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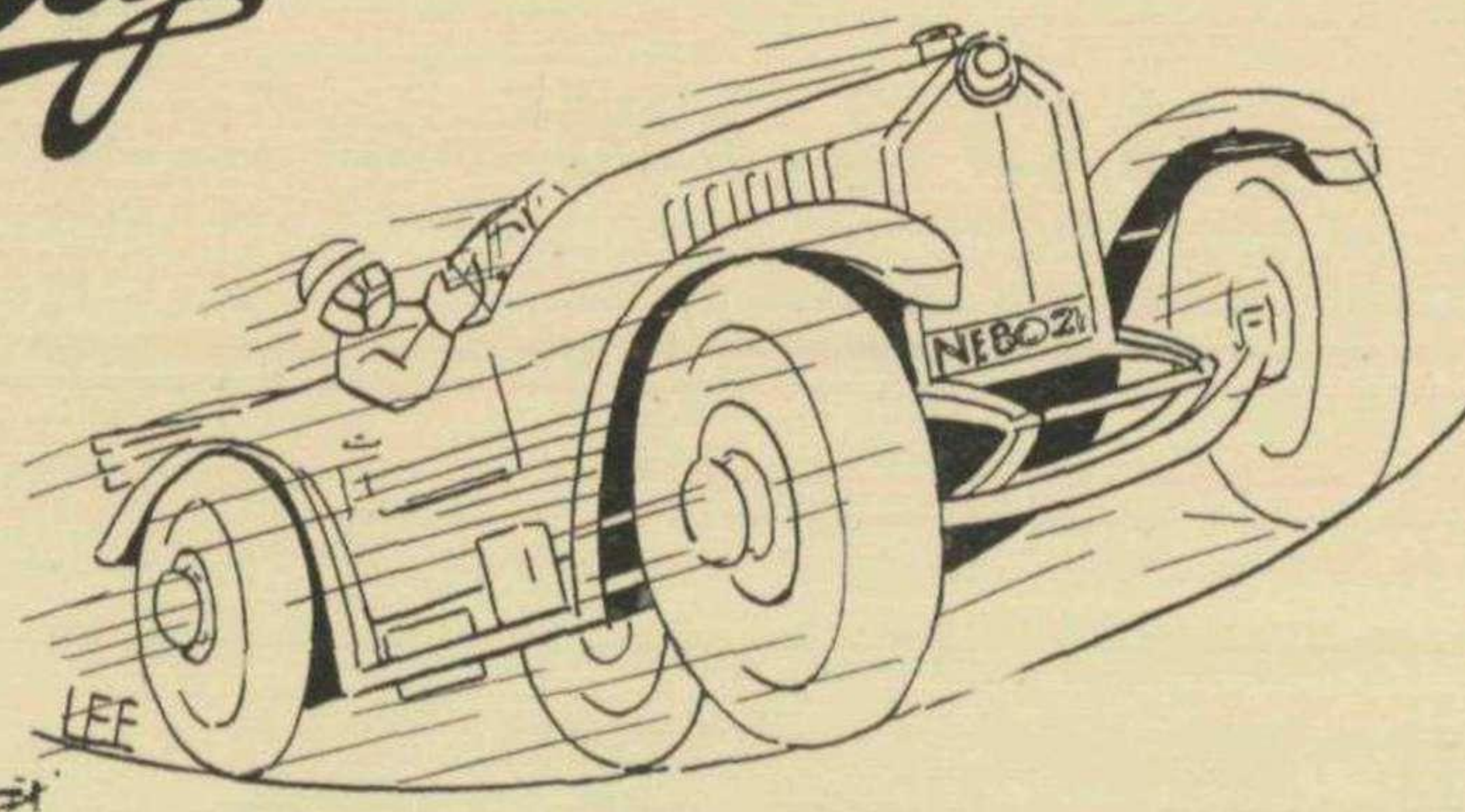
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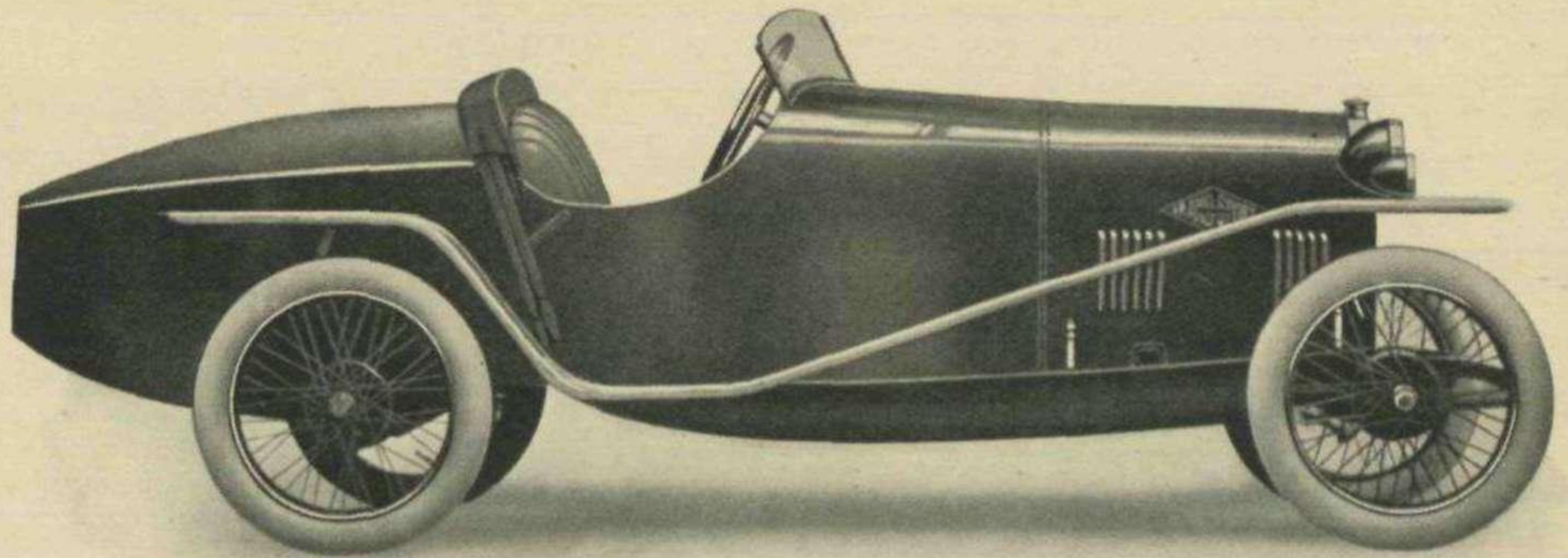
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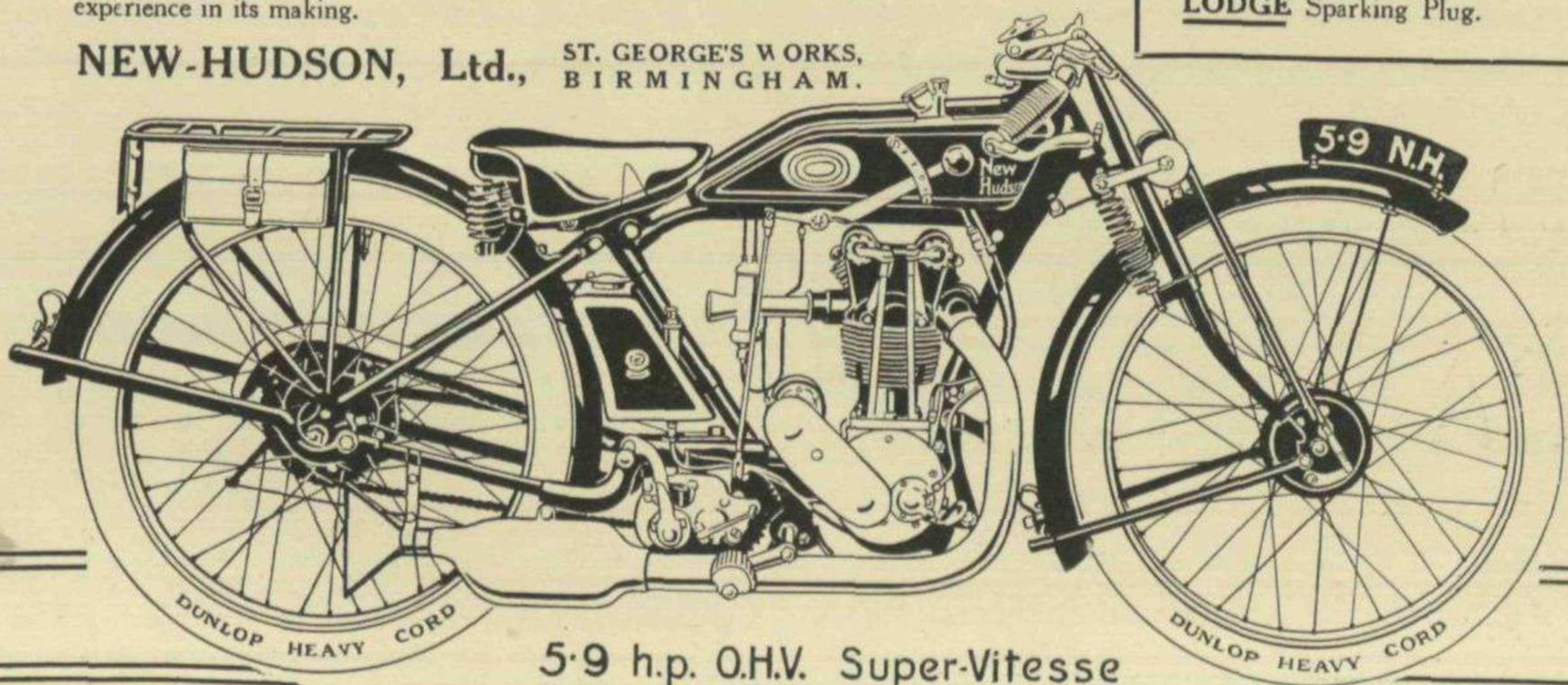
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Edited by RICHARD TWELVETREES, A.M.I. MECH E M.S.A.E., M.SOC.ING.CIV. (France)

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H

Merry Xmas

and a

Prosperous

New Year

to all

Our Readers.



SOME EXPERIENCES WITH THE WORLD'S FASTEST CAR.

By CAPTAIN MALCOLM CAMPBELL.

We have pleasure in publishing this article, specially written for MOTOR SPORT by Captain Malcolm Campbell, whose performances on the Big Sunbeam, as well as on various cars at Brooklands, have excited the admiration of all followers of motor racing.

EVER since the big twelve-cylindrical Sunbeam came into my possession, my friends have been greatly interested to know the reasons prompting me to attempt the high speeds of which the car is capable.

The answer is simple and may be expressed in one word—Ambition. Motoring makes different appeals to different people, some finding their desires for achievement satisfied by long distance records; others in gaining successes over difficult trial routes; whilst reliability trials, short hill climbs and other forms of the great pastime appeal to the sporting instincts of different classes of motorists.

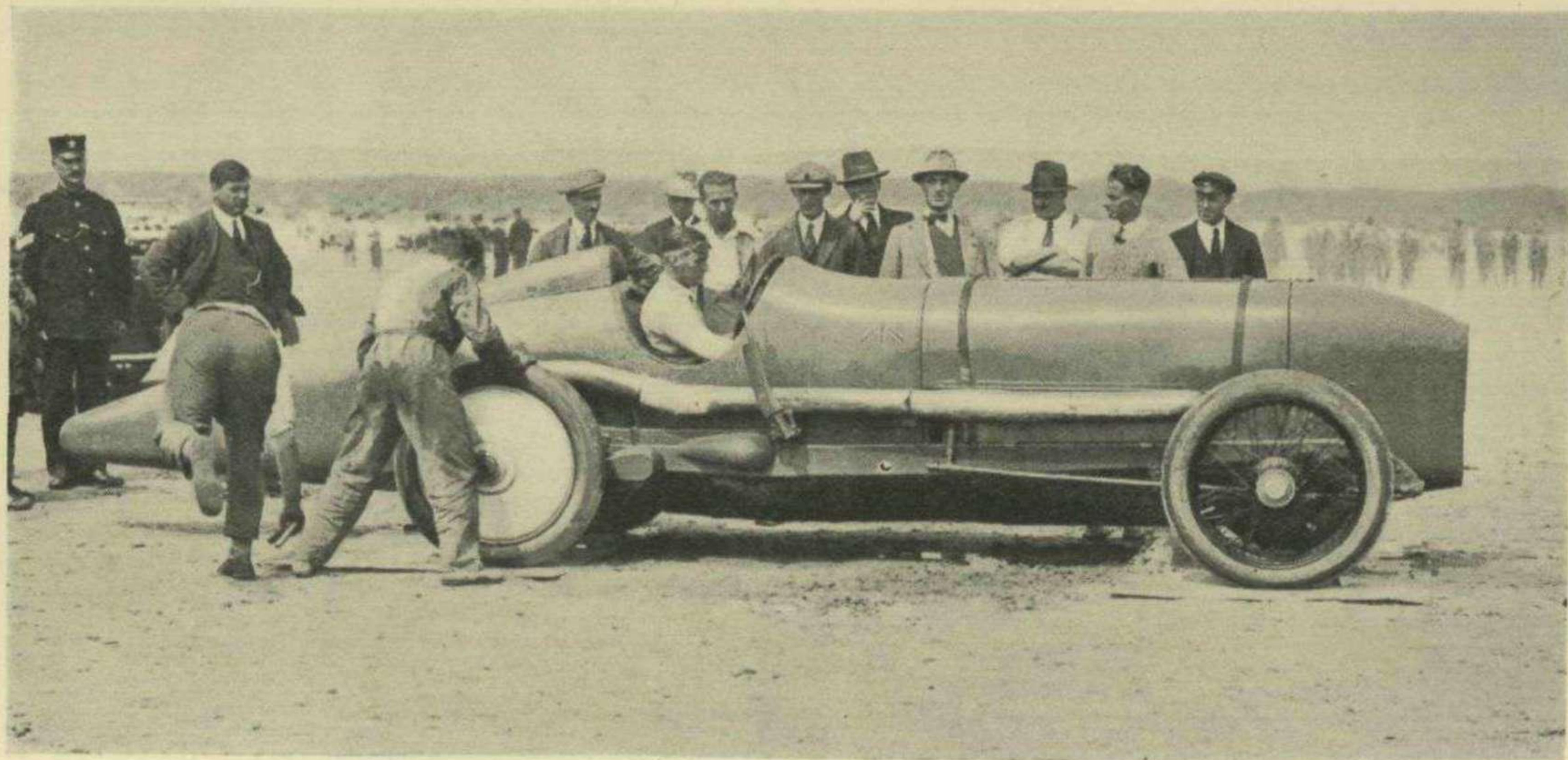
No one will deny that the joys of sheer speed possess an extraordinary fascination, but, before taking the wheel of the Sunbeam, I had no idea of the wonderful sensation of driving at a really high velocity. The outstanding recollection of my first fast trip on this car was the time occupied in slowing down and even when the brakes were applied, it seemed at the moment as if it would never stop again. On becoming accustomed to the higher speeds and the manipulation of the car, this feeling, of course, disappeared, though at the time it was a most remarkable experience.

One has only to sit behind the big engine and let the car go on a stretch of good sand to feel as if some supernatural force were at work; a force which, though controlled by the hand of man, is so terrific as to inspire awe.

I have often thought that if a Rudyard Kipling, or someone equally skilled in expressing their feelings, could be persuaded to take a trip at 150 miles an hour on such a car as the Sunbeam, the description of the trip would go down to history as a poetical masterpiece. But, there it is! I cannot attempt to describe the fascination of sheer speed and will content myself by stating that every run I take on the big car makes me feel ten years younger. Perhaps that may be a personal justification of my hobby, though naturally there are many useful things to be learned as the result of abnormally high speeds.

From my own point of view, any attack on the world's record is not a business proposition, there is little to be gained and a good deal to be risked financially, as it is practically impossible to insure one's car except at an exorbitant premium.

But, as I was going to say, the greatest fun is obtained during practice spins, for then one is free from all the



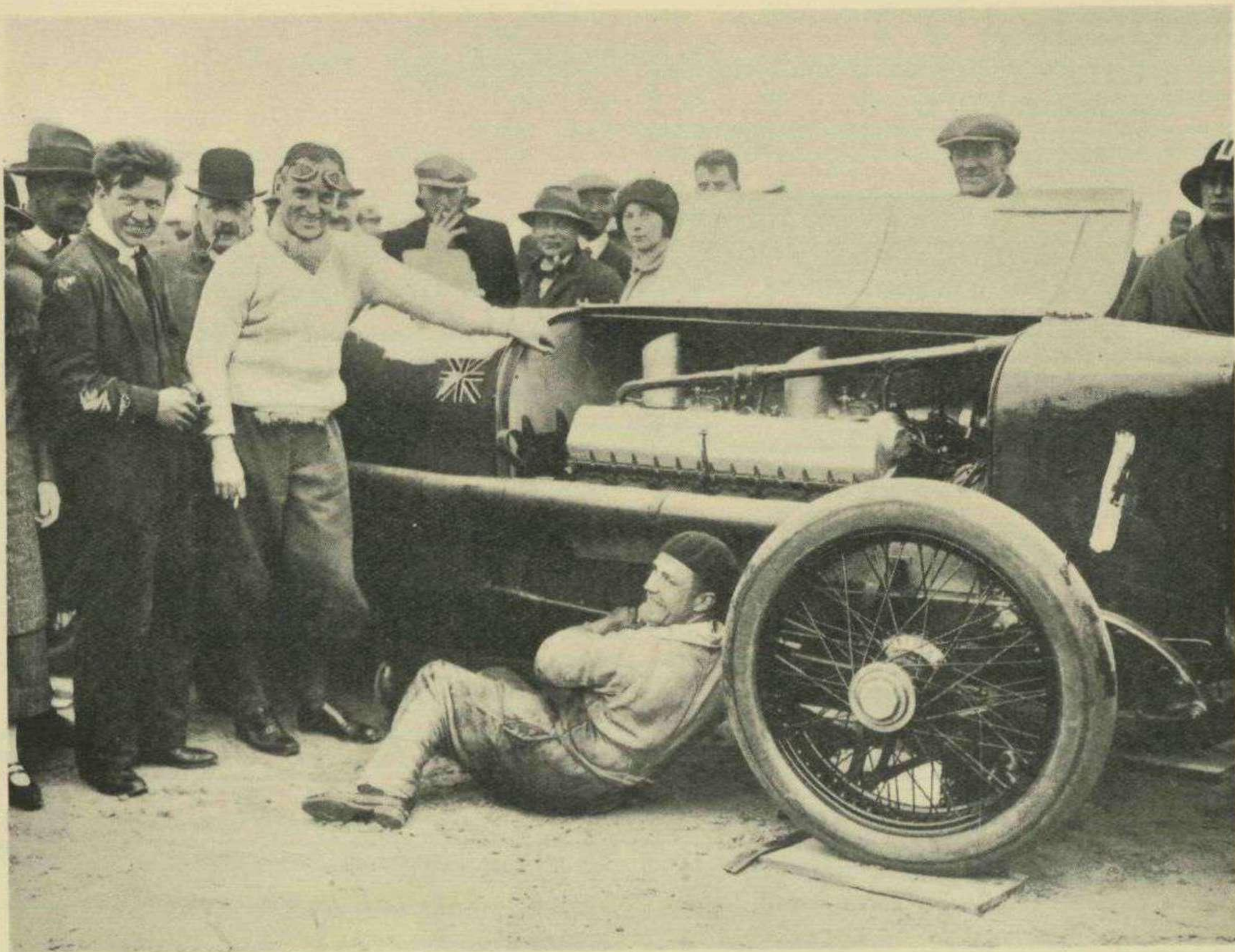
CAPT. MALCOLM CAMPBELL ABOUT TO START ON THE RECORD RUN AT PENDINE.

SOME EXPERIENCES WITH THE WORLD'S FASTEST CAR—continued.

cares and anxieties of an official record attempt, the worry as to the condition of the surface, the state of the weather and the exacting attention necessary to all minor details of organisation.

There is just the subtle difference between a public and a private performance, so well known to all motorists who take part in any kind of competition event. As a crowd, waiting for the driver who fogs his gear when rounding a steep corner, exercise a baneful influence on many competition drivers, so does the presence of spectators, pressmen and others interested in the record, tend to mar the enjoyment of a really fast run.

the Brooklands Track. Speaking of the track, I do not consider the Sunbeam at all suitable for the conditions of that course, which is the only reason for running it at Pendine, Fanöe, Skegness and elsewhere. For speeds in the neighbourhood of 150 miles per hour, all the conditions must be absolutely right, for the normal risks when travelling all out are sufficient, without incurring needless dangers. At such a speed a side gale blowing at between forty and fifty miles an hour is not a pleasant experience, whilst the fact that one's vision is partly obscured by flying sand is not one to be neglected. But, when everything is right, the maximum speed of



FINAL ATTENTIONS BEFORE STARTING TO ATTACK THE WORLD'S RECORD.

In other words, one becomes the servant rather than the master of one's hobby, but for all that I am devotedly attached to the car that has given me so much real enjoyment.

Perfect Conditions Essential for Speed.

Other people who have handled the big Sunbeam have been equally impressed by its charms. Hawker, Hornstead, Rene Thomas, "Sammy" Davis and Kenelm Guinness, being the only other men who have driven it to any extent. The last-named having put up the best performances with this car ever witnessed on

the Sunbeam surpasses the thrills of flying and everything else for sheer exhilaration.

The Value of a Second.

One very remarkable point in connection with record attempts is the value of the unit of time. In a mile run three little seconds make all the difference between 150 m.p.h. and 180 m.p.h. Just have another look at your stop watch, count off three seconds and think what it means where a world's record is concerned. To beat the watch by those three ticks, one must be prepared to spend considerable sums of money, months

SOME EXPERIENCES WITH THE WORLD'S FASTEST CAR—continued.

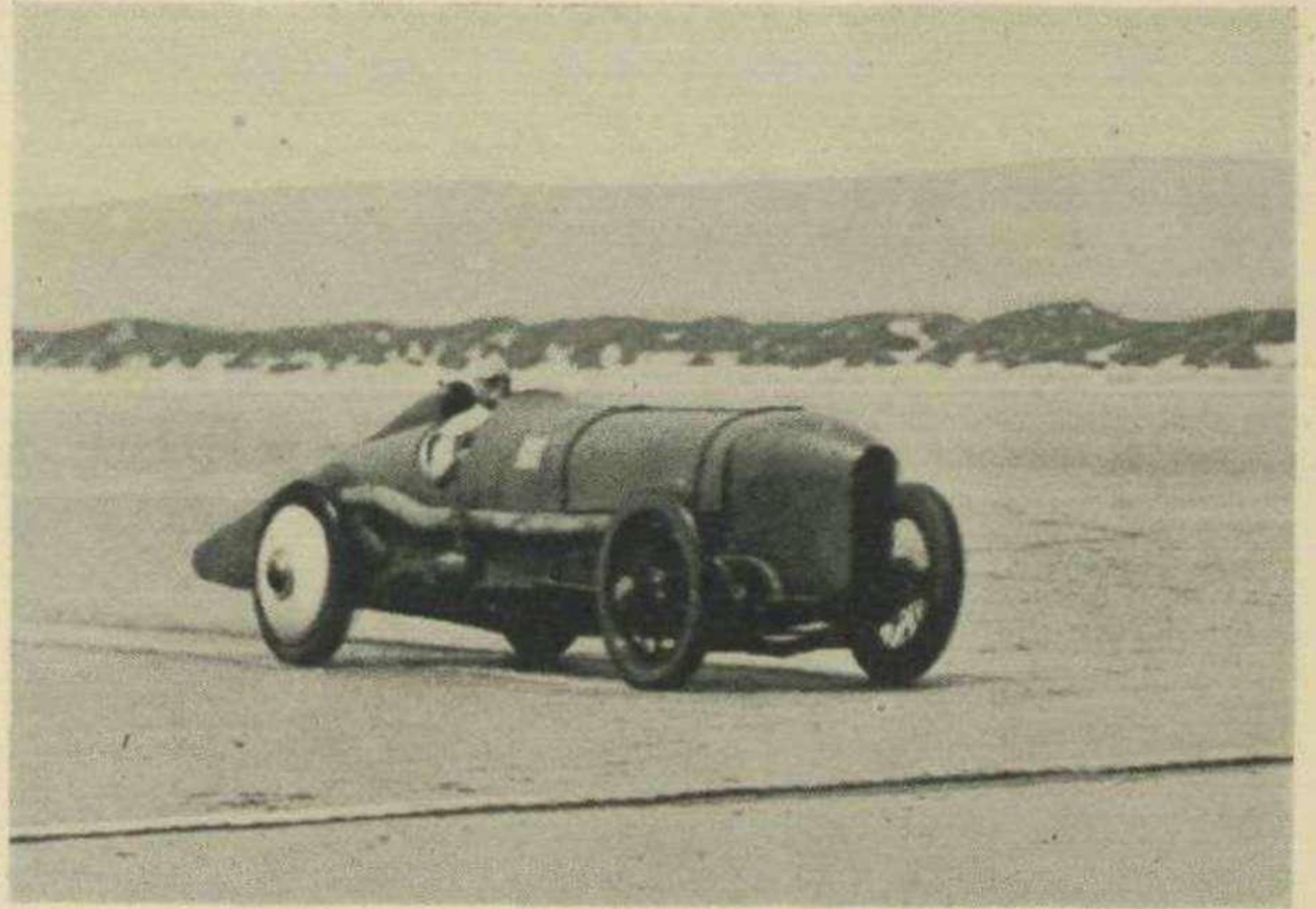
of persistent effort and the technical resources of many sections of the automobile industry have to be requisitioned.

Perhaps, when read in black and white, it may seem rather futile to take so much trouble to cut down the time for a short run by so limited an amount as three seconds, but the wealth of technical information obtainable by such efforts cannot be over-estimated.

One learns the real meaning of wind resistance, becomes familiar with the peculiar influence of gyroscopic action, whilst the effects of perfect balance and harmony in all parts of the machine are demonstrated in a remarkable way.

Take the case of tyres as a single example. It is common knowledge that the straight edge cover, so popular to-day, is the direct outcome of high speed experience, as is the new well-based rim. Furthermore, it is interesting to mention that tyre manufacturers are now concentrating upon the development of a special form of tyre testing apparatus, which will exactly reproduce the conditions obtaining when a car is travelling at 180 miles per hour. A few years ago such a project would have been described as absurd in the extreme and, if the big Sunbeam has done something to provide the ordinary motorist with better tyres, it may be said to have justified its existence.

Then again, for high-speed work, the entire absence of engine and chassis vibration is an absolute essential and, in this respect, one of the virtues of a record breaking machine is a primary quality for the touring car de-Luxe. One may well ask, however, if any of the peculiarities of construction of the monster Sunbeam are to be found in cars of normal design? It is quite impossible



CROSSING THE LINE AT 153 M.P.H.

to say how far high-speed influences extend into ordinary car practice, but it is safe to say that in the hands of its original owners, the Sunbeam Motor Company, an enormous amount of practical data was obtained.

So long as this and other super-speed cars are run, so long will their influence extend to standard models. Every single performance is closely watched by car designers the world over and though little may be said about it at the time, one may take it for granted that the different factors making for speed and regularity gradually find their way into the composition of ordinary cars and especially those of the type selected by the sporting motorist.



MOTOR CYCLE FOOTBALL: COVENTRY AND WARWICKSHIRE V. GRIMSBY.

This meeting of two unbeaten teams resulted in a win for Coventry (Skulls) by 6 goals to nil.



Early Motor Cycling and the Result.

By F. W. BARNES, M.I.A.E.

Mr. F. W. Barnes, who is well-known to all Brooklands habitués, tells some of his early experiences in the following notes. Apart from his career as a speedman, our contributor has done much valuable pioneer work in developing motor-cycle design and construction, the Zenith-Gradua Gear being the best known of his inventions.

Some of the trophies won by Mr. Barnes are depicted on the right of the heading.



THERE are many motorists still on the active list who can well remember the days of the inception of motor road vehicles; and from these one hears from time to time many really interesting experiences. The annual Motor Shows in particular, when pioneers of motoring meet together, are excellent times for such recollections; and a book containing these would certainly be well worth reading. Perhaps we shall see such a book, which has often been suggested, at some future date, while the pioneers are still with us.

The Old Crocks' stand at the Motor-Cycle Show of 1924 did much to remind one of the old warrior days of motor-cycling; although it is possible that some of the spectators who did not live through the early days may not have been quite so appreciative of their presence amongst the highly finished machines of the present day. But those "old crocks" should certainly be highly respected, not despised for their ungainly design and shabby appearance. They presaged the birth of a great industry; and, though weird now in appearance to most of us, they were wonderful in their time. Try to visualise the early designers, struggling against unprecedented difficulties, ever groping onwards for an orthodox design; attempting and discarding in turn various transmission types—belt, shaft, friction, loco, and chain; but all fired with the same high spirit of progress, and all equally taking part in the new development.

An Early Friction Driven Machine.

How many readers remember the Wolfmüller motor-cycle, with a horizontal cylinder on each side of the rear wheel, transmitting power direct? This was the Loco drive—a real "buck-jumper," and a feat to sit on, even on the smoothest of roads. There was another type of drive, scarcely ever heard of, known as the "Rail ring" drive; in the invention of this I had some share, and about 1902 it was adapted to an existing make of motor-cycle. The design aimed particularly at levelling out uneven road surfaces, and it certainly did this to a remarkable degree. As will be seen from the illustration, the rear road wheel was a spokeless one with a specially designed rim having a raised centre portion known as "the rail."

To this the power was transmitted from a frictional driving disc supported on a cross tubular beam having a roller guide at each end spring, operated for the purpose

of maintaining a vertical position of the outer or road wheel which was free to oscillate to and fro within limits, independently of the frictional driving wheel with its constant centre, so that on meeting a pot hole or obstacle the outer wheel would remain stationary for a moment while the rest of the machine continued its progress, the frictional driving wheel advancing its centre in relation to the road wheel and so laying its own rail thus considerably reducing the shock.

Certainly in practice the design did all that was expected, but, with other disadvantages, it was too costly to be advantageous, and so did not assist very much in the progress of design. Its fate was the fate that has followed so many other would-be revolutionary ideas.

During several years onwards, manufacturing ideas and designs gradually simmered down to a more or less standard form; and it was at this time that competitions, particularly of a reliability character, came along. Competitions have indeed, played a very great part in the progress of design. The early Land's End to John O'Groats runs, for instance, and the Six Days' Trials, were largely responsible for the rapid improvements. To gain any sort of an award in those days was really something of an achievement, taking into account fixed gear ratios, belt drive, surface carburettors, high frames, and the ever troublesome accumulator and coil ignition; to say nothing of tyres that were not *too* good, and engines that could scarcely be called reliable. The pedalling gear undoubtedly saved many an award; but there was need for much physical fitness on a Trial such as the Six Days.

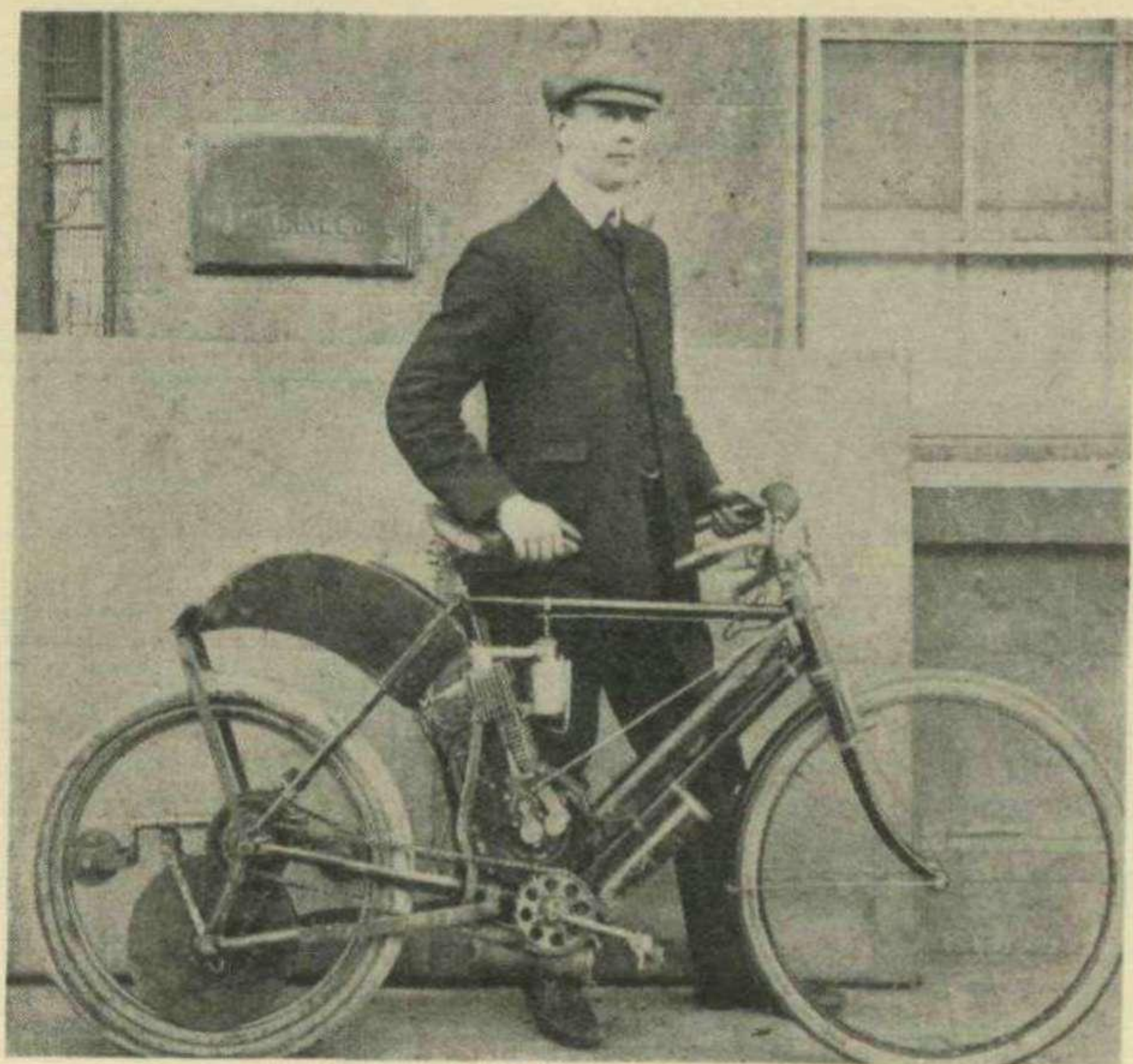
The "Barred" Gradua Gear.

Hill climbing competitions also provided many thrills. For such events a steep hill with as many bends as possible was chosen; and it was generally a hair-raising performance to negotiate the bends at a speed high enough to ensure surmounting the hill. I only remember two such climbs myself on a fixed gear, necessitated by an unlucky failure of the Gradua variable gear; the choice of the correct fixed ratio presented a very pretty problem. I might say here, that I was rather fortunate in hill climbing competitions; as from 1906 onwards all my Zenith machines were fitted with an infinitely variable gear of my own inven-

EARLY MOTOR CYCLING AND THE RESULT--continued.

tion, known as the "Gradua" gear. This provided an infinite variation in gear ratio between roughly $3\frac{1}{2}$ and $7\frac{1}{2}$ to 1, and by thus enabling me to select the right gear for any gradient or bend gave me a considerable advantage over my brother competitors. No doubt many can still recall the days when certain clubs barred this gear from hill-climbs, by arranging their events to exclude variable gears. At that period there were very few such gears on the market, and certainly no other make of machine than the Zenith-Gradua was equipped with a variable gear for competitions; but the ban gave rise to the Zenith trade mark "Barred."

Even in straight events on the level I used to find this gear very advantageous, particularly in the get-away, and on days of high winds. One particular occasion stands out in my memory, the combined motor-cycle and car B.A.R.C. Easter meeting. As was usual in pre-war days all races were given a Paddock start, nearly at the end of the Finishing Straight: probably Reuben Harveyson can best remember the line, from the occasion when he failed to pull up at the end of a race, could not negotiate the bend, and flew on over the top of the banking! On this particular day my handicap was hopeless, and by nothing short of a miracle could I win. My turn came when most of the competitors were off the mark, but, having a fairly low gear, I made an excellent start. A very high wind was blowing, and to my astonishment, on my second lap, I began to overhaul numerous competitors, and appeared to be leaving them practically stationary. The Gradua gear had enabled me to keep up a high engine speed on a low ratio against the wind, and, of course, on the other side of the Track, with the following wind, up went my gear, and I finished the race in a blizzard and was facing the photographer before the second competitor crossed the line—not only a great surprise to myself, but certainly a considerable score for the bookies.



MR. F. W. BARNES IN 1902 WITH THE "RAIL-RING" MOTOR-CYCLE.

However, step by step the real luxury touring machine developed, and the two or three-speed gear-box came into being. At first the pedals were retained for starting purposes, but later the kick-starter crank became universal. Gear-boxes at present are of course quite indispensable even on racing machines, but their standardisation has been of slow growth. The part played by speed in design development is no mean one; and here again, the element of competition has been responsible for the rapid changes, and for the alarming increases in speed of late years. It is only a few years since the 1,000 c.c. Solo short-distance record stood at just over 90 m.p.h.; while now we see a 350 c.c. engine exceeding 100 m.p.h. over the same distance. In 1920, the 1,000 c.c. Sidecar record was 72 m.p.h.; while to-day the 350 c.c. engine pulls a sidecar over the kilometre at more than 82 m.p.h.

The Value of Classic Trials.

Many persons will deny that racing is worth while, and ask what it has done towards making the ideal touring machine. These figures show the lessons we have learned in engine efficiency combined with considerably improved mechanism and materials. Gear-boxes, Clutches, Magnetos, Oil-pumps, and Frames, and many other vital parts, all provide examples of the lessons set by Speed, and of the improvements incorporated on touring motor-cycles. Certainly, there are points where Speed cannot help us; Mudguarding, Silencers, Chain-cases, Saddles, et cetera, these must be left for improvement by Touring class competitions. Much can still be done in such accessory work, even though the modern motor-cycle can certainly be regarded as approaching its zenith so far as luxury is concerned. By its nature the two-wheeler can never offer complete protection from the elements; although the motorcyclist of to-day, equipped with suitable attire, is becoming more and more an all-weather rider. This is proved by the large increase in the number of entrants from year to year for Winter Trials such as the London-Exeter run.

This classic trial, amongst others, has done much towards the progress of the touring machine; every year one sees many gadgets for mud protection, and experimental ideas tried out by the manufacturers. But even such a Trial, though fairly strenuous for the rider, does not present much difficulty to the modern motor-cycle in capable hands. In preparation very little need be done compared with the extensive overhaul necessary in the early days. The use of copper wire and insulating tape is not now so much in evidence; in fact, a machine practically in ordinary trim can successfully negotiate the course of a London-Exeter run, except for a few minor details such as are always necessary for an ordinary tour. At the same time, the great element of doubt about completing the course in the early days certainly created quite a different aspect of the sporting side of Trials.

Hints to London—Exeter Competitors.

At the present day, then, one can count with reasonable certainty on a no-trouble run; but all the same to

(Continued on page 193).

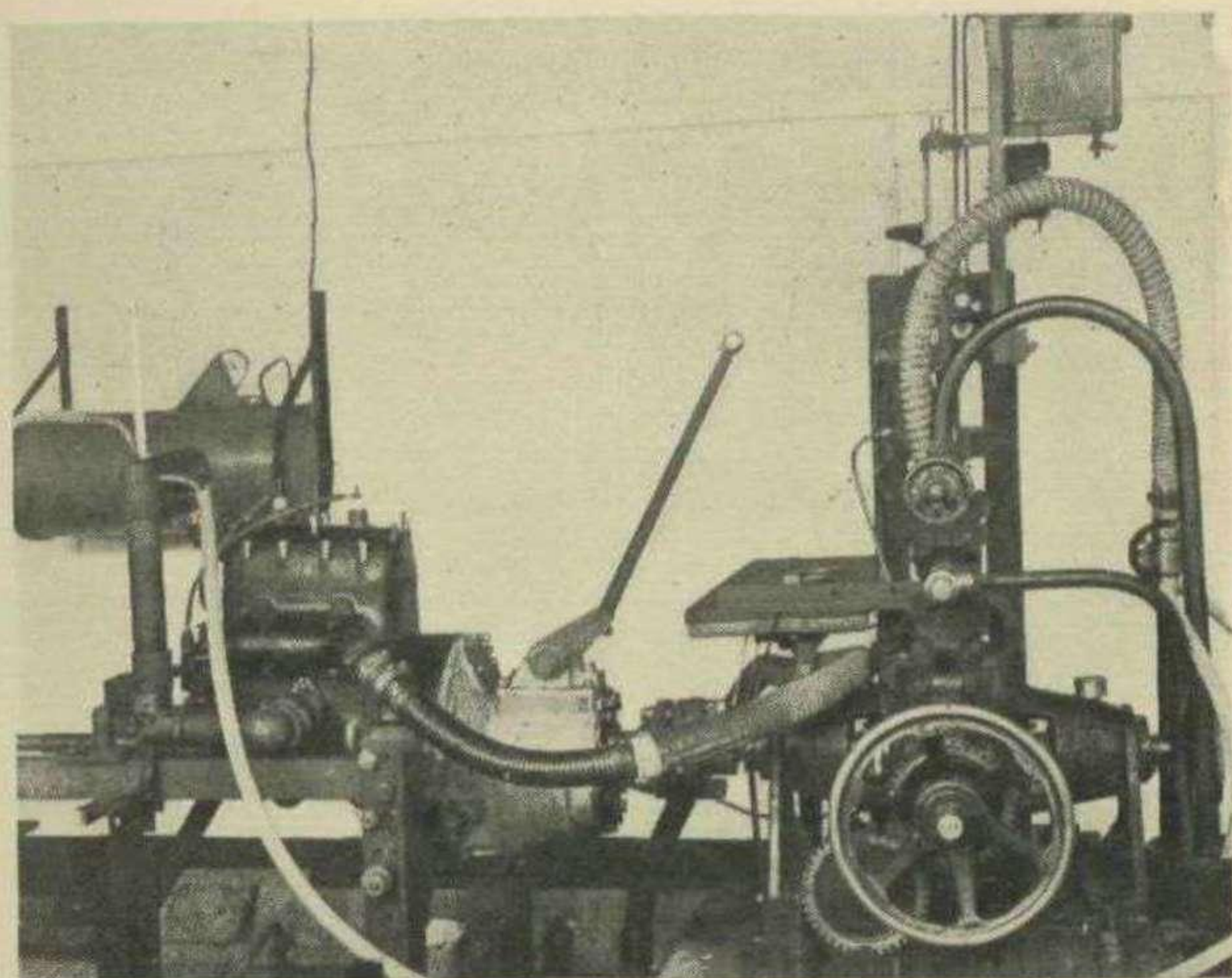


FIG. 1.—VIEW OF THE TESTING BENCH AND DYNAMOMETER.

It is well known that whilst some manufacturers take a keen interest in the sporting side of motoring, others are content to turn out sports models which consist of little more than standard chassis with special bodies and a great amount of interest is shown by amateurs with an engineering turn of mind in securing abnormal performance from cars of the latter variety.

There is, however, a point beyond which the amateur cannot go owing to the limitations of his equipment, and this is where the services of the specialist come in. Readers are already familiar with the activities of some of the larger firms in this line of business, but we recently had the opportunity of visiting the interesting works of Research Engineers, Ltd., and also of examining some samples of the work turned out from their shops.

Tuning Up Sports Engines.

At the time of our visit a sports engine had just arrived at the works and the works engineer explained the procedure adopted in such cases which is briefly as follows: The engine is mounted on the test bed shown in Fig. 1, to ascertain its performance in order that accurate data can be obtained by means of power and consumption curves. The apparatus shown comprises a Heenan and Froude hydraulic dynamometer, capable of absorbing 225 b.h.p. at 6,000 r.p.m., the actual readings being obtained by varying the brake load by means of sluice gates incorporated in the water dynamometer, which is recorded on a spring balance. The sluice gates are regulated by the large hand wheel shown in the illustration.

Situated above the brake is a Brown and Barlow flowmeter, which records the actual amount of fuel consumed by the engine in pints per hour. This apparatus, together with a revolution counter, driven from the dynamometer main shaft gives very accurate measurements of power, fuel consumption and engine speed serving as a basis for subsequent comparisons.

Having thus determined the characteristics of an engine, the drawing office now takes a hand in the proceedings and furnishes detailed drawings for any component parts which appear to need modification. For example, in certain cases, owners are prepared to invest in an entirely new camshaft which may be made

A Visit to an Experimental Engineering Works.

SOME ACTIVITIES AT THE LABORATORY of RESEARCH ENGINEERS, Ltd.

on the premises by a profile grinding machine. Special attention is paid to the lightening of reciprocating parts and by a careful study of the design metal can be removed without seriously affecting the factors of safety.

Supercharging.

Research Engineers, Ltd., have made a careful study of the problems of supercharging and have already fitted super-sports cars with supercharging apparatus to the design of their clients. In one case an 11.9 h.p. engine developed 65 b.h.p. without supercharging as shown on the dynamometer, and after tuning and the addition of the supercharge the power output increased to 100 h.p., which was maintained regularly during several long bench tests. In the experience of this firm the effect of over-supercharging is not desirable, for in several instances it has been found that the design of a normal engine is not adequate to resist the enormous stresses imposed by forced induction.

Increased Power Output.

As an example of increased power output obtained by scientific means we may mention the case of a 498 c.c. motor-cycle engine which, when first tested, produced 20 h.p. at 4,400 r.p.m. and after super-tuning and various mechanical modifications the power was increased to the astonishing figure of 27 h.p. at 5,000 r.p.m.—an extremely good performance for a power unit rated at $3\frac{1}{2}$ h.p.

Some Examples of Engineering Research.

In addition to undertaking tuning and testing operations of a normal character, the work of this establishment

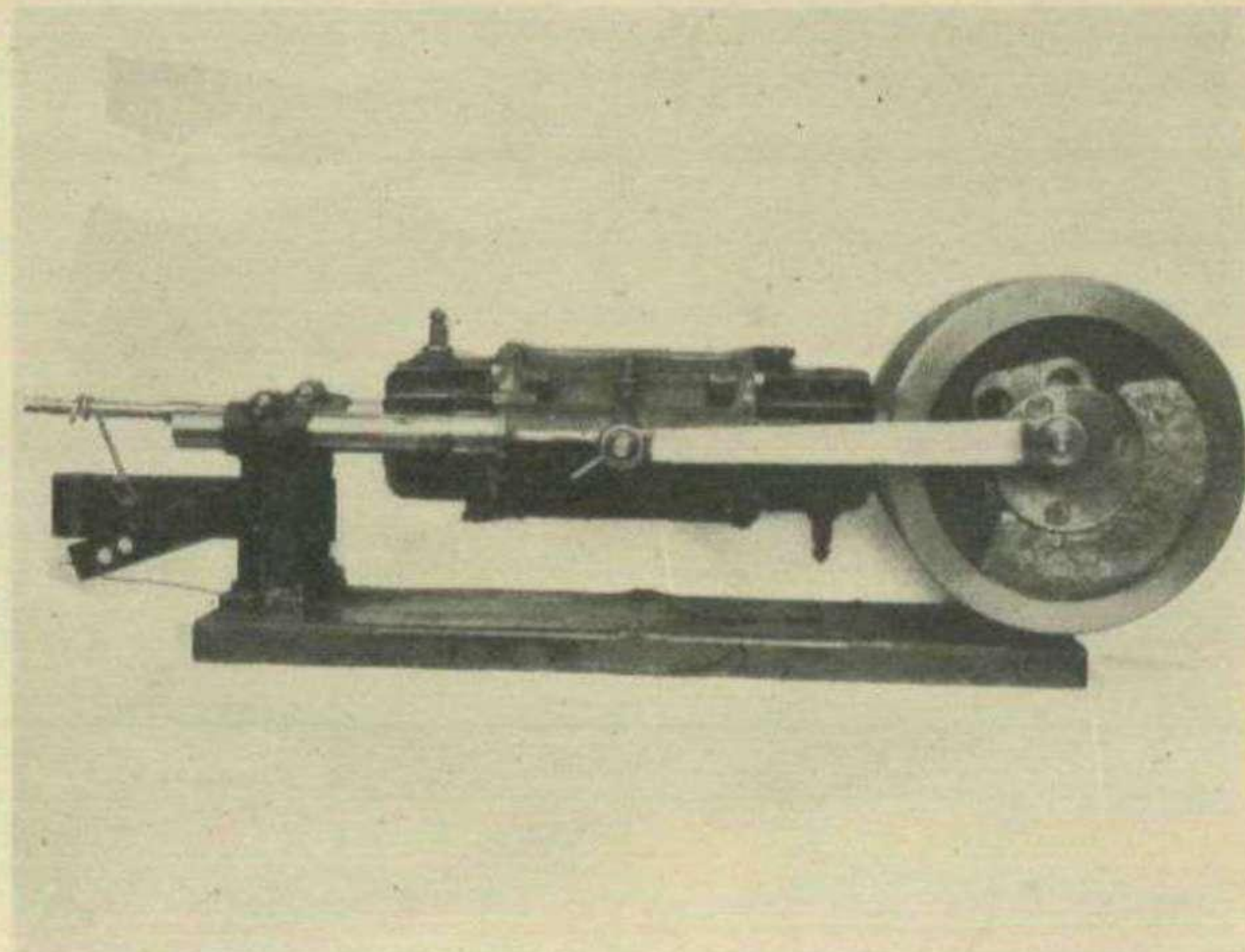


FIG. 2.—A NOVEL DOUBLE-ACTING ENGINE.

A VISIT TO AN EXPERIMENTAL ENGINEERING WORKS—continued.

includes manufacturing numerous intricate machines and apparatus designed by inventors, a few of which are to be seen in the accompanying illustrations. Fig. 2 represents a novel attempt to produce an engine with a low weight-power ratio and consists in a double acting cylinder with a stationary trunk piston and reciprocating cylinders. The latter are mounted on longitudinal slipper guides, and have two trunnions forming the gudgeon pins for the external connecting rods. Though no details of the actual performance of this engine were recorded, it serves as a typical example of the accuracy of machining methods used in its construction.

Fig. 3 represents the crankshaft assembly used in a two-stroke twin cylinder aeroplane engine which competed successfully in the light aeroplane trials of 1923. The whole engine was built to the design of the inventor by Research Engineers, Ltd., and gave a very creditable power output on its bench test for prolonged periods.

Variety in Engineering Achievements.

Catering as they do for the inventor the works are often called upon to execute some remarkable jobs. Prior to the opening of the British Empire Exhibition, one of the intending exhibitors brought some stuffed birds to the works with a request that they should be fitted with mechanical singing apparatus. Nothing daunted, the job was undertaken by the technical

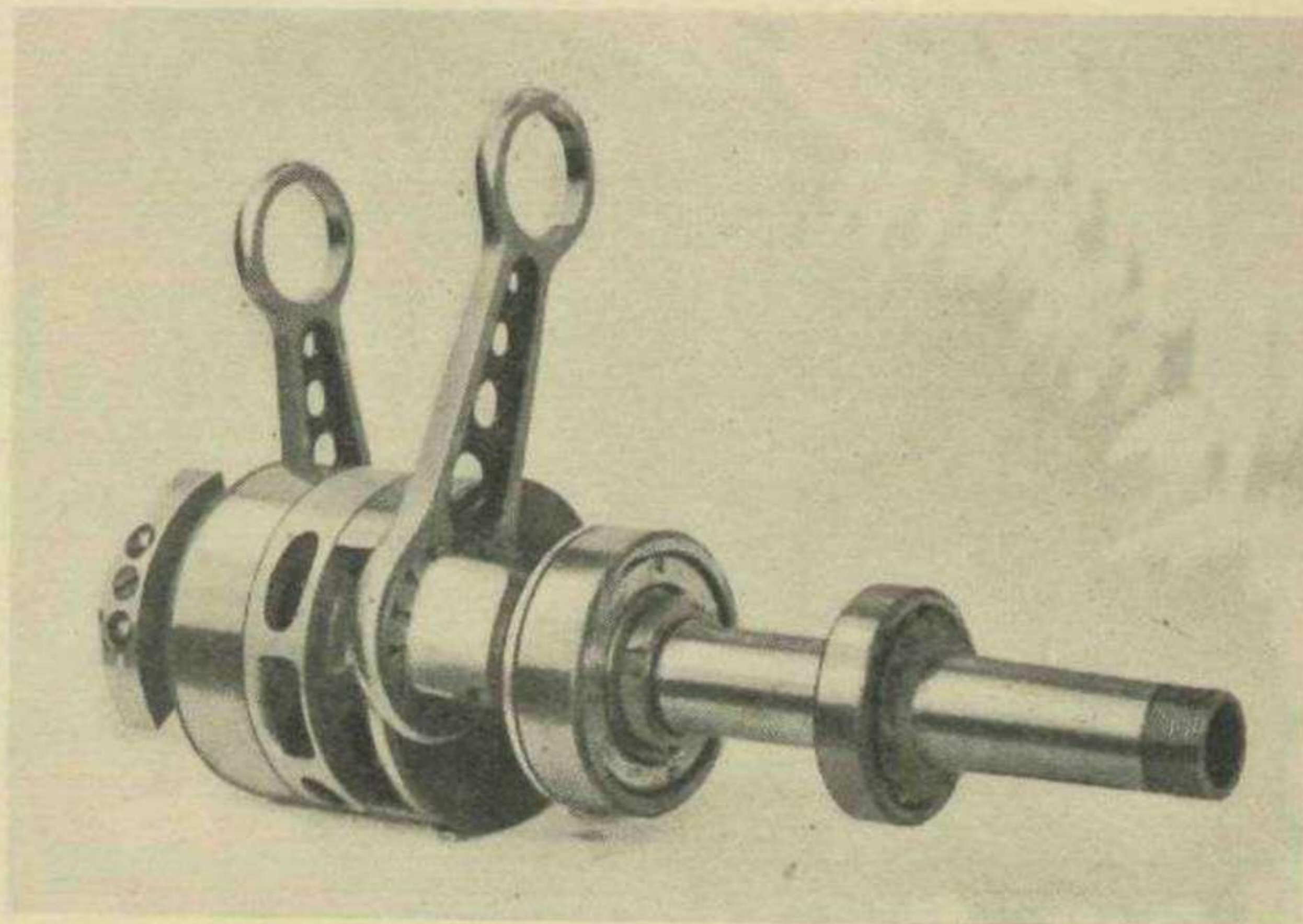


FIG. 3.—CRANKSHAFT ASSEMBLY FOR A LIGHT AERO ENGINE.

staff, and, when the result was exhibited at Wembley, the Queen commented on the naturalness of the song of the birds, and, though several clients have submitted perpetual motion machines for construction, the serious business of developing motor engines on high efficiency lines continues to occupy the resources of this progressive little firm.

BOOKS RECEIVED.

THE BOOK OF THE STANDARD (Sir Isaac Pitman and Sons, Ltd., 6s. net) is an attractive volume of great interest to motorists in general and to owners of Standard cars in particular. Written in simple and non-technical language the book gives all the necessary information required to enable the owner to keep his car running with the maximum of satisfaction at the minimum of trouble in upkeep and the lowest possible maintenance costs.

In addition to the advice concerning Standard cars, there are sections dealing with the essentials of touring, the rules and courtesies of the road, and the broad principles of motoring law. Every adjustment for the car is clearly described and by the aid of numerous and excellent illustrations the reader can follow all the points described with ease.

THE BOOK OF THE AUSTIN TWELVE. (Sir Isaac Pitman and Sons, Ltd., 5s. net.) This useful guide for Austin owner-drivers treats with all matters relating to the popular Austin model and, like the volume mentioned above, contains a mass of useful information for motorists generally. The author has succeeded in conveying a large amount of technical information in a very readable style and the work will appeal equally to novices and experts. The illustrations comprise photographs, diagrams and humorous sketches by H. M. Bateman, special articles being included by the Editor of *MOTOR SPORT*.

THE BOOK OF THE TRIUMPH. (Sir Isaac Pitman and Sons, Ltd., 2s. net.) The advice and information contained in this book is in the nature of a general treatise on the whole subject of Motor Cycling, but with special reference to the equipment, maintenance, running repairs and overhaul of the various Triumph models. All Triumph owners will find the volume of the greatest assistance in obtaining the best result from their machines.

THE BOOK OF THE DOUGLAS. (Sir Isaac Pitman and Sons, Ltd., 2s. net.) The Booklet of the Douglas is a complete guide for owners and prospective purchasers of Douglas Motor Cycles, and deals with every phase of the subject and includes well written chapters on Driving, Touring, Legal Matters, Insurance, Tracing Faults and Overhauling.



MR. J. A. PRESTWICH OF J.A.P. MOTORS AND MISS PHYLIS COPLEY, WHO WERE MARRIED RECENTLY.



MOTORING SPORTSMEN.

Lieut. Glen Kidston, R.N.

By THE EDITOR.

We tender our congratulations to Lieut. Kidston, whose marriage to Miss Nancy Soames took place at St. Margaret's, Westminster, on November 25th.

LIKE so many other of the famous racing men who are known to our readers by reason of their exploits on the road and track, Lieut. Glen Kidston, R.N., appears on the track, disappears for a while, then returns again to thrill the spectators with his speedy Bugatti. In the following notes we shall attempt to show Lieut. Glen Kidston in another light where he shines with equal brilliance, namely, as second in command of the largest submarine in the world.

At the age of eleven years, young Kidston made up his mind to qualify for the Royal Navy. He, therefore, entered Osborne and went on to the Royal Naval College at Dartmouth, and, after having passed his examination, was duly qualified to take an appointment as midshipman on H.M.S. Hogue. This was a thrilling time for beginning his career; his first taste of naval

warfare being the battle of Heligoland Bight, on August 28th, 1914. On September 22nd, 1914, the Hogue in company with the Aboukir and Cressy was torpedoed off the Dutch coast by enemy submarine, Mr. Glen Kidston being one of the few survivors.

Mindful of the experience of being sunk by a U boat, Lieut. Kidston applied for an appointment in the submarine service and, late in 1917, took the special submarine course and shortly afterwards passed out as a fully qualified submarine officer.

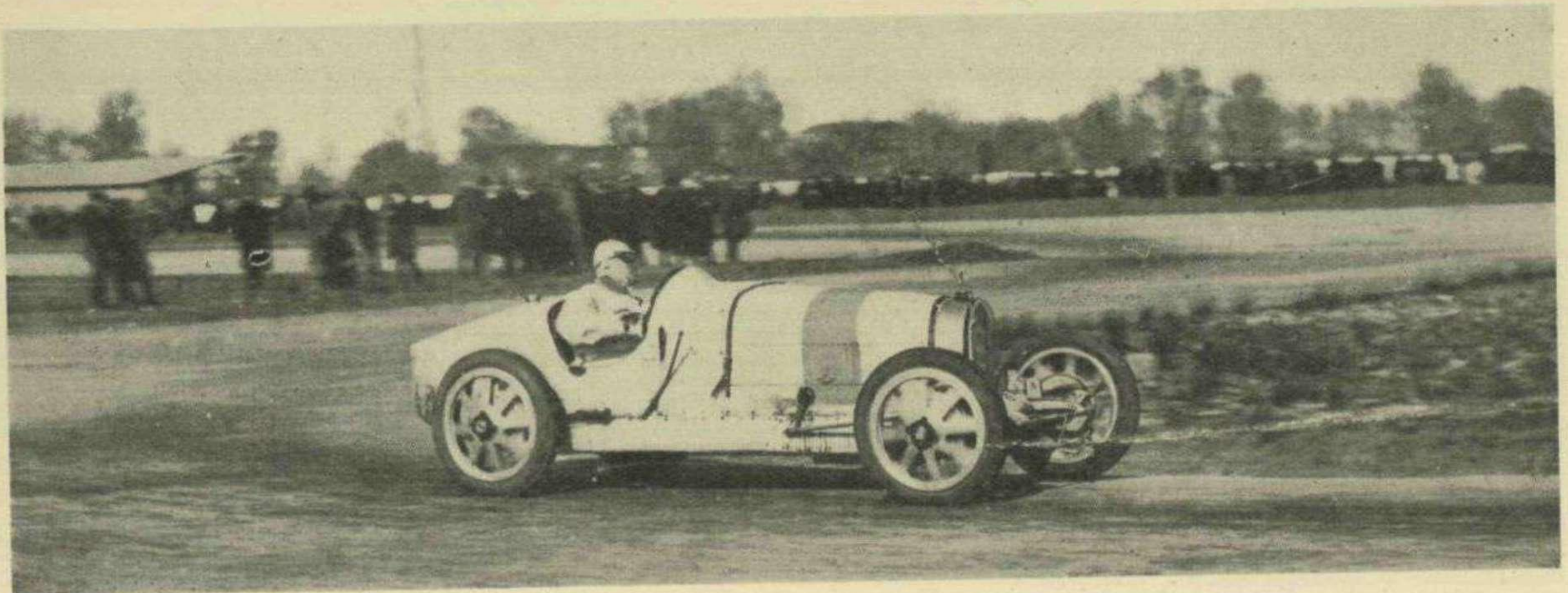
On his return home, he served with H.M.S. Orion from October, 1914, to December, 1917, and took part in the Battle of Jutland. At the surrender of the German fleet, he had the interesting experience of being on the British Prize Crews, taking over the surrendered German U boats at Harwich.

In 1919, he served in submarines in the Baltic, and saw many interesting events in the Baltic States during their fight for freedom with the Bolsheviks.

After submarine service in the Far East, he was appointed to H.M.S. Dauntless for the Imperial World Cruise.

Lieut. Kidston finds in his duties on the X.I. a fascinating combination of seamanship, engineering and the discipline of the Navy, which is always tempered with the spirit of "bon camaraderie," for which British Naval Officers the world over are so greatly renowned.

The letters "R.N." at the end of Lieut. Kidston's name conveys far more than the average Brooklands



LIEUT. GLEN KIDSTON CORNERING ON HIS G. P. BUGATTI DURING THE COUPE HARTFORD RACE.

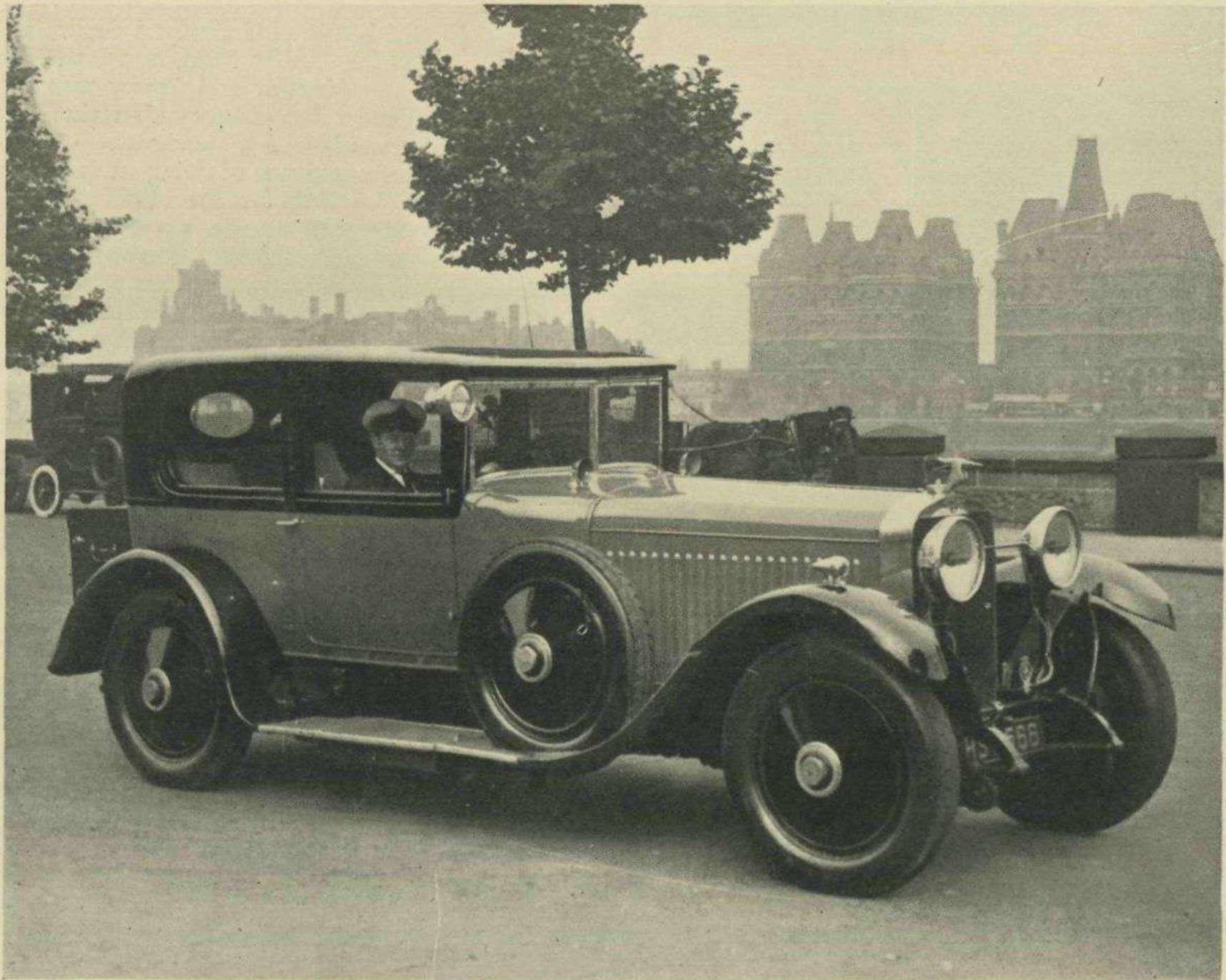
MOTORING SPORTSMEN—continued.

habituée has any idea, and, in the space at our disposal, we can only indicate a little of their true significance.

As a motorist, Lieut. Kidston is known among his naval friends as "Count Bugatti" and, though to our readers he may be considered a newcomer in the motor racing world, his name has appeared as a regular winner of gold medals in the M.C.C. events, as he was formerly a consistently successful competitor on different makes of motor-cycles in such trials as the London-Exeter, the Edinburgh and the Land's End. In fact, he gave up these from sheer monotony of amassing gold medals

and his well-known Bugattis. Speaking of the latter, Lieut. Kidston says that Signor Ettore Bugatti is the only manufacturer he knows who will sell real racing cars to the general public, thus giving the amateur enthusiast an opportunity of gaining successes without going to the expense of having special cars built to compete with the world's fastest machines.

Possibly his best performance was that of this year when, in the Hartford Cup, at Miramis, he drove his Bugatti to the first place, which he held for twenty-one laps before being deprived of the position by a faulty



FOR FAST TOURING LIEUT. KIDSTON FAVOURS THE BOULOGNE TYPE HISPANO SUIZA SALOON.

and so turned his attention to other forms of motor sport. In 1920, he was successful in winning the Arbuthnot Trophy and in the following year took part in the International Anglo-Dutch trial for motor-cyclists. His favourite mount was a Sunbeam motor-cycle. Incidentally, it may be mentioned that his first machine was a four-cylinder F.N. which he used to overhaul personally for various trials and speed events.

As a car enthusiast, Lieut. Kidston has had a very wide experience as an owner of various makes, including an A.C., a Hillman, a Baby Peugeot, a speed model Bentley, a Crystler, a very fine Hispano Suiza Saloon

petrol feed. As it was, he finished fifth and had the honour of making the fastest lap of the day.

In this race he displayed remarkable skill in getting out of a particularly awkward predicament; for, on the first hairpin bend of the second lap, his car turned two complete circles and it would have puzzled many a more experienced driver to have got it going again without charging the spectators or capsizing altogether.

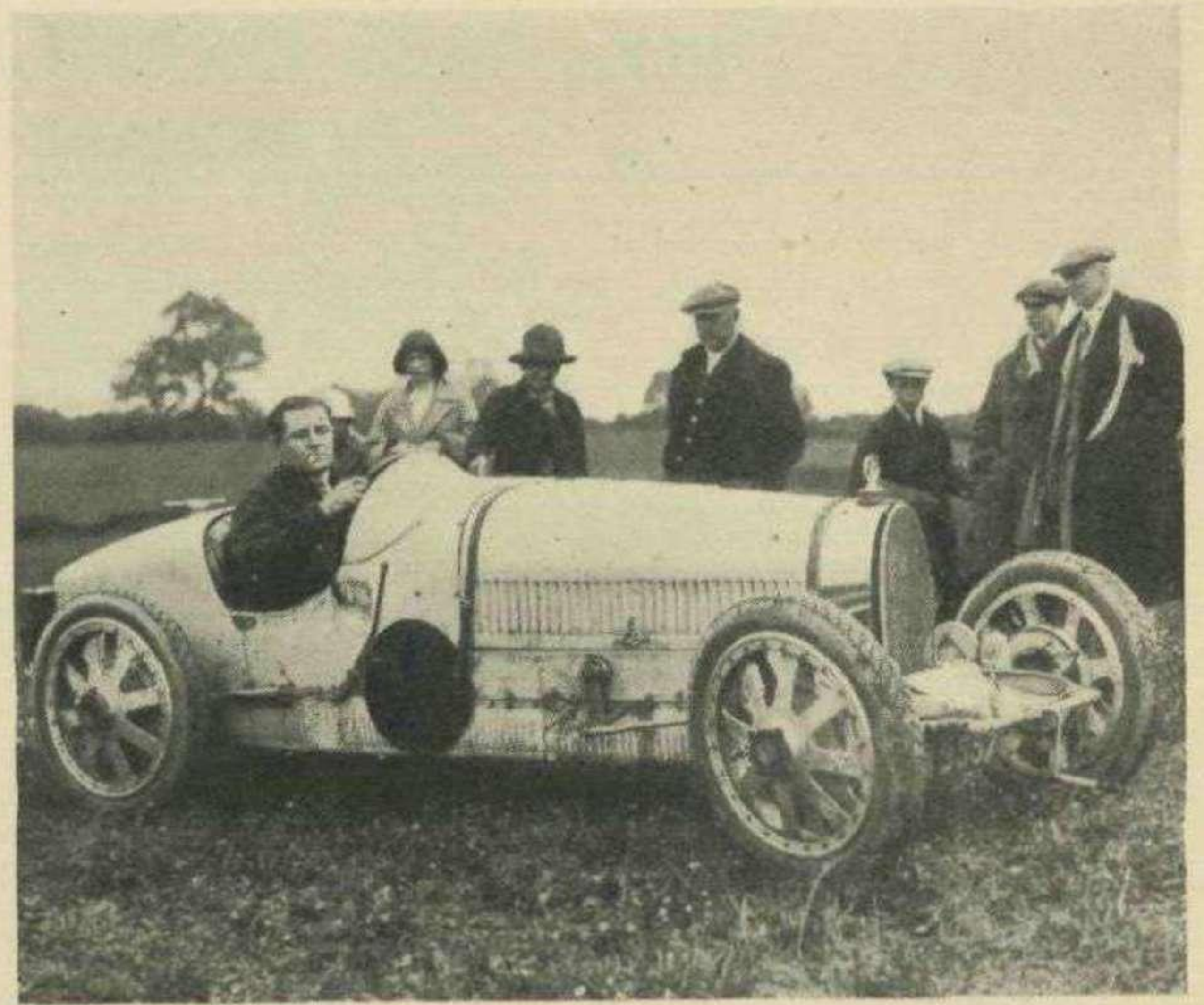
It is interesting to record that as an amateur, Lieut. Kidston was made most welcome by the professional racing men, who were always ready to help and give advice, Major Segrave in particular being only too willing

MOTORING SPORTSMEN—continued.

to assist him before this, Lieut. Kidston's first appearance in a big continental event.

Space need not be given to a reiteration of his exploits at Brooklands, the familiar duels between the Grand Prix Bugatti and the Leyland Thomas having become regular features of the racing on the track, but Lieut. Kidston recollects the thrill when, immediately behind Major Coe at the Whitsun Meeting, he saw the Vauxhall crash, and when passing through the cloud of dust and débris wondered whether he would ever emerge to tell the tale. It is with some regret that we have to record that Lieut. Kidston is unlikely to appear on the track again, as with his engagement to Miss Nancie Soames, he has decided to give up racing, but doubtless he will continue to frequent the Paddock and to view the scene of past successes. Lieut. Kidston is a good all-round sportsman being quite useful with the "gloves," is very keen on ski-ing which compares with motoring for the joy of sheer speed. Shooting and fishing are also among his favourite recreations and he often is to be seen with the fly on the picturesque river Wye. As might be expected yachting has exercised its fascination upon Lieut. Kidston, and he gets a deal of amusement from a 14-ft National Class Morgan Gyles dinghy.

As an earnest of his intention to give up racing he has sacrificed his Bugatti before the altar of Hymen, and the car is now in the possession of Mr. George Duller.



LIEUT. KIDSTON ON THE BUGATTI HE RACED AT BROOKLANDS.

But, whether he is allowed to appear on the track or not at some future date, Lieut. Glen Kidston will ever be remembered as one of the most daring exponents of how a car should be handled and will live in the memories of our readers as a most distinguished amateur sportsman.

Early Motor-Cycling and the Result—continued.

ensure a good chance of gaining the coveted award it is advisable, and very well worth while, to look over the machine thoroughly. A few hints may prove useful. For instance, the tyres should be above reproach; they should be removed from the rim and examined for cuts or embedded flints, which often escape notice. When refitted, the utmost care must be taken to avoid nipping the inner tube, or straining the valve sideways; while for such a trial the tyres should not be run at too high a pressure. If required, the engine should certainly be decarbonised, and the valves ground in on their seatings. Valve springs, and piston rings, should also receive attention. The contact-breaker points on the magnets should be cleaned and adjusted, the carbon brush and high tension wire examined; while if there is any possibility of heavy rain—not unusual on "the Exeter"—greasing the vital parts is well worth while. Driving chains should be cleaned, and soaked in thick oil or melted grease, unless some oiling arrangement can be fitted on the machine. Wheel bearings also are very important, and should be well oiled and correctly adjusted.

On many machines it is quite feasible to enter for a trial with standard gear ratios; but in the case of low powered motor-cycles it is advisable to lower the gear. Many manufacturers are prepared to supply machines correctly geared for Trials work. Reverting to the engine unit, the sparking plug or plugs should be beyond suspicion, and fitting a new set before the start should relieve the driver of considerable anxiety on this score. The carburettor and petrol pipe should be dismantled

and thoroughly cleaned; while if the machine has been in use for any length of time the control wires should be inspected. A frayed wire should at once be renewed, and in any case, all cables should be detached at one end and lubricated by means of an oil gun and a short length of rubber tubing slipped over the control wire casing. Beyond the obvious tightening up of all nuts throughout the machine, there is one final point. It is not advisable to set out on a long run immediately after the engine has had its overhaul and tuning up; some 50 to 100 miles should be covered at a moderate speed, so that the valves, springs, piston rings, et cetera, may have a chance of settling down to their work again.

A CAR BATTERY WARNING.

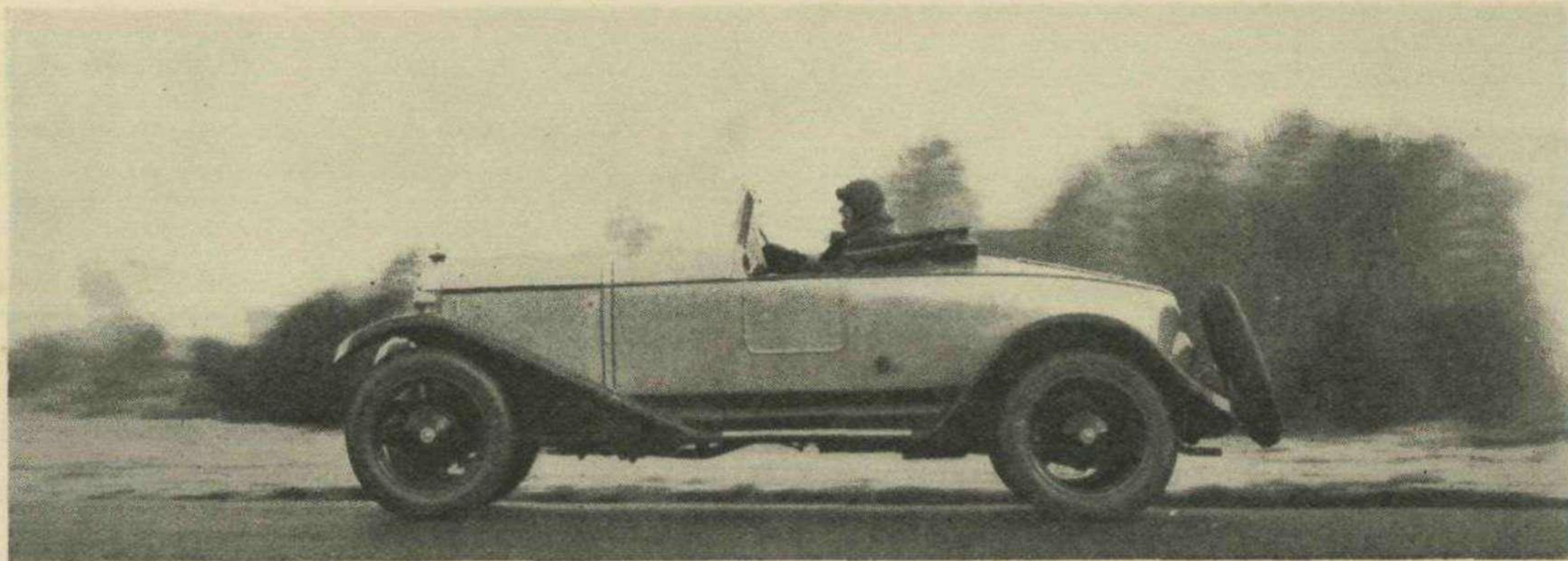
In the interests of motorists, the Automobile Association advises that lighted matches should never be brought near accumulators used on cars for lighting and self-starters. It is not generally known that while these batteries are being charged, and for a period after charging ceases, a highly inflammable gas passes from the cells.

Recently, while a car was halted with the engine still running, and charging the battery, a motorist handed a lighted match to a friend across the car at about 18 inches above the battery, which was located under the front seat. The gas from the battery, which was uncovered, immediately ignited and blew the acid into the eyes of the passenger, who has practically lost the sight of one eye.

SPORTING CARS ON ROAD AND TRACK.

THE 16/55 DAIMLER SPORTS MODEL.

By RICHARD TWELVETREES.



THE 16/55 SPORTS DAIMLER COMBINES LUXURY TRAVEL, WITH A FINE TURN OF SPEED.

SOME little time before the Olympia Show, I had the opportunity of witnessing some interesting bench tests of the new Daimler engines fitted with light steel sleeves and also had some short runs of different cars of the Daimler range.

The performance of the new engine was so remarkable that I was constrained to inquire if the Company intended to enter the field of sporting cars, but was informed that their main intention was to develop fast touring and luxury models, rather than those built specially for the requirements of the sporting driver.

I must say that this gave rise to a little disappointment, which soon disappeared however, with the arrival of the Two-seater Sports model displayed on the Daimler stand.

This particular car, which owes its origin to Messrs. Stratton-Instone, Ltd., the special Daimler Agents, is the subject of the present article dealing with a fairly exhaustive series of road tests. It is not proposed to enter into a long discussion as to the relative advantages of sleeve *v.* poppet valve engines at the moment, but a few remarks concerning the principal characteristics of the Daimler engine should be included in my notes.

Perhaps from the user's point of view, the chief virtue of the sleeve engine is its absolute freedom from valve trouble, and not only is wear and tear reduced to a minimum, but the Daimler engine has the advantage of possessing a pocketless combustion chamber of symmetrical form, calculated to give the highest theoretical and practical efficiency.

By the use of the new steel sleeves, with improved designs for the ports, the 16/55 Daimler engine, in common with the larger models, enables perfect balance to be sustained at speeds up to 4,000 r.p.m., a rate of revolution greatly in excess of anything hitherto attained with this make of engine in the past.

By virtue of these and other technical details too numerous to mention in a review of this nature, the new Daimler engine ranks with many of the high efficiency

poppet valve engines, used in modern sporting cars, though, as a matter of fact, it was not designed specifically for this class of work.

The Sports Model Daimler was developed as a natural sequence of improved engine efficiency, for, when Messrs. Stratton-Instone took delivery of the first 16/55 touring model, it occurred to them that here was a chassis possessing most of the characteristics of a sporting car and they thereupon proceeded to equip it as such.

Acquiring the "Daimler" Habit.

According to my usual practice when testing a new model, I allowed the Daimler to proceed as it chose, for it is no use trying to make any car do what it does not like, if its inherent features are to be discovered during a short test. On leaving Pall Mall, the car glided gracefully along, as if it were actually conscious of the admiration it excited, for as may be judged from the accompanying photographs, it is truly a beautiful car. There was no doubt that the engine had very good acceleration, but it aroused no desire to dash about on the indirect gears as with the Bugatti or cars of that type.

Indeed, the progression seemed so "demned" luxurious, that I felt almost disinclined to go fast at all. The curious thing, however, is that the speed develops unconsciously, and without looking at the speedometer, one only knows how fast one is travelling in traffic when a sudden emergency calls for the use of the brakes.

The best way I can describe the model under review is a Sporting car with the "Daimler habit," and those who are accustomed to the pleasures of long trips on a touring Daimler will know what that means.

On the "M.S." Colonial Section.

Well, for a little while I allowed the car to have its own way, and, after it had taken me comfortably through the town traffic, without any second gear work at all,

SPORTING CARS ON ROAD AND TRACK—continued.

I began to realise my responsibilities and set out for a nice quiet district where one can put a car over a real "colonial section" without causing too much excitement.

Once in the open country, the Daimler seemed to wake up considerably. "Come now, this is a different thing altogether," it seemed to say, and off we went. In second gear, the engine revved up until a speed of 45 m.p.h. was reached, then a quick change up soon sent the needle over to 65 and with a little further pushing 70 was touched, but I think 65 m.p.h. is its best speed, at any rate until the engine has done a couple of weeks work.

On a second gear, it takes just 8 seconds to accelerate from 10 to 35 m.p.h. as recorded by the Accuraspeed watch, and, thanks to the four-wheel brakes, the car can be slowed down speedily and without any roughness.

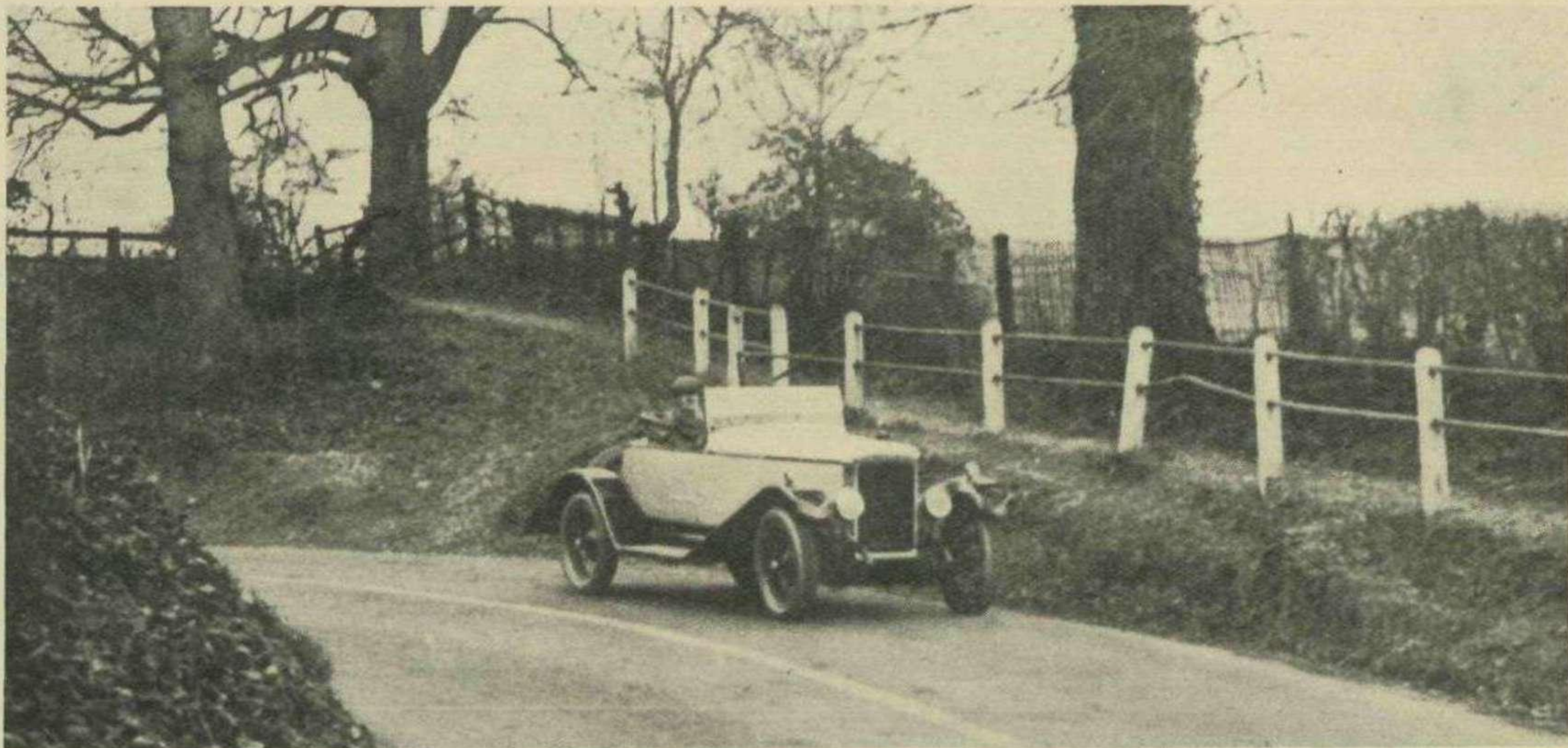
On very steep slopes, one can negotiate the car in a remarkable way because of the power developed at

too quick for a car possessing a good turn of speed. It is nice and light and the wheels castor admirably, but I understand the Company have already decided to make a modification in the direction suggested.

At first I thought the side brake an impossible affair altogether, and, acting on the transmission, it is certainly a wee bit jerky at very low speeds, but when travelling fast it becomes quite smooth and effective. The brake lever pushes on, which enables the driver to use the door on his side of the body; but, for fast road work, it might be desirable to have a one-door body and arrange the side brake with a pull-on action.

The 16/55 model has a three-speed gear-box, which is apt to cramp one's style in making extra quick get-aways, though at the same time the car, even with its three speeds, is the reverse from sluggish.

In my humble opinion, too, the makers have not been too generous with regard to dashboard equipment, for on a car at its price one expects a clock, whilst



A HALT ON THE WAY TO THE CROSS-COUNTRY TEST.

extremely low engine speeds, so there is no necessity to accelerate suddenly to the extent which almost invariably produces wheel-spin.

Thanks to the method of mounting the body in a frame of its own the coachwork suffers practically no distortion, even when the chassis is twisted by extremely rough ground, and this, I should imagine, gives complete immunity from such troubles as rattling doors and creaky body members.

The suspension is so good that the car seems to crawl over bad surfaces like a snake, instead of bounding from lump to lump after the manner of many sporting cars.

A Few Criticisms.

One feels almost impertinent in offering any criticisms at all about such a car as the Daimler, but as "fools dash in, etc.," here goes. The steering *at present* is much

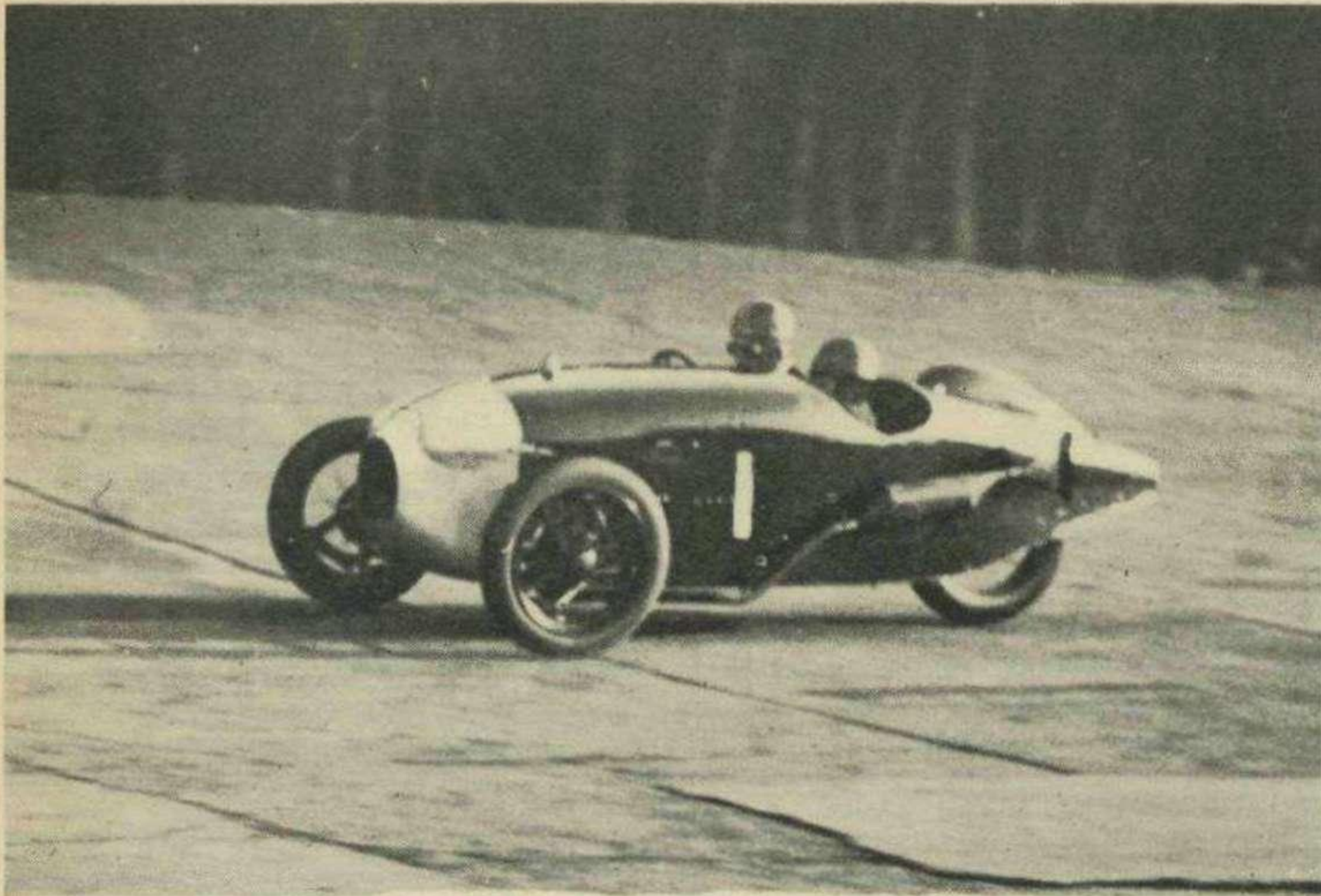
the all-weather comfort of the body in wet weather is discounted by the absence of an automatic windscreen wiper. No doubt these details will receive due attention on subsequent models, for this particular example was finished off at lightning speed to include in the Show exhibit.

Notes on Performance.

Having spent a part of the test in a critical frame of mind, as one is obliged to do if a review justifies its existence, I proceeded to enjoy a long run to study the general performance of this delightful car.

Once clear of Town, we made for Brockley Hill, which usually calls for a change down when nearing the top, but the Daimler sailed smoothly over the summit at a good 45, without the slightest effort. The use of the economy lever, controlling the amount of petrol flowing from the float chamber to the jets, is most

Recent Events in



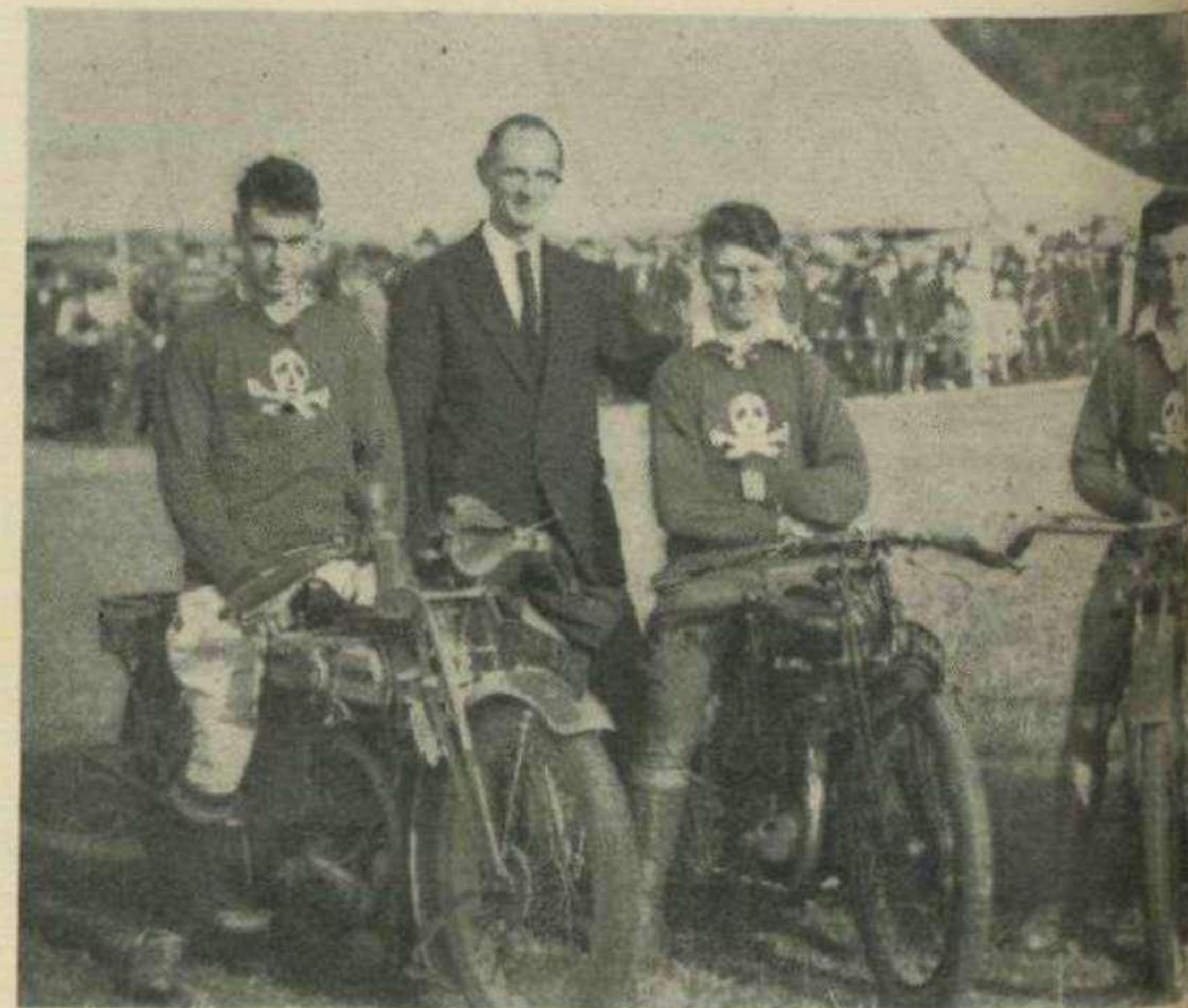
H. BEART AT SPEED ON HIS MORGAN-BLACKBURNE.



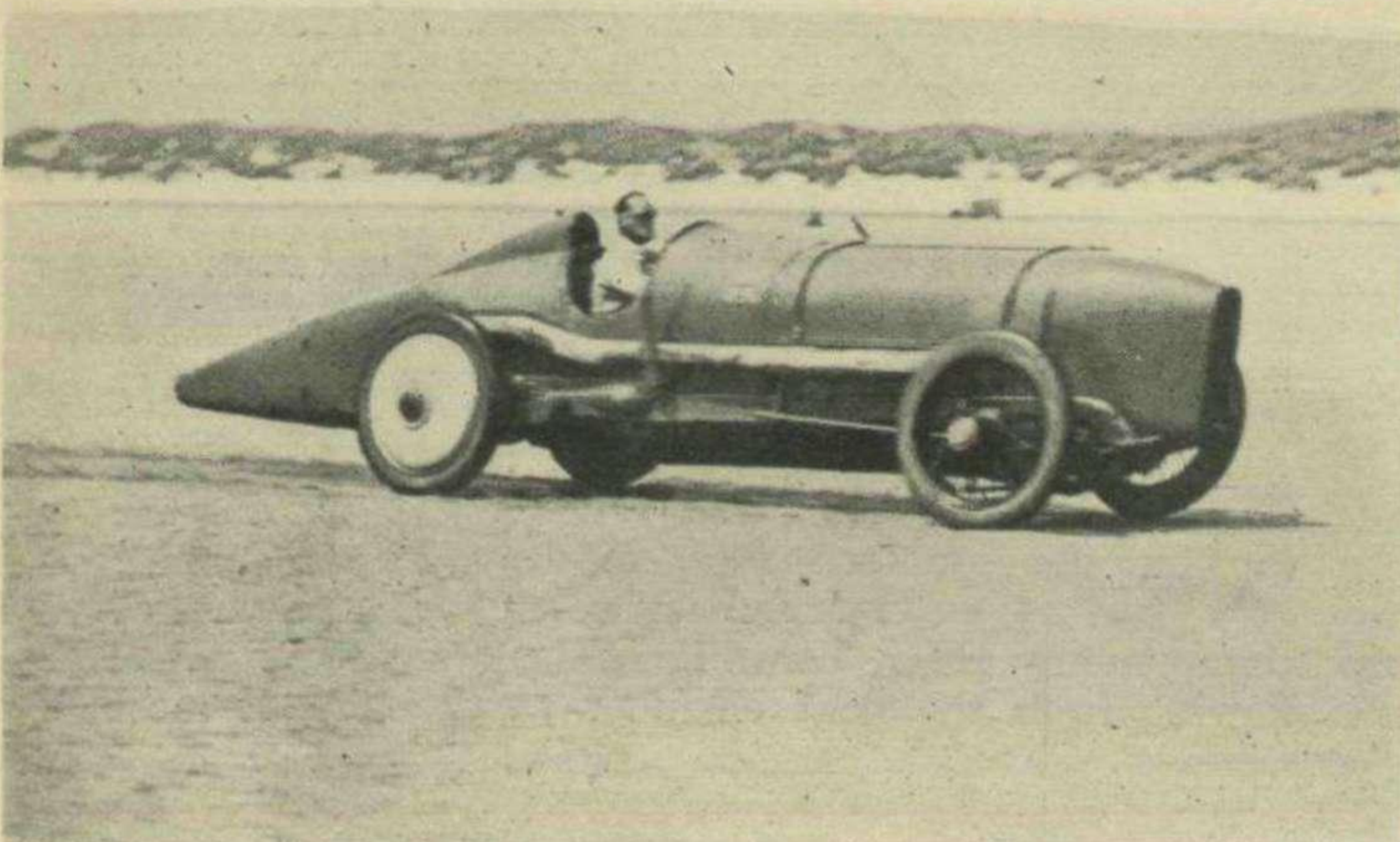
A GOLD CONVOY WHICH WAS ATTACKED BY BEDOUINS NEAR DAMASCUS.



THE "M.S." REPRESENTATIVE SAMPLES THE INTER-VARSITY COURSE



THE COVENTRY AND WARWICKSHIRE M.C. FOOTBALL TEAM



CAPT. MALCOLM CAMPBELL ALL OUT ON THE BIG SUNBEAM.



START AT THE BLACKPOOL MOTOR RACES

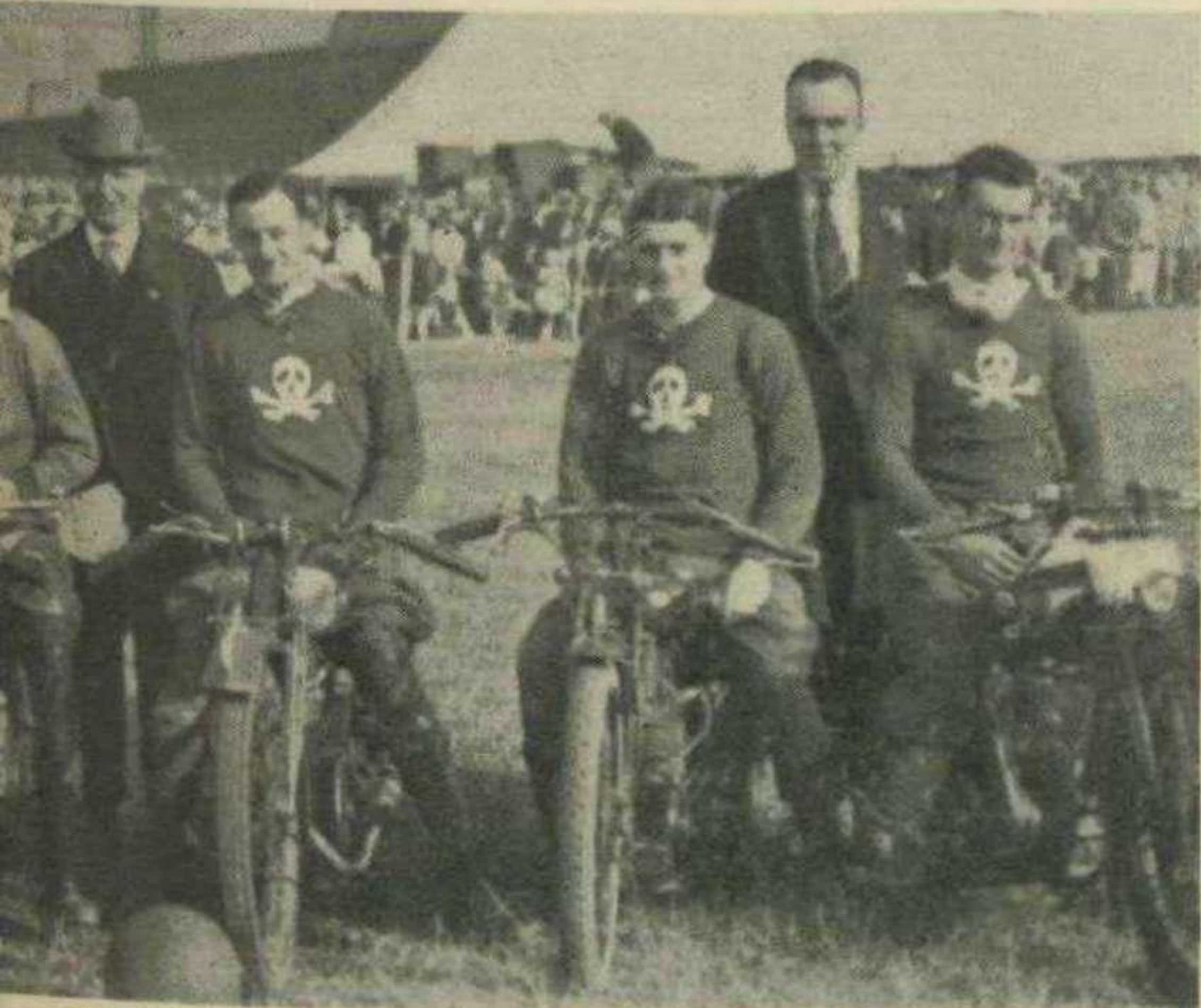
The Sporting World



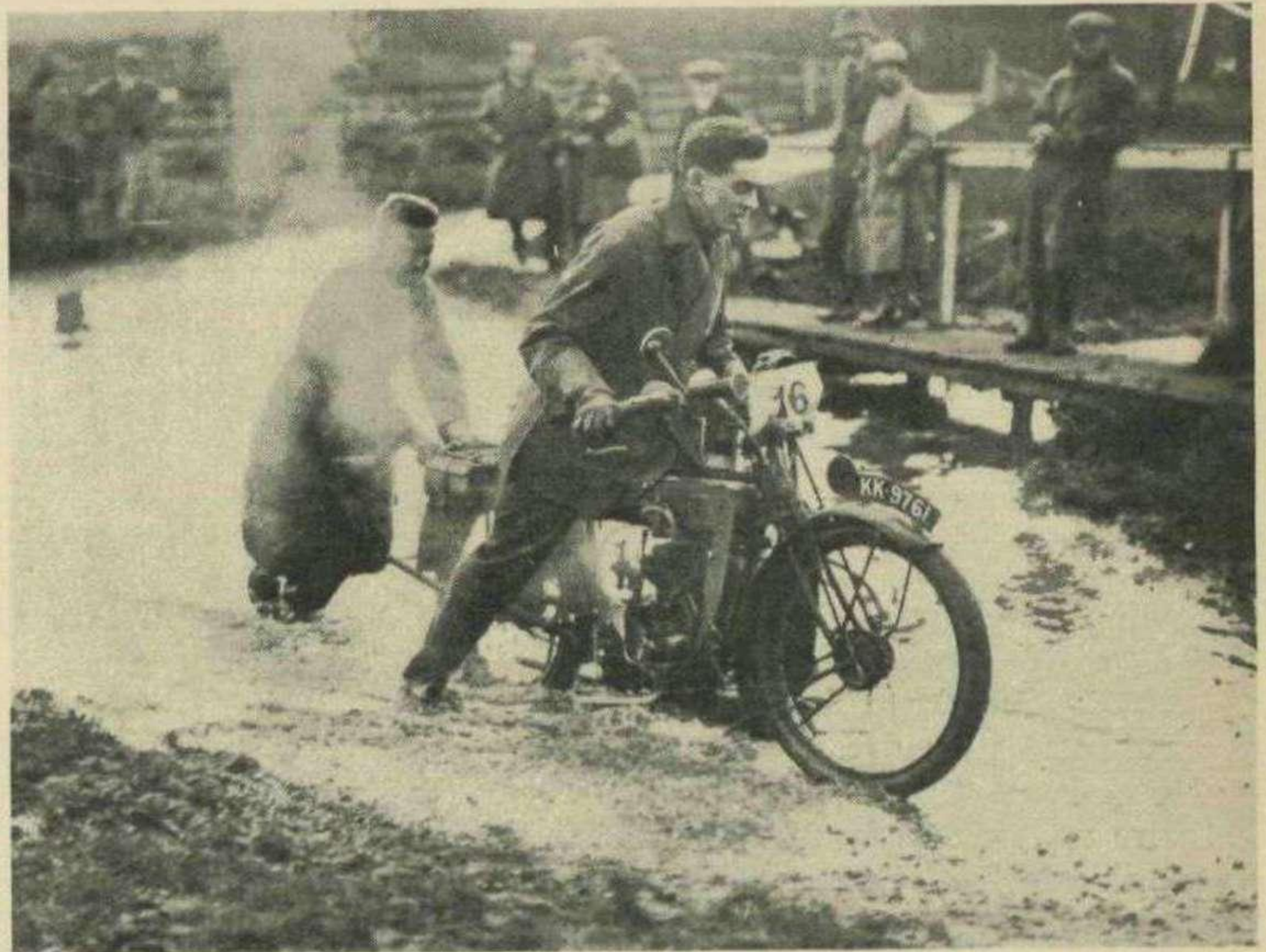
PROF. A. M. LOW AND F. A. LONGMAN WINNER OF THE HUTCHINSON CUP.



CAPT. T. R. OLIVER WHO WAS AWARDED THE "J. W. SHAW" TROPHY.



M, WHO HOLD AN UBNEATEN RECORD FOR THE SEASON.



H. E. BAKER (348 NEW IMPERIAL) AT THE REDBOURN WATER SPLASH.



IN PRINCESTHORPE WOODS DURING THE ELLIOTT CUP TRIAL.



NOT A TRIAL! A SCENE AT BELFAST DURING THE RECENT FLOODS.

SPORTING CARS ON ROAD AND TRACK—continued.



THE NEW DAIMLER ENGINE PULLS SPLENDIDLY AT LOW SPEED.

entertaining, for the variation of the supply in this way enables the driver to adapt the mixture to suit prevailing conditions, such as those for hill climbing and high speeds on the level.

Making a detour to Princes Risborough, Kop Hill was tackled, and though the first climb was actually made without changing gear, the second test left no doubt as to the speed of the car on second gear, which over the steepest portion was 38 m.p.h. The descent of this hill also provided a very good brake test and though, compared with the average sports car, the brake drums are rather on the small side, the four-wheel brakes are extremely effective and release properly when cornering on full lock. One very noticeable feature of the engine is the entire absence of overheating, for even when driving for about three miles on the rough country shown in the photographs, the Boyce motormeter could not be persuaded to excite itself in the least degree.

The petrol consumption, over the week-end trip, averaged out at 30 miles to the gallon; which, all things considered, is remarkably good.

Attractive Bodywork.

Reference has already been made to the beauty of the Daimler Two-seater Sports Model, which is further emphasised by our illustrations, but appearance is not the only quality of this particular bodywork. The low driving position and the high back to the seats give a wonderful degree of comfort and one can drive all day without experiencing the slightest traces of fatigue. With the hood and side curtains erected, night travelling is luxurious, though, as mentioned before, a wind-screen wiper would be a very useful addition.

Ample luggage accommodation is provided at the rear of the front seats and access to the luggage space

is obtained by tilting the squab. A comfortable dickey seat for one person is also arranged at the rear, proper steps being fitted so that the wings or panels are not damaged as the rear passenger gets in and out. The car illustrated is painted in cream white with red wings and mouldings, the upholstery and hood being in red leather, thus making a particularly good combination of colours.

In conclusion, it is interesting to observe how the standard Daimler production offers so remarkable a performance, and a Daimler chassis produced specially for sporting owners would be an interesting proposition.



THE DAIMLER SPORTS ON A SECTION OF OUR TEST ROUTE.

THE INTER-VARSITY RELIABILITY TRIAL.

A Sporting Event over a Difficult Course.



N. R. SOLLY (LEA-FRANCIS) STARTING FROM HARPENDEN.

THE only way to get any idea of the difficult route served up for the Inter-Varsity Reliability Trial is to follow the course from beginning to end, the procedure taken by a member of our editorial staff on November 7th. To be quite correct, one circuit was followed, and during the other several good vantage points were taken from which the performance of the various competitors could be watched—and a very good day's sport it made too!

The motoring men from Oxford and Cambridge gathered in force at Harpenden, evidently prepared for strenuous work, and as the course turned out to be of an exceptionally severe nature they had plenty of opportunities for displaying some very good driving.

At Bonner's Farm.

Within a quarter of an hour of leaving Harpenden, the fun commenced; for after following a narrow and winding lane for some distance, the blue marks indicated a sharp right hand turn down a grassy lane. As it was pouring in torrents at the time, those competitors who attempted the ascent of the sudden rise at the end of the lane found themselves in difficulties and a queue of cars had to wait whilst those in front struggled with the rise. At this point much manhandling was necessary to negotiate the slope, though a few of the drivers managed to rush up, by the aid of passengers from other cars, who standing on the backs did some very effective "bumping" to give wheel adhesion on the slimy surface.

More than half the competitors failed to make a clean ascent at Bonner's Farm, which obstacle accounted for very severe delays. After a few miles of deeply rutted lanes, a section of boggy grass was encountered, which tested the steering and suspension systems to a degree, Trowley Bottom was reached and continuing to Holtsmore End, the route included another observed section. By this time most of the competitors were late and some very fine, if a trifle risky, driving was to be seen.

Arriving at the non-stop section at Great Gaddeston, the section for the stopping and restarting test was found to be in fairly good condition and did not provide very much difficulty.

Climbing the Tunnel Slide.

All sorts of dreadful rumours were rife concerning the condition of Tunnel Slide, near Nettleden, and most of the two and three-wheeled brigade did some very spectacular skids in attempting the ascent. R. Richards (Oxford) then proceeded to show how the ascent should be made with his A.C., but he soon came to a standstill with his rear wheels spinning furiously. G. W. Bagshawe (Oxford) took his S n chal up in good style as did G. H. Martineau (Salmson) a member of the Cambridge team.

A feature of the Tunnel Slide episode was the excellent climb made by A. N. L. Maclachlan (Oxford), whose Austin Seven performed marvellously throughout the whole trial.

C. B. Ford (Cambridge) looked like getting up the hill at the first attempt, but was obliged to descend as the course was blocked by another competitor, but having a clear route a few minutes later, went up with a scream. The condition of the Tunnel Slide, with its steep ascent and slippery surface, called for skilful piloting, especially as anything like a bad skid would have precipitated the cars into the stone walls on either side. It says much for the skill of both teams that no casualties occurred, and, on the whole, the cars suffered but very little damage.

At a distance of sixteen miles from the start many of the competitors had retired and most of the others were late, which was partly due to obstructions by farm waggons, flocks of sheep and all kinds of poultry. On one occasion four or five cars had to wait whilst a Ford van took in a load of sacks and afterwards proceeded

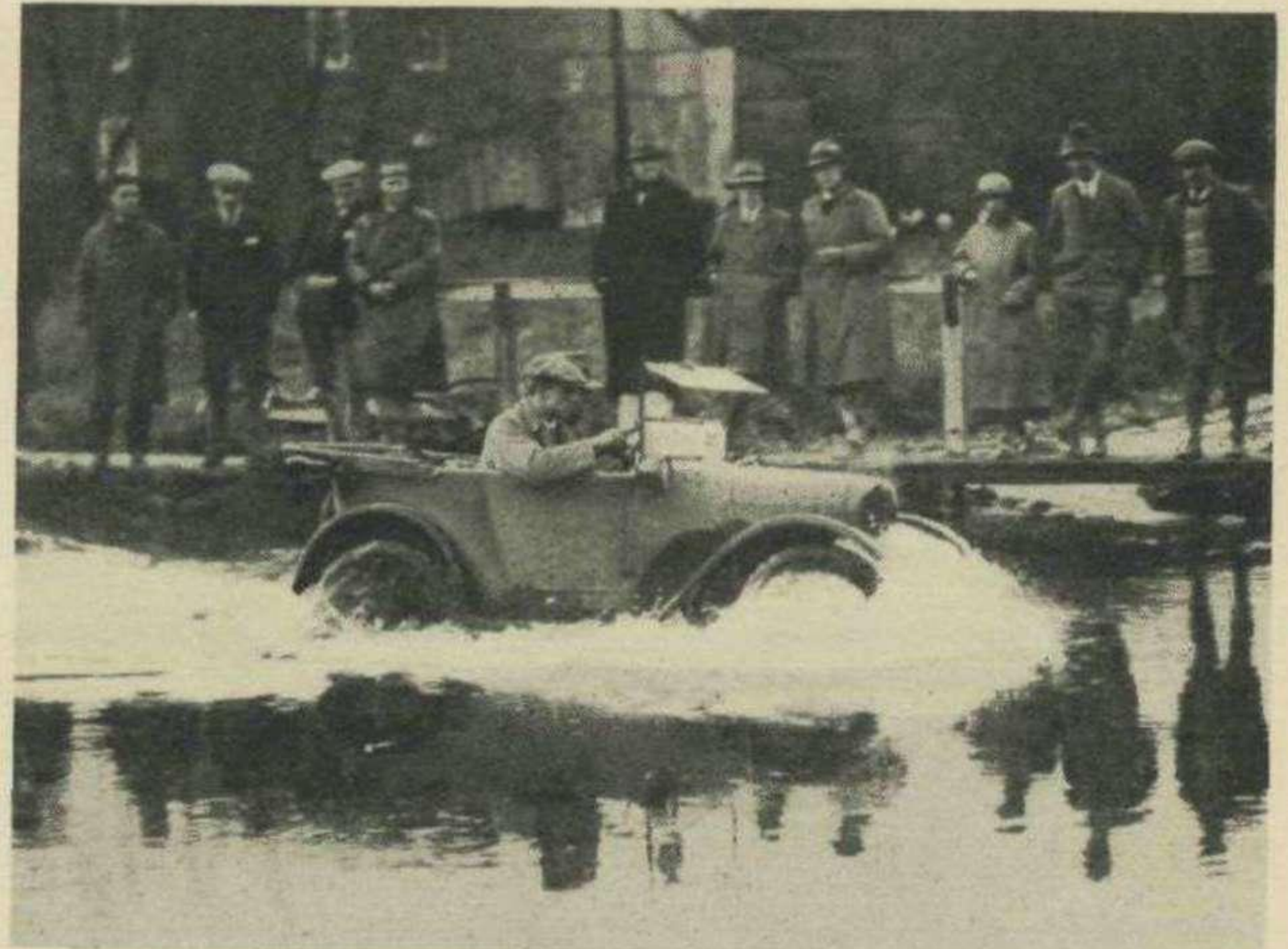


F. J. R. HEATH (HENDERSON) AND C. GAULT (P. & M.)
CROSSING THE WATER SPLASH.

THE INTER-'VARSITY RELIABILITY TRIAL—continued.



J. C. F. LLOYD-WILLIAMSON (SUNBEAM) MAKES A GOOD PASSAGE AT REDBOURNBURY.



A. W. L. MACLACHLAN'S AUSTIN SEVEN GETS FULL MARKS.

to lead the procession for a mile or so, until room for passing was found.

After the brake test at Little Heath, the competitors were confronted by White Hill, which with its rough surface and double hairpin bend called for skilful driving. Space does not permit of an adequate description of all the colonial sections, which had been selected with an uncanny knowledge of the local quagmires, and having surmounted the difficulties of the course thus far, the drivers were confronted with the water splash at Redbourn, where much amusement prevailed.

Incidents at Redbourn Water Splash.

Very few of the motor-cyclists succeeded in getting more than half-way across the splash before their engines were put out of action and a willing band of helpers waded in to assist in the aquatic sports. One of the best crossings was made by R. A. Stavert (P. and M. Oxford) who drove steadily without the least hesitation. F. J. R. Heath (Cambridge), driving his big Henderson with characteristic skill, got across in safety, but some of the less experienced riders could not resist the temptation of rushing the splash with the inevitable result of stopping, water-logged in the middle.

The remarkable thing about those who stopped in the middle was the rapidity with which they got their engines started again, and in some cases a few kicks did the trick.

The majority of car competitors took the water far too fast; which, though extremely spectacular, caused much loss of time. N. R. Solly (Oxford) raised a first-class wave with his Lea-Francis and had to be pushed out of the stream, but got going again after draining the water from his carburettor. N. Miller's Riley showed up very well and took the splash without a falter, and, though C. B. Ford (Cambridge) stopped his engine in midstream, he leapt out and restarted, although the water was well up to the level of his chassis. Ford's performance was very creditable, as during the second circuit he had shed two tyres on White Hill, but managed to finish within the specified time.

In view of the weather conditions and the extremely severe nature of the course, the performances of the various competitors are extremely praiseworthy,

Events of this character in which the trade element is entirely absent show the standard of skill which can be attained by amateur motorists and motor cyclists, and the organising officials are to be congratulated on the smooth and efficient management of the entire trial

OXFORD. RESULTS.

23 Starters.
11 Finished. 509 Marks.

CAMBRIDGE.

18 Starters.
10 Finished. 456 Marks.

Oxford win the "Motor Cycling" Challenge Cup.

Best Performance of the day.

G. W. Bagshawe	(Oxford)	1096 Senechal	100 Marks
A. Maclachlan	(Oxford)	746 Austin	100 Marks

Best Solo.

1st J. T. Halsall	(Oxford)	348 Beardmore	85 Marks
2nd F. J. R. Heath	(Cambridge)	1301 Henderson	84 Marks

F. J. R. Heath wins the Birkin Cup for best C.U.M.C.C. Solo.



G. W. BAGSHAWE (SENECHAL) DISTURBS THE MINNOWS.

Another World's Record

on

“BP”

The British Petrol

Mr. E. A. D. Eldridge, driving his 1,500 c.c. Eldridge-Special at Montlhery Track on November 10th, established a new World's Record for the 50 Kilometres, which was covered at the rate of 116.329 m.p.h.—187.314 k.p.h.

This new record is especially notable in view of the fact that the record was previously secured with a car of cylinder capacity of 7,266 c.c.

Use “BP” the British Petrol

British Petroleum Co. Ltd. Britannic House, Moorgate, E.C.2

Distributing Organization of the
ANGLO-PERSIAN OIL CO. LTD.



THE INDIAN "SCOUT" DESCRIBED BELOW.

SPORTING MACHINES ON TEST.

THE INDIAN SCOUT.

By ARNOLD RADCLYFFE.

of mark should be made on the tank to guide one in one's change. Of course, at night this would be useless, but then one never misses one's gears at night, the principle being the same one which seems to eliminate all bumps and put on ten miles an hour; both well-known nocturnal phenomena.

Æsthetically, I dislike the following details. The lop-sided method of mounting the electric horn, the excrescence on the tank which is an exhaust lifter and the aluminium silencer which does not tone with the rest of the machine.

Aurally, the only disturbing element is the crackle of the quick starter segment as it returns to its normal position. I am afraid one is advised to put up with this as the outside segment gear is so much more efficient than the silent internal mechanism on some machines, which, as we well know, is never happy unless it is being renewed.

No further adverse criticism is possible to my mind so I will dilate on a few of the good qualities of the design of the Scout.

Desirable Features of the Scout.

The double tube frame has a world-wide reputation for being practically unbreakable; personally I have had practical experience of this. Crashing into a six-foot ditch one night with a sidecar outfit I bent my front forks to an angle of about 40 degrees with the ground. Apparently, a wreck, half-an-hour's work with a blow lamp rendered the machine "as you were," and the forks were never even sent back to the makers. The frame was in perfect alignment and the machine is still in use; the accident occurred four years ago.

If anything the frame of the present Scout is more sturdily built than in those days and an unbreakable frame inspires great confidence in those parts of the world where garages and spare parts are things of the future.

Mudguarding is stout and of sensible section; in common with the rest of the machine a wise margin of strength is present in construction of the guards. This remark includes the chain guard. A notable feature of the chain is its position; located on the offside of the machine it is instantly accessible for removal where a sidecar is fitted. Thus, is an unpleasant operation simplified.

The footrests are, of course, footboards rubber covered, and collapsible; very useful for Scramblerley and the like.

Front springing is adjustable to the riders weight, an operation which is sometimes necessary to eliminate fore and aft motion on a balloon tyred machine. The Scout can be obtained with or without balloons, the

IT is now just twenty-five years since the first Indian motor-cycle was built; during this period many models have seen the light of day, and many of the earliest are still running about the roads at the present time with enormous mileages to their credit. Throughout the two and a half decades the characteristics of the Indian have remained fundamentally the same; the old single geared model, the Red Indian, the Blue Indian, the Power-plus, the Scout, and the Chief, all of them had a wonderful capacity for "road burning." To be the owner of one of the old Red Indians was in those days the equivalent of being the owner of an aeroplane to-day. They were credited with super-normal speeds and stupendous acceleration and the man who could mount one successfully at his first attempt was looked upon as a hero or an acrobat. On two occasions I have seen a 7.9 leap away leaving its owner or prospective owner biting the dust. The acceleration was usually connected with the twist grip, but in reality the Schebler carburetter should take the credit. A Schebler with a Bowden control is just as violent (if you wish it to be) as it is when fitted with the usual twist control.

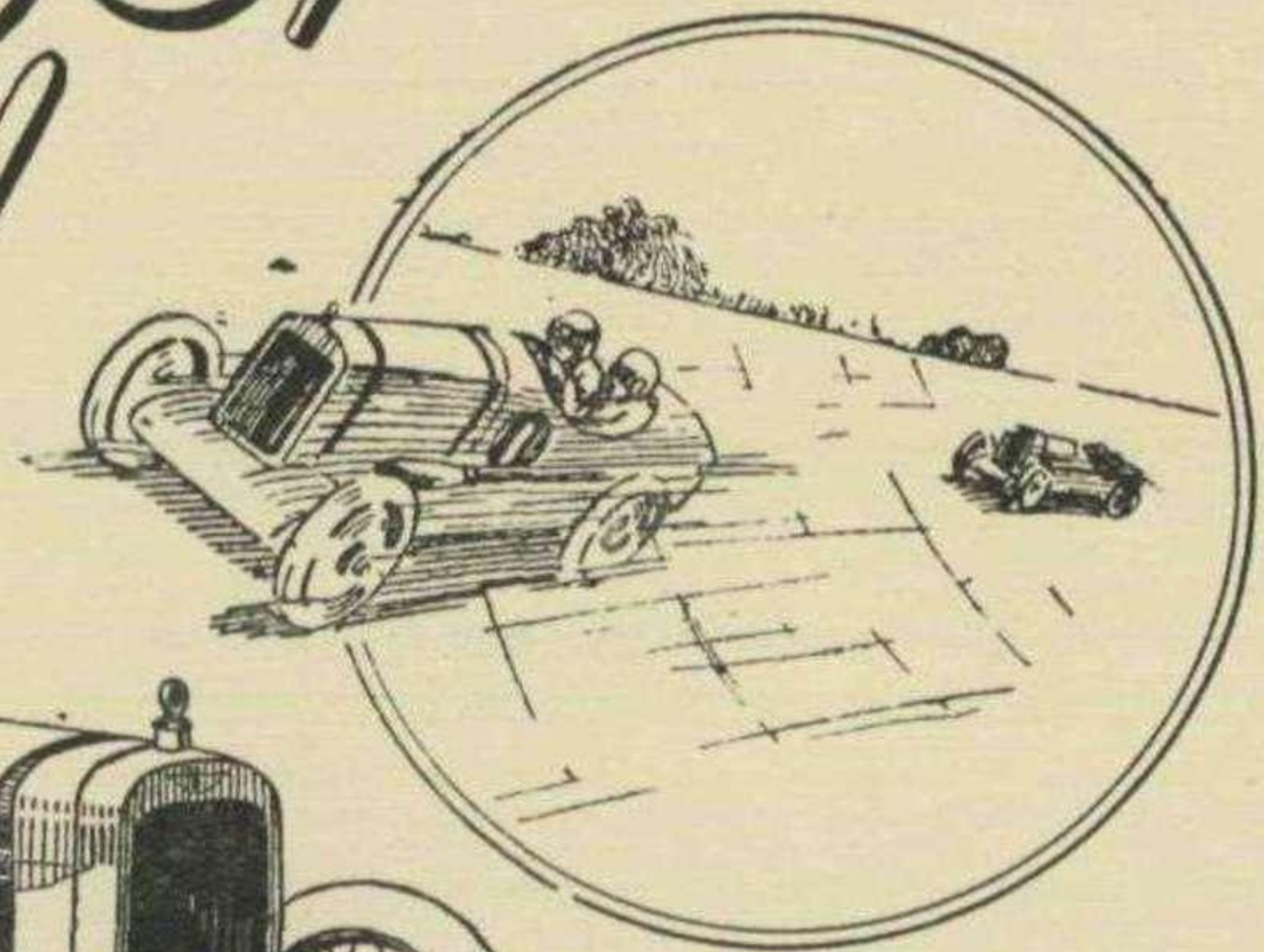
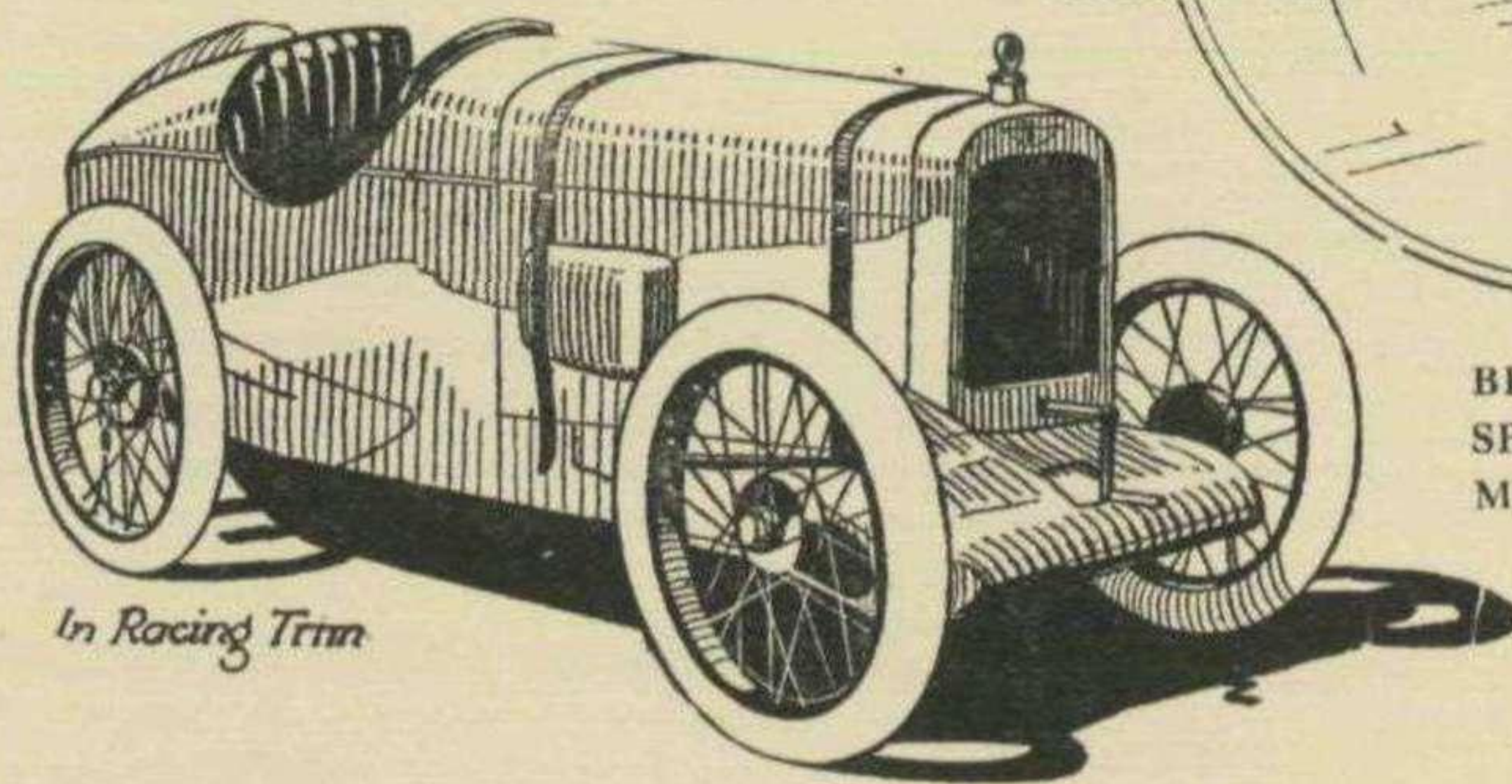
After twenty-five years of solid experience in all countries the Indian designers place before us the 1926 Scout. It is only natural that a critic should have a difficult task when he approaches the machine to pull it, verbally, to bits.

In fact, after a strenuous test, I could discover no radically weak points about the machine. What little criticism I have to offer can be put forward in a few lines.

Critical Comments.

It concerns chiefly the gear lever. As a lever it is neat and well finished and harmonises with the machine; in practice I should prefer it bent forward considerably as at present, in the low gear position it fouls the leg badly and is inaccessible if one has on voluminous garments. It also causes an awkward position to be adopted if one wishes to manipulate the footbrake when in bottom gear. The remedy for this is obvious and it should not influence anyone adversely for more than the time taken to bend the lever. Second gear position is in my opinion too indefinite and some sort

Trophies 90%
of the entries!



BROOKLANDS 5 SUPER-SPORTS MODEL **£265**

Austin Seven

Successes in 1925

are an impressive list, much too long for enumeration here item by item. Quite apart from those achieved by private owners, our own Competition Dept. has secured no less than 45 trophies out of a total of 50 entries, and has put up TEN WORLD'S RECORDS, bringing the total of awards to fifty-five.

Outstanding amongst the season's events was, of course, the J.C.C. 200 Miles, where Austin Seven Specials finished 1st, 2nd and 3rd, in the 750 c.c. Class. Again, in the 50 Miles Handicap (3,000 c.c.) at the Essex Motor Club's Brooklands Meeting, on October 3rd, the Austin Seven (750 c.c.) won by 3 miles, at an average of nearly 90 m.p.h., beating other cars of over 4 times its capacity! Thus does the "Seven" maintain its position as "easily the best small car in the world" and witness the truth of the assertion that AUSTIN MEANS EXCELLENCE. Send for the complete Austin Catalogue.

STOP PRESS:—
"A further outstanding success was achieved on Nov. 22nd at the National Autodrome, Barcelona, where, in a race of 30 kilometres, the Austin Seven was 1st in both the 750 c.c. and 1,100 c.c. classes and attained a speed of over 80 m.p.h."

Price of AUSTIN SEVEN TOURER at Works **£149**
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LONDON: Showrooms, Service Depot & Hire Dept., 479-483, OXFORD ST., W.1 (nr. Marble Arch).

SPORTING MACHINES ON TEST—continued.

standard equipment, however, includes Goodyear low pressure tyres.

The tank has very pleasing lines and holds $2\frac{1}{2}$ gallons of petrol and $2\frac{1}{2}$ quarts of oil; the latter is fed to the engine mechanically and the method is practically foolproof; a hand pump is provided in the tank for emergency purposes.

The Sports handlebars, fitted as standard to the English machines, are of good stout tube, anchored at three points to the head; the control wires are enclosed in the bars and leather casings guard them where they emerge. The bars are soft and can be bent to any other shape which an owner might prefer; this malleability is useful after a collision.

The rear stand is of channel section, and designed to allow an easy pull up; it might, however, with advantage be cranked a little to allow the machine to stand on a downward slope.

Technical Details.

Coming now to the power unit; this has a capacity of 596 c.c., and enclosed side valves and detachable heads are utilised, giving at once an accessible and neat cylinder job. The primary drive is by unbreakable and practically everlasting helical gears (the London depot has only once been called upon to supply a spare wheel, and this was caused by foreign matter in the oil). The whine which used to indicate the nature of the drive has almost completely vanished in the present model; at any rate it does not obtrude itself above the hum of the relatively quiet engine.

Gear box, helical drive and crankcase are all unified, but are, nevertheless, independent of each other and instantly demountable.

The Splitdorf magneto delivers a useful spark even at the low speed of 35 revolutions per minute, thus enabling the weakest to start the motor with ease; a further aid to this end is provided in the shape of a priming gear integral with the filler cap, an old-established Indian feature.

The dynamo is mounted above the gear box and is driven by a leather belt, adjustment of which is provided in the dynamo mounting. The belt is shielded but can be easily renewed if necessary.

Performance.

Contrary to my usual custom I have occupied rather more space than usual in detailing the engine and frame features; I put forward the excuse that the design of the Scout excites my admiration and merits a more introspective examination than is usual.

The road performance of the balloon tyred Scout calls for little comment, inasmuch as it is as perfect as modern design will permit.

Comfort on a sports mount is not always obtainable, but in this case it is omnipresent and a ride of any length can be accomplished with a real minimum of fatigue. On this machine the problem of that pitching motion has been solved; balloon tyred cars and motor-cycles have so far been subject to the phenomenon and it has been decidedly unpleasant to experience it on a pot-holey road. The Scout does not pitch and very

bad surfaces can be taken at speed without the discomfort usually connected with low pressure tyres.

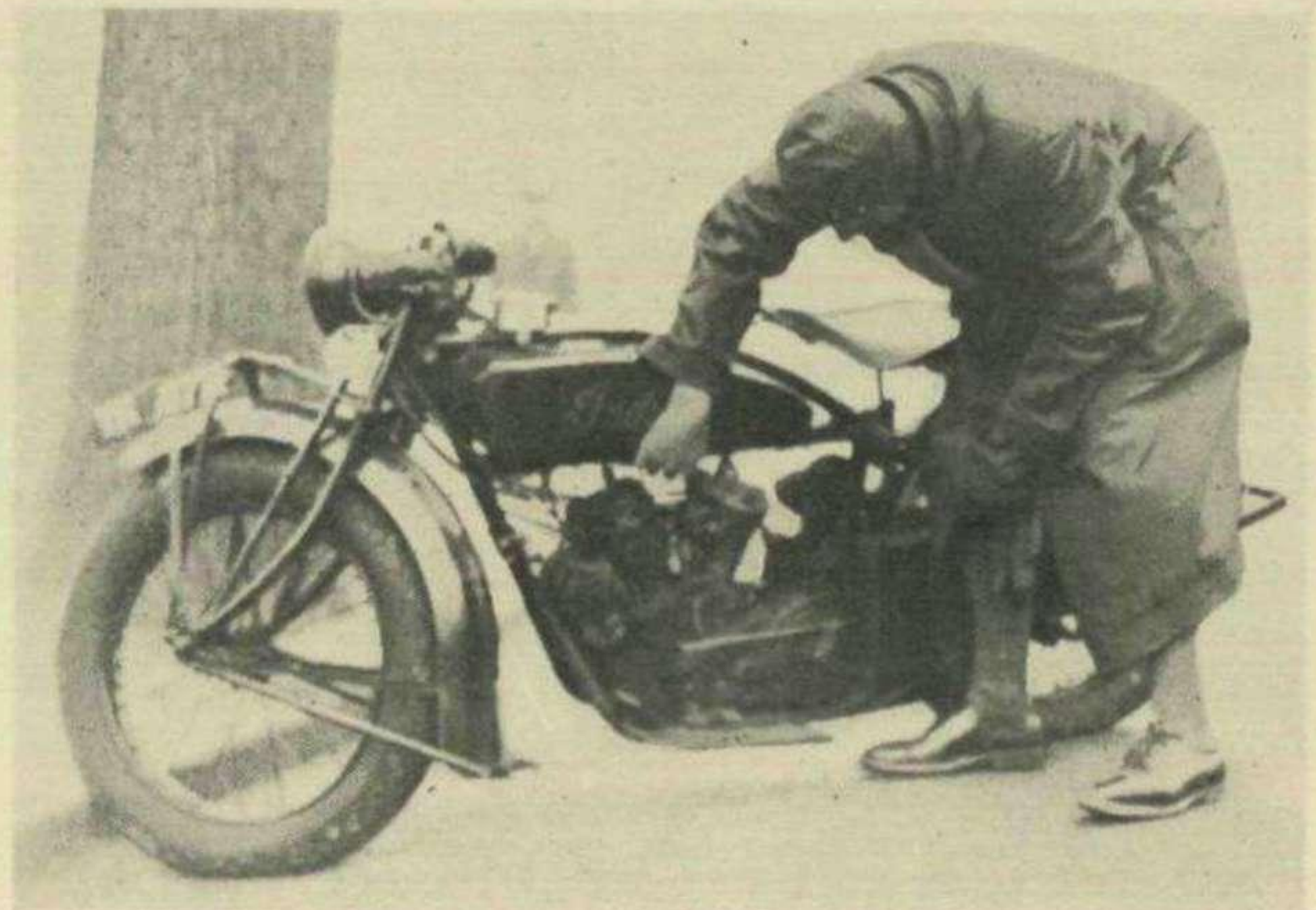
Touring speeds of fifty and fifty-five can be held indefinitely, the engine showing no signs of drying up; the maximum speed of this particular machine was in the neighbourhood of seventy, sixty-five having been actually accomplished over the kilometre on the track with a loaded sidecar. And the Scout looks so unassuming that the old saying about melting butter could be easily applied to it.

The gear box is there to be used, however, and the sweet top gear pulling of the older models was not quite so noticeable on this actual machine.

The acceleration possible with the foot clutch and Schebler carburettor is delightful and the former fitting is forgiven its disadvantages when it displays its utility in enabling a lightning change to be obtained. A short tussle with an o.h.v. T.T. machine showed that if anything the Scout excelled in getting away. The one great advantage of a foot clutch and twist grip throttle combined is that only one operation is called for which needs the right hand and that is the gear lever. Thus, the change can be made instantaneous without the necessity of imperilling one's gears by a "slip" change; also this latter is not always possible with every make of gear box.

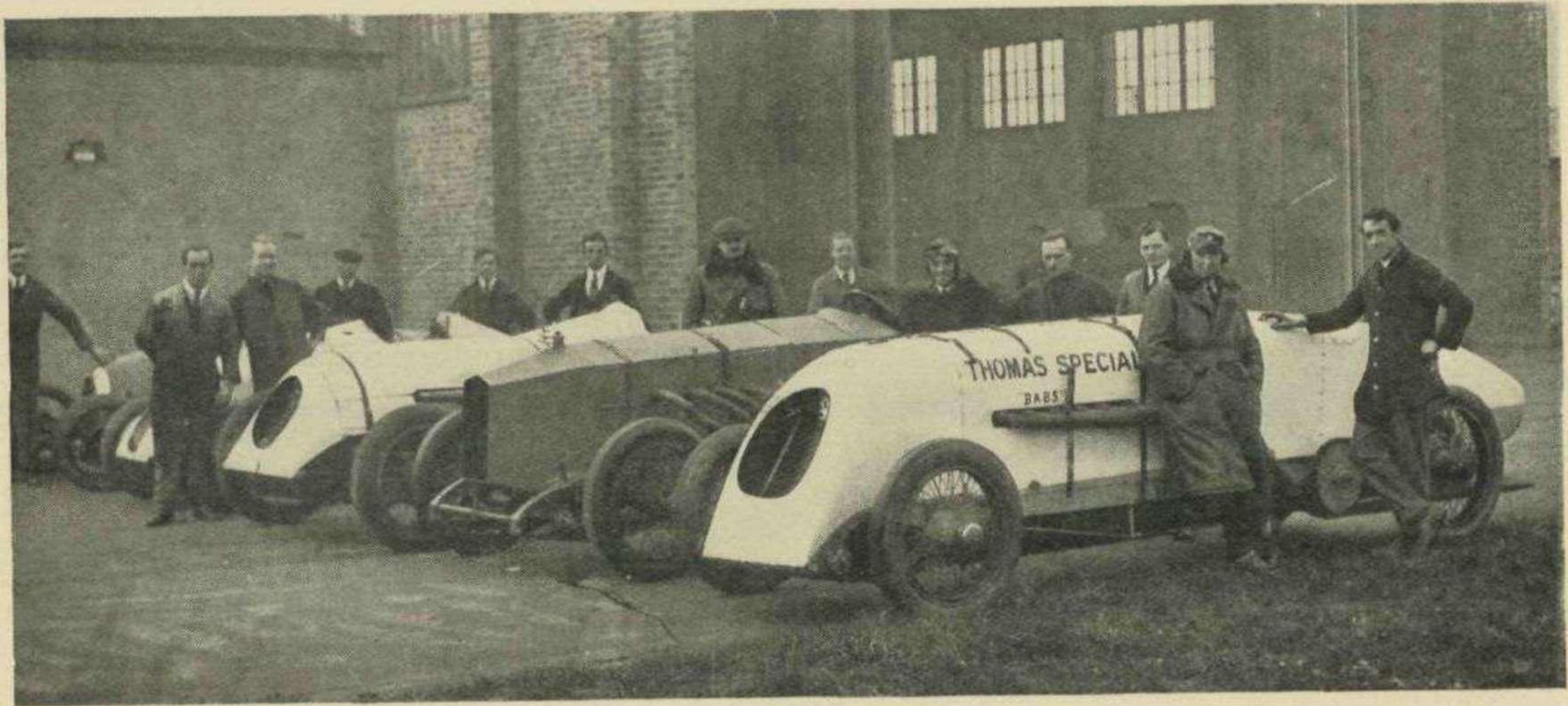
Naturally enough the Scout despised any hills that I could show it, and my test was concluded with some rough stuff where the machine showed its true colours, no amount of bad going affecting its steering or stability. A steering damper was fitted but was slackened right off, its useful sphere being confined to work with an empty sidecar.

The electric outfit was efficient, a very extraordinary beam being given by the headlamp, the ammeter and switch is mounted on the tank, control and observation being nicely situated. The machine can be obtained without the electric gear, the price being £72 10s. od. Needless to say in the States a model is never sold without electric lighting, but for our convenience over here it is listed separately.



ACCESSIBILITY IS ONE OF THE "SCOUT" FEATURES.

J. G. PARRY THOMAS AND MR. "SNOWY" BROWNE.



MR. J. G. PARRY THOMAS WITH "BABS" AND MR. "SNOWY" BROWNE ON THE LANCHESTER, TOGETHER WITH THE TEAM OF RACING CARS WHICH MR. THOMAS PARRY HAS HANDLED SO SUCCESSFULLY DURING THE 1925 RACING SEASON.

THE "DEWAR" TROPHY.

The Committee of the R.A.C. has awarded the "Dewar" Trophy for 1925 to the Rover Co., Ltd., Coventry, in respect of a trial of a 14/45 Rover Car. This trophy, which was first awarded in 1906, is given annually by the R.A.C. for the most meritorious performance in a Certified Trial by the Club. The performance which secured the Trophy for Messrs. Rovers was fifty continuous ascents and descents of the well-known Welsh test hill, Bwlch-y-Groes. The hill is about $1\frac{1}{2}$ miles long and has an average gradient of 1 in 6.99. This is the first occasion since the Trophy was presented that it has been awarded for a Trial which was confined exclusively to hill climbing.

Messrs. Fibrine Sales, Ltd., makers of the Fibrinetic Puncture Seal, would like to hear from readers participating in reliability trials especially the London-Exeter-London run at Xmas.

We understand that the Jubilee Worm Drive water clip is being used by several motor manufacturers and that well-known racing men speak highly of its convenience and efficiency.

SYDENHAM AND DISTRICT MOTOR CLUB.

This club's colonial trial over a seventy mile course proved a great success and their new discovery, namely a hill in Whitly Forest, turned out to be stiffer than was expected. Rain during part of the event made the course harder still, but despite this three teams survived and the two silver cups were duly awarded.

Silver Cup (best performance) ... F. E. Mockford, Raleigh.
 " " (best performance outside a winning team) L. C. Bentley, B.S.A.

A BARIMAR BOOKLET.

We have received from Messrs. Barimar, Ltd., the scientific welding engineers, an attractively printed booklet, entitled, "Send to Barimar," which gives details of their various processes which have been elaborated by the company's engineers for the repair of motor car parts. It is interesting to note that Messrs. Barimar, Ltd., announce that this is demonstration month at the Barimar Factory, and we understand that they have made arrangements to handle a big batch of Demonstration Repairs, to prove that they can handle every class of motor car repair with complete satisfaction to the customer. Full details of this interesting announcement and a copy of the book may be obtained upon application to Messrs. Barimar, Ltd., 14-18, Lamb's Conduit Street, London, W.C. 1.

UNIVERSITY MOTOR CYCLING.

G. F. Simond, the hon. trials secretary of the Cambridge University Motor Cycling Club. He has ridden in a considerable number of trials, his machine being a 349 c.c. o.h.v. Sunbeam. He is a member of Corpus Christi College.



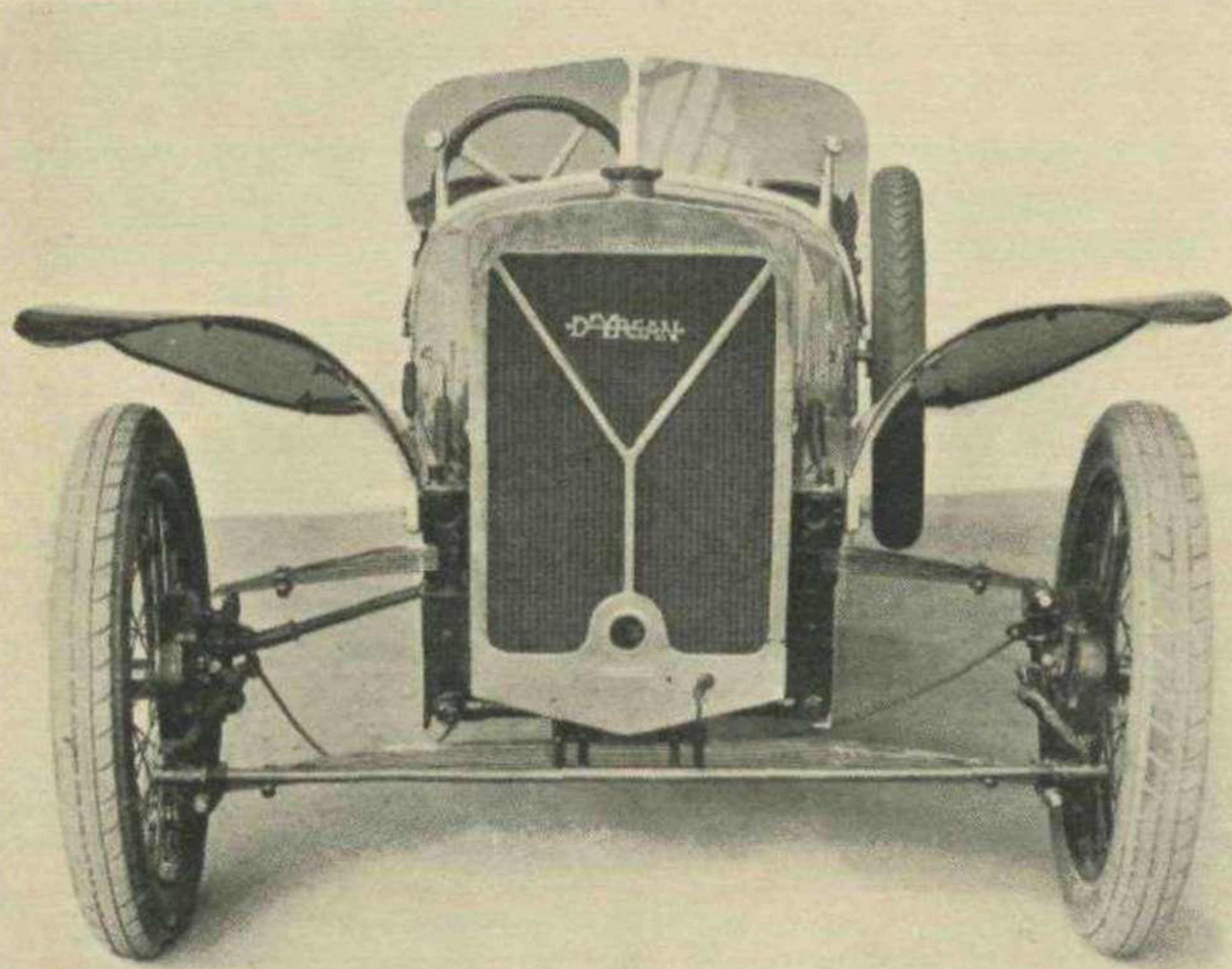
THE ROAD FUND.

At a Conference held at the R.A.C. on 2nd November, 1925, of organisations representative of users and makers of motor vehicles, the following resolution was unanimously adopted and has been forwarded to the Minister of Transport:

"This Conference of organisations representative of owners, users and manufacturers of all classes of motor vehicles, views with the greatest concern the suggestion of the Chancellor of the Exchequer that a portion of the revenue from motor taxation should be diverted from the purposes to which it is at present devoted and to which it was pledged by the Finance Act (1909-10) 1910 and later enactments of successive Governments.

"In the opinion of this Conference any such diversion of the monies of the Road Fund would hamper seriously the process of highway reconstruction, development and maintenance."

The organisations represented were the Royal Automobile Club, the Automobile Association, the Royal Scottish Automobile Club, the Society of Motor Manufacturers and Traders, the Commercial Motor Users Association, the Scottish Commercial Motor Users Association, the British Cycle and Motor Cycle Manufacturers and Traders Union, and the Roads Improvement Association.



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THE TALE OF THE T.T.

Messrs. J. A. Prestwich & Co., Ltd., of Northumberland Park, London, N.17, of J.A.P. Engine fame, have recently issued a very interesting little booklet entitled "The Tale of the "T.T.," which deals with the full history of the Tourist Trophy Races. The J.A.P. engines have figured very prominently in the series of races since the time when C. R. Collier won in 1907 at an average speed of 38.22 miles per hour on a J.A.P. engined Matchless. It will be remembered too that Howard Davies H.R.D., which averaged over 65 miles per hour this year, was also fitted with a J.A.P. engine.

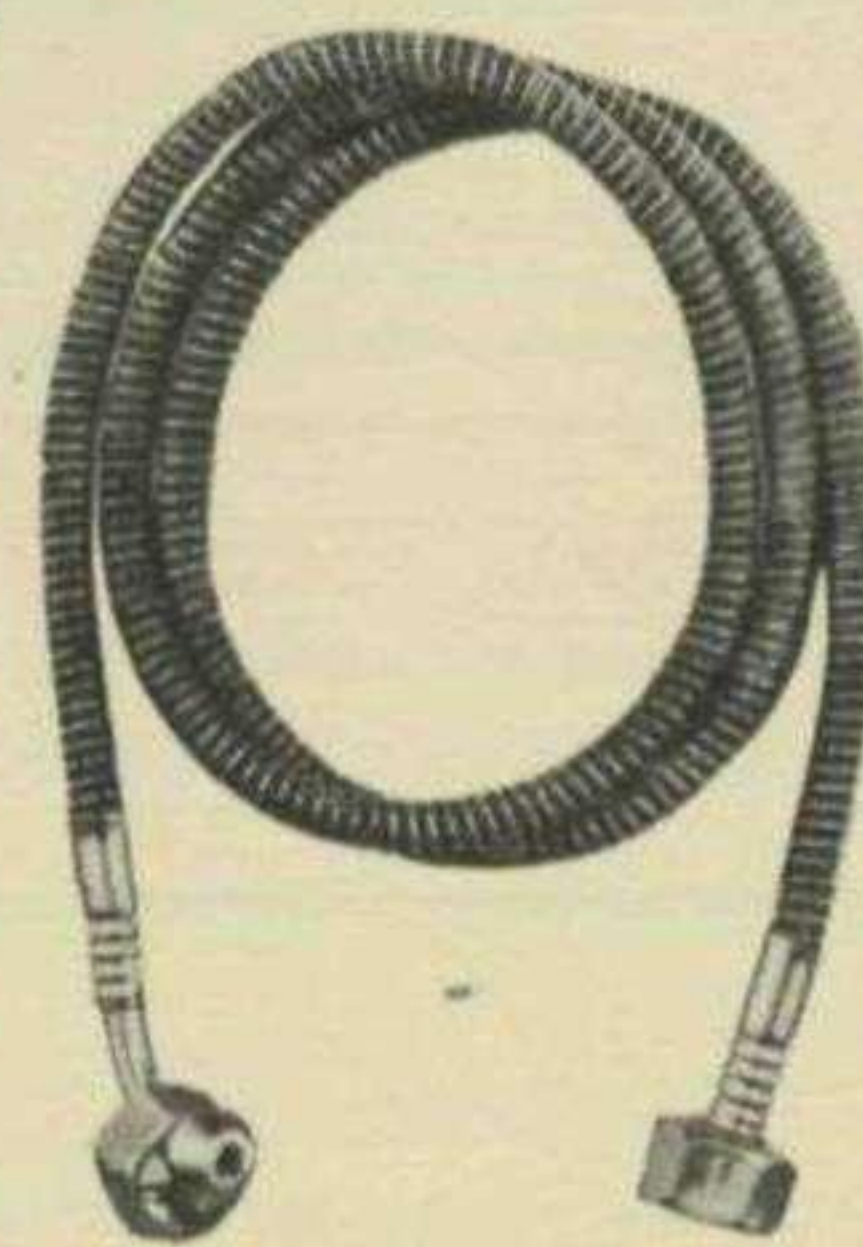
The first part of the booklet includes interesting information concerning the course, of which the main features are described in detail, together with a complete review giving details of developments in design of the competing machines from the first race in 1907.

A full list of the winners with particulars of their machines, average speeds and fastest lap speeds is given at the end. Copies can be obtained on application to Messrs. J. A. Prestwich & Co., Ltd., at the above address on mentioning "Motor Sport."

The J. W. Shaw Shield, which is the equivalent of the Nesbitt Award, has been presented to Captain T. Oliver, in recognition of his fine act in avoiding a woman and child on the course of the Ulster Grand Prix.

At the B.M.C.R.C. championship meeting at Brooklands on October 10th, B. and B. carburettors were fitted on the machines that won six firsts, set up five world's records and won the Buckley Cup.

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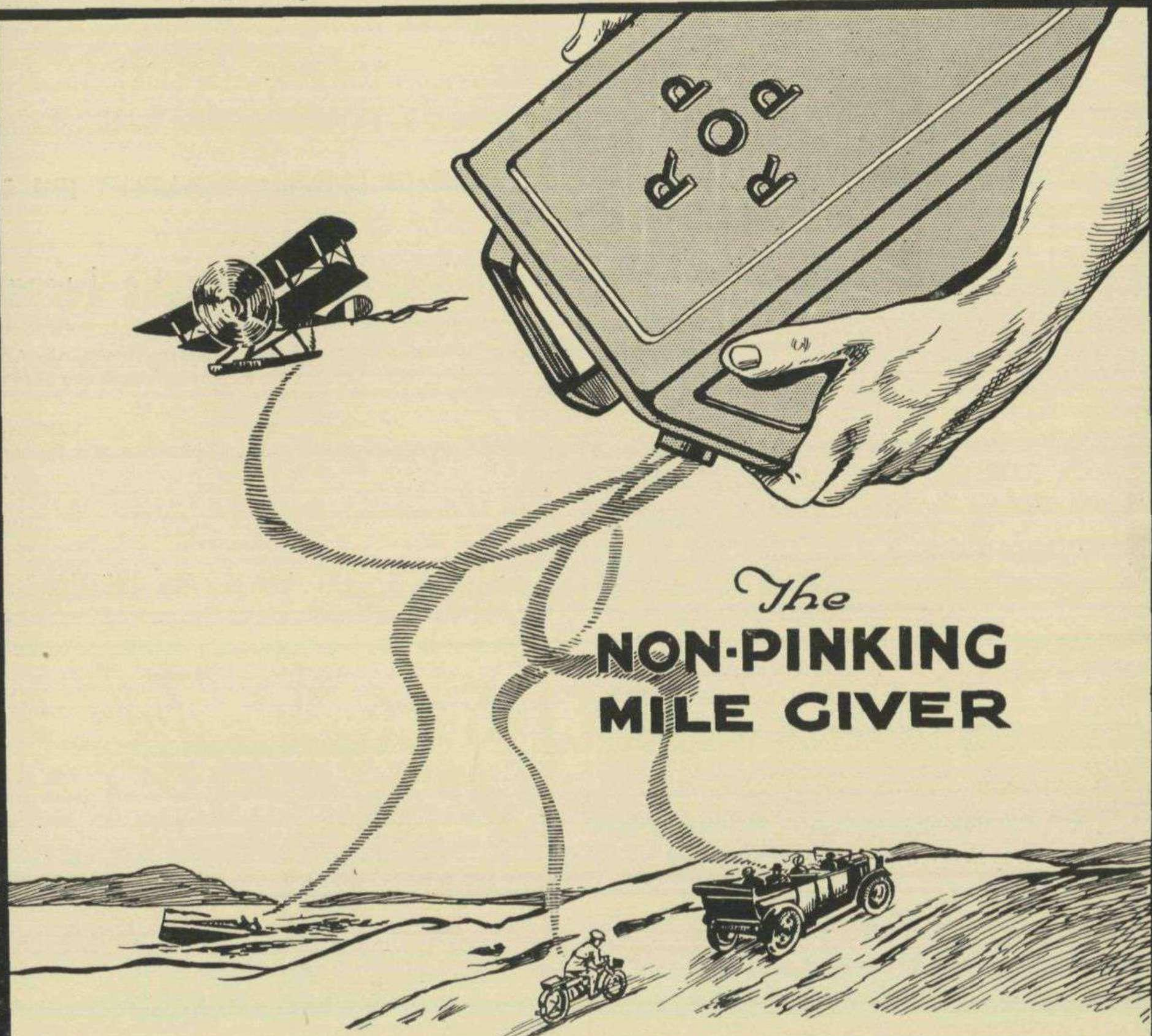
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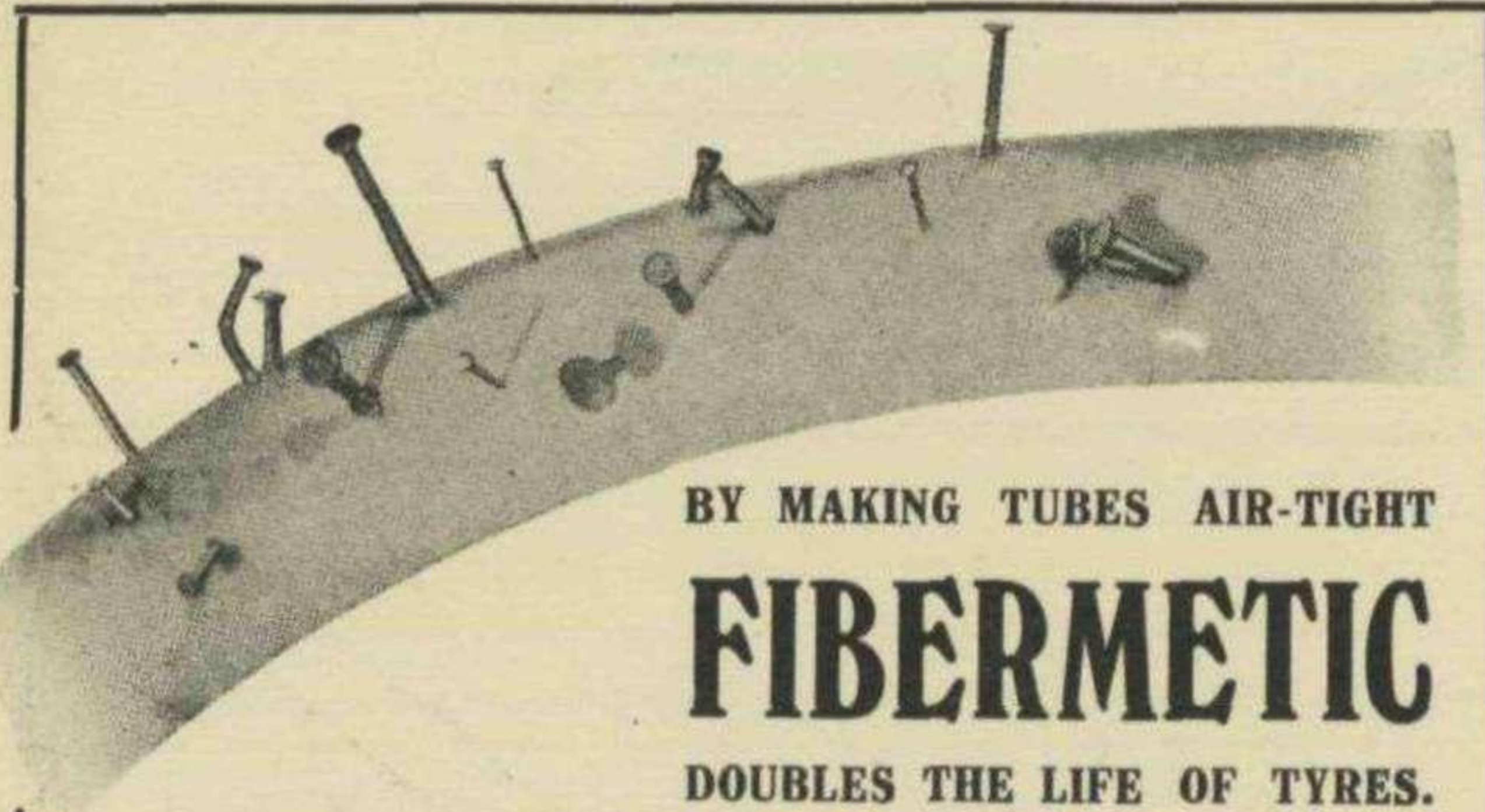
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Telephone:—LONDON WALL 9204 and 9205.



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To ascertain quantities for Motor Tubes—multiply diameter wheel by diameter tyre by 18. Example $30 \times 3\frac{1}{2} \times 18 = 1.89$ lbs. per tube approximate. State if required for Cycle, Motor Cycle or Motor Car.

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You can secure this **Great Relief** at the **Trifling Cost** of 1/- per car, 3d. per motor cycle, and 1½d. per cycle per month.

Read the testimonials in our pamphlet and grasp the fact that Fibermetic does this, does it every time and continues doing it for years.

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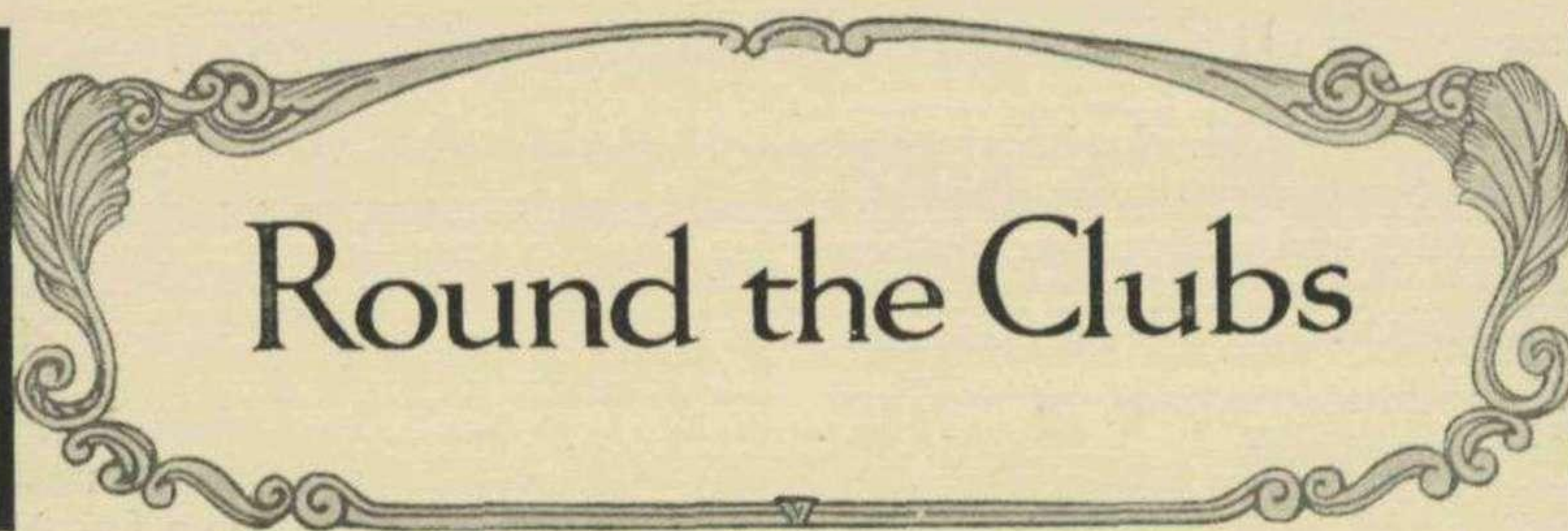
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THE A.C.E.M.C. (COVENTRY).

This club held a Half-Day Sporting Trial for the Elliott Cup.

The course was one of about 22½ miles, starting from Coventry and going via Kenilworth on to Princethorpe Woods and finishing at a village called Stretton. The route lay chiefly through woods, cart tracks, ploughed fields and water splashes. The accompanying photographs show the humorous side of a trial of this description (but not from the competitors' point of view), as, at the foot of the telegraph post on the left-hand side of photo, reproduced on page 197, was a poster telling competitors that a speed of 40 miles per hour must not be exceeded on this portion of the course. Needless to say, not one competitor completed this section of the course without assistance.

BOURNEMOUTH GIPSY M.C.C.

On December 13th the above club will hold their Annual Speed Freak Hill Climb at Creech, near Wareham, starting at 11.0 a.m.

Two climbs will be allowed for each class entered, fastest time to count. Ten yards start will be allowed.

CLASSES.

- | | |
|--------|-----------------------------|
| No. 1. | Machines up to 250 c.c. |
| „ 2. | „ „ 350 c.c. |
| „ 3.* | „ over 350 c.c. |
| „ 4.* | Best average climb any c.c. |

*Closed to Club Members.

Entry form and particulars can be obtained from the Hon. Secretary, Mr. A. G. Cullwick, 6, Belvedere Road, Bournemouth.

The Hill consists of clay and grass with an awkward hair-pin bend just after the start.

SOUTHPORT MOTOR CLUB.

The Southport Club's Trial will be the first large official trial to be run at this time of the year. The other big run, the M.C.C. London—Exeter, being a private club's concern, is not run under the jurisdiction of the R.A.C. and A.C.U. Special care has been taken to ensure efficient organisation, and, of course, suitable for the time of the year. There are no water splashes and only a matter of five miles of third-class road. The Ripon Corporation are very kindly taking considerable interest in the lunch control on the outward journey. Whilst, at Scarborough, the competitors will be staying at the Grand Hotel and the Salisbury Hotel, there will be several dances over Christmas which competitors will be able to attend. The Scarborough Corporation have promised to do everything in their power to ensure the trials success, and the comfort of all competitors.

Those who have previously competed in trials which have gone to Scarborough are well aware that the Corporation in that enterprising town does not do things by halves. Although the first batch of forms have only been out three days seventeen entries, were received by return.

NEWCASTLE AND NORTHERN MOTOR CLUB.

The first of a series of Social Functions held by the above Club during the Winter Season was held recently at the "Cottage," Northumberland Road, when a large number of the Club members and their friends participated in a Whist Drive.

Amongst the guests, Mr. J. B. Bainbridge represented the Newcastle and District Club, and the prizes were presented by the wife of the Sports Secretary.



THIS PHOTO SHOWS THE CONDITION OF THE "COURSE" IN THE A.C.E. CLUB TRIAL FOR THE ELLIOTT CUP.

The winners were:—

Ladies: MRS. T. G. ATKINSON, MRS. W. WRIGHT, MRS. COOK. Consolation: MRS. McCULLAGH.

Gentlemen: MR. E. WARDROPER, MR. J. BAGNALL. Consolation: MR. W. ATKINSON.

SHEFFIELD AND HALLAMSHIRE MOTOR-CYCLE AND CAR CLUB.

A Revenge trial was held on October 25, being organised by the general members for the edification of the officials. The route was sealed and no speedometers were allowed, competitors wandering by devious routes by Bakewell, Chatsworth and Beeley Moor to

ROUND THE CLUBS—continued.

Ashover, where the lunch stop was held. An impromptu social event in the form of a Smoking Concert filled the interval between the morning and afternoon routes; the latter being practically the reverse of the morning. The whole event was thoroughly enjoyed by everyone, although the system of marking was said to penalise some competitors somewhat heavily, marks being lost for grousing and the use of any forcible expressions regarding the trial. One car owner lost 100 marks for shaking his fist at the organiser on an observed hill.

The final results were:—

- 1st. *Honour*: J. WILDBLOOD (Austin 7).
 2nd. 2 *Cigars*: A. BOND (350 Ivy).
 3rd. *Silver Medal*: W. TURNER (Morris Oxford).

A small memento in the form of a Club cigarette case has been given to the winner.

SPEN VALLEY MOTOR-CYCLE & LIGHT CAR CLUB.

In order to keep the members together the Club are arranging for whist drives, dances, etc., to be held one per month in January, February and March. A ladies' committee is being formed to undertake certain of the arrangements in connection therewith.

The Annual Dinner will be held on 9th December, whilst a "Hide and Seek" Trial, which was so popular last year, will be held on 13th December.

SUTTON COLDFIELD & N. BIRMINGHAM A.C.

Starting from the Hagley Road, Birmingham, this Club's autumn trial turned out to be rather more severe than the competitors expected it to be; in fact, by the time the new hill, Cleeton Gulch, was reached, it had become a real sporting run and the rainy intervals served to make the course worse. Several water splashes severely tested the machines and the amount of boggy land to be traversed caused continual stoppages on the part of the combinations.

Cleeton Gulch proved to be an ascent composed of projecting rocks covered with a thick coat of slime, which, combined with a stiff gradient, caused many failures, chiefly amongst the passenger machines. Soloists were able to pick their way and on the whole a good show was made by them. A horse and tackle took a hand in hauling the sidecar outfits to the top.

ROTHERHAM & DISTRICT M.C.

Not to be outdone by the exploits at Hepolite Scar, the Rotherham Club scoured the neighbourhood and discovered a terror with a 1 in 1½ section on the Listerdale private estate.

The portion at first selected was thought to be unclimbable, but at the meeting the majority of competitors proved their ability to make the ascent. Upon another part of the hill being tried it proved much more successful only three members actually reaching the summit.

They were:—

E. H. Baker (Triumph), A. Hick (Triumph), E. Bunworth (Norton).

Both the spectators and the riders enjoyed the innovation immensely and a repetition of the event should be very popular. Meetings of this nature find much more favour than the old type of reliability run.

COVENTRY & WARWICKSHIRE M.C.

Coventry and Warwickshire M.C. were again victors, when it met the Grimsby M.C. last month. With their usual tactics the former team again and again broke down Grimsby's very strong defence line, the score being 6—0 when the whistle blew. Grimsby played an excellent game but they must develop their attack before they can overcome a fast side like Coventry.

The players were as follows:—

GRIMSBY.	COVENTRY AND WARWICKSHIRE
F. Plastow (Capt.)	J. Montgomery (Capt.)
D. Geddie	D. Brandish.
W. Spray.	L. Crisp.
L. Reeves.	S. Jackson.
W. Ian.	G. Elliott.
R. Parrish.	A. A. Sanders.

DOUGLAS M.C.C.

A semi-American hill climb promoted by this Club became in reality a tobogganning ground by reason of the prevailing mud. Twelve competitors very sportingly put in an appearance and gambolled gaily up and down the hill in spite of its vile surface and after several attempts V. Tring was acclaimed the winner with F. Hooper second.

RUGGA RUGGA M.C.C.

On November the 28th the six entrants who secured full marks in the Bryan Cooper Trophy Trial will, it is hoped, re-compete for the Caddell Cup, as the former Trophy was not awarded owing to all the competitors leaving the course. The following obtained full marks:—

G. C. Callaghan (Scott)	F. Holmes (Triumph)
F. Moore (Chater-Lea)	J. Evans (New Hudson)
J. F. B. (Norton)	E. Stapleton (H.R.D.)

BIRMINGHAM M.C.C.

Including such hills as Hagley Wood, Beacon, Swan's and Old Walton, and the famous Bromsgrove Water-splash, the course of the Open Centre Lamplight Trial took some negotiating, especially as half of it was covered in the dark. Braking and acceleration tests were held and the course finished with a fifteen mile an hour section, which indicates the nature of the going.

The following checked in:—

Solo—F. W. Viles (Raleigh), B. H. Riley (New Hudson), E. F. Cope and S. H. Jones (New Imperials), J. Adcock and V. Jolliffe (P. and M.'s), E. Hurlston (Ariel), and J. Element (Enfield).

Sidecars—E. Weston (Quadrant), C. H. Watson and F. Dixon (Nortons), B. Kershaw (New Hudson) and N. P. O. Bradley, A. Watson and R. G. G. Beesley (Sunbeams).

M.C.C.

The London—Exeter run will be held this year on 28th and 29th December instead of on the 26th and 27th as in previous years. The start, as usual, will be from the Bridge House Hotel, Staines, the first man will be sent off at 8 p.m. Salcombe, Marl pits, Peak, and White Sheet will all be included and a special test will be held on Salcombe. Extra prizes will be awarded this year to the drivers of the most silent machines.

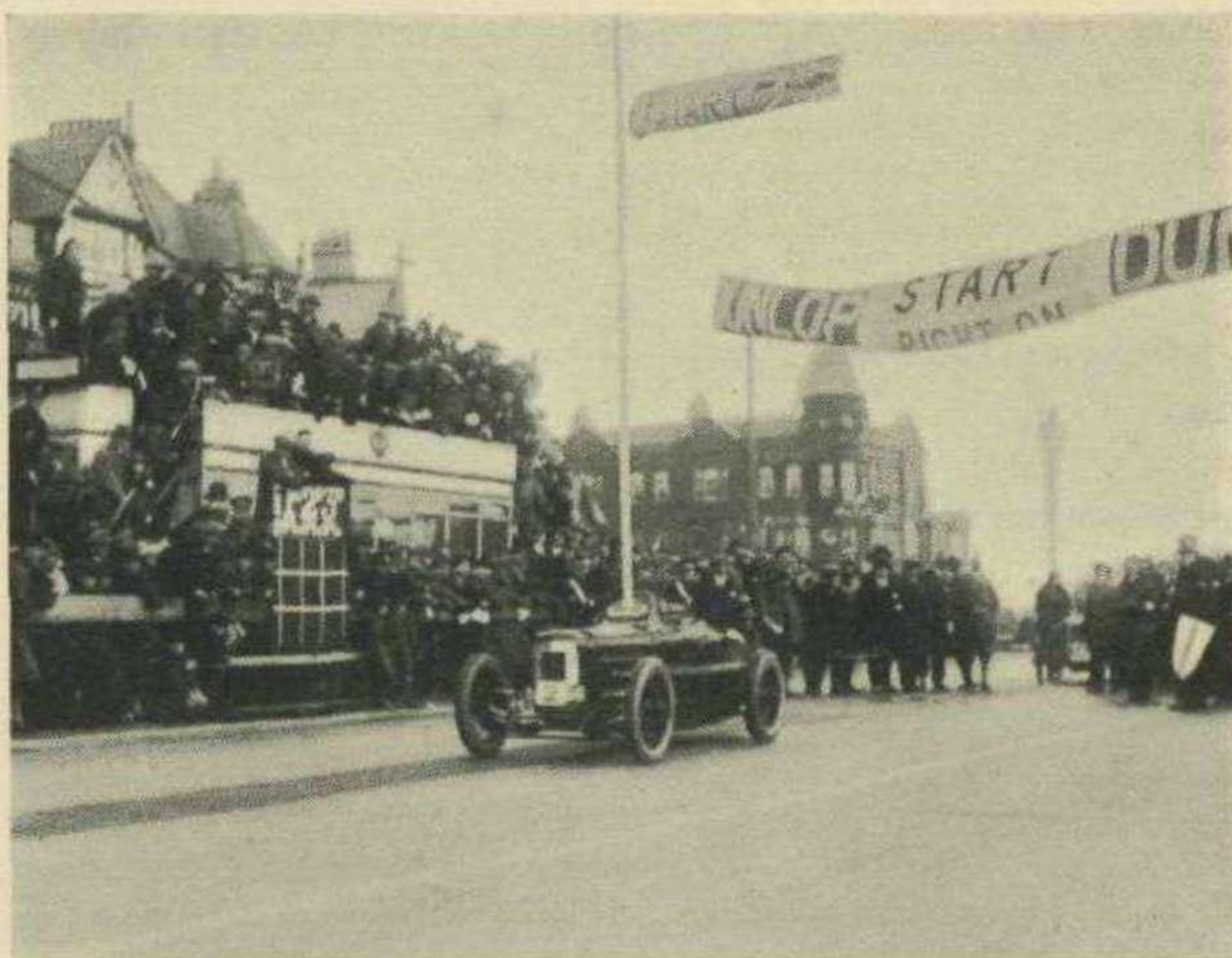
The closing date for entries is December 12th, and the Trial Secretary's address is 84, North End Road, N.W. 11.

CLUB NEWS IN PICTURES.

The Editor will be pleased to receive photographs of Club events for inclusion in this page.



R. T. OATES (O.M. SPORTS) GETS AWAY FROM AN AUSTIN.



MAJOR SEGRAVE MAKES FASTEST TIME AT BLACKPOOL.



A JOWETT MAKES A GOOD CLIMB OF HEPOLITE SCAR.



H. R. B. WATERS (INDIAN) ON THE SADDLEBACK M.C.C. TRIAL AT CAMBERLEY.



F. W. APPLEBEE (LEVIS) THE VETERAN COMPETITION RIDER.



GEORGE BROUGH ON HIS BROUGH SUPERIOR AT THE M.C.C. HIGH SPEED TRIAL.

ROUND THE CLUBS—continued.

MID-BEDFORDSHIRE MOTOR-CYCLE CLUB.

In spite of heavy rain, which made the already bad going villainous, only one competitor failed to check in at the lunch stop at Abbotsley on the occasion of this club's invitation sporting trial.

Run over a fifty-three mile course some really rough sections were encountered, culminating in Everton Hill. Only three riders succeeded in satisfactorily breasting the summit of this hill, the rest all failing to make clean ascents. Duffett rode well, and made easily the best climb. Out of the thirty-four starters, twenty-eight checked in at Goldington, but how many of these accurately followed the course it is hard to say.

Gold Medal ...	T. Allen ...	Douglas.
Silver Medal ...	T. B. Hene ...	Triumph.
Bronze Medal...	W. Duffett ...	Triumph.

ROTHERHAM & DISTRICT MOTOR-CYCLE CLUB.

An unusually long course, which might have proved cheerless in wet weather, actually provided a very pleasant run, Chester being the lunch stop and turning point. Seventeen out of twenty-two completed the run.

President Cup	}	...	W. G. Sinclair	770 B.S.A.
Gold Medal		...	G. Foster	980 Coventry Eagle.
Silver Medal		...	A. Bingham	499 Rudge.
Bronze Medals		...	S. Rogers	358 Raleigh.
" "		...	R. Heggwhite	348 Raleigh.

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