Winchester Rd.
BLACKBURN, Lancs.	R. Jackson, 24, Cecelia Rd., Feniscliffe.
BLACKPOOL, Lancs.	T. Sharples, Rawcliffe Hall, via Garstang.
BLOXWICH, Walsall	Horace R. Millington, Wallington Heath.
BODMIN, Cornwall	W. H. Jenkin, Bodmin [Rd.
BOURNEMOUTH, Hants. ...	A. G. Cullwick, 6, Belvedere
BRIGHTON, Sussex.	Lieut.-Commdr. John Havers, 35, Lansdowne Place, Hove.
BRISTOL, Glos.	T. D. Corpe, Hill View, Churchill, Somerset.
BROMLEY, Kent	F. Wilson Smith, 32, Hammelton Road.
CAMBRIDGE, Cambs.	C. A. C. Birkin, Jesus College
CARLISLE, Cumberland ...	F. Rowlands, "Douglas House," Nelson Street.
CARMARTHEN, Carmarthen. ...	J. Jones, Nelson Hotel.
CLECKHEATON, Yorks. ...	F. A. Brown, "Hill-Crest," Whitcliffe.
DERBY	Mr. M. A. McEvoy, Vicarage Lane, Duffield, Nr. Derby.
DEVIZES, Wilts.	G. H. Oliver, 18 and 19, The Brittox.
DOOARS, India	H. Marshall, Esq., Matelli T. E. & P.O., Jalpaiguri,
GRAVESEND	S. J. Gillis, "Comines," Wrotham Road.
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OTLEY, Yorks.	J. H. Holmes, The Garage, Station Road.
OXFORD, Oxon.	W. Mathews, 6, St. Aldate's.
PATELEY BRIDGE, Yorks. ...	G. Kingham, Colton Croft, Burnsall.
READING	S. W. Woollan, Caversham Motors, Ltd.
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SHEFFIELD, Yorks.	H. W. Ogg, 12, Southbourne Road, Broomhill.
STROUD, Glos.	W. E. Hayward, Bideford, Bisley Road.
TAUNTON, Som.	P. V. Hare, The Parade.
WOLVERHAMPTON, Staffs. ...	H. L. George, "The Homestead," Old Fallings Lane, Fallings Park.

Honorary District Agents are appointed by "Motor Sport" to further the interest in the sporting side of motoring and motor cycling.

We give on this page a list of the Honorary District Agents already appointed. Through these Honorary Agents we keep in touch with local events in all parts of the country, and with their co-operation we hope to increase the popularity of motor and motor cycle sport. Honorary District Agents will be pleased, whenever possible, to give assistance to motorists and motor cyclists, desirous of taking part in local events.

If you have any difficulty in obtaining "Motor Sport" in your neighbourhood, the nearest Honorary District Agent will inform you how you may obtain it.

WOOD GREEN AND DISTRICT MOTOR CLUB.

THE above club held its first Ladies' Reliability Trial recently over a very stiff main road course, including three observed hills, and leading over treacherous slime-covered roads in Hertfordshire and Buckinghamshire. In spite of the severe nature of the trial, a good entry was received, thirty-four out of the forty-two competitors being mounted on motor-cycles.

It was noticed that nearly all the motor-cycles were recent models, and quite a number super-sports machines; and to glance at them, and their riders, who were all very suitably attired, it might be thought that an ordinary club trial had been arranged for the enjoyment of man.

The start was at Alexandra Palace at 10.30 a.m., and the route led from there to the Three Horse Shoes, where a secret check was held. Incidentally, it may be mentioned that a time allowance of three minutes late or early at each point was made, three marks being deducted for each minute early, and two for each minute late above that allowance.

The first observed section, Waterworks Hill, just outside Tring, had to be climbed non-stop. The hill was in a very greasy condition, and required careful negotiation. Several of the motor-cyclists made very good ascents. Most of the cars came up well, there being only two failures. Miss Roper (A.C.) made a very good climb after being baulked further down the hill. The route then continued by way of greasy lanes to Wendover, where another secret check was held, and then to the foot of Whiteleaf Hill through Askett, where a restarting test was arranged. The surface of the hill was in a fairly slimy condition, and competitors were stopped on the steep part of 1 in 6, and were required to restart, their times being taken between two lines marked with tapes. Skids and wheelspin caused the loss of many marks for the motor-cyclists when getting away, and the test would have caused even the most experienced of hill-climbers several qualms. By the time the cars arrived on the scene the surface was well churned by the wheels of the preceding motor-cycles, and their occupants realized that they were "for it." Good ascents were made by Miss J. Randall (Austin Seven), Miss M. V. Milne also in an Austin, Miss M. Corbett (A.C.), Miss N. Woods (Lea-Francis), Miss B. W. Ramsay (Oldsmobile), Miss R. M. Macintosh (Austin Seven), Miss M. Abrahams (Clyno), Miss L. M. Roper (A.C.), Miss P. W. Ingram (Morris-

ROUND THE CLUBS—continued.

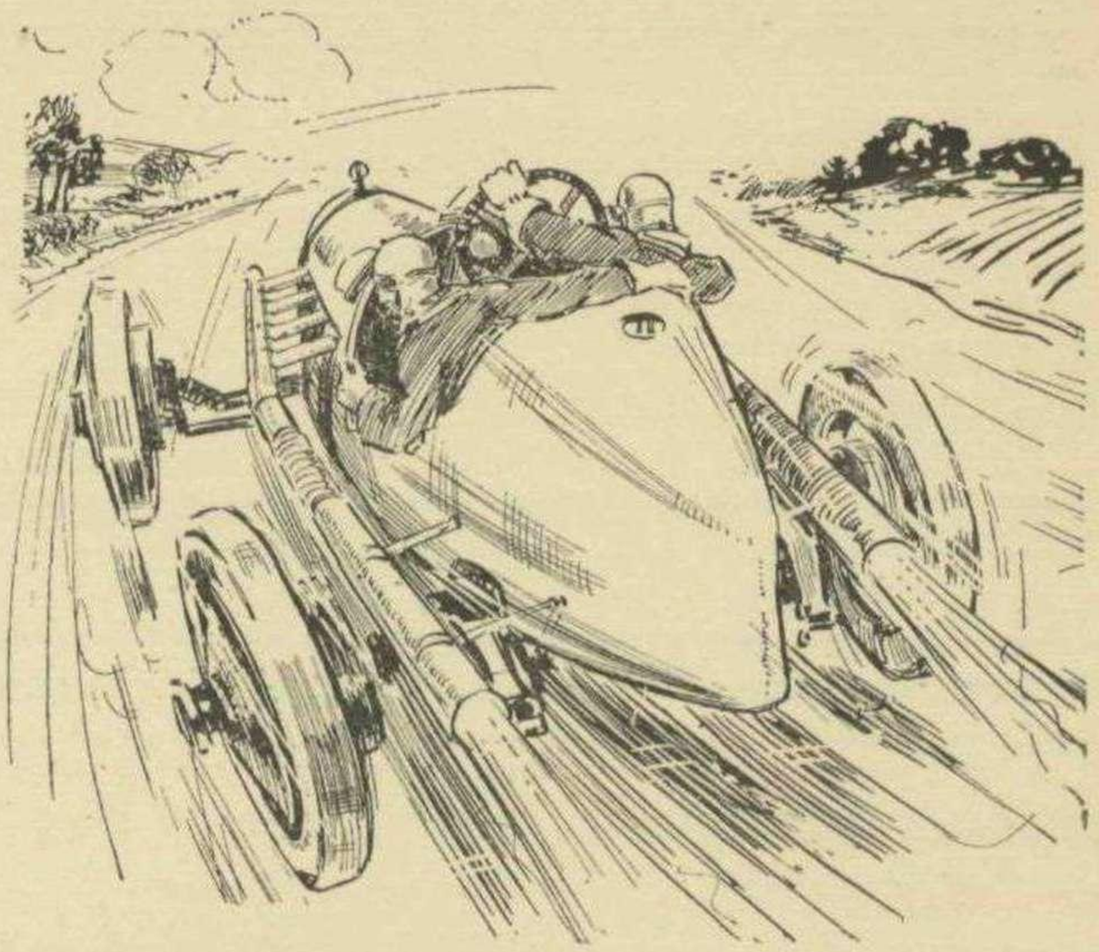
Wood Green & District (cont.).

Cowley), and Miss J. E. H. Weekes, whose A.C. had carefully balanced wire wheels.

The brake test at the top of Kop Hill was extremely severe, and the results were rather disappointing, as there were more failures than successes. The competitors were required to coast 40 yards down the hill in neutral and then pull up between two lines of dye. In the car class there were eight failures, and in the motor-cyclists class only ten competitors were successful. From the bottom of Kop Hill the route led straight to the luncheon stop at Princes Risborough, where the competitors obtained a "fill-up" both for themselves and their machines. After lunch the route led back in the reverse direction, and the competitors had to make a slow climb of Kop Hill in one minute intervals. Times were taken on the steepest part and marks deducted for every minute taken under the 7½ minutes allowed. Drivers adopted various methods to ensure losing no marks. One motor-cyclist was seen riding from bank to bank in order to take the longest way possible, while others took the easier parts of the hill very slowly so that they might negotiate the more difficult parts at a good speed. Miss Landon (438 Chater Lea) made a good ascent, being very slow and steady on the lower part, but opened up a little higher up and reached the top successfully. Good climbs were made by Miss Lermitte (346 Royal Enfield), Miss Kerridge (249 B.S.A.), and Miss Temple (348 Raleigh.) Miss Adams (348 Douglas) made a neat climb, also ascending in corkscrew fashion. Miss M. V. Milne (Austin Twelve) was first up the hill in the car class, and she made a very good, effortless climb. The two Austin Sevens driven by the Misses A. J. Randall and R. M. Macintosh, also distinguished themselves. Other good climbs were made by Mrs. G. H. Harrison (Clyno), Miss J. E. H. Weekes, who carried three in her A.C., and Misses M. Walker (Singer), L. M. Seiflow (Windsor), and P. M. Ingram (Morris-Cowley).

The provisional results are as follows:—

First Prize: Miss K. M. Kerridge (249 B.S.A.).
Second Prize: Miss N. Debenham (249 B.S.A.).
Third Prize: Mrs. S. Cato (799 A.J.S., sc.).
Silver Medals: Miss A. G. M. Broderick (348 Raleigh), Miss J. R. Hole (498 Scott), Miss J. W. Manning (980 Coventry Eagle, sc.).
Bronze Medal: Miss C. Adams (348 Douglas).
Special Silence Prize: Miss A. G. M. Broderick (348 Raleigh).



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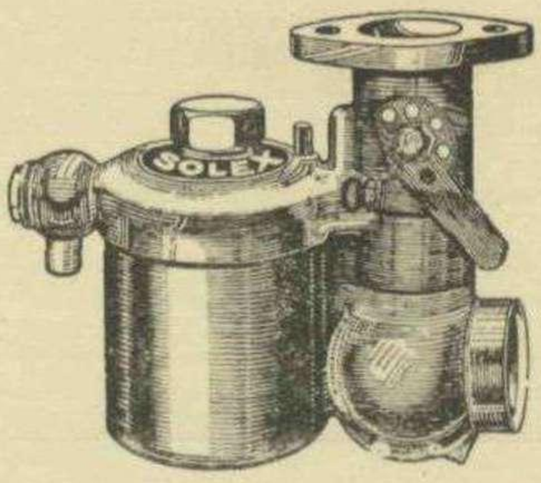
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ROUND THE CLUBS—continued.

Ulster M.C.U.I.

The above club held a reliability trial, for which a good entry was received. Twenty-six riders out of the thirty-two starters finished the course. The results are as follows :—

GOLD MEDAL : S. Wallace (98L Brough Superior, sc.)

SILVER MEDALS : J. Kirkwood (348 A.J.S.), T. Hall (348 A.J.S.), H. M'Kee (498 Scott), T. Stewart (494 Triumph), L. P. Donnan (Triumph), G. A. Savage (Rudge-Whitworth), J. Boal (B.S.A.), N. Dickson (Triumph), and N. M. Scott (Matchless).

BRONZE MEDALS : J. Dubois (Ariel), G. A. Smyth (Dunelt), W. F. Coates (Sunbeam), W. L. Burns (Sunbeam), and J. W. Shaw (Norton sc.).

TEAM PRIZE : Ulster M.C.C. No. 2 Team : H. M'Kee, G. A. Savage and G. A. Smyth.

Birmingham M.C.C.

The results of the sporting trial held recently by the above club are as follows :—

AVON CUP : G. B. Goodwin (Sunbeam).
BAKER CUP : J. Parker (B.S.A.).
ENDURANCE CUP : Alan Watson (Sunbeam sc.).
BRADLEY CUP : J. P. Lloyd (B.S.A.).
TEAM AWARD : Sunbeam No. 1 Team (A. Watson, G. B. Goodman, and N. P. O. Bradley).

GOLD MEDALS were awarded to F. H. Brown, E. F. Cope, R. G. Beesley, E. Eschborn, G. Stannard, C. Locke, N. P. O. Bradley, D. H. Gittins, R. F. Wade, J. Jones, A. E. Perrigo. L. Wiltshire, F. Hayes, J. C. Bayley, P. Blamire, F. Chambers, D. Brandish and P. J. Wilkins.

SILVER MEDALS : S. Jackson, A. Sherwood, G. Wright, D. Mansell, J. M. Biddle, and C. Lord.

BRONZE MEDAL : L. Wiltshire.

Liverpool M.C.

Forty-six competitors entered for a recent reliability held by the club, thirty-five riders finished the course of 250 miles. The following awards were made :—

CUNDLE CUP (Best solo) : S. Doward (348 Velocette).
STEPHENS SILVER GOBLET (Best sidecar) : H. Kershaw (980 Zenith, sc.).
BEE SILVER GOBLET (Best lady) : Miss E. Edmunds (174 Raleigh).
LUNBY SILVER GOBLET : Miss N. Marples.

FIRST CLASS AWARDS : G. Edmunds, Miss E. Edmunds, F. R. Double, B. Granville, L. A. Clarke, V. F. Crosthwaite, C. A. Wylie, S. Doward, W. J. Thomas, Miss N. Marples, C. Edge, C. R. Sergent, G. P. S. Evans, J. H. Kershaw, A. D. Elder, and A. L. Shipton.

SECOND CLASS AWARDS : G. H. Joynson, S. B. Clegg, C. A. Wilkinson, E. Damadian, G. W. Hourd, N. de Larrinaga, J. H. Ruddock, S. R. Cundle, H. V. Lloyd Roverts, C. B. R. Smith and J. Bithell.

THIRD CLASS AWARDS : B. A. Lancaster, J. G. Collins and G. S. Whiting.

TEAM AWARD : J. H. Ruddock (495 James), J. L. Braes (495 James), and A. L. Shipton (495 James).

Bradford M.C.

The above club held its annual dinner and prize distribution recently at the Midland Hotel, Bradford. J. A. Watson-Bourne and his bride (Miss Marjorie Cottle) were among the visitors. When proposing the toast of "The Auto Cycle Union and the Yorkshire Centre," Mr. H. Payne, president of the Ilkley and District M.C.C., mentioned the fact that Bradford mounted police had now been equipped with rear lights for their horses, and expressed a hope that all cattle drovers should follow the example. Major Vernon, a founder member of the club, responding, recalled incidents in the early days of motor-cycling, especially one when starting on a run to Morecambe he had to mend forty-eight punctures before he reached Skipton. During the evening a gold watch was presented by Mr. Eric Myers to Mr. J. E. Fearnley in recognition of his services to the club as president from 1913 to 1926.

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