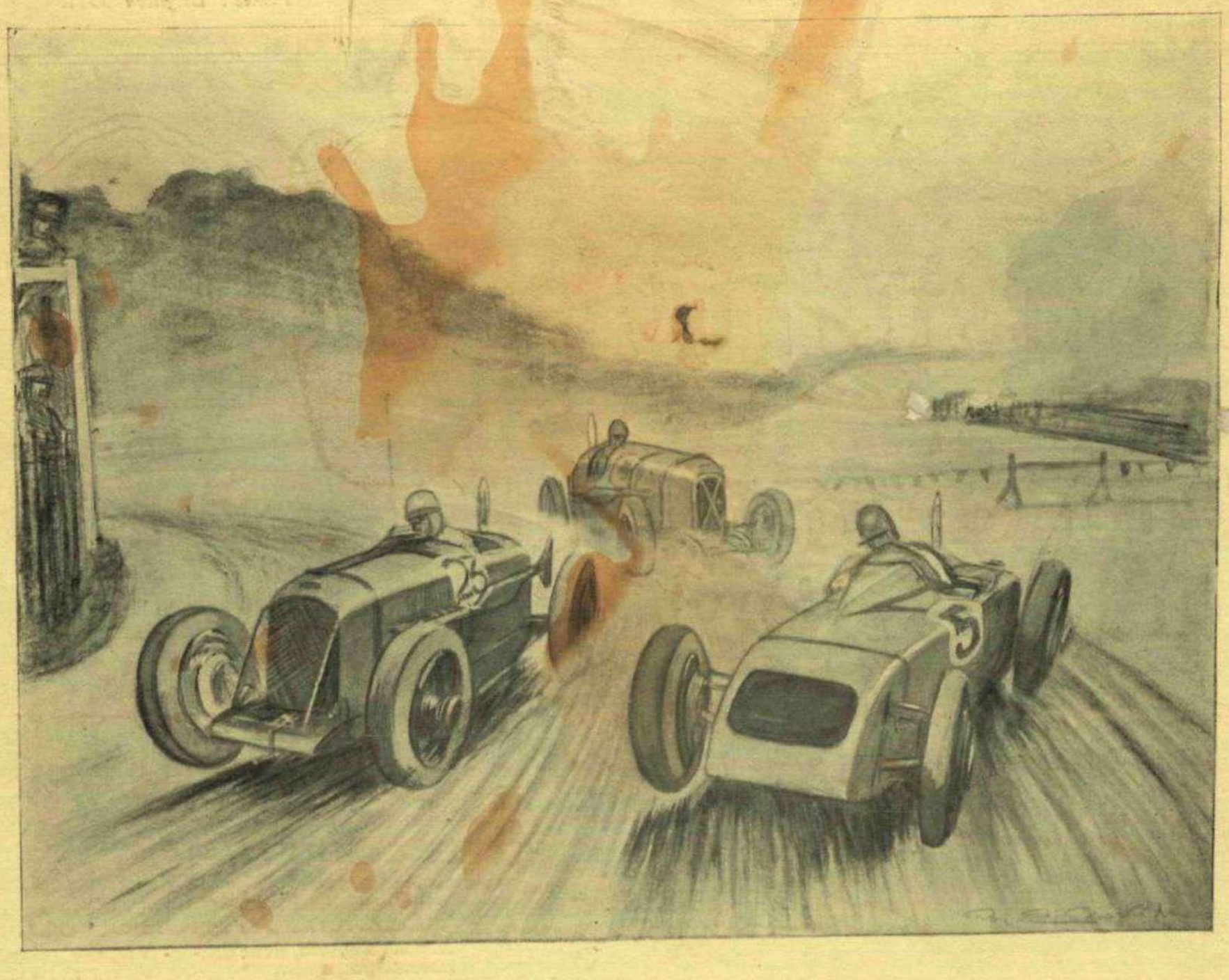
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MOTOR SPORT

Vol. 4 No. 5
November
1927

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Gazette



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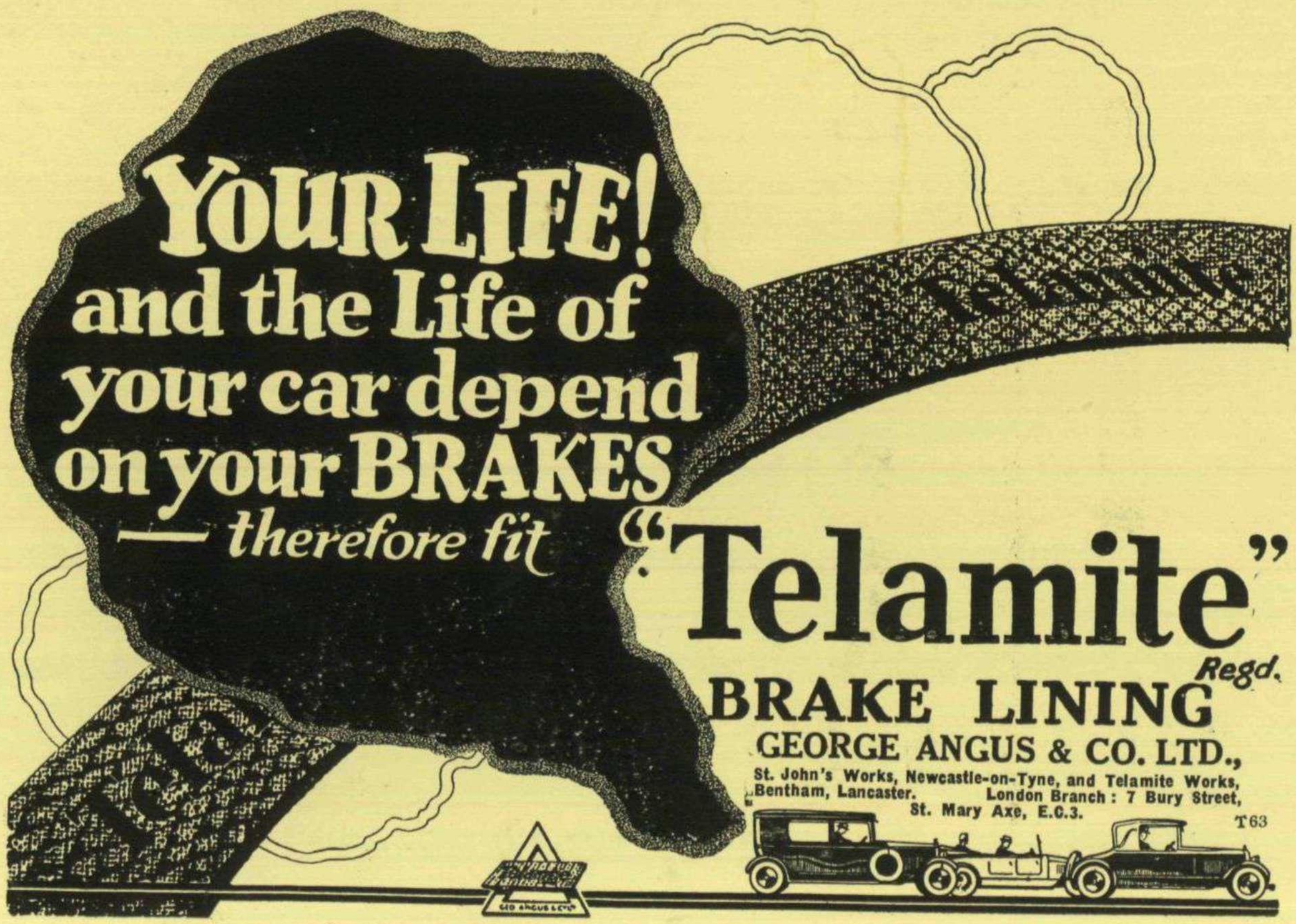
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No. 5. VOL. 4.

Edited by L. A. HUTCHINGS.

NOVEMBER, 1927.

EDITORIAL.

ANOTHER motoring year has drawn to a close. Both the Motor Show and the Motor Cycle Show is finished. These eagerly awaited events close the motoring year, and we now look both ways, backwards at a year completed, forward to a year of progress and success, let us hope, in sporting circles.

There are many lessons to be learnt from our failures in the year behind us. We have learnt that the foreigner is a fine engineer and a fine racing driver. We have learnt that the Continent is capable of producing cars which can beat us on our own ground. We have learnt that we are not all mighty in the realm of motor racing.

Let us take these lessons to heart in the coming year. Do not let us waste time in bewailing what is done or explaining our defeats. We must now buckle to, and prepare for a stern struggle when the racing season reopens.

The European Grand Prix is to be run at Brooklands in 1928. Here is our chance to wipe out whatever disgrace may have come upon us in the recent R.A.C. Grand Prix. Here is the occasion to restore whatever prestige we may have lost in the eyes of Continental nations.

Many plans are afoot for the restoration of our racing prowess. Let us look to it that something comes from the heated discussions that occupy so much space in the motor press.

The International Calendar is very full, and offers ample scope for British manufacturers to show the world that we *are* the supreme motor engineering country in the world. No one doubts that we are, and that our racing men are the world's finest. All the world views with amazement the steady decline in the past year of our racing triumphs.

Now as we stand on the threshold of a new year is the time for us to make our resolutions, to put Britain at the head of results in all the important races of 1928.

* * *

It is fairly obvious that the 1928 season is going to see roads more crowded than ever before. The reduction in prices, increase in value and progressive economy of motoring, is going to put more cars on the roads in 1928 than in any year since the war.

It behoves us sporting motorists to set an example to the new comers in the motor world. Although we may own fast cars and habitually drive far in excess of the speed of ordinary man, yet we must also show the others how real enthusiasts use the road. We must set out on our every journey with the intention of making our driving an example to all road users of "how to do it."

Let us all pull together in this respect, and, drawing a definite line between fast driving and hogging, preserve the spirit of the road and the chivalry associated with motor sport.

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J.C.C. TWO HUNDRED MILE RACE.

Another Successful French Invasion.



COMPETITORS ROUNDING THE LAST BEND ON THE FIRST LAP; DULLER AND HARVEY ON ALVIS CARS ARE LEADING CAPTAIN FRAZER-NASH.

ONCE again this extremely sporting club has shown that it can stage a race, which as a spectacle and as a contest was probably superior to any other 1927 classic, with the exception of one or two real road races held on the continent. In attaining this successful result they were no doubt aided by an extremely interesting entry, including many drivers who, although professionals, have always been regarded rather as "sportsmen"—so far as racing is concerned—and several famous amateurs. Among the former class must be mentioned George Duller, Captain Frazer-Nash, Vernon Balls and Captain Campbell, while Harold Purdy and George Eyston represented the latter.

Again, the organisers made full use of the material available and designed a course embracing several different degrees of "corner," in direct contrast to the course of the British Grand Prix, in which all the corners were "slow."

With the stage thus set for a really good race, it was satisfying to note, as the cars lined up, that only one entry had failed to materialise, that of J. H. Oborn, who was to have driven a small Talbot; this left a field of twenty-nine, ranging from 750 c.c. Austins to "straight-8" Alvises and Bugattis.

The Start.

On the fall of the semaphore the eye was attracted by the violently spinning front wheels of the two Alvises. In spite of this, however, the two cars beat the field down the finishing straight—George Duller in front (he was driving in place of the Earl of Cottenham). In an excess of zeal, Duller had a nasty moment turning on to the banking, but he is too old a hand to be caught napping and was soon hurtling safely down the railway straight.

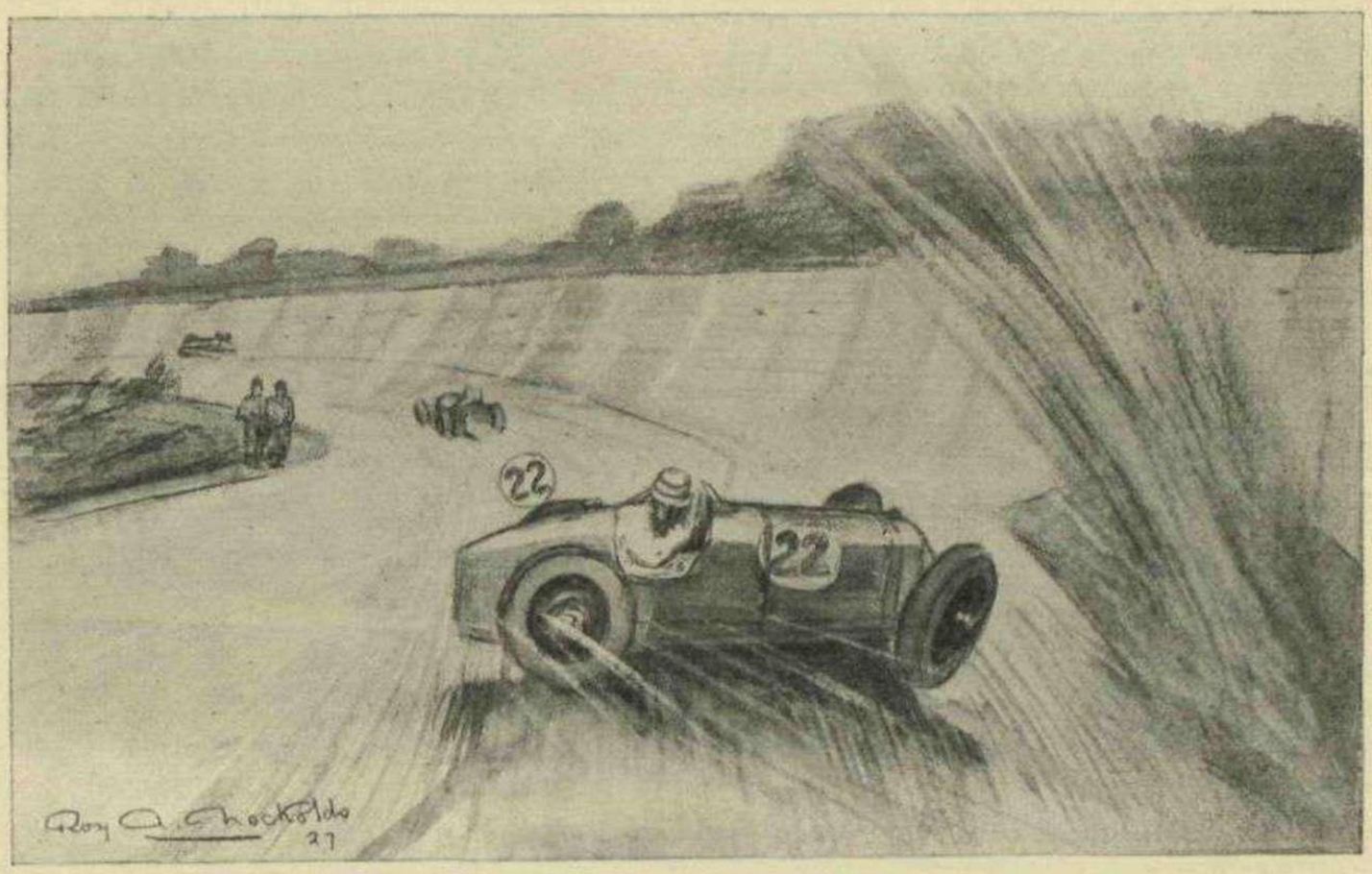
On the far side of the track, however, it was seen that a Bugatti was going up fast and as the procession slid up to the "tub" hairpin on lap 1 the leaders were Campbell (Bugatti), Duller (Alvis) and Harvey (Alvis). Next came the amazing little Amilcar driven by Morel, which thus early gave an indication of the form it was to maintain throughout the race. Harvey's radiator cap was open and belching steam and water—during the next lap it mysteriously shut itself and Harvey passed Duller; both Alvises however, were now behind the Amilcar while Eyston had brought his Bugatti into second place behind Campbell. The other Amilcars, driven by Martin and Balls were just behind the Alvises, this *marque* therefore running 1st, 2nd and 3rd in the 1100 c.c. class.

Early Troubles.

First lap incidents were fairly numerous, Turner (Gwynne) overshot the last sandbank and had to reverse while the Marendaz Special retired with engine trouble.

On lap two Johnstone's old Bugatti and W. B. Scott's later model (hurriedly prepared as a substitute for the Thomas Special), both fell out with what sounded like big end trouble. Two laps later C. U. M. Walther upset his Austin at the Tub and retired, without serious injury. On the same lap two Salmsons stopped—G. Newman, to change a jet and Dr. Benjafield to retire with a broken ball race in the supercharger. Turner on the Gwynne was changing plugs every few laps while some time after the start Gordon Hendy pushed the supercharged Austin home, with a broken crankshaft—having led for two laps.

THE J.C.C. TWO HUNDRED MILE RACE—continued.



VERNON BALLS (AMILCAR) IN THE THROES OF HIS SPECTACULAR ENCOUNTER WITH THE SANDBANK.

This catalogue of misfortunes, however, did not detract attention from the main issue, which, during the early part of the race took the form of a fierce duel between Eyston and Campbell, both on Bugattis. Campbell had the faster model but Eyston, if anything was driving a little " bluer," and the two constantly passed and repassed each other. Duller had dropped back with several stops for plugs—a lengthy business on an 8-cylinder car, but Harvey and Purdy were keeping up well. The latter's car (Thomas) seemed to have colossal acceleration and slid round broadside whenever the driver put his foot down at the fork. The order in the various classes after 20 laps was :—

1500 c.c.	1100 c.c.
(1) Eyston—76.9 m.p.h.	(1) Morel—75.27 m.p.h.
(2) Campbell	(2) Balls
(3) Harvey	(3) Casse
(4) Purdy	(4) Martin

750 c.c.

(1) Chase—58.02 m.p.h.
(2) Wilson
(3) Boyd Carpenter
(4) Samuelson

Martin on the third Amilcar had stopped to change plugs and/or wheels three times in all before thirty laps were completed, but thereafter Amilcars monopolised the first three places in the 1100 c.c. class.

The Ratier—Austin's only rival in the 750 c.c. class was running regularly though somewhat slowly in the hands of F. H. B. Samuelson, but stopped at 24 laps for various adjustments and continued with misfiring.

Brian Lewis and Captain Nash, both on cars of the latter's make were driving very well but the former had several stops to try to obtain some oil pressure while the latter's car boiled merrily all the time and eventually " blew up " on its 30th lap.

Smoke !

A curious incident occurred when R. F. Oates, driving a racing O.M., was flagged to stop after 15 laps owing to the inconvenience caused by his exhaust smoke !

Other unfortunates added to the list, during the first thirty laps were de Marnier (Salmson) with a seized blower on his 13th lap, George Newman (Salmson), on his 11th lap, Densham (Bugatti), on his 27th lap with another ruined big end and the unhappy Harvey on his 25th lap with engine trouble.

Fire !

The most sensational incident of the race, however, was provided by Turner's Gwynne, which burst into flames and burnt really well for about ten minutes at the finish of the Byfleet banking, until a second car load of Pyrene quenched the twelve foot flames. The blaze was a most awe-inspiring sight with a background of leaden sky and cars hurtling past a few yards away.

The Eyston-Campbell duel continued unabated, though Campbell, in a brief pit stop reported the loss of 3rd and 1st gears ; Eyston filled up, changed plugs and adjusted his carburettor on his 35th lap and then broke a valve and retired 3 laps later.

Purdy had also stopped for fuel and to replace a burst tyre so that at forty laps the orders were :—

1500 c.c.	1100 c.c.
(1) Campbell—75.3 m.p.h.	(1) Morel—75.44 m.p.h.
(2) Duller	(2) Balls
(3) Dykes	(3) Martin
(4) Purdy	(4) Casse

750 c.c.

(1) Chase—59.12 m.p.h.
(2) Wilson
(3) Boyd Carpenter
(4) Samuelson

THE J.C.C. TWO HUNDRED MILE RACE—continued.

It was then realised that the wonderful Amilcar was actually leading the whole field, including the 1500 c.c. leader, a position, however, which did not last for long, though the little cars were still running 2nd, 3rd and 4th in the general category.

W. U. Dykes was putting up a really magnificent show on a practically standard sports Alvis—a car which ran throughout without a single stop of any nature whatsoever.

The second front wheel drive Alvis, with G. Duller driving suffered a similar misfortune to Harvey's and was withdrawn after 52 laps with 2nd place almost within reach. This let Purdy and Dykes up a place each, though the former changed plugs on his 50th lap.

With most of the "weaklings" and unfortunates out of the race incidents now became less frequent, but interest was rife as to whether Campbell's 2-speed Bugatti would be able to stave off the 1100 c.c. challengers, who seemed to be giving away nothing in the way of reliability and very little speed.

The orders after 60 laps therefore were :—

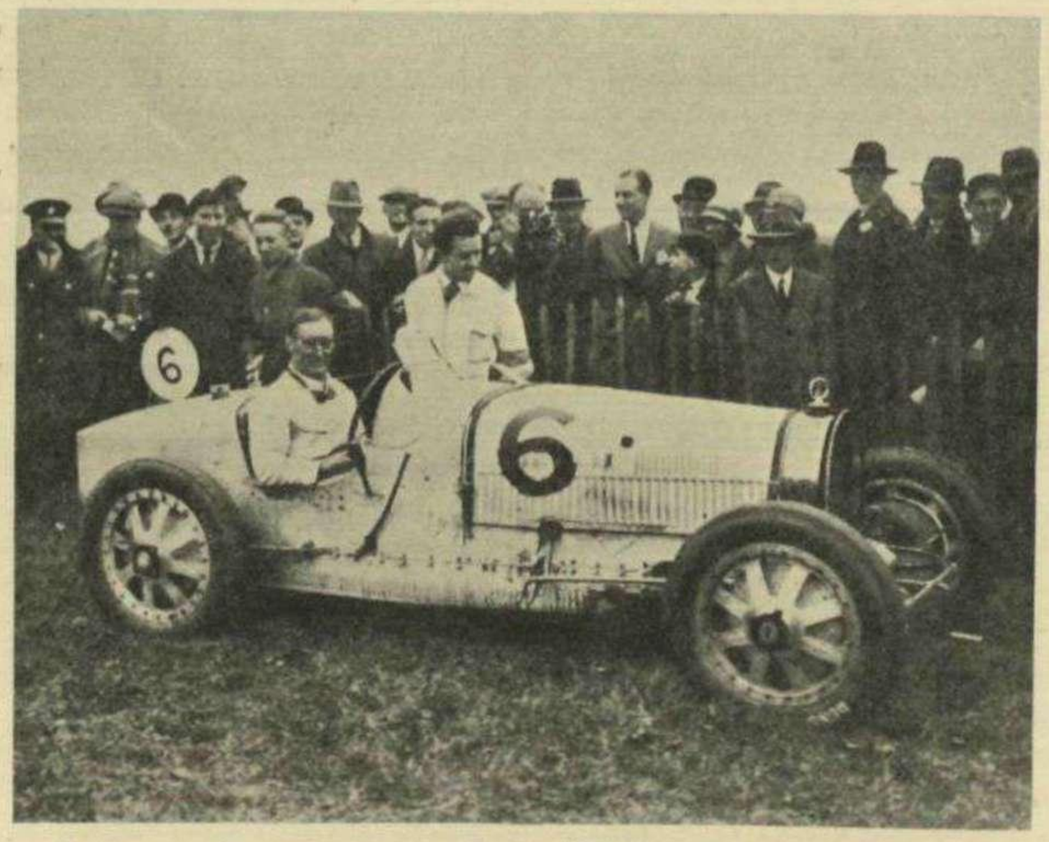
1500 c.c.	1100 c.c.
(1) Campbell—76.25 m.p.h.	(1) Morel—75.4 m.p.h.
(2) Purdy	(2) Balls
(3) Dykes	(3) Martin
(4) Lewis	(4) Goutle

750 c.c.

(1) Chase—57.98 m.p.h.
(2) Wilson
(3) Boyd Carpenter

The Ratier was flagged off at 53 laps when the time limit expired and was awarded 4th place in its class.

Nothing more of note took place before the finish, Dykes continued with clockwork regularity, Campbell did some very dashing overtaking on the paddock bend and increased speed while Lewis was flogging his Frazer Nash in a furious endeavour to finish in time. His cornering was really magnificent and he is altogether deserving of better luck. He was flagged off after completing 71 laps, when lying 4th.



THE SMILE OF VICTORY—CAPT. CAMPBELL AT THE FINISH.

The final orders and speeds were :—

1500 c.c.

(1) Campbell (Bugatti), 76.62 m.p.h.
(2) Purdy (Thomas), 68.31 m.p.h.
(3) Dykes (Alvis), 65.91 m.p.h.
(4) Lewis (Frazer Nash), 71 laps.

1100 c.c.

(1) Morel (Amilcar), 75.17 m.p.h.
(2) Balls (Amilcar), 77.78 m.p.h.
(3) Martin (Amilcar), 71.15 m.p.h.
(4) Casse (Salmson), 64.88 m.p.h.
(5) Goutte (Salmson), 63.44 m.p.h.

750 c.c.

(1) Chase (Austin), 58.17 m.p.h. (69 laps).
(2) Wilson (Austin), 68 laps.
(3) Boyd Carpenter (Austin), 66 laps.
(4) Samuelson (Ratier), 53 laps.

NOTES.

Morel and Vernon Balls both made "officially non stop runs on their Amilcars. Each, however, was guilty of a slight indiscretion during the race, the former skidded and stopped just short of the railings at the fork (as did Martin last year), while Vernon Balls hit the last sandbank very well when turning into the railway straight. He appeared to turn round 1½ times and finished with stationary engine, nose up the banking. After much fruitless winding, he eventually pushed off downhill and restarted.

* * * *

The new Frazer-Nash racer (a type which will be marketed) seemed to accelerate in a remarkable manner. It is built very low and cornered extremely well. Both cars put up a very plucky show and all sportsmen will wish them better luck next time.

* * * *

It was a change to see Captain Malcolm Campbell a really driving" for once. Last year, in the Grand "rix he restrained himself for the sake of reliability, Pnd in this year's event he was hampered by faulty brakes. In the "200" however, everything was O.K. (except the gearbox), he was hard pressed and we were treated to as fine an exhibition of driving as we could wish for.

* * * *

H. W. Purdy was in despair on the eve of the race, with the Thomas Special strewn in bits around him. It seemed impossible to get everything right at the same time, and he did not expect to do a lap. All honour to him, therefore, for a remarkable performance after so many trials and anxieties during the preparation for the race.

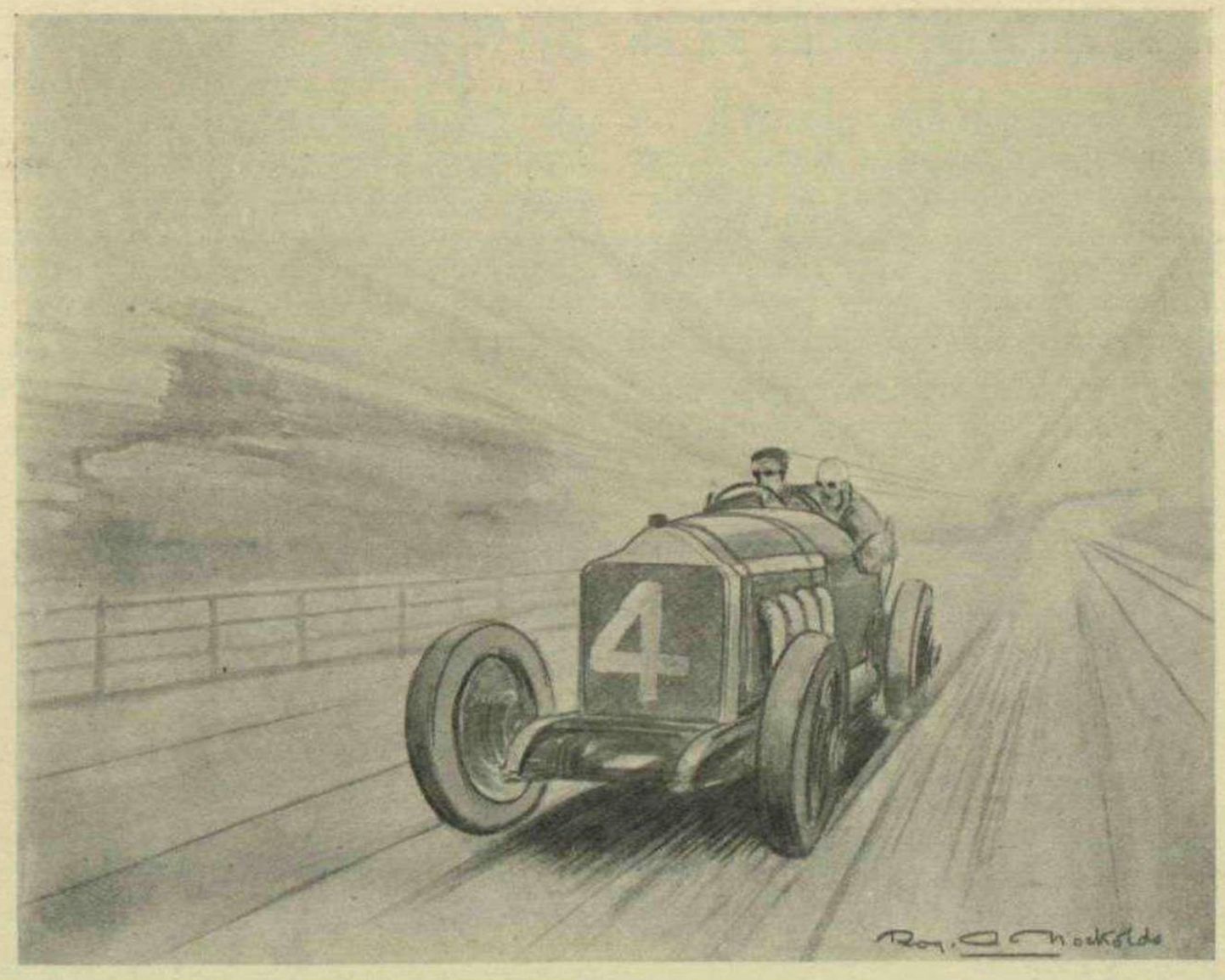
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Hearty congratulations should be extended Mr. Urquhart Dykes, the amateur driver of a standard Alvis sports model. To average 65.9 m.p.h. for 200 miles on a "road" circuit without a single stop reflects great credit on the driver and on the standard products of the Alvis factory.

GREAT RACING MARQUES.

IX.—LORRAINE-DIETRICH.

By E. K. H. KARSLAKE.



"VIEUX CHARLES TROIS," AN ANCIENT LORRAINE DIETRICH FAMILIAR TO BROOKLANDS HABITUÉES.

LA Société Lorraine des amiens étallissements de Dietrich et Cie de Liméville a Argenteuil, is the full name of the manufacturer of the Lorraine-Dietrich car, and in it is contained some fact of history. De Dietrich et Cie of Liméville in Lorraine were a well-known engineering firm long before the era of motor cars, and when they decided to embark on the construction of them, they moved into French territory and started a factory at Argenteuil near Paris. At first, however, their cars were not well known until that most famous of all races from Paris to Madrid which ended at Bordeaux, was run in 1903 and rendered them famous.

In those days cars of all types were entered for races, many of them quite ordinary touring cars, which had no hope of winning, and which were entered by their owners who wished to see the contest. There were several de Dietrich cars entered for this race, but all the hopes of the firm were centred on the three big cars which were to be driven by the three Englishmen, Charles Jarrot, Lorraine Barrow and George Stead. These racers had been largely designed by the French engineers, Turcat and Méry and their appearance strikes a curiously modern note. The bonnet was brought to a vertical knife-edge just behind the radiator, which consisted of an enormous gilled tube repeatedly doubled back on itself, and swelled gradually to the driver's seat, behind which was a beautiful streamlined tail ending in another vertical knife edge. The driver sat much lower than was usual at that time, so that only his head protruded above the streamlined body.

The de Dietrichs were only completed just in time for the race, and no one therefore thought that they would do much good; but although only one finished at Bordeaux, the others did not fall out through mechanical failure. The number of smashes in that race is famous, and the de Dietrichs did not escape. Stead, while travelling at 80 m.p.h., was cut down by another car and capsized, its driver being killed; and Barrow hit a dog which deranged his steering, his car charged a tree, and he too was so badly injured that he died soon afterwards. In the meantime, however, Jarrot, who had started first, had made third fastest time to Bordeaux, covering the 348.13 miles in 5 hours 52 minutes, at an average speed of 59.34 m.p.h.

After this performance, the reputation of the de Dietrich was made, and the next year a team was entered for the Eliminating Race to decide on the cars to represent France in the Gordon Bennet Cup. One designed by Turcat and Méry was driven by Rongier, while the other three had Jarrot, Gabriel, who had won the Paris-Madrid race, and the Baron de Forest as their drivers. Of these Rougier on the Turcat-Méry-de Dietrich finished third, with Gabriel fourth, while de Forest was put out by a broken clutch, and Jarrot by a leaky radiator. Rougier's car was, therefore, one of the team which represented France in the race which was held over the Saalberg course near Homburg, and after a magnificent race, he finished fourth.

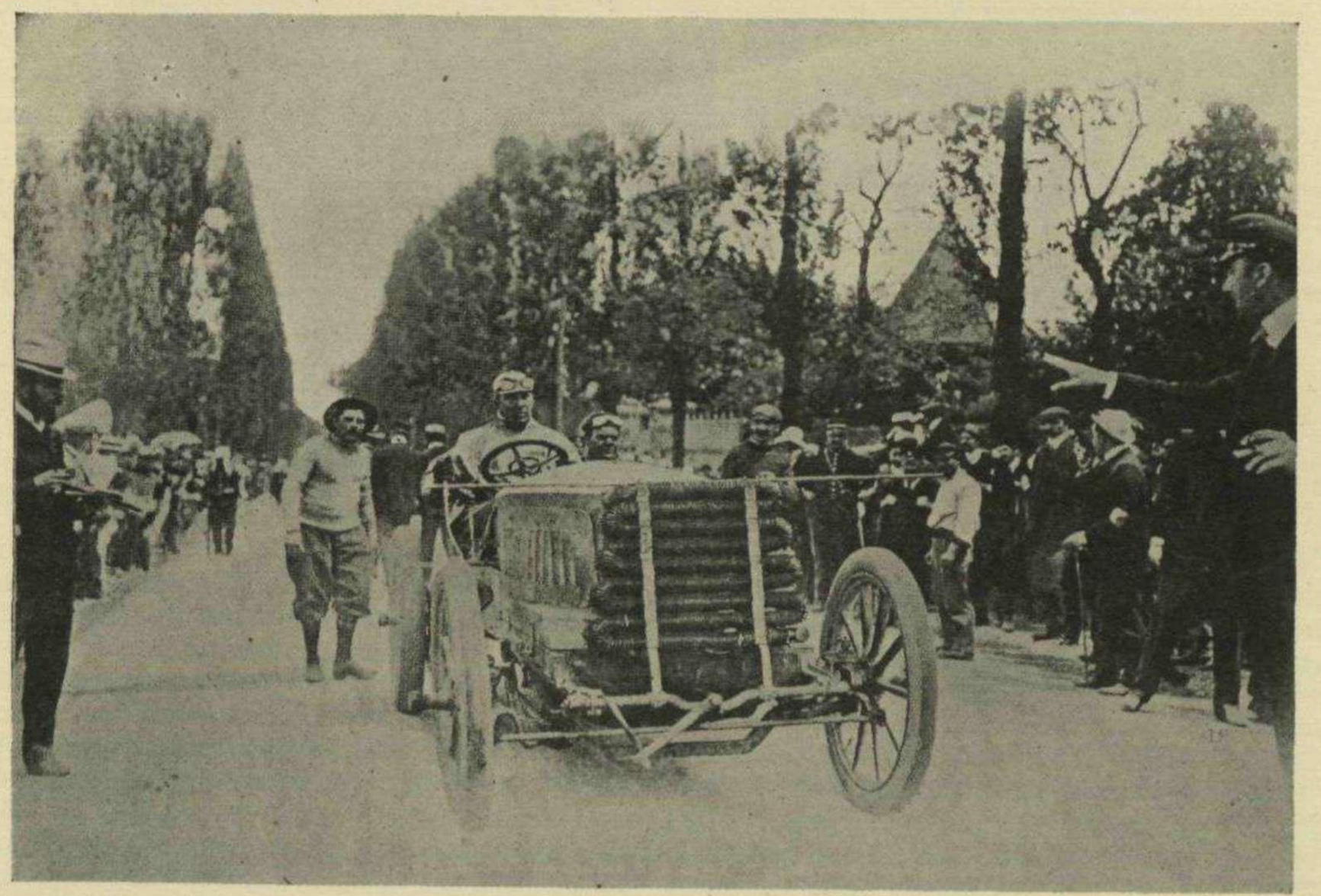
Three de Dietrichs were again entered for the Eliminating Race in 1905, and of them two finished, with Duray

GREAT RACING MARQUES—continued.

in third place. The 130 h.p. de Dietrich therefore carried the firm's colours once more in the most important race of the year. Duray finished the first round in fourth place and after keeping well up with the leaders, finally finished sixth, averaging 42.1 m.p.h. over the difficult Auvergne circuit.

In 1906 the Gordon Bennet cup was replaced by the Grand Prix, the first race being run at le Mans. Three 120 h.p. Lorraine-Dietrichs—as the car was now called—were entered for it, and had Gabriel, Rongier and Duray as their drivers. It is interesting to note that Gabriel and Duray are still racing, while Rongier appeared as recently as 1923, when he drove a Voisin in the Grand Prix. The 120 h.p. de Dietrich had a four-cylinder gearbox. Rougier, too, dropped out of the race after a series of troubles, not the least of which was that the hot water could not be prevented from shooting out of the radiator cap into the driver's face. Gabriel, however, kept on steadily and finally finished fourth.

For the 1908 race, the fuel consumption limit was abandoned, and instead, the bore of the cylinders was limited to 155 mms. Under these conditions the Lorraine-Dietrichs were built with one of the longest strokes in the race—175 mms., their capacity therefore being 13,014 c.c., and the engines now had overhead valves set at 45°. This year Gabriel drove for Bayard-Clément, and the other two members of the de Dietrich team were therefore joined by the Italian Minoia, who is nowadays



CHARLES JARROTT ARRIVING AT BORDEAUX ON THE PARIS-MADRID RACE IN 1903. HE WAS PLACED THIRD.

engine with a bore and stroke of 185 x 160 (17,2100 c.c.), a low-tension magneto, four-speed gearbox and final drive by side-chains. Their performance in the race, however, was not brilliant for some cause or another. But later on in the year Duray scored a notable win on the 120 h.p. de Dietrich. The great Belgian race of those days was the Circuit des Ardennes, and in this event in 1906, Duray came in first, averaging 66 m.p.h. for 373 miles.

The 1907 Grand Prix was run at Dieppe on a limited fuel consumption basis, cars having to average about 10 m.p.g. Three Lorraine-Dietrichs were entered, but this time their engines were rather smaller, the bore and stroke being 180 x 150 mms. (15,274 c.c.), while they had the same drivers as the year before. Duray took the lead at the beginning of the race, hotly pursued by the Fiats, and then while leading comfortably he went out within two laps of the finish with a seized bearing in his well known as a driver of Bugatti and O.M. cars. At the end of the second lap Duray and Minora appeared in fifth and sixth positions, but on the next circuit Duray dropped out of the race for good. On the fourth lap Minoia too retired, and about the same time Rongier found his clutch would not disengage at the critical moment on a corner, his de Dietrich left the road, hit a tree and was placed hors de combat.

After 1908 the Grand Prix was in abeyance for three years, but in 1911 the Automobile Club de l'Ouest organised at le Lans a race called the Grand Prix de France. That year there were fourteen competitors, one of which consisted of Duray on one of the 1906 Gerand Prix de Dietrichs. At the end of six laps Duray held the lead with his five-year-old racer, and then on the sixth circuit he retired with a broken differential.

In 1912 the Grand Prix was revived, and run over the famous circuit at Dieppe. After this pause of three

GREAT RACING MARQUES—continued.

years, it was found that most of the old-time champions had decided to give up racing, and of them only Fiat and Lorraine-Dietrich brought teams to the starting line. Tnere was no limit to engine size in the race, and the de Dietrichs had the largest engine of all built on the lines of the veteran winners, with a bore and stroke of 155 x 200 mms. (15,101 c.c.). None of the de Dietrichs finished the race, and the honours of the contest went to the firms who for the last few years had been racing voiturettes. This defeat was too much for Lorraine-Dietrich, and for many years after the 1912 their name was absent from the entry lists of races.

In spite of their absence from races, however, Lorraine-Dietrich continued to make fine cars, and in 1923 a race was inaugurated for standard cars only, which gave them a chance to prove it. This race is of course the Grand



LORRAINE-DIETRICH CARS WERE 1ST AND 2ND IN THE LE MANS 24-HOUR RACE IN 1926.

Prix d'Endurance organised by the A.C. de l'Ouest at le Mans. After the war, Lorraine-Dietrich began to make a very fine six-cylinder sports model with a bore and stroke of 75 x 130 mms. (3446 c.c.), and in 1923 three of these were entered for the first 24-hour race. Their best position gained was eighth, by the car driven by de Courcelles and Rossignol. But the next year their performance was more impressive. Three cars were again entered, with de Courcelles and Rossignol, Bloch and Stalter and Stoffel and Brisson as their teams of drivers. They soon showed themselves among the fastest cars on the circuit, and half way through the race, the car driven by Bloch and Stalter held the lead by more than 20 miles. On the Sunday morning, however, it lost it to Duff's Bentley, and then at about mid-day Stalter had to withdraw the car with broken valves. In spite of this, however, Steffel and Brisson's Lorraine-Dietrich was second in the race, with de Courcelles and Rossignol third.

The last named drove together again on one of the cars entered for the 1925 race, Stalter and Brisson were together on the second car, and Bloch and St. Paul had the third. Of these cars, the one driven by Stalter and Brisson was qualified for the final of the Triennial Rudge-Whitworth cup for its performance in 1923 and 1924; while both it and the one driven by de Courcelles and Rossignol were eligible for the final of the First Biennial cup by reason of their running the year before.

In the race it was soon seen that all the competition was going to lie between the French Lorraine-Dietrichs and the English Sunbeams and Bentleys. During the night, the third Lorraine, while being driven by St. Paul, left the road and turned upside down in a ditch. When he drove in the French Grand Prix in 1913, a Frenchman said of Mr. H. R. Pope, what with a name like that, le bon Dieu must be on his side; whether he owed it to his name or not, however, St. Paul came off unscathed. In the meantime, however, de Courcelles and Rossignol had got the lead, and finally finished first, with the other Lorraine-Dietrich driven by Stalter and Brisson third behind the 3-litre Sunbeam. The first Loreaine-Dietrich, as well as winning the Grand Prix d'Endurance, gained second place on formula for the First Biennial Rudge-Whitworth Cup, while the one driven by Stalter and Brisson was third in the classification for both this and the Triennial Cup.

After this victory one of the cars, driven by de Courcelles and Rossignol started in the Belgian 24-hour race over the Spa circuit, and finished second, completing its last full lap four minutes after the winning Chenard et Walcker.

In 1923 the Lorraine-Dietrichs had not been among the leaders in the Grand Prix d'Endurance; in 1924 two of them had finished second and third; in 1925 they had been first and third; but their greatest triumph was still to come. For the 1926 race three cars were again entered. Stalter and Brisson still drove together, Bloch now had Rossignol for his companion, and de Courcelles was accompanied by the new member of the team, Mongin.

Their chief rivals were the Peugeots, the Bentleys and the O.M.'s, but by half way through the race, the three Lorraine's were first, second and sixth, and at the end of the 24 hours, the three Lorraine-Dietrichs came home solid in the first three places. Before the race there had been great discussions as to whether a car could average 100 kilometres (62½ miles) per hour for 24 hours over the le Mans circuit; and this amazing performance was achieved by two of the Lorraine-Dietrichs, while the third only fell short of it by .46 k.p.h. The winner driven by Bloch and Rossignol covered 1,585.99 miles in the 24 hours and averaged 66.08 m.p.h., a performance which has not since been equalled; while the second car driven by de Courcelles and Mongin covered 11 miles less. Unfortunately there was some doubt as to whether the latter car, which was qualified for it, had won the second Biennial Rudge-Whitworth Cup, and each having been alternately declared the winner, it was finally awarded one of the O.M.'s. Whether owing to this muddle or some other cause, the Lorraine-Dietrichs were not entered for the race in 1927, but their performance in 1926 will long be remembered, and everyone will hope to see them return to the scene of their triumphs.

SPORTS MOUNTS FOR 1928.

By R. T. WALKERLEY.

YEAR after year the choice of a sports machine for the new season becomes more and more difficult. At one time half a dozen stands comprised the sports range, but now, nearly every exhibitor presents a tempting model for the clubman and sports rider.

The choice of a mount has become a bewildering business, for those firms, which up to a very few years ago offered nothing but touring machines, now display hyper-super-sports models, which compete successfully with the products of firms which have specialised in "hot stuff" machines for years.

Of the former firms, Ariel must be classed in the forefront of up to date manufacturers. Their 1928 range is very pleasing in design, appearance, and doubtless in performance. There are thirty-two new features incorporated in the 1928 machines, including improvements to frame, forks, mudguards and a new patent regulator for the lubrication system. Prices run from £43 10s. (side valve) and from £48 10s. to £52 10s. (o.h.v.). There is probably no better value for money in the Show.

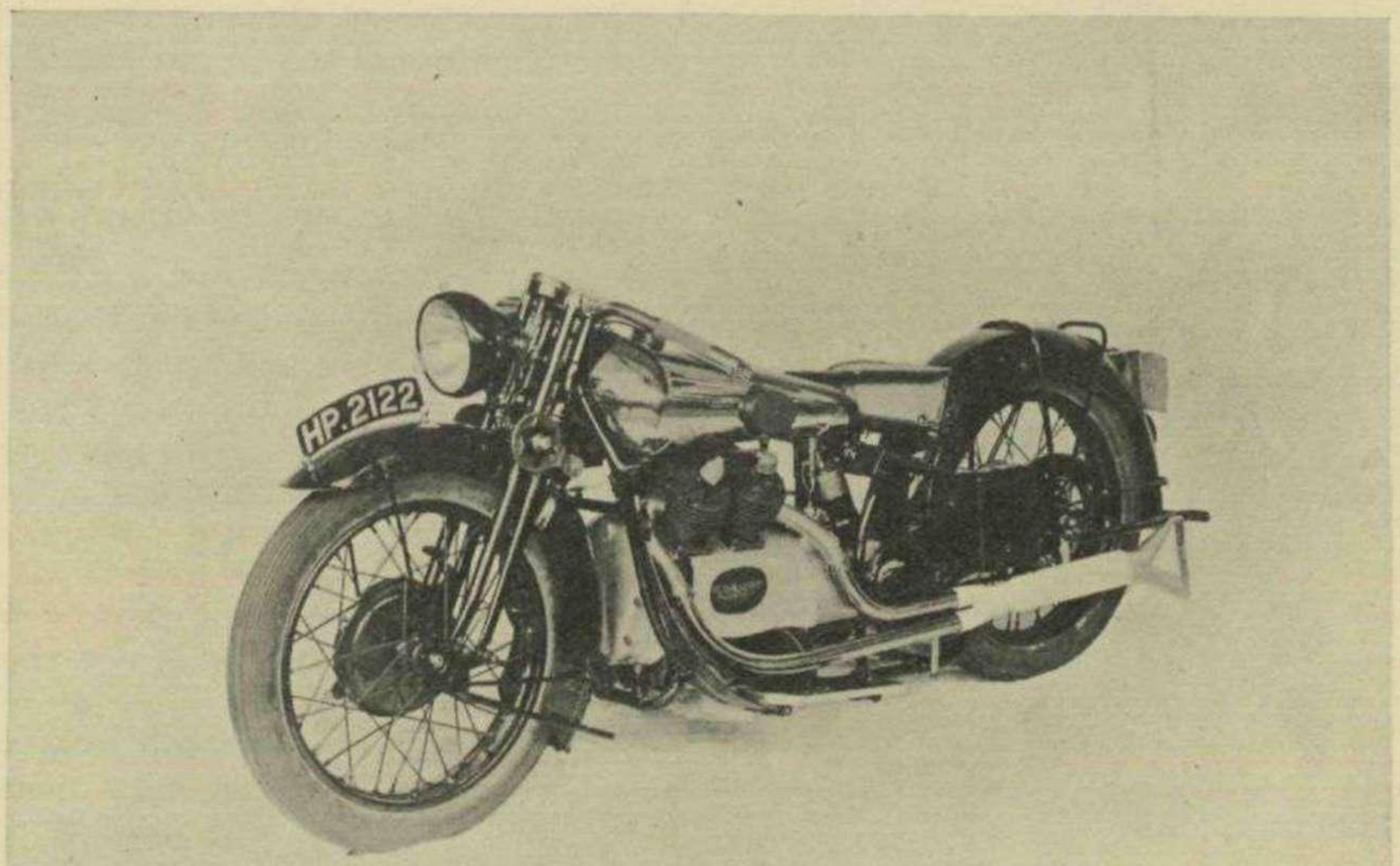
Raleigh is another firm which has seriously entered the sports field, and the fast rider will be attracted by the super-sports models 26 S.S. and 23. The 348 c.c. model has improved frame, twin petrol tanks, new forks and adjustable bars.

The 498 c.c. o.h.v. model 23, has a two port engine with enclosed push rods and valve gear.

The James Cycle Company has always enjoyed a fine reputation, and this is enhanced by their 1928 programme. There are two new models, one a sports two-stroke, with 172 c.c. Villiers "Super-sports" engine, fitted with 25.3 in. Dunlop tyres. This machine will be priced at £35 10s.

The Popular small twin is again presented, with improved frame and saddle tank, and is priced at 54 guineas. £54 is the price of the 349 c.c. o.h.v. super-sports model, with high compression engine and capable of high speeds.

In the Triumph range the greatest interest will centre in the "T.T." model, which has done so well during the past season, particularly noteworthy being its performance in the Senior T.T. race, where this marque gained three replicas, one machine finishing 3rd, This model, with its two port 498 c.c. engine, and blue and black finish, is exceedingly attractive at £66 17s. 6d.



THE MUCH-DISCUSSED FOUR-CYLINDER BROUGH. ONE OF THE GREAT ATTRACTIONS AT THE SHOW.

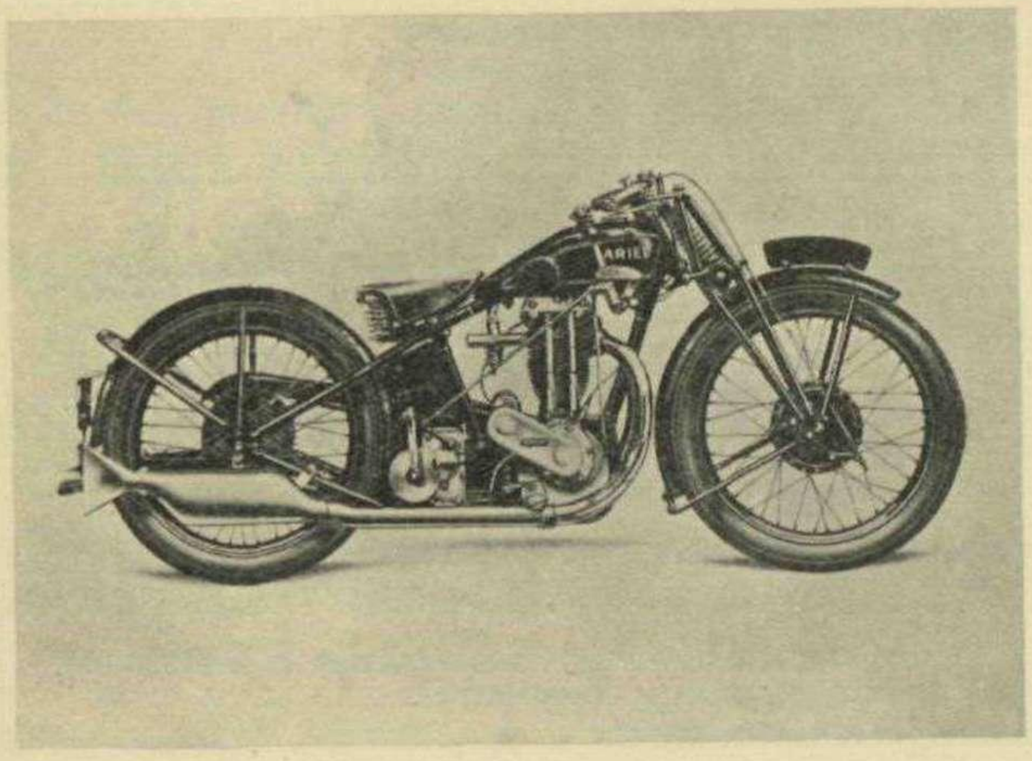
Coventry Eagle have made a plunge and produced some pressed steel frames, with a view to mass production. This frame is only to be employed in conjunction with two-strokes at the moment.

The 346 c.c. o.h.v. J.A.P. engined model is priced at £47 15s., which is very competitive; and the two port engined model, with dampers and shock absorbers is priced at £52 15s. The two port J.A.P. engine is too well-known to need comment, and this model presents a really fast machine at a very reasonable price.

Sunbeam are offering a very complete range, which, if a little on the highly priced side, are worth every penny, as all Sunbeam owners know. Superlative finish, attention to detail, and cleverness of design are out standing.

The o.h.v. models, 347 c.c. and 493 c.c. are particu-

SPORTS MOUNTS FOR 1928—continued.



THE LINES OF THE 500 C.C. ARIEL ARE EXTREMELY RAKISH.

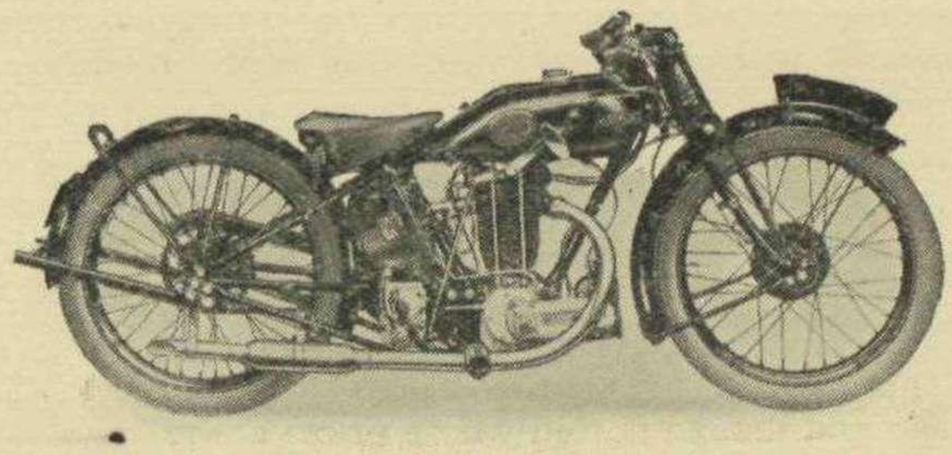
larly noteable, combining racing experience with roadworthiness. A report of the performance of the 493 c.c. (model 90) double port engined model appears elsewhere in this issue.

The most interesting exhibit on the N.U.T. stand was the 746 c.c. sports model. A special engine is fitted to this model only, with lightened reciprocating parts, and a Binks two-float carburetter. Twist grip control is standard.

This firm are also producing two-strokes of the super sports variety.

The A.J.S. stand was the centre of considerable interest.

After their conspicuous successes in the T.T., and German, Belgium, Austrian and Swiss Grand Prix races, the overhead camshaft machines will be added to the range of models, while the push rod 350 c.c. and 500 c.c. *racing* models will be dropped. The camshafts will be chain driven, the cylinders are redesigned, the bridge-piece and turn-buckles securing the heads having been replaced by four studs and nuts. Dry sump lubrication is employed, and a lower saddle position



THE 350 O.H.V. RALEIGH.

has been obtained by a special three point suspension.

Altogether these sports models will have a great appeal to the fast men. The prices of camshaft models are—K.7 349 c.c., £63; K.10 498 c.c., £70.

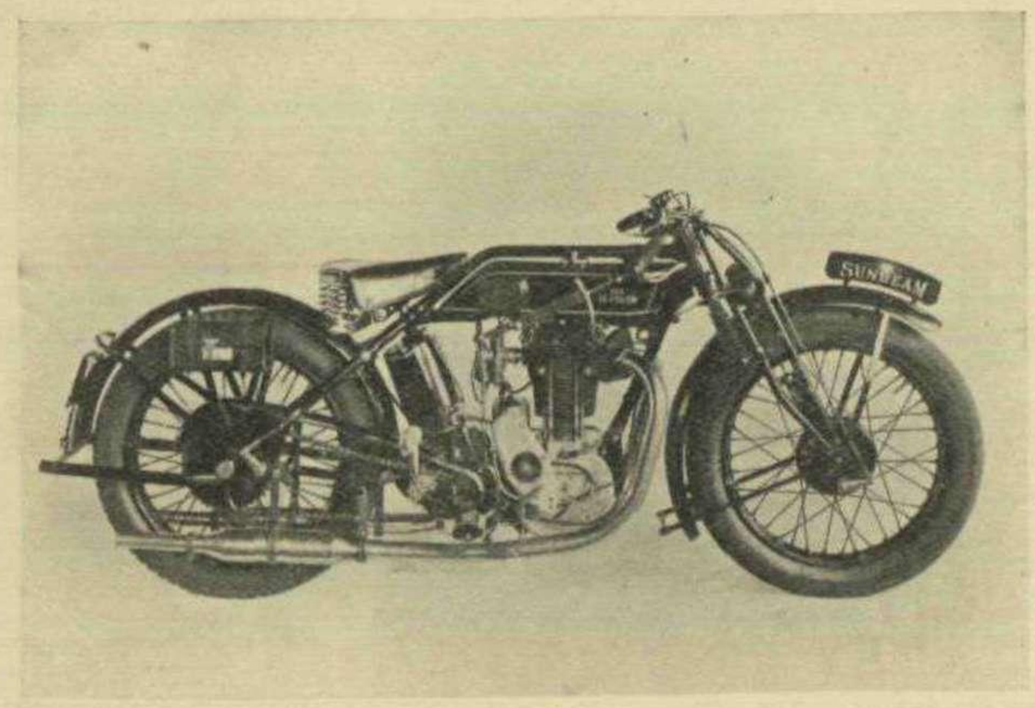
New Imperial offer attractive sports mounts in their 5 and 5a models. This follows past practice. 5a has double port engine and racing cams. There is a model 6a which is best described as a Brooklands model and can be supplied for track work.

George Brough again leads the field with ultra luxurious machines. Chief interest, almost one might say excitement, will be aroused by the new four cylinder model. This machine is not yet in production, much experimental work remaining to be done, but it is a model which indicates the trend of design in the super-motor cycle classes.

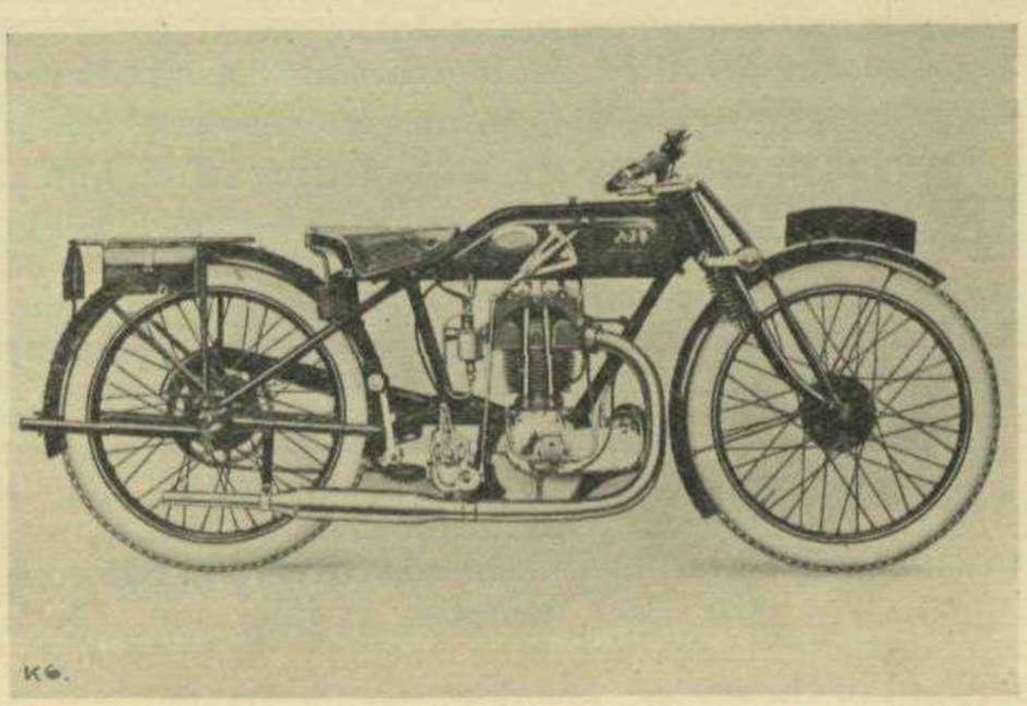
The S.S. 100 Pendalpine model is on show at £160, with a guarantee of 110 m.p.h., while a fully equipped touring machine on the same lines costs £170. The 680 o.h.v. introduced last year is priced at 96 guineas and remains practically unaltered—all o.h.v. engines, however, will have the valve gear enclosed for 1928.

There is a new model of 750 c.c. with side valves. which might be called the young brother of the S.S. 80, This very attractive machine will be 97 guineas complete with dynamo lighting and electric horn.

Many riders made a bee-line for the Rex-Acme stand as soon as they passed the Olympian portals. These



THE MODEL 90 493 C.C. SUNBEAM. THIS MACHINE IS REVIEWED IN THE PRESENT ISSUE.



THE ALTERED ASPECT OF THE 350 C.C. A.J.S. IS EASILY NOTED.

SPORTS MOUNTS FOR 1928—continued.

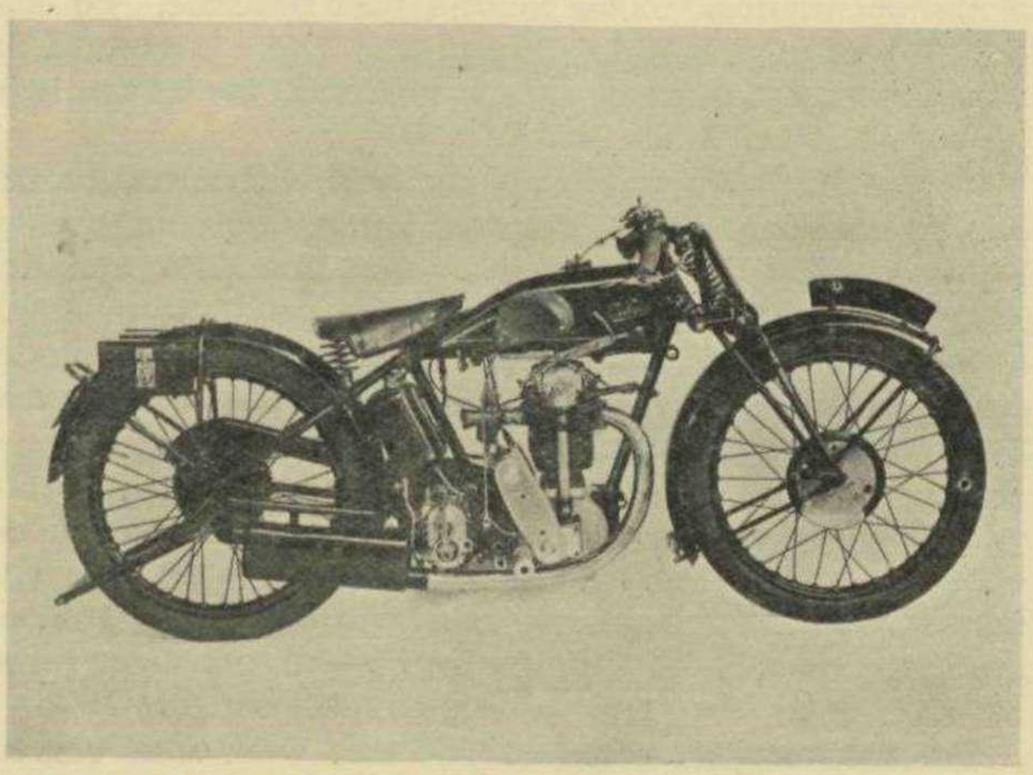
machines, based almost entirely on racing experience, appeared with duplex frames to all sports models.

The famous T.T. model is entirely redesigned for 1928, being produced under the personal supervision of Mr. W. L. Handley. This model is supplied with a choice of three engines—Blackburne, M.A.G., and J.A.P., priced at £63, £70, and £63 respectively. The two latter are double ported engines.

There will also be two 500 c.c. Blackburne models, single and double ported whose prices are not available as we go to press.

A firm which has won a fine reputation for up-to-date design is the Francis Barnett factory.

Of chief interest to the sporting owner is the 172 c.c. Super Sports with Villiers engine. This engine has twin-ports with sweeping exhaust pipes ending in twin silencers. Expanding brakes, Terry saddle, and new



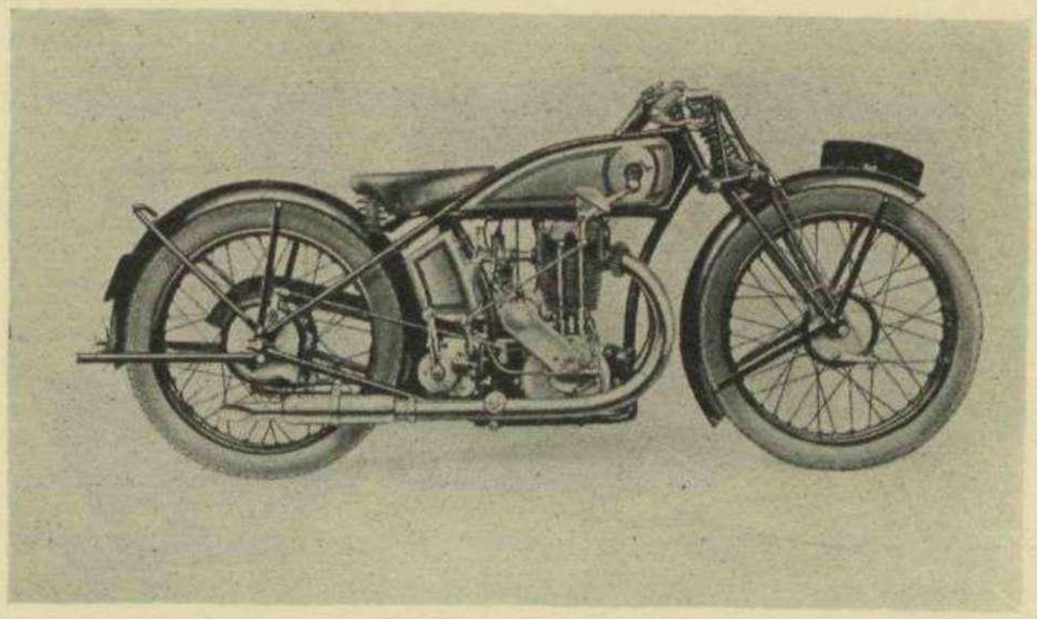
ONE OF THE MOST POPULAR 350 C.C. MOUNTS ON THE ROAD. THE 348 C.C. VELOCETTE.

type forks with steering damper render the machine more controllable than ever. A neat handle has been fitted to the rear mudguard, and grease gun lubrication to cycle parts is standard. Dunlop wired on tyres of 25 x 3 in. size are fitted. Altogether the machine is very alluring at £36.

Douglas, as usual, show a very sporting range, and all eyes will be turned, again as usual, to that super machine, the T.T. model 494 c.c. A machine similar to this has *lapped* Brooklands at 103 m.p.h., which should satisfy most riders. The gear box and frame construction are now famous, and the brakes are still further improved for 1928. This particular model cost £88.

A totally new model is shown, known as "Model D.28." This machine has a 348 c.c. o.h.v. engine, with enclosed valve gear, and push-rods covered in telescopic tubes. The gear lever mounting is interesting, being reminiscent of the earlier track machines, and is mounted forward of the engine, low down on the frame.

This model should prove an excellent fast mount, and costs but £48.



ALMOST IDENTICAL WITH RACING PRACTICE IS THE 350 C.C. REX ACME.

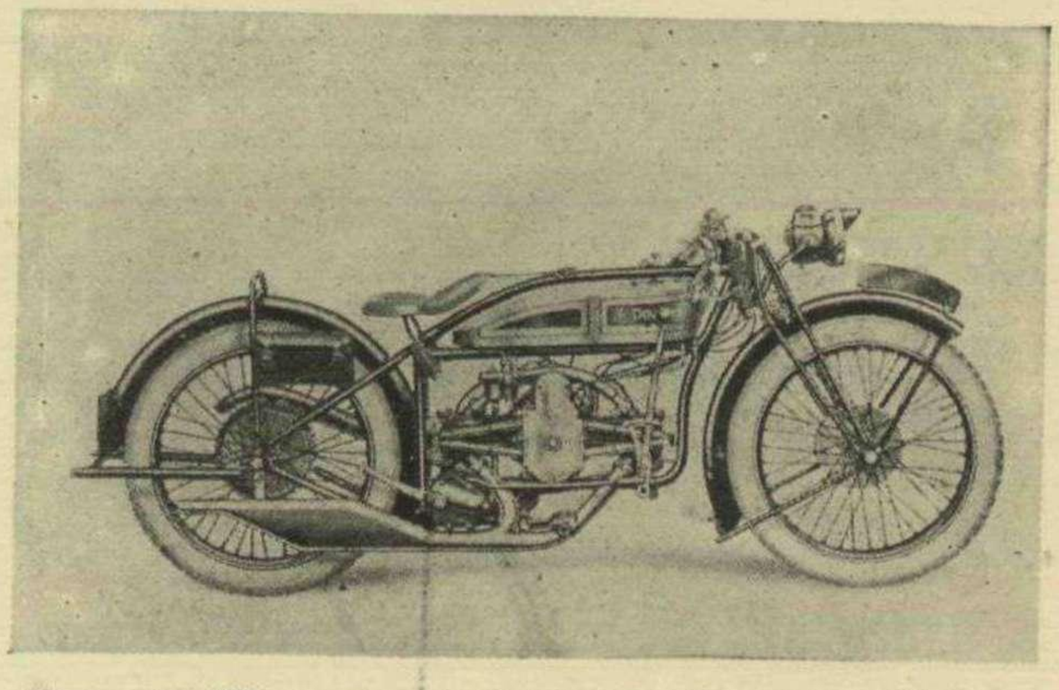
Models "G.28" and "H.28", both with 596 c.c. o.h.v. engines, incorporate the T.T. frame, and cost £65 and £67 respectively. The latter is equipped with twist-grip control, which so many fast riders prefer.

Dunelts have made a name for themselves as sports machines, performing with great consistency on road and track. The 250 c.c. model holds several world's records, which proves that this supercharged two-stroke is definitely in the sports class. Model K Sports de Luxe 249 c.c. is priced at £38 10s.

Another two-stroke in the sports category is the Levis "O," which is capable of high speeds. This firm continues to show the interesting o.h.v. engine of 346 c.c. capacity, which appeared for the first time last year. This machine remains unchanged at £54.

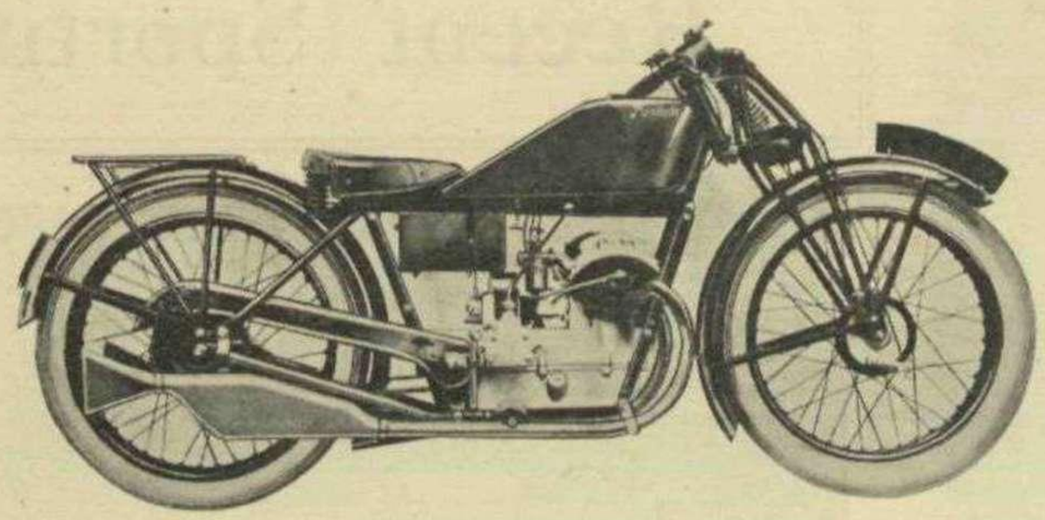
Velocette is one of the most popular sports machines on the road, and is capable of running away from most machines, even of higher power. Of course, the overhead camshaft is retained. The large diameter brakes will be noted. The steering of this machine is famous, and needs no comment. Steering damper and shock absorbers are standard Model KSS. is listed at £75 ; KS. at £65.

The P. & M. exhibits represented the acme of fast touring design. The performance of this *marque* is well known for reliability and speed. The range continues

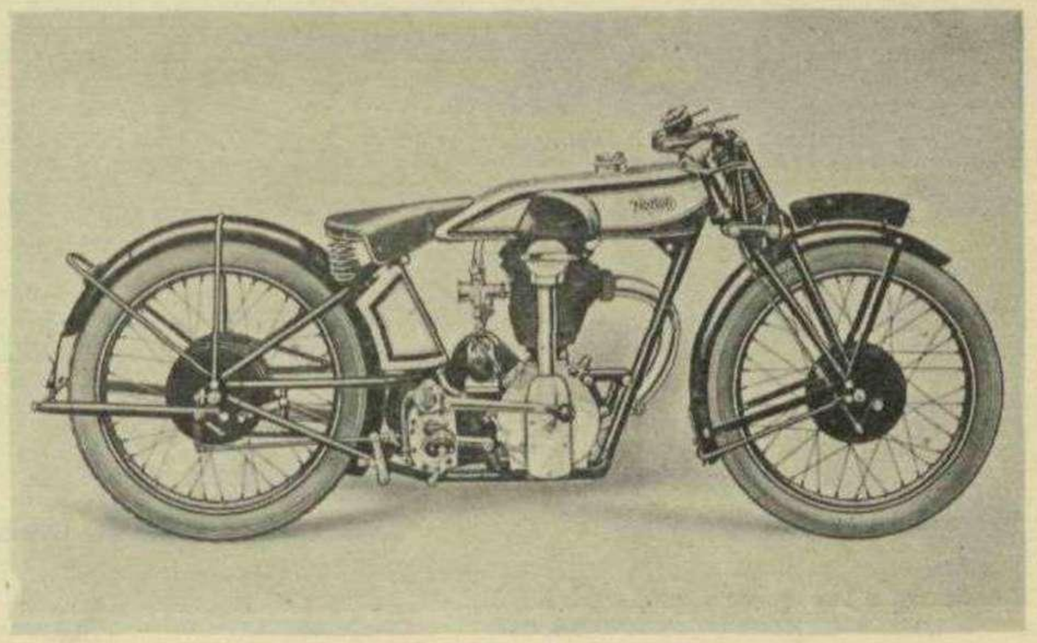


THE NEW 350 C.C. O.H.V. DOUGLAS. NOTE THE ENCLOSED PUSH-RODS.

SPORTS MOUNTS FOR 1928—continued.



THE CLEVERLY DESIGNED P. & M. PANTHETTE. NOTE THE UNIT CONSTRUCTION.



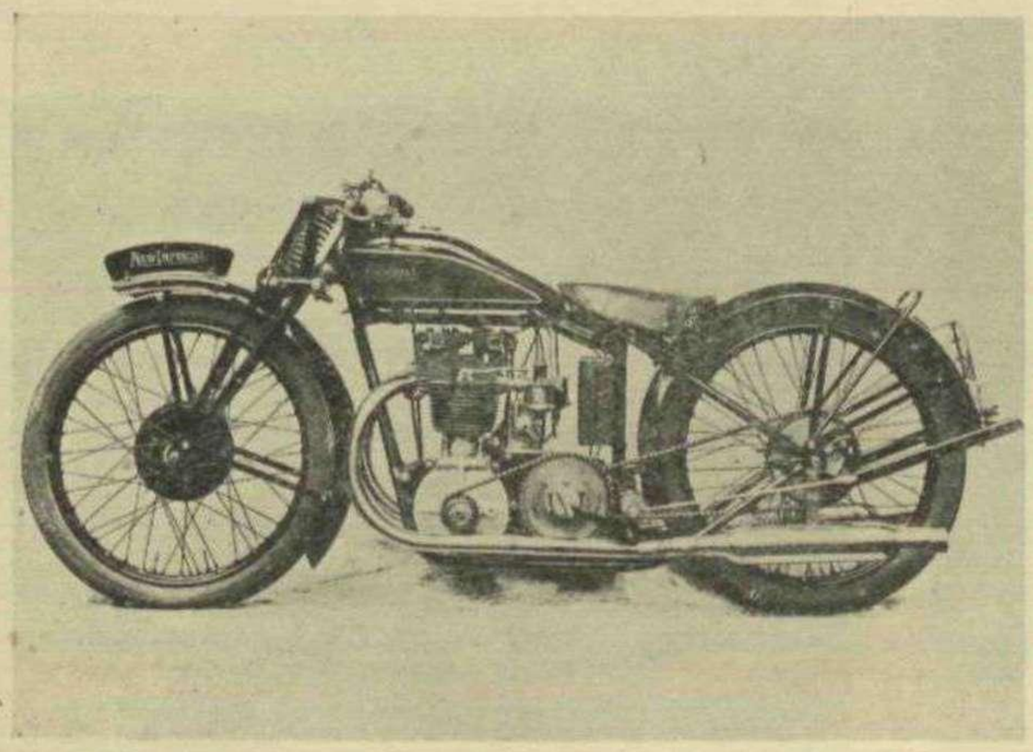
THE MODEL C.S.I. O.H.C. NORTON.

very little changed from last year, the chief alterations being that the 3-speed gear is standard, although the 4-speed box may be fitted as an extra to all models. A new shaped tank is incorporated, giving the popular low saddle position, while a neatly enclosed dynamo drive is shown on all models. Among other improvements the Panthette exhaust system now resembles the Panther, two long exhaust pipes terminating in large expansion chambers and fish-tails.

The 3-speed Flying Squirrel as used in the 1926 T.T., is produced with minor improvements, although the experience gained in the 1927 T.T. has not yet passed the experimental stage, and the manufacturers do not feel justified in incorporating this in the 1928 range.

Perhaps the most popular sports model on the road, Nortons bid fair to retain their popularity. The greatest interest will be aroused in the overhead camshaft engine, which will probably be the most coveted machine in 1928. This model known as C.S.1. represents an embodiment of racing practice in road use.

New cradle frames with torque rods are fitted to the T.T. models—both push rod and camshaft—and should prove as stable in private hands as they have in racing, at the terrific speeds of which these engines are capable. 95-100 m.p.h. is mentioned in connection with the latter.



THE 350 C.C. TWO-PORT NEW IMPERIAL. AN IDEAL SPORTING MOUNT.

The Matchless exhibits present three models of great attraction. Chief among these is the 495 c.c. two-port machine which has a guaranteed maximum speed of 85 m.p.h. The price of this machine is truly amazing at £55.

Other models are the two-port 350, priced at £46, and an extremely neat looking overhead camshaft engined 350 model, with singe port.

The whole range examples extraordinary value for money.

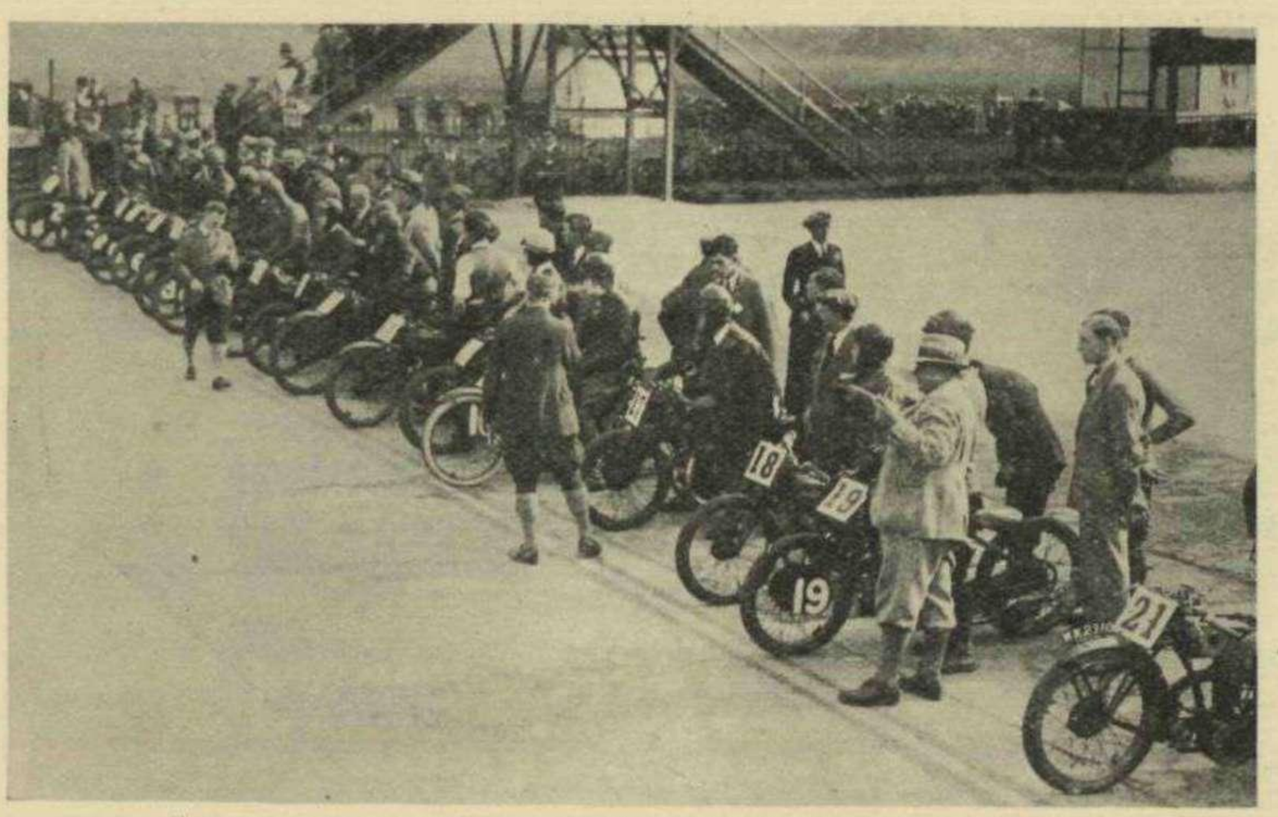
To mention of sporting mounts would be complete without a word about the Cotton and A.J.W. models.

The Cotton for 1928 is far in advance of last year's machine. There are some very attractive speed models with J.A.P. or Blackburne o.h.v. engines, either single or double port. Handsome saddle tanks are fitted to the sports models, and the frame has been shortened and constructed of heavier tubing. The magneto mounting is particularly worthy of praise, being in a very accessible place high up behind the engine. Altogether the Cotton is a machine which will make an instant appeal to the sportsman, who knows the wonderful road holding qualities of the triangulated frame.

The A.J.W. range is very imposing, and is a real he-man's mount. Machines are produced with J.A.P. or Summit engines. The latter are perhaps better known as the famous Anzani or Vulpine engine. The £170 model with double-port twin Summit is perhaps the most majestic machine produced, and its performance is not belied by its appearance.

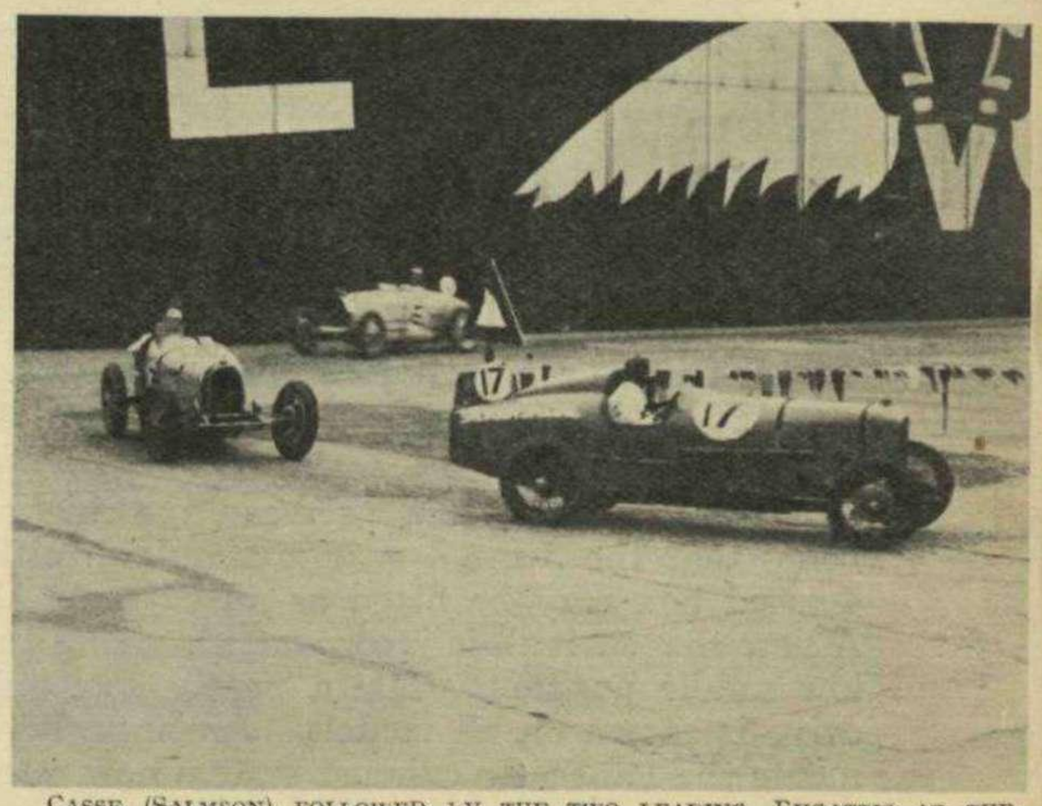
At the Show this year, more than in any previous year, the sporting rider is confronted with an *embarras de choix*. But it is fairly obvious that, no matter which machine takes his fancy, he will obtain greater value and higher performance than ever before. For 1928 we are offered perhaps higher speed than in 1927, but with greatly increased reliability. The absence of novel or daring lay-outs has proved that the designers have concentrated on getting greater reliability in 1928 out of an engine which was quite fast enough in 1927.

This does not mean any stagnation or lack of progress, since increased reliability means, in the end, increased efficiency and speed. So that in 1928 we may expect higher speeds and greater progress than ever before.

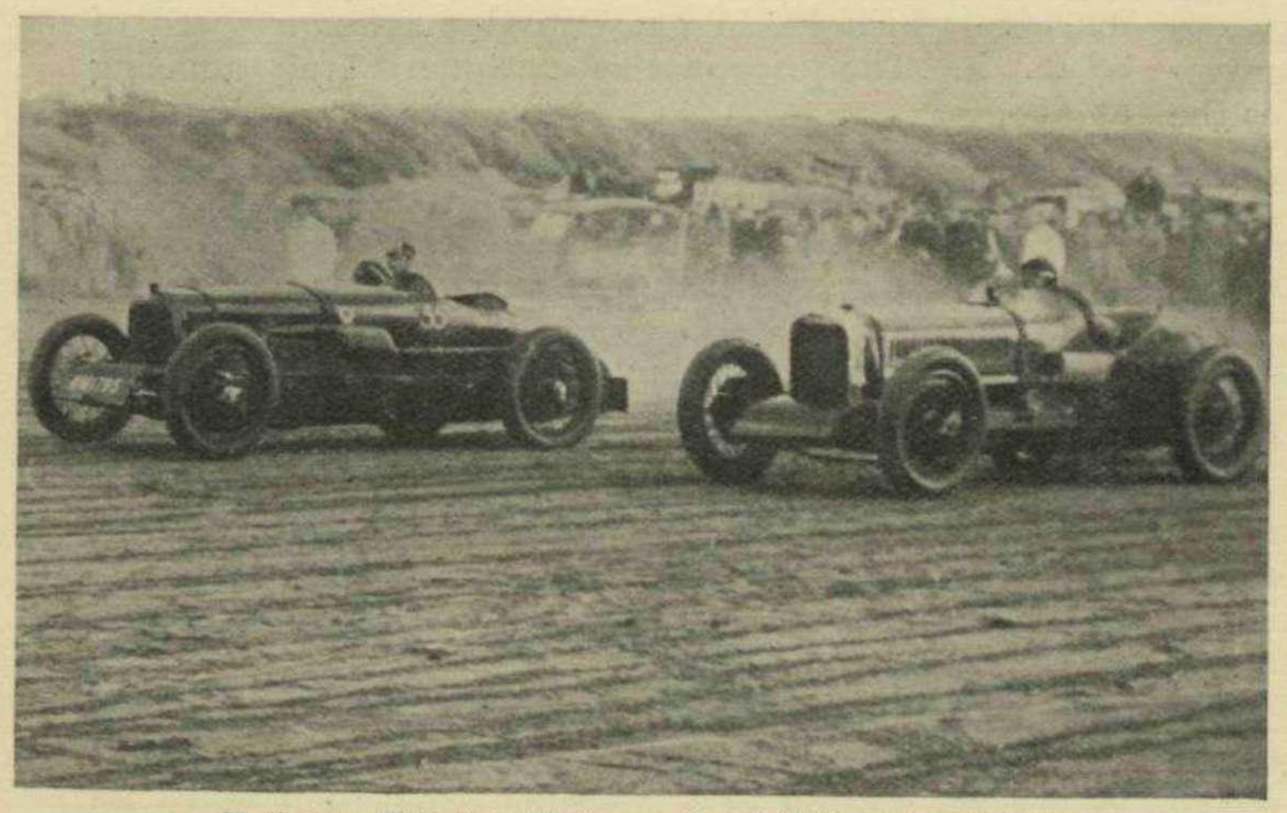


THE LINE UP FOR THE 250 C.C. CLASS. BROOKLANDS GRAND PRIX RACES.

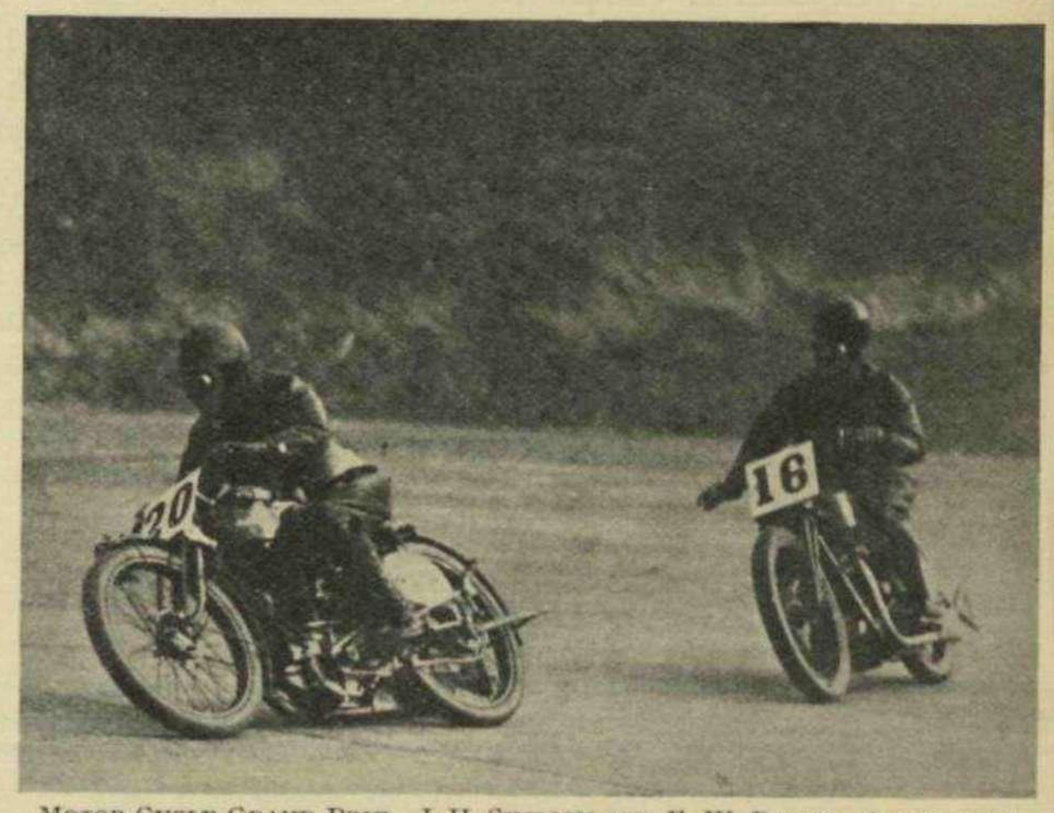
Recent Sporting



CASSE (SALMSON) FOLLOWED BY THE TWO LEADING BUGATTIS AT THE TUB HAIRPIN.



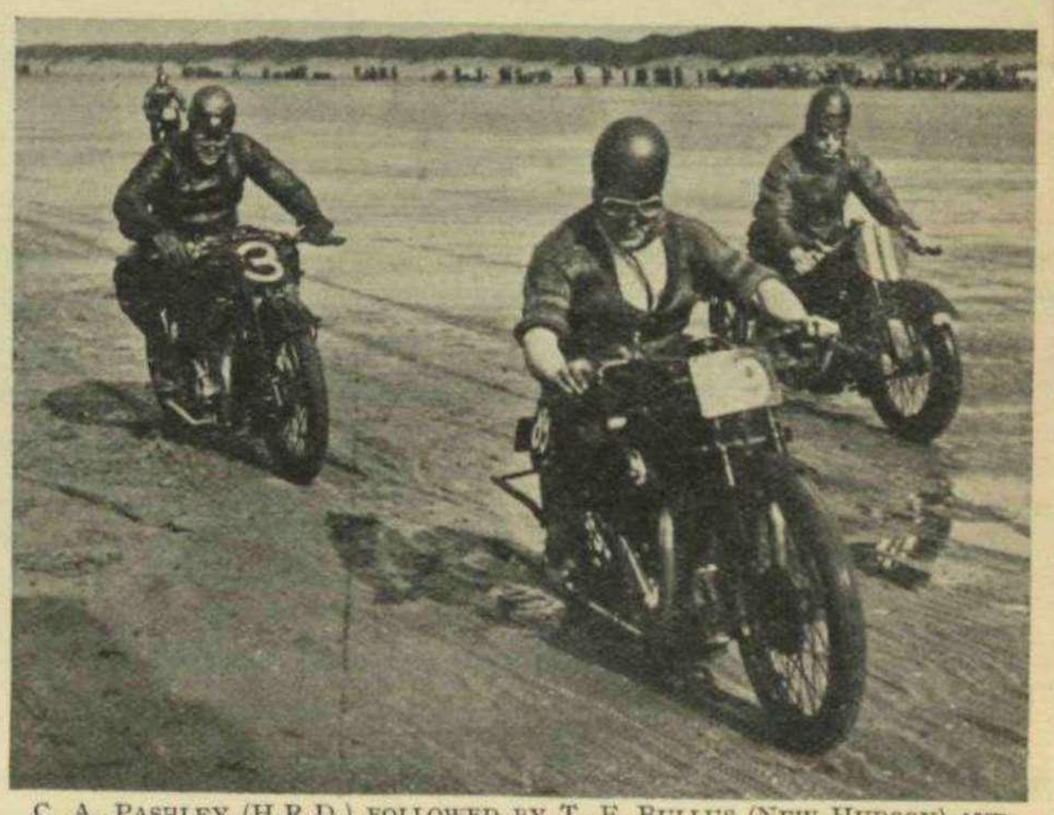
H. F. CLAY (T.T. VAUXHALL) AND G. J. JACKSON (SUNBEAM) AT SOUTHPORT.



MOTOR CYCLE GRAND PRIX. J. H. SIMPSON AND F. W. DIXON. A CONTRAST IN STYLE.

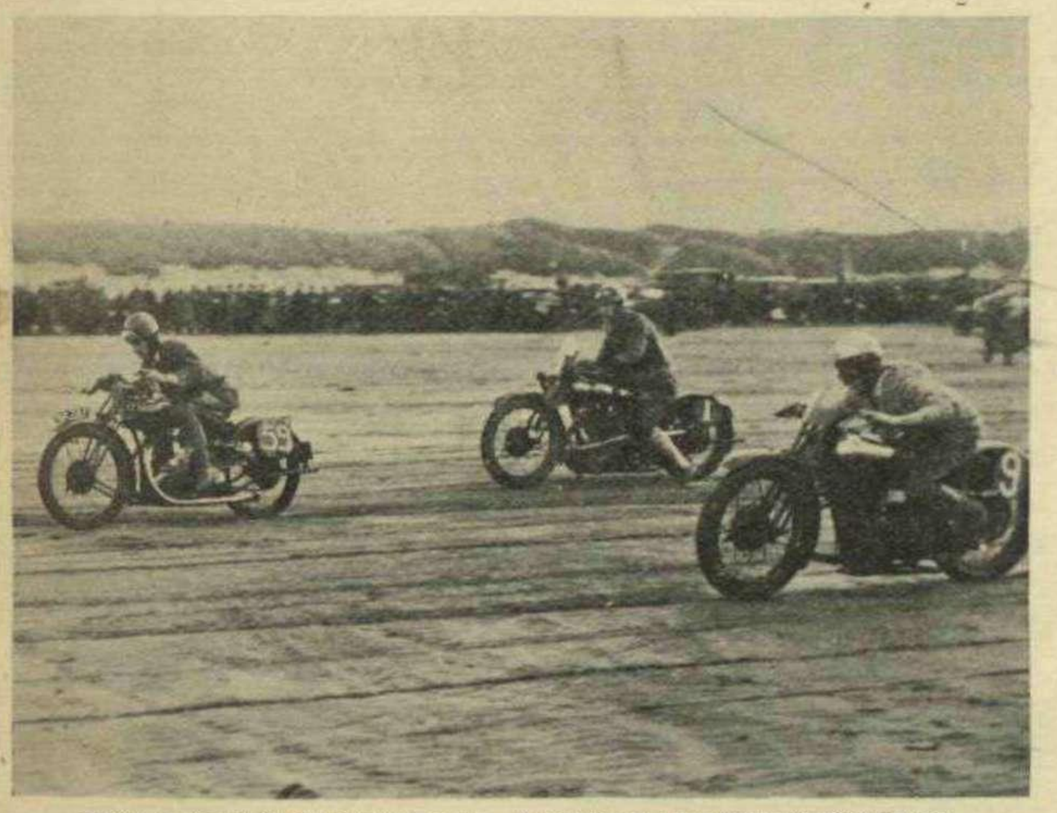


CAPT. MALCOLM CAMPBELL AND G. E. T. EYSTON IN THE THROES OF THEIR DUEL. J.C.C. 200 MILE RACES AT BROOKLANDS.



C. A. PASHLEY (H.R.D.) FOLLOWED BY T. F. BULLUS (NEW HUDSON) AND L. MYERSCOUGH (RUDGE)—A SOUTHPORT SNAP.

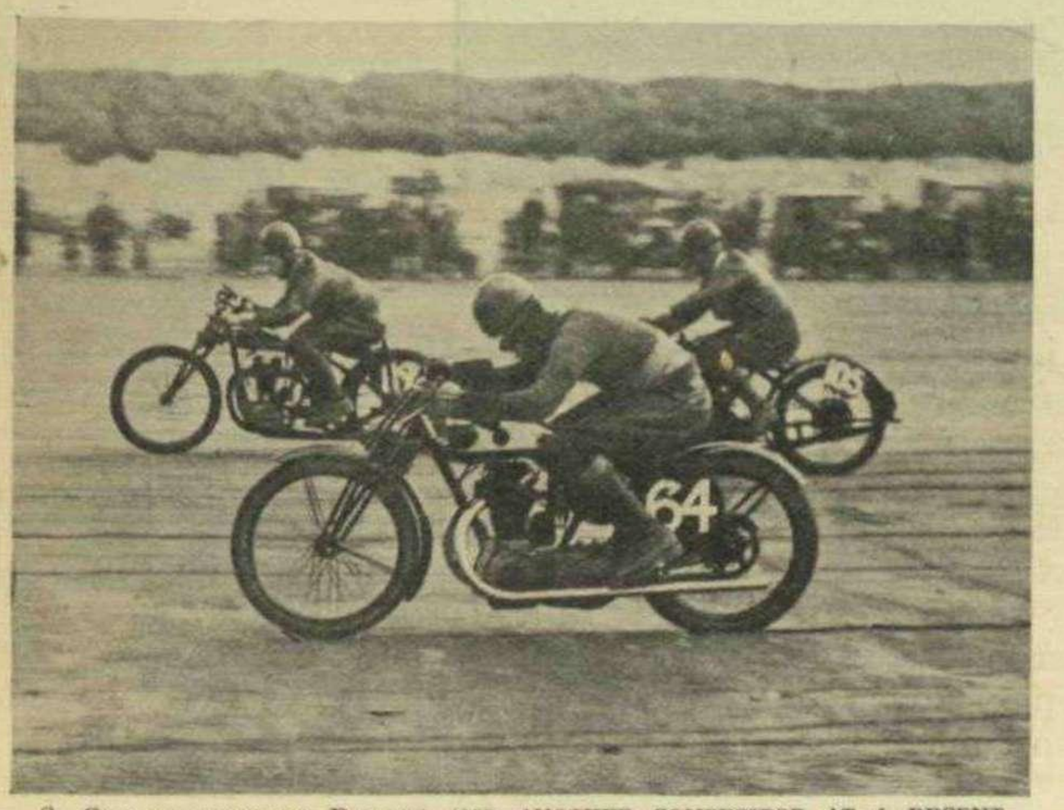
Events in Pictures



HEAVYWEIGHTS AT SOUTHPORT. A SNAP OF THE UNLIMITED CLASS.



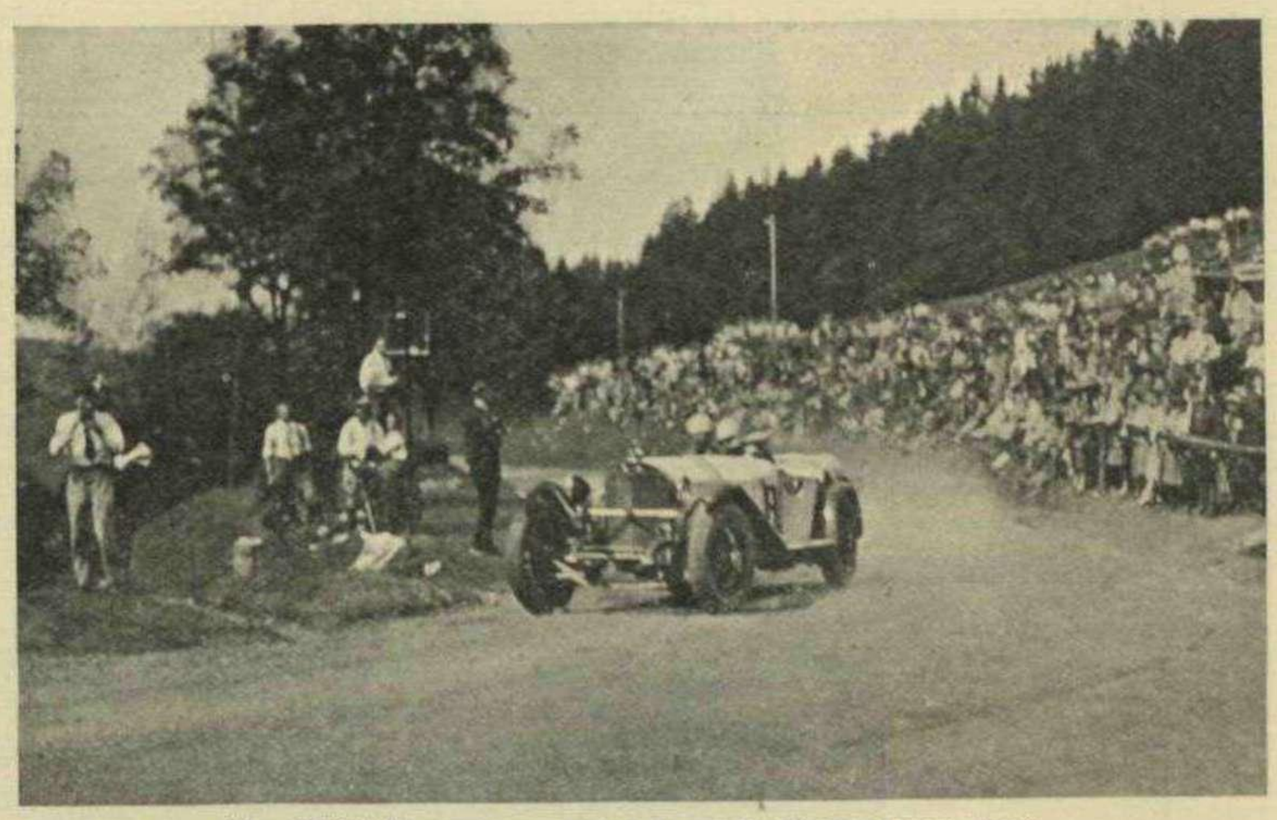
TURNER'S GWYNNE IN THE 200 MILE RACE, BEFORE ITS DESTRUCTION BY FIRE.



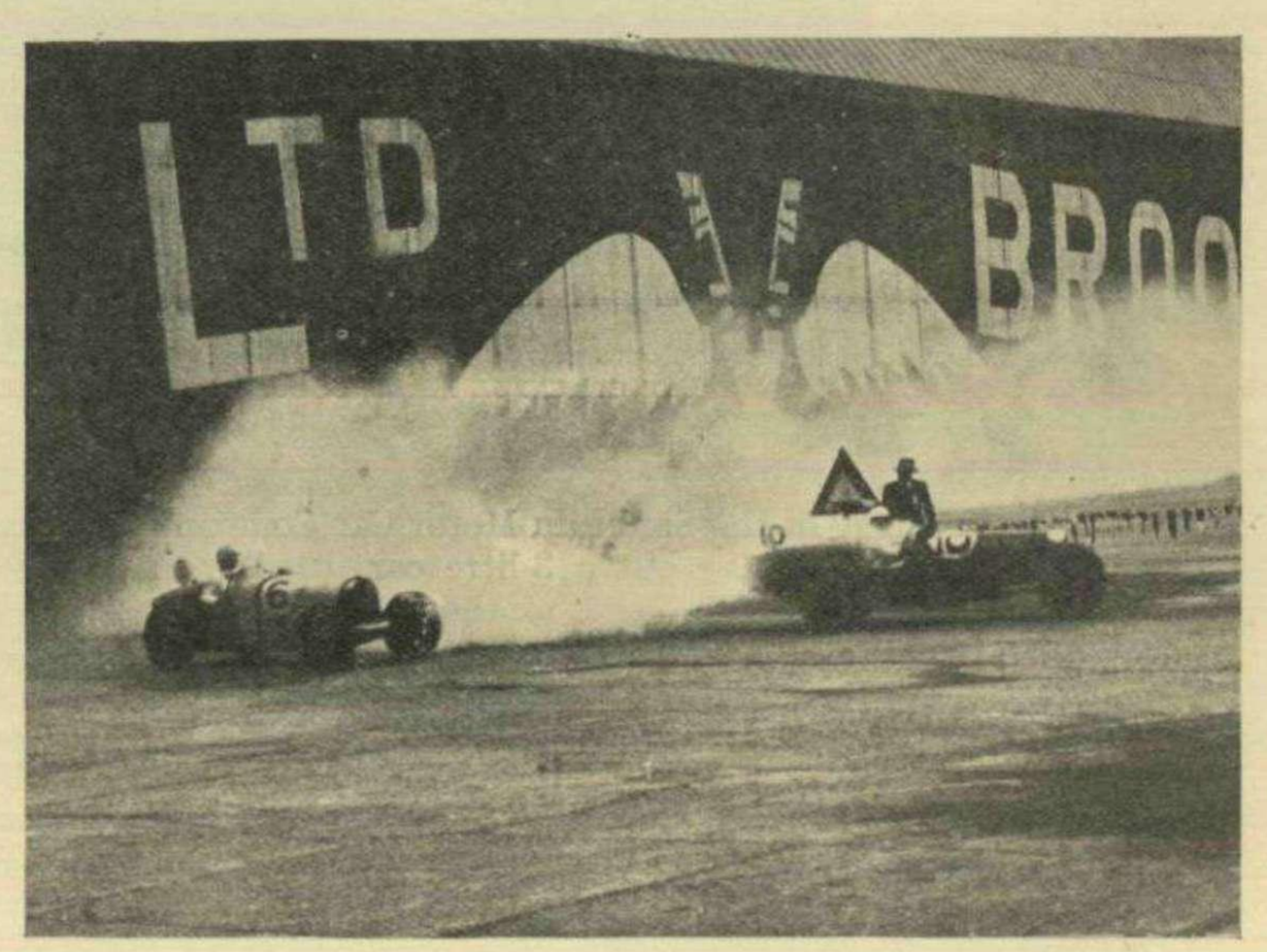
S. GLEAVE LEADING BULLUS AND ANOTHER COMPETITOR AT A RECENT SOUTHPORT MEETING.



J.C.C. 200 MILE RACE. THE FIELD AT AN EARLY STAGE IN THE RACE.



THE 36/220 MERCEDES WINNING A RECENT GERMAN HILL CLIMB.



OATES' O.M. BEFORE BEING ORDERED OFF FOR EXCESSIVE SMOKING.

SPORTING CARS ON TEST.

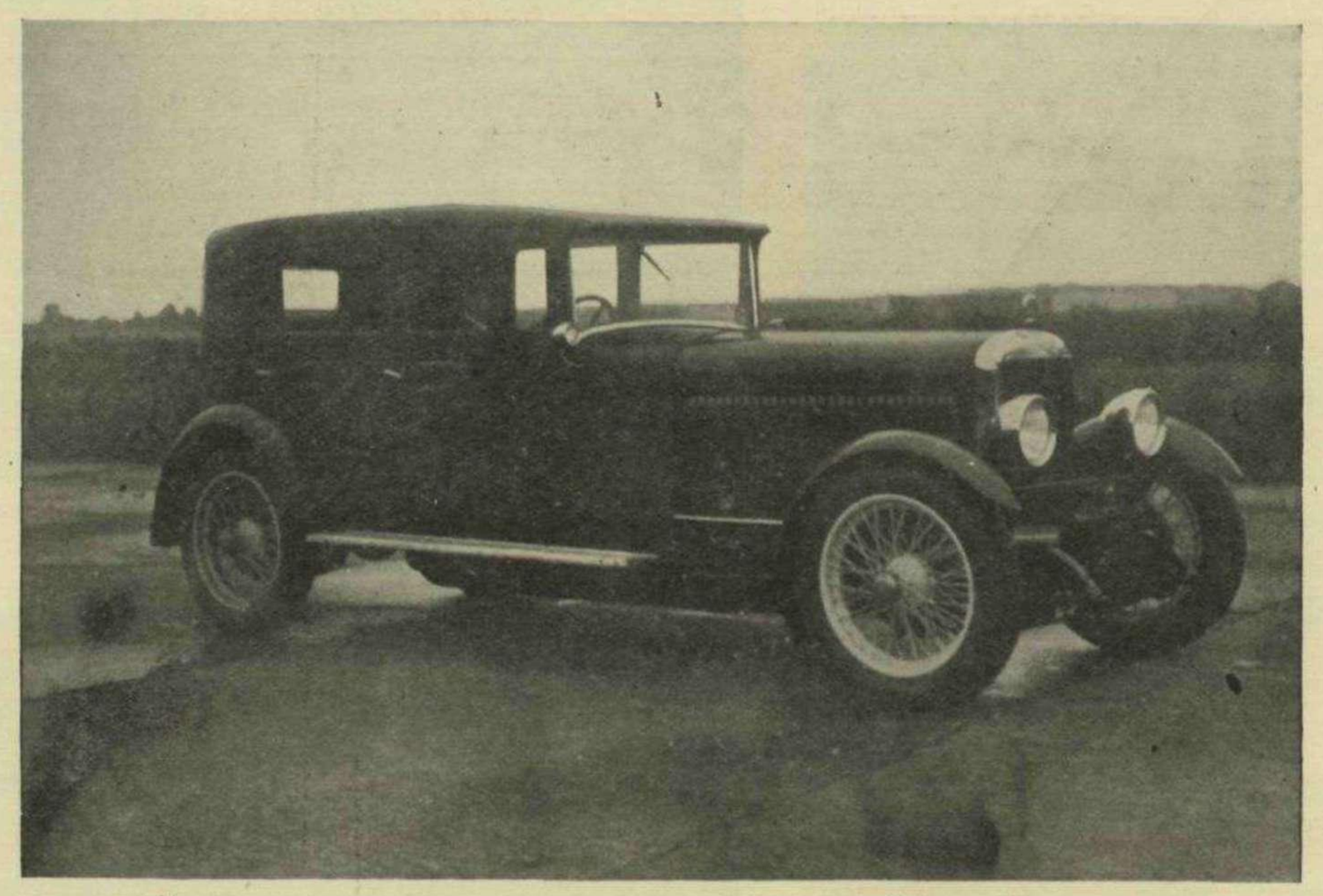
THE 3-LITRE SUNBEAM.

By THE EDITOR.

FOR so many months have we reviewed high powered continental cars in these pages that we had indeed begun to doubt the existence of British Cars in this class. We feel sure that our readers must have shared this view.

Awaking suddenly to this realization therefore, we cast the editorial eye around in search of a worthy representative of high grade British production in the sports category.

After some deliberation, during which we were again struck by the paucity of choice presented by British *marques*, our choice fell upon the 3-litre Sunbeam, a truly worthy representative of British engineering.



THE GRACEFUL LINES, SUGGESTIVE OF POWER, OF THE 3-LITRE SUNBEAM.

By the courtesy of the Sunbeam Motor Car Company we were enabled to take out a 3-litre car fitted with fabric saloon body. At first sight we thought this luxury bodywork would detract greatly from the sporting performance of the car. That we were wrong, the following report will reveal in due course, while the weather, on the day of our trial, was such that closed car comfort was very welcome.

Taking the wheel at the outset, in an atmosphere of extreme gloom and a steady drizzle of rain, we proceeded through thick London traffic, on roads which glistened with that evil sheen which denotes wheel spin, side slip and absence of stopping power. Our first impression was that we did not fit the driving position very well, being shorter in the leg than the previous driver. This did not conduce to a feeling of confidence or to ease of control, but happily we discovered that the independent front seats were easily adjustable—an advantage of which we immediately made good use, setting the seat so that the steering wheel almost touched the driver's chest.

This done, we felt better and were more able to take notice of other features of the car and its behaviour.

First impressions are difficult to eradicate, whether they be favourable or otherwise, and we must confess, that in a sporting car, we distinctly feared the effect, in a saloon body, of windage.

That the fabric four door saloon was comfortable to the point of luxury was amply proved on our journey, the body being almost uncanny in its complete silence, and absence of creaks and groans. The upholstery was that deep, capacious and yielding kind which is so conducive to somnolence.

THE NEW MODEL

EXCELSIOR

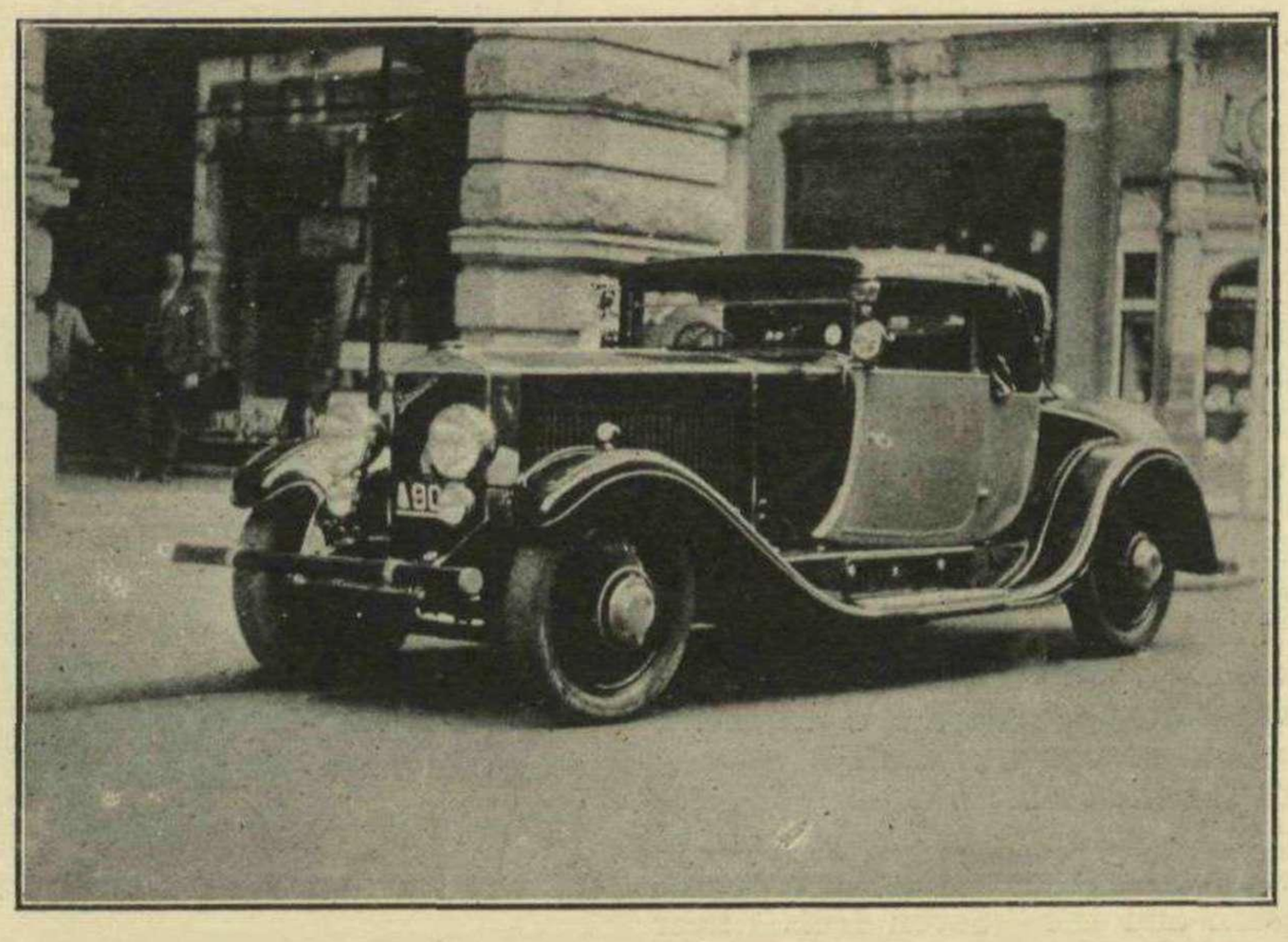
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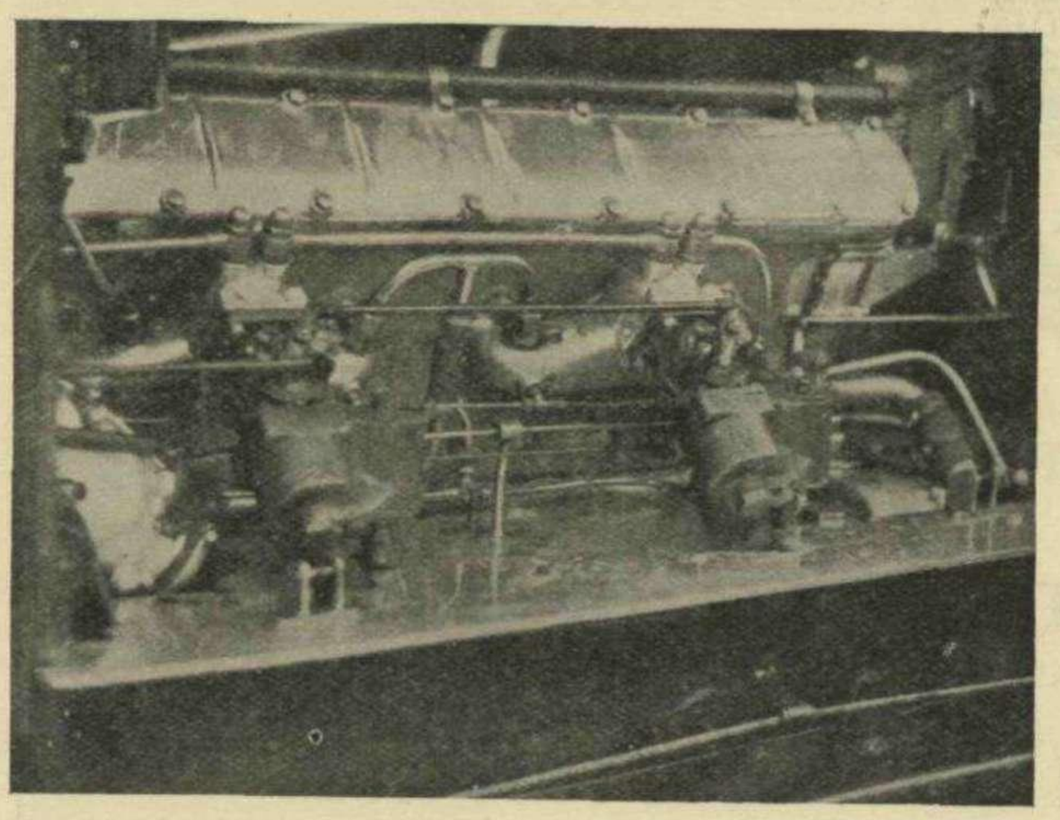
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SPORTING CARS ON TEST—continued.



THE OVERHEAD CAMSHAFT ENGINE. NOTE THE TWIN CARBURRETERS.

As we took over the steering wheel of the Sunbeam, a steady drizzle set in, and the streets were rapidly covered by the viscous slime peculiar to the metropolis. However, the "feel" of the car inspired us with confidence, and we steadily forged our way through the dense traffic with perfect ease.

Once, however, on turning into a quiet square, we somewhat incautiously trod on the gas. The instant result was the car's turning broadside on. Then, to our astonishment, *we felt the steering-wheel correcting itself*, and we promptly took our hands off. The wheel gradually came round, and we were out of our skid, automatically corrected by the steering of the car.

After this, going was easy, and should there appear a tendency to tail wag, we simply left the wheel alone, whereupon the car would straighten itself!

In accordance with the invariable practice of *Motor Sport*, our route lay to Weybridge, for the purpose of carrying out high speed tests on the track. The route we chose was via Kingston and the "Seven Hills" near Cobham.

Here, as usual, we opened out over the switch-back road, and were extremely impressed by the road holding qualities of the low-built saloon.

At one critical point in this section, when we were travelling at some seventy miles an hour, a particularly vicious hump caused all four passengers to hit the roof, which was fortunately flexible.

The car became naturally, a trifle restive, but on the driver regaining his seat, we returned to a less hectic mode of progress.

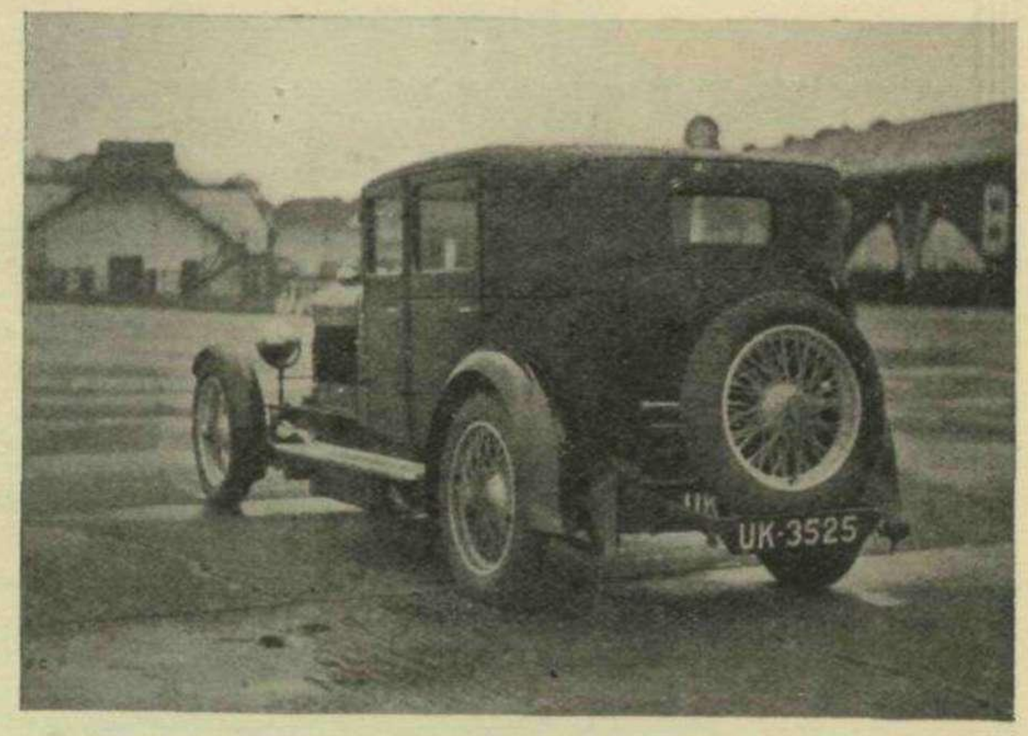
Comparing the behaviour of the car on this stretch with others we have tried, we concluded that the Sunbeam was actually as steady as any car we have tested. But we are under the impression that we were travelling on the Sunbeam at least five miles an hour faster than ever on this road before.

On arriving at the track, we found that in accordance with our usual luck, a howling wind was roaring up the track from Byfleet. mingled with a fine rain, which was most trying.

Nothing daunted, we took the saloon on to the track, and accomplished a preliminary lap in the neighbourhood of seventy, four up. Then, two up, a fast lap was put in, during which the car touched 86 and never fell below 76. However, for the sake of accuracy, a lap was done against two stop watches, the lap time working out at 77½ miles per hour.

This speed seems to us extremely creditable, particularly in view of the appalling weather and the coachwork of the car, but the representative of the Sunbeam Motor-car Company who was with us, appeared highly disappointed that the car was incapable of a lap speed in excess of eighty miles an hour. He explained to us that the car was fitted with a special low back-axle ratio for use at the annual Shelsley Walsh Hill-Climb, in which event this chassis, with an open body was driven by Mr. W. R. Perkins.

In our estimation this enhanced our already high opinion of the car, and we feel certain there are few saloon cars capable of approaching this performance.



ANOTHER VIEW OF THE FABRIC SALOON.

On our journey down to Brooklands, we were inclined to think that the shock absorber setting was slightly on the tight side. But actually at speed on the track, we reaped the full benefit of this adjustment, the car proving remarkably steady and controllable, even over the more notorious bumps. The steering was finger light and absolutely positive, which together with the road-holding qualities of the saloon eliminated any impression of high speed.

Our next diversion was an ascent of the Test Hill from a standing start between the posts at the foot.

The distance from this point to the summit was covered in bottom gear in 14 secs., our speed at the top was over twenty-five miles an hour—a performance which is interesting if not spectacular.

On the road we had already gleaned the impression that the brakes were of superlative merit, but feeling that definite statistics are of greater value than glowing

SPORTING CARS ON TEST—continued.

eulogy, we resolved to measure accurately the stopping distance in conjunction with registered speeds.

At forty miles an hour on the wet track the foot-brake, assisted by the Dewandre vacuum-servo mechanism, halted the car in thirty yards. The efficiency of the front brakes may be judged when it is known that for the entire distance the rear wheels were locked, and therefore not exerting their maximum retarding effect. It is interesting to note that during this performance the Sunbeam slid in a perfectly straight line, without any tendency to tail-wag.

After being long accustomed to ordinary braking efficiency, the extremely delicate operation of the servo brakes was apt to be a little startling, causing us inadvertently to leave the seats in the direction of the wind-screen, on more than one occasion!

Satisfied with our performance on the track, we turned our bonnet Londonwards, and, recollecting that we had omitted to secure acceleration figures, we adjourned to a quiet stretch of road. Here, results of our tests showed that, on top gear, the time required to accelerate from ten to forty miles an hour, was only 12 seconds! Making use of the gear-box, the same change of speed was effected in 8½ seconds.

Little more remains to be said of this noteworthy British car save to emphasise our impression of the entire ease of control of the whole car, whether of gears, brakes or steering.

We feel that this British production is definitely up to the high standard of the finest continental *marques*, and is a car wherein British engineering skill is exampled as second to none in the whole world.

VOISIN TAKES 24-HOUR RECORD AT MONTLHERY.

THE 24-hour record is one of the most coveted in the racing world, but when the big 45 h.p. Renault annexed it at 108.53 m.p.h. in July, 1926, it was thought that this figure would stand for some time. Now however it has been surpassed by a Voisin car, driven in turn by Morel, Kiriloff and Marchand, which raised the figure to 114.2 m.p.h.

In the course of the 24-hour run, a number of other world's records were also taken, and after the two rounds of the clock, the car was kept going for another 3½ hours, in order to capture the records for 3,000 miles and 5,000 kilometres. The full list of records is as follows, the figures in brackets representing the speed of the old records, held by the Renault.

1,000 miles, 112.99 m.p.h. (108.94 m.p.h.).
2,000 miles, 113.53 m.p.h. (108.01 m.p.h.).
3,000 miles, 113.79 m.p.h.
2,000 kiloms, 112.97 m.p.h. (108.2 m.p.h.).
3,000 kiloms, 113.68 m.p.h. (107.92 m.p.h.).
4,000 kiloms, 113.73 m.p.h. (108.56 m.p.h.).
5,000 kiloms, 113.59 m.p.h.
12 hours, 113.44 m.p.h. (108.12 m.p.h.).
24 hours, 114.16 m.p.h. (108.53 m.p.h.).

Thus it will be seen that the average speed of the Voisin actually increased right up to the 24th hour, which is a wonderful tribute to the endurance of both car and drivers.

The machine used in these records was a special eight-cylinder sleeve-valve racing car. The engine, which has a bore and stroke of 95 x 140 mms., giving a capacity of 7,938 c.c., really consists of two standard 4-cylinder Voisin engines placed end to end. This engine is offset about 4 inches in the frame in order to make for greater stability when running on the banking of the track, and the car is very carefully streamlined.

Delco ignition is used for the engine, and two Zenith carburettors are employed, which draw their air through a large Y-shaped air-intake from a Tecalemit air-filter. Both axles are mounted above the frame, and the centre of gravity is thus brought very low.

VELOCETTE RE-INTRODUCE A TWO-STROKE.

Although last year Veloce, Ltd., concentrated on their extremely successful overhead camshaft machines, they have now re-designed their two-stroke and have named it the model "U." This machine has a bore and stroke of 63 x 80 m.m. with a cubic capacity of 249 c.c. as on past Velocette two-strokes, and it embodies the automatic lubrication which has already proved so successful. The specification includes a saddle tank, loop frame with straight top tube, Velocette three-speed gear-box, Webb forks, 6in. internal expanding brakes and 25 x 3in. tyres. The price has been fixed at £36.

* * *

VILLIERS PRODUCTIONS IN 1928.

Engines, lighting sets and carburettors were shown on the Villiers stand. The engines are of the two-stroke type and all except one are single cylinders, the twin cylinder being the 344 c.c. engine which is fitted to the Francis-Barnett machine. The singles vary from 122 to 342 c.c., and are made in touring, sports and super-sports types. An engine which will undoubtedly attract a large amount of attention is the twin-port 172 c.c. super-sports type which was fitted to many machines at the Show.

The well-known Villiers carburettors were shown in all the types and sizes in which they are manufactured, an item of interest being a neat air cleaner which does not employ filters. For some time past the company has been making a very excellent little lighting set, the flywheel magneto supplying current direct to the lamp. This was cheap, simple and thus quite satisfatcory, except that it did not supply a light when the engine was not running, unless a switch-over battery was carried. After various experiments and concinual tests, the Villiers people have now introduced a set in which a six volt. accumulator is charged from the magneto. The charging rate is low—about .7 amp., but it is sufficient for all ordinary requirements, and the set certainly constitutes the cheapest and one of the most reliable known.

TUNING THE BLACKBURNE SUPER-SPORTS 350 C.C. ENGINE.

By I. P. RIDDOCH.

APPRECIATING the keenness of many motor cyclists to be able to purchase at a reasonable price the most up to date racing engine, Burney & Blackburne, Ltd. decided to produce for this season a new model O.H.V. engine with double exhaust port, possessing all the very latest improvements and features of design.

Though the engine in standard trim is capable of a very competitive performance, it is, however, of course possible by various ways and means to " boost " the engine such that the machine in which it is fitted, stripped for racing and ridden solo, may be capable of exceeding 90 m.p.h. It is hoped therefore, that the following notes will be of assistance to owners of these engines who intend to go in for racing.

The engine itself closely resembles the 1926 T.T. engine which put up the extraordinary record of obtaining five places out of a possible nine (1st, 2nd, or 3rd) in the T.T. Races, and was the only 350 c.c. engine that has ever held the hour record in the 500 c.c. class, and recently won the 200 miles sidecar race Class B. at record speed.

In so far as the crankcase and crankshaft assembly are concerned, there is very little which requires to be done to improve the engine's performance. The small end of the connecting rod may be lightened and polished, but under no circumstances should the rod be drilled : it is much more important that the rod should be rigid than exceptionally light. The exhaust lifter may be dispensed with and the arm of the exhaust rocker upon which the exhaust lifter cam works may be ground off, thereby lightening the exhaust rocker very considerably. The pads of both rockers operating against the ends of the tappets may be reduced ; the ends of the tappets should be smeared with blue or other paint so as to mark the bearing surface required on the pad of the rocker, and superfluous metal may be ground away.

The cylinder should be carefully lapped and polished with metal polish, using a scrap piston and an old pair of rings. The head, without valves, should be placed in position on the cylinder and the joint between the cylinder and the head inside should be carefully examined through the ports and the bore of the cylinder, and any ridge, either in the head or the cylinder, should be removed by filing, while the joint faces should be blended together as carefully as possible.

The copper gasket washer between the cylinder head and the cylinder may be discarded and the head ground direct on to the cylinder barrel : when assembling the head on to the cylinder some heat resisting jointing compound, such as Firmantite, should be smeared upon the joint faces.

The combustion chamber and both valve ports are fettled and polished by the manufacturers. It is, however, possible still further to improve the performance of the engine by removing still more metal from the inside of the ports so as to make the passage for the gases as smooth and stream-lined as possible. The inlet valve guide may be cut off flush with the inside of the inlet port. On no account, however, must the exhaust valve guide be shortened. The joints between the choke of the carburetter and the inlet stub, and again between the inlet stub and the inlet port on the cylinder head must be blended together perfectly and should be polished smooth.

The valves should be ground in with fine grinding paste and finally with metal polish. The seating both on the valve and in the cylinder head may be adjusted to a width of about 1/16 in. for the inlet valve and 3/32 in. for the exhaust valve. A light tulip-shaped inlet valve can be obtained from the makers for short distance racing.

Should there be any indication that the valve stems are too tight a fit in the valve guides, such as seizure marks, such marks should be removed by polishing with fine emery cloth until the valve works freely in the guide. If the valve stem is too tight a fit in the guide, a considerable drop in power will be experienced. The lift of each valve is 5/16 in.

If at any time new springs or new valve guides are fitted the maximum lift of the valve should be checked over : it should be possible to lift the exhaust valve 7/16 in. and the inlet valve 7/16 in. before either the top of the valve collar comes in contact with the top of the valve guide, or before the coils of the springs are completely closed up one upon another.

This is an important point and should be carefully checked whenever new parts are fitted. The inner spring on the inlet valve often requires to be slightly shortened to give the full 11/32 in. lift.

The valve springs supplied upon the engine are suitable for fast touring and long distance racing : for sprint races where high speeds may be called for, extra strong and long inner and outer valve springs can be purchased, in conjunction with which it is necessary to use a special type of top valve collar. These special springs have an open coil at one end.

The two ring aluminium alloy piston fitted in the engine gives a compression ratio of just over 6 to 1 : the ration may be increased to 8 to 1, by discarding the copper washer and by shortening the cylinder 1/16 in. This should be taken off the top joint face and the register in the top of the barrel of the cylinder head must be deepened by a corresponding amount. A single ring sprint piston can be obtained which will still further raise the ratio to $8\frac{1}{2}$ to 1 : the manufacturers recommend that this piston be only used for short distance events with alcohol fuel. If, however, the temperature of the engine is suitably controlled by proper attention to the mixture and ignition settings, it will be found quite safe to use the piston for long distance racing as well.

When using a high compression ratio either with the two or single ring piston, great care must be taken to see that there is adequate clearance between both valves

TUNING THE BLACKBURNE ENGINE—continued.

and the top of the piston: when the piston is on to dead centre and both valves are closed it should be possible to lift either valve off its seating 3/16 in. before coming into contact with the top of the piston. If necessary, flats may be filed on the top of the piston opposite the valves in order to allow sufficient clearance. The actual amount of clearance may of course easily be checked by mounting the head complete with valves on the cylinder assembled, but without valve springs and collars.

Under no circumstances should the piston be drilled nor is it desirable to reduce the bearing surface of the piston on the cylinder wall: the latter practice will prevent conduction of heat from the piston to the cylinder and therefore cause distortion and local seizure of the piston.

The piston rings should be lapped into the cylinder with metal polish and must show good contact all round. The gap at the joint should be from .004 in. to .006 in.

The best valve setting for both short and long distance racing will be automatically obtained if the instructions given in the makers' instruction booklet are correctly carried out. The tappets should be adjusted as closely as possible so that the push rods can only just be freely turned, and the valve timing should then be set such that the inlet valve commences to open two fifths of the total overlap before top dead centre. Before finally checking the setting it is necessary to assemble the timing case cover on the engine so that the camwheel is supported on both sides: the absence of the timing cover will cause a discrepancy in the valve timing owing to the camwheel, under such conditions, being supported in one bearing only.

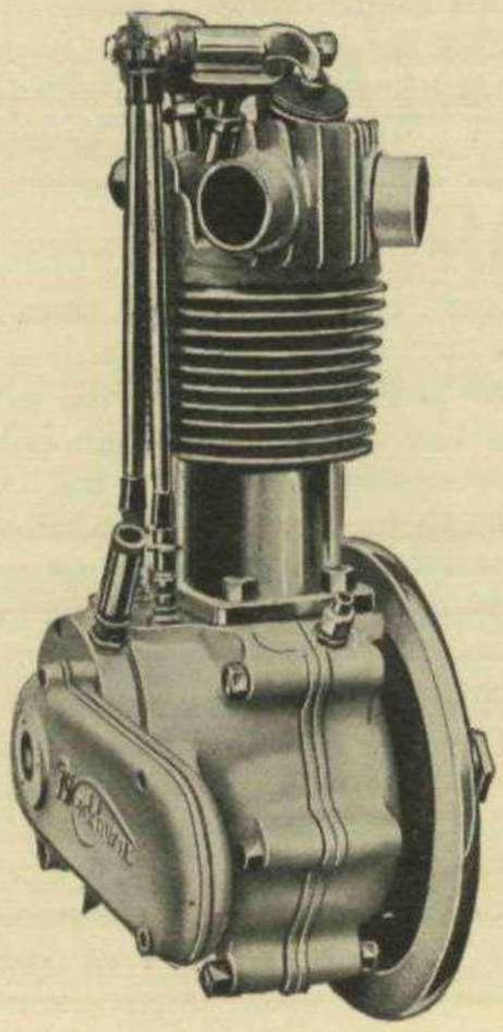
Before completing the assembly of the engine a careful test should be made to see that all moving parts move quite freely. This should be done with the cylinder and piston head but without piston rings. The clearance between the timing main shaft and its bearing may be increased to .004 of an inch for racing. The timing gear must work freely in its bearings and the alignment of the piston in the cylinder bore should be carefully checked.

The magneto setting should be adjusted so that when the contact breaker is fully advanced the points commence to break 38° before top dead centre. The correct amount of advance will vary inversely to the performance of the engine, i.e., the better the performance of the engine, the less advance will the engine take; some of the fastest engines have given their best results with not more than 30/32° advance. If, by experiment, you find that the performance of your engine is improved by giving more than 35/38° advance, it is reasonable to assume that there is some other mal-adjustment, often indifferent carburation, which is handicapping the performance of the engine and allowing it therefore to take more ignition advance than might otherwise be expected, and this mal-adjustment should be sought for immediately. It must be remembered that too much advance will cause not only reduction in speed, but also overheating, burning of the sparking plug, and as a result, possibly serious damage to the engine. Upon a high efficiency engine of this character it must be appreciated that the control of the ignition is of vital importance.

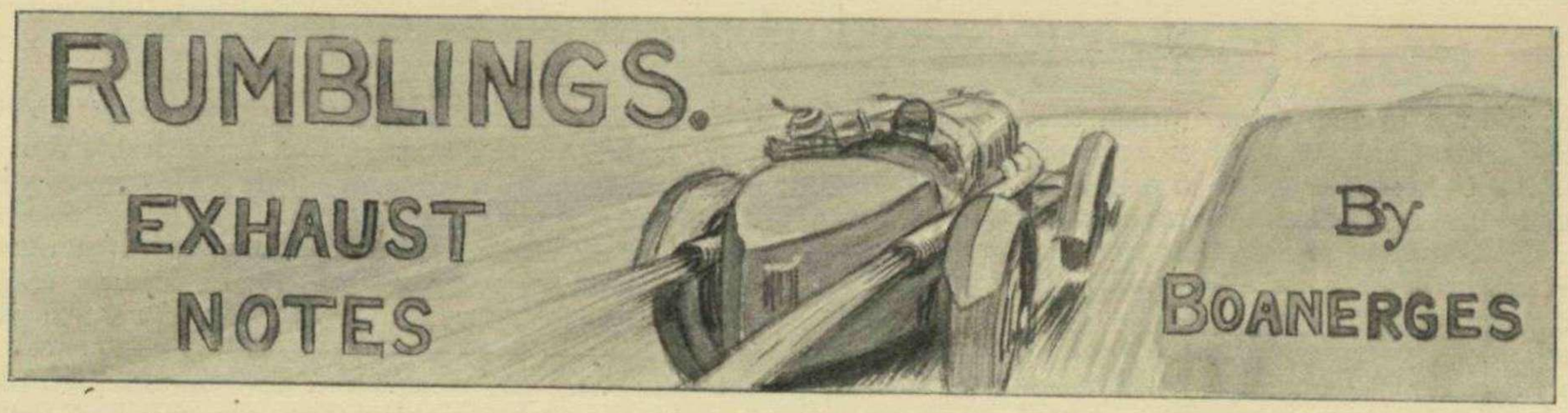
In regard to carburation the Amac instrument is used, and for road racing and events where acceleration is of primary importance, a choke size diameter 29/32 in. is recommended. For sheer maximum speed an advantage will be obtained by using a 31/32 in. diameter choke. It is impossible to lay down any definite ruling in regard to the size of jet required: this adjustment must be determined by experiment and may require alteration to suit varying climatic conditions, etc. That jet should be selected which is found to give best results with the mixture control lever set midway between these two extreme points, so that there is a 50% variation, rich or weak, available. In carrying out experiments with a view to finding the correct jet it is advisable to start with a jet too large rather than too small. Whereas a rich mixture may have no adverse effect upon the engine at all, a weak mixture will, however, definitely cause overheating and serious damage may follow. For the sake of the engine, therefore, it is desirable that you should commence with a jet too large and work down to the correct size.

The importance of mixture control cannot be too strongly stressed: there are probably more races lost, and more engines ruined or seriously damaged, through being run on too weak a mixture, than through any other cause. There can be no doubt that a weak mixture has been fundamentally responsible for a great many cases of engine failure, for which some other part has been unjustly and incorrectly blamed.

The manufacturers of the engine have well equipped experimental and racing departments under the supervision of the chief designer. They are at all times glad to give information and advice to owners of Blackburne engines upon their tuning and adjustment.



THE 350 C.C. SUPER SPORTS, TWO-PORT BLACKBURNE ENGINE.



MUCH ink has been spilt on the subject of driving in fog, and, of what is worse—driving in fog at night.

Many inventions have been produced to render this horror a little less dreadful, but it would seem that the only real remedy is to banish the fog. Perhaps our scientists will cease snarling about Darwin and do something useful.

Spot lights are almost indispensable in fog, but they are illegal. Rather a jar, but there it is. Of course one *can*——

The best thing appears to be the use of diffused light, and in this matter electric head lamps bow before the primitive acetylene of the motorcyclist. But something can be done with one's head lights by fitting caps and similar devices. There are some excellent rubber affairs on the market for this purpose, especially an amber rubber one with a guaranteed range of twenty yards in thickest fog on darkest night.

* * *

Do motor cycle designers travel by first-class and thousand pound saloons? It certainly seems impossible that they ever ride their own productions. Perhaps if they did, and had burnt their fair fingers replacing plugs, struggled on a wet night with a rear wheel puncture, or pulled their arms out hauling a 600 c.c. sports motor into its stand, if they had done these things, I say, some improvements in such items might come to pass.

What would be said if a car appeared at Olympia without head or tail lamps, these to be fitted on unweildy brackets at extra charge? And yet this is accepted practice among motor cycle manufacturers. Loud cries of "Shame."

* * *

The female of the species is more deadly than the male. Yea, and has more nerve at times. Witness the following, which, for sheer nerve complete with ultra-riding ability really wins the silver hot-water bottle.

A narrow sandy lane, descending steeply a hill, with a right angled corner at the foot. A roar at the hill-top. A cloud of dust and one perfectly healthy exhaust note, complete with one perfectly dazzling girl in scarlet beret and lip stick. *Facilis descensus* . . . down she roars.

She approached the corner, at which moment, a sports car came roaring uphill. I got up the bank. The two vehicles met. My lady had her wheels locked, skidded across the bonnet of the car, missed it by three inches, charged up the bank, leapt a gulley, rocketed over a heap of stones, crashed down into the road, yanked open the throttle and disappeared at speed. Whew—yes, the silver mounted hot water bottle please—thank you.

It is rather interesting to examine figures with regard to most things, statistics and all that.

The crankshaft of a racing car turning 130 times *per second* at 8,000 r.p.m., makes one think, and the magneto of an eight cylinder engine at 100 m.p.h., giving off sparks at the rate of 32,000 sparks per minute passes understanding.

At slower speeds, and touching motor cycles, it is interesting to look at some figures regarding the side-valve Ariel which recently completed 5,000 non-stop miles under observation. This engine ran for 251½ hours, and the engine revolutions approximately forty million. Twenty million explosions occurred, and the *piston* travelled about four thousand miles, eighty million reversals of direction having taken place!

* * *

I am not myself a believer in the occult, except when the occult takes the shape of a spark high up inside the insulator of my plug, or a spot of grit in the jet, but the following excerpt from a psychic journal may interest some.

"Famous people come to my flat on all sorts of occasions and for all sorts of reasons. The other day there came Major Segrave, who travelled in a motor-car in Florida last winter at 207 miles an hour. He came to tell me that when he sailed for America last winter he got a wireless message signed Thompson, warning him to change his chain. To his wireless questions there came no answer. 'When a motor has been made for you,' he said, 'by the best engineers in Great Britain, all of whom want you to win back the speed championship of the world, you do not like to change anything. But I was so obsessed with this warning that I changed the chain, and did 207 miles an hour. "Why did you send me that wireless," I asked Thompson afterwards on returning to London, "and then give no replies to my question." "I could not reply to your wireless messages," he said, "because I knew you would not do it for the reason that I should give. I have been going into Spiritualism, and when I consulted a medium a few days before you sailed, Parry Thomas came through and told me to warn you about the chain. I knew if I told you that you would only laugh."' Segrave tells me that he brought back the chain from America, and thereupon it was tested, because Thompson told him the medium said the chain would break at 170 miles an hour. When it was tested it did break at 174 miles an hour."

I shall consult an oracle or something before the Private Owners Car T.T. next year.

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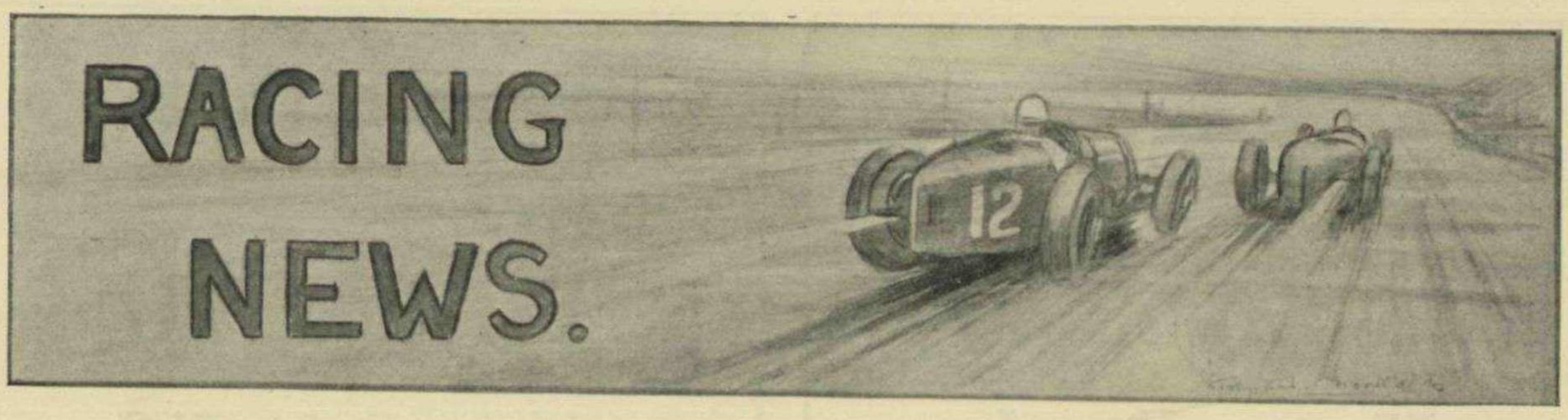
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BRITISH MOTOR CYCLE RACING CLUB.

MEMBERS' GRAND PRIX.

ON Saturday, October 8th, Brooklands presented a very changed aspect to the frequenter of motor cycle meetings. For the second time in history something approaching road-racing conditions was staged on the track, and a very thrilling afternoon's racing was the result.

The course was reminiscent of the R.A.C. Grand Prix course. The start was in the Finishing Straight opposite the Paddock. The competitors were required to negotiate a left and right bend at the end of the straight, continue round the Members' Banking, down the Vickers straight to the Fork, and then up the Finishing straight through a left and right bend opposite the stands, sandbanks being used to form the corners as in the car Grand Prix. All races were over 43 laps, 50 miles approximately.

The weather was perfect, although a slight autumn haze arose towards five o'clock. There were five races and an excellent entry for each, including the names of famous road racers who are strangers on the track. A large but scattered crowd enjoyed what proved to be a spectacular day's sport.

Class A up to 250 c.c.

The first race provided a field of 19 riders of whom the most favoured were Handley (Rex Acme) Colgan (Cotten), Ashby (O.K. Supreme) and Staniland (Excelsior).

The start was good, Eggleton (O.K. Supreme) being the only slow starter. When the first men passed the stands after the first lap, the order was Fernihough (Zenith), Stainland, Archer (New Imperial) and Clark (New Imperial).

In the next lap Stainland led, but it was seen that Handley was coming up rapidly. He led on the third lap, and from then on he lengthened his lead lap by lap. He was riding like a machine, gaining yards on his pursuers at each corner. Ashby was now travelling well, and running through the fold about a lap and a half behind. On lap 22 Colgan fell out and Fernihough came into second place, which he presently lost to Ashby.

Handley finished easily, with Ashby and Fernihough well behind.

RESULTS :—

1st, W. L. Handley (248 Rex Acme), 50.38 m.p.h.
2nd, C. T. Ashby (246 O.K. Supreme).
3rd, E. C. Fernihough (246 Zenith).

Class B up to 350 c.c.

The second race was eagerly awaited, and proved very fast. C. W. Johnston (Cotton) was a non-starter. This narrowed things down, and the issue seemed to lie between Handley Simpson, Dixon and Hicks.

Handley was the leader at the first corner but Dodson (Sunbeam) and Simpson (A.J.S.) overtook him on the Vickers Straight, and lead him by the stands. Hicks (Velocette) followed on top of them. The pace was terrific, the cornering hectic, and the acceleration lurid.

On lap 3 Handley made a mistake at the Fork and crashed, injuring his hand. This left matters between Simpson, Hicks, and Hamilton. Dixon was running about seventh on his H.R.D.

Simpson lapped steadily, cornering in real T.T. style, widening his lead. Dixon was slow, and his brakes squeaked at every application. Hicks was riding well, and cornering fast.

A cloud of smoke from behind the hill proved to be the pyre of R. A. Jones' H.R.D.

B. L. Hieatt (Cotton) was now seen to be moving up.

On the 18th lap Simpson overtook Dixon, Willis retired and Hieatt moved up one. Baker (Velocette) was hard on the trail of Hicks, and going very fast, but dropped out on lap 38.

Simpson crossed the line within a few yards of lapping Dixon again.

RESULTS :—

1st, J. H. Simpson (348 A.J.S.), 55.56.
2nd, F. G. Hicks (348 Velocette).
3rd, B. L. Hieatt (348 Cotton).

Class C up to 500 c.c.

The field for this race included such men as Dixon, Bennett, Craig and Woods and promised to be a terrific struggle. Woods and Craig rode camshaft Nortons, and Tommy Spann a camshaft A.J.S.

Bullus (New Hudson) led on lap 1, bunched with Sissons (Ariel), Cobbold (Sunbeam), Bennett, Woods and Craig. The pace was terrific. Bullus lost the lead about lap 5, owing to his brakes. Braidwood, having ridden fast and steadily retired with gear box trouble.

Woods' cornering was spectacular, and Sissons, especially at the Members turn,was very wild, but fast. Bennett was now leading Cobbold, with Sissons on his astonishingly fast Ariel third, this being the finishing

RACING NEWS—continued.



E. M. THOMAS (REX-ACME) AND C. J. P. DODSON (SUNBEAM) LEADING A STRING OF COMPETITORS AT THE SANDBANK TURN.

order. Hicks on the 350 Velocette doing well and finishing sixth.

RESULTS :—

1st, A. Bennett (490 Norton), 57.80 m.p.h.
2nd, G. C. Cobbold (493 Sunbeam).
3rd, F. Sissons (497 Ariel).

Class B/S. 350 Sidecars and Class F, 600 Sidecars.

This race was run concurrently, the 350's being distinguished by the passengers' yellow jerseys.

These sidecar races were easily the most spectacular and thrilling of the day. The passengers' antics being quite in keeping with the best T.T. traditions.

As the field arrived at the stand sandbanks at the end of lap 1, a melée ensued, the leader (Driscoll) charging the bank owing to the passenger failing in his gymnastics. Mathews (Norton) ran into the back of him, and confusion reigned.

Staniland took the lead, followed by Tucker (Norton), then two 350's—Crowther-Smith (Rex-Acme) and Pellat (O.K. Supreme).

On lap 4, Tucker's passenger in a super-antic fell clean out of his chair, while Tucker, pleased with the new acceleration, charged ahead.

Parker was now going all out, lifting his sidecar higher every time he passed the stand.

Crowther-Smith, meanwhile, charged the fence by the Fork, giving the lead to Pellat.

Parker's Douglas developed plug trouble, Tucker was out, giving the race to Staniland.

Crowther-Smith, dispensing with his useless brakes, passed Pellat for a while by useing his gear-box, but stopped again with plug-trouble.

Pellat finished two laps ahead ; there were no finishers within the time limit in the 600c.c. class except the winner.

RESULTS :—

350 c.c. :

1st, L. J. Pellat (O.K. Supreme), 42.94 m.p.h.
2nd, E. S. Prestwhich (346 Coventry Eagle).
3rd, C. V. Crowther-Smith (348 Rex-Acme).

600 c.c. :

1st, C. S. Staniland (588 Norton), 44.97 m.p.h.



THE LINE UP FOR 250 C.C. CLASS. HANDLEY'S MACHINE (NO. 21) WHO ULTIMATELY WON, IS ON THE RIGHT.

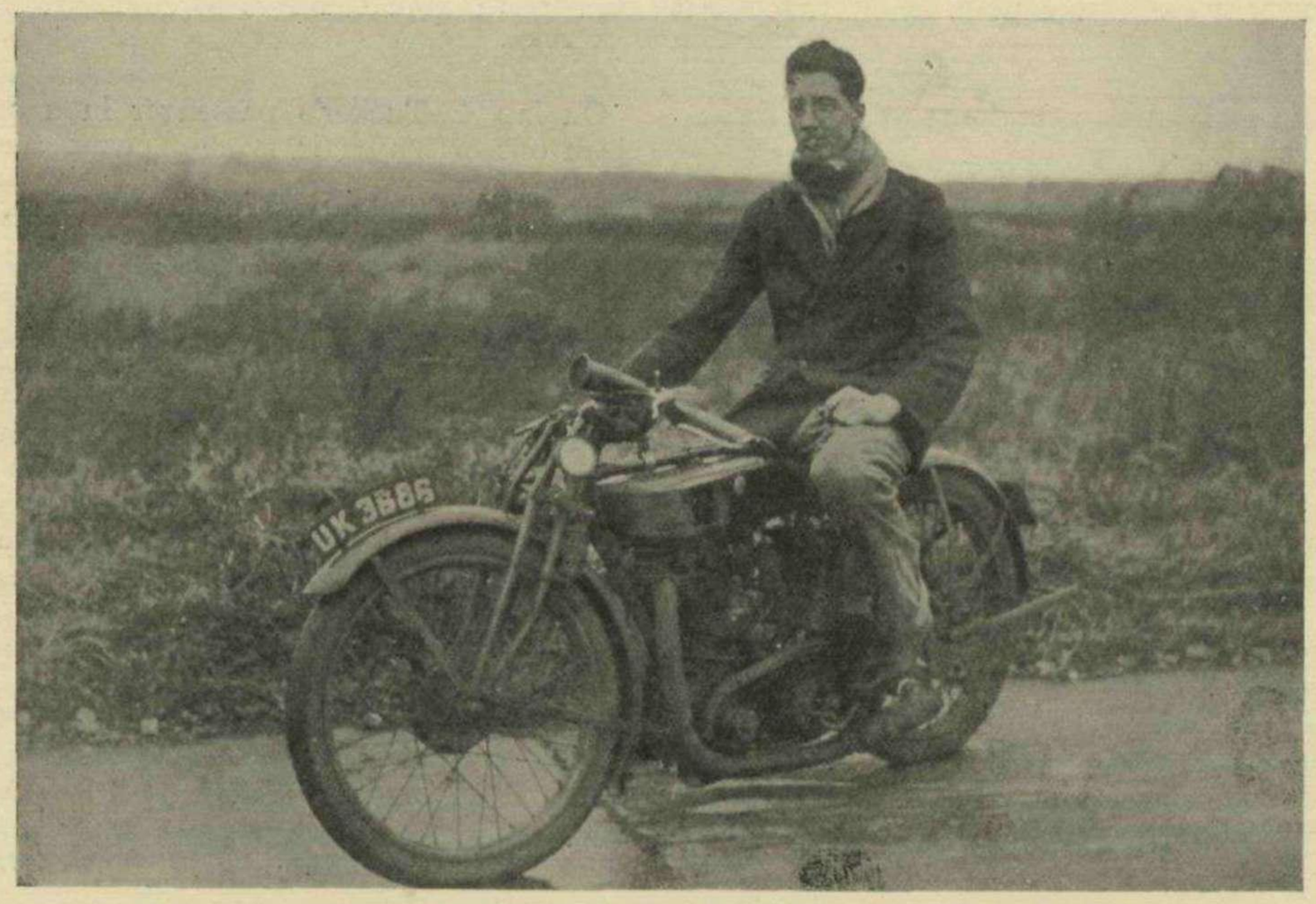
SPORTING MACHINES ON TEST.

THE MODEL 90 SUNBEAM.

By THE ASSISTANT EDITOR.

IT has been our duty to ride many sports models, and our pleasure to ride a few. The 493 c.c. Sunbeam definitely falls in the latter category.

The impression we had on first getting astride the machine was one of complete controlability, the saddle position being extremely low and comfortable. For a machine of considerable weight, the feeling is one of great compactness.



THE EXTREMELY COMPACT APPEARANCE OF THE "MODEL 90" 493 C.C. SUNBEAM.

The machine we took over was actually a T.T. reserve, and as such, we expected a certain amount of intractability. The compression ratio of the two-port engine was in the neighbourhood of seven to one, while the low gear was about eight to one, factors which do not make for extreme docility at low speeds. In addition a further embarrassment was the twist grip control, a method we had hitherto never tried.

Despite all this, however, we were able to start the engine at Euston Station and drive it out of Town to our home in the country twenty-five miles away, with perfect ease. In traffic certainly, a certain amount of dexterity is required to keep the engine revving, as the machine is liable to spit and bang at low engine speeds. This, however, is probably due to the carburetter setting, and could be cured by adjustment.

On the open road, however, the machine came into its own. Our way lay over one of the new bye-pass roads, and here we opened out a little, to get the feel of the machine at reasonable speeds.

The piston, which slaps steadily up to about fifty or sixty miles an hour, grew silent, the deep exhaust note rose slightly, and the road began to fly from under our wheels. At half throttle we seemed to be doing a gentle seventy or so, the machine rock-steady under us.

Further on, an open stretch of bye-pass tempted us yet further, and we opened flat out. A speedometer was not fitted to this machine, but the acceleration from seventy onwards was tremendous, and far in advance of any other sports model we have ever tried, except a certain big twin.

The engine appeared to be accelerating from twenty miles an hour, so terrific was the increase in speed. We must have been travelling around eighty-five, when we shot on to a section of road which had recently been "up."

We had not tightened either the steering damper or shock absorbers, and with the extreme springiness of

SPORTING MACHINES ON TEST—continued.

the Terry saddle, we leapt and Charlestoned about a hundred yards, before regaining equanimity and equilibrium.

Throughout this little exhibition of what not to do, the machine had complete control, we simply hung on with our hands, having lost the footrests. But with the machine controlling *us*, all was well, and we were never in any danger of crashing. There was nothing like a wobble, but simply a pitching and tossing fore and aft motion, and this would probably not have happened, if we had made intelligent use of the damper and shock absorbers.

The steering damper is of interest, as it can be adjusted while in motion with one finger, so gentle is the action required. The front fork shock absorbers are also provided with a finger nut for adjustment from the saddle, very useful items on a fast machine.

We next rode the machine across country in pouring rain and over rain sodden lanes, deep with the fallen leaves and thick mud of Autumn. Despite these conditions, we were able to proceed at speed, without the slightest suspicion of a skid.

Only once indeed, did we have this, and that was owning to forgetfulness and a sudden jerk open of the throttle. Although in top gear, the rear wheel waltzed in a thrilling manner, but we successfully retained our seat.

Having an appointment at Brooklands next day, we decided to use the Sunbeam to keep it, and set off over treacherous roads amid a drizzle of rain.

Already confident in the road holding qualities of the Sunbeam, we were able to maintain a high average, and by judicious use of steering damper and shock absorbers, successfully negotiated some roads notorious for their badness, notably the road from Richmansworth to Denham, and across the Uxbridge-Slough road to Colnbrook.

On this latter section, again neglecting the shock absorbers, we succeeded in denting the front mudguard with the bottom of the forks, while striking a pot-hole two inches deep at about forty miles an hour. The shock, which would have sent us over the handle bars of some machines we could mention, did not disturb the steering in the least.

We arrived at the Track very wet, for the model 90 was equipped with T.T. mudguards as well as a T.T. engine. After transacting our business, we took a run round the track, and then essayed a climb of the test hill.

We changed from bottom to middle as we crossed the line at the foot, and despite this, the machine accelerated all the way to the top, to such purpose indeed, that we executed a hair raising leap into the air, at the summit moving at about forty miles an hour.

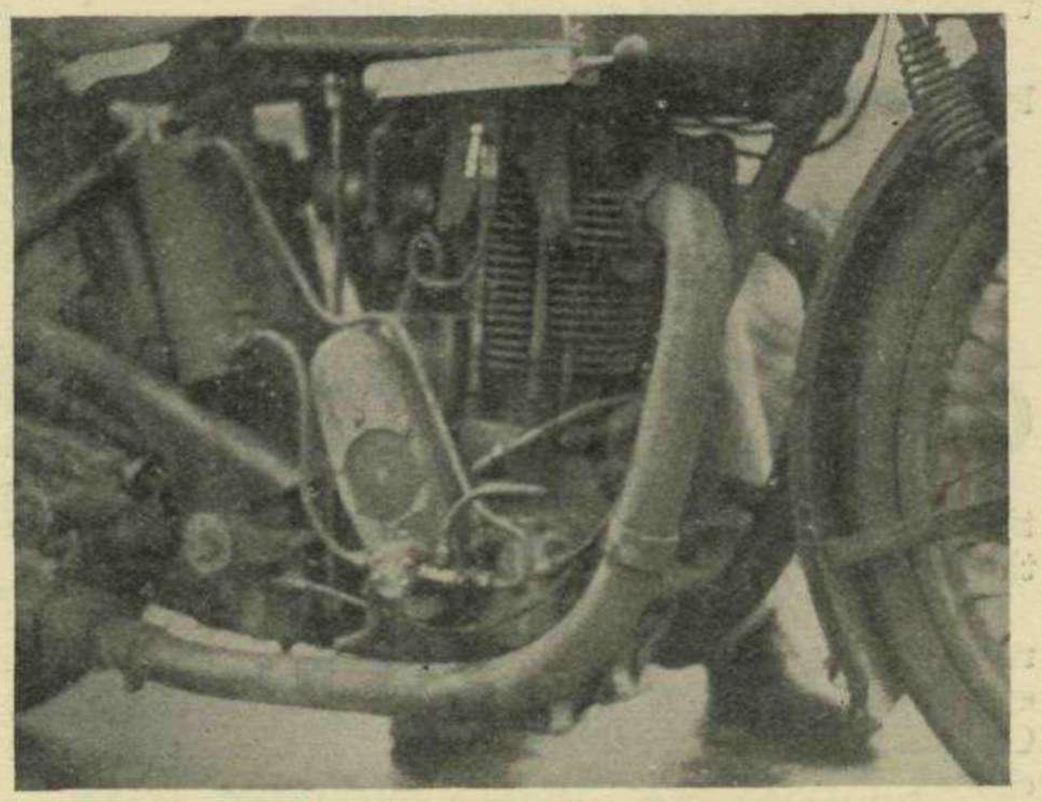
We landed in complete safety again, a good bit further on, thus demonstrating again, the extremely excellent steering of the machine.

On the track itself, we were unable to get the best out of the engine, owing to shocking weather conditions, with rain and a high, gusty wind blowing. Knee grips were not fitted to this particular machine, and we felt their lack on the bumps of the track, which any who knows Brooklands will appreciate.

From what we saw of the machine, we should judge ninety miles an hour quite within the scope of the engine. Seventy and eighty are comparatively easy of attainment on any open bit of road, and at these speeds the engine is perfectly happy, more so indeed than at fifteen or twenty.

One adjustment we made, and this was to the footrests. These we moved to a higher position, owing to the excellent shocks we sustained from our very wet trench coat making contact with the plug top !

The finish of Sunbeam products is world famous, and needs no comment beyond saying that it is superlative. Thought in design is obvious in the most cursory glance. Instant adjustment by milled wheels is provided for both front and rear brakes. The front brake, by the way, was the most efficient we have ever known, the slightest touch to the inverted lever alone being necessary, a welcome change after the frenzied clutch necessary to *feel* the front brake at all on many machines.



A CLOSE-UP OF THE ENGINE. NOTE THE HEAVILY FINNED EXHAUST PORTS.

The valve gear was reasonably quiet, an item of interest being the " grass-hopper " valve springs employed. Lubrication is effected by dry sump, an oil tank being situated under the saddle, and provided with an auxiliary pump actuated by a lever on the handle-bar.

In the production model cable mechanism is employed for the rear brake, and a rod for the front, and a stand is provided for the front wheel.

Twin silencers are very effective and give a very deep, mellow note, which could not in any way be termed noisy.

Altogether, the machine approximates to the sportsman's ideal, being very fast, with tremendous acceleration, very stable at speed, yet controllable at slow speeds.

A few points of criticism, all of them trivial. The fuel consumption is on the high side, although this is of course to be expected with an ultra-efficient engine of this sort, driven as fast as this one was. The consumption

SPORTING MACHINES ON TEST—continued.

and slow running could both be greatly improved by a little judicious carburetter tuning.

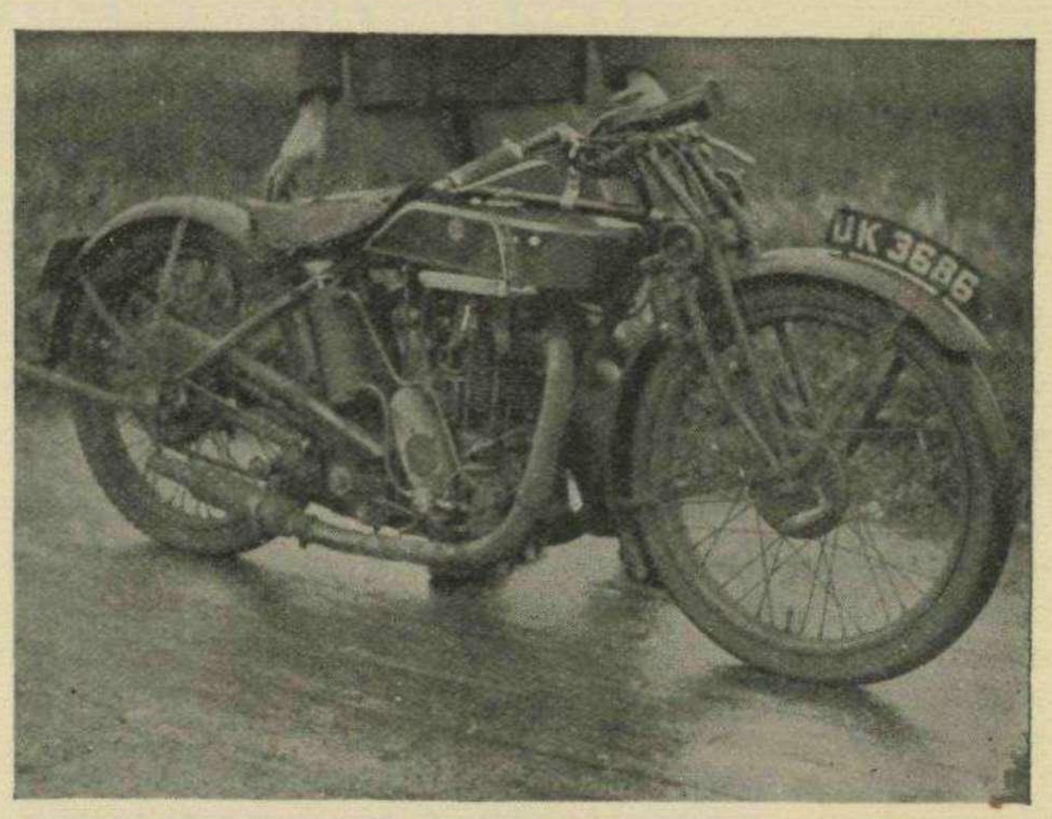
Oil consumption, owing to the dry sump system, appeared to be practically *nil*.

The only breakages we suffered were the bolt anchoring the shock absorber, which snapped on hitting the king of all pot-holes at speed, and the fracture of the nipple between the float chamber and petrol pipe.

As these breakages were both due to excessive speed and excessive road surface, they may be dismissed as negligible.

Apart from these points the Model 90 presents a remarkable machine capable of displaying a rear number plate to almost anything on the road to-day. There is certainly no car in existence, and one or two motor cycles only, which could equal the Sunbeam's performance over any distance. The Model 90 has to be ridden to be believed. It is almost incredible.

The price of this wonderful machine with 1928 improvements will be 100 guineas.



ANOTHER VIEW OF THE MODEL 90. THE T.T. TYPE SHOCK-ABSORBER IS CLEARLY SEEN.

THE M.C.C. HIGH SPEED TRIAL.
Interesting Event in Appalling Weather.

ON Saturday, October 22nd, the Motor Cycling Club staged their High Speed Reliability Trial, and received aid from the Clerk of the Weather, as the rain either poured down, or came down in torrents the whole time.

In spite of the weather, non-starters were almost non-existent, and to the observer, the trial was more exciting than usual, owing to the state of the track. Crashes were comparatively frequent in the motor cycle classes.

Each event was to last an hour, and the first event began at 10.30 a.m. in a drizzle, sixty motor cycles starting. R. E. Humphries (Gillet) came off in the first two hundred yards, which he repeated a minute later.

A remarkable thing was the number of exhaust systems which disintegrated, and there was quite a trail of tool bags, lamps, and assorted bits all round the track.

No tremendous speeds were attained, though some 250 c.c. machines produced astonishing speed.

Events two and three were run off in steady rain, the third (and last motor cycle event) being marked by J. W. Beare (490 Zenith) crashing spectacularly at the Fork, and continuing at once!

Seven Morgans performed amid the two wheelers (and a few sidecars) in Event 2, with two Bugattis and a big Hotchkiss.

The classes were very mixed up, owing to the very large entry, and track regulations of 60 vehicles only to be on the track at once. Hence some cars run among the motor cycles, some motor cycles among the cars, and side cars almost anywhere.

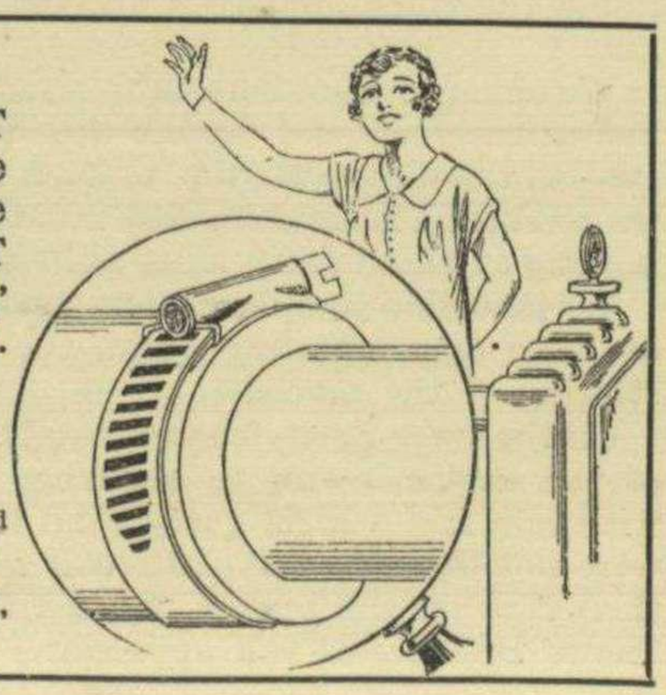
The 4th Trial was an all-car one, except for a solitary motor cyclist. Quite a number of hoods were kept up, as the rain teemed down. The performance of a Riley Nine Saloon was very noteworthy, in this event, and came home first in its class, completing 21 laps in the hour.

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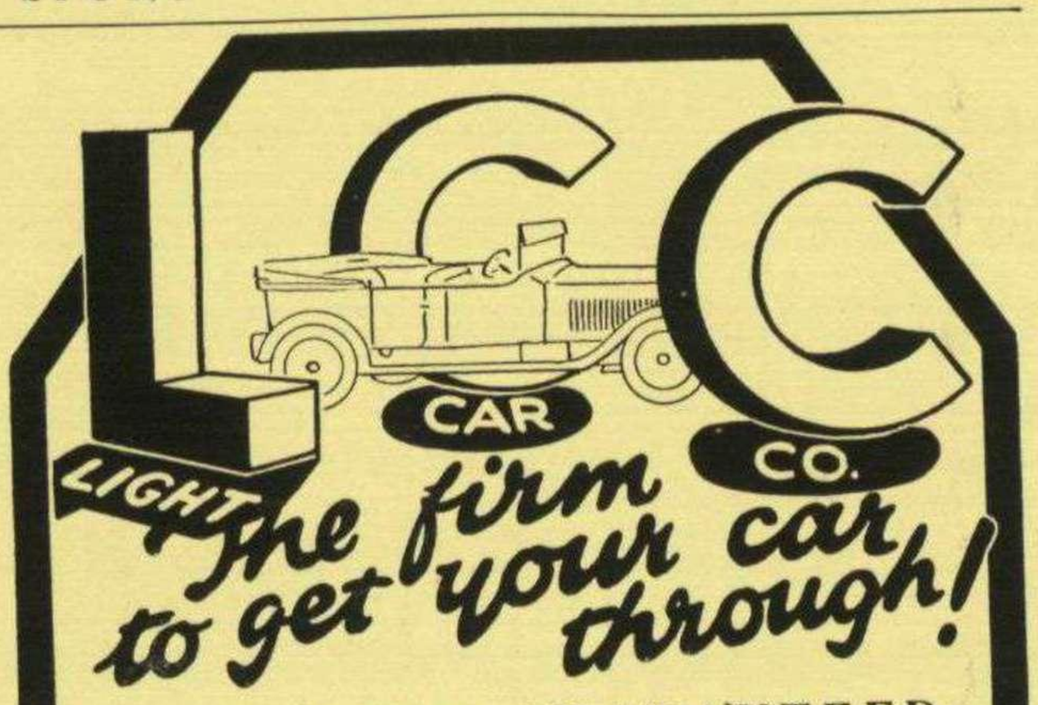
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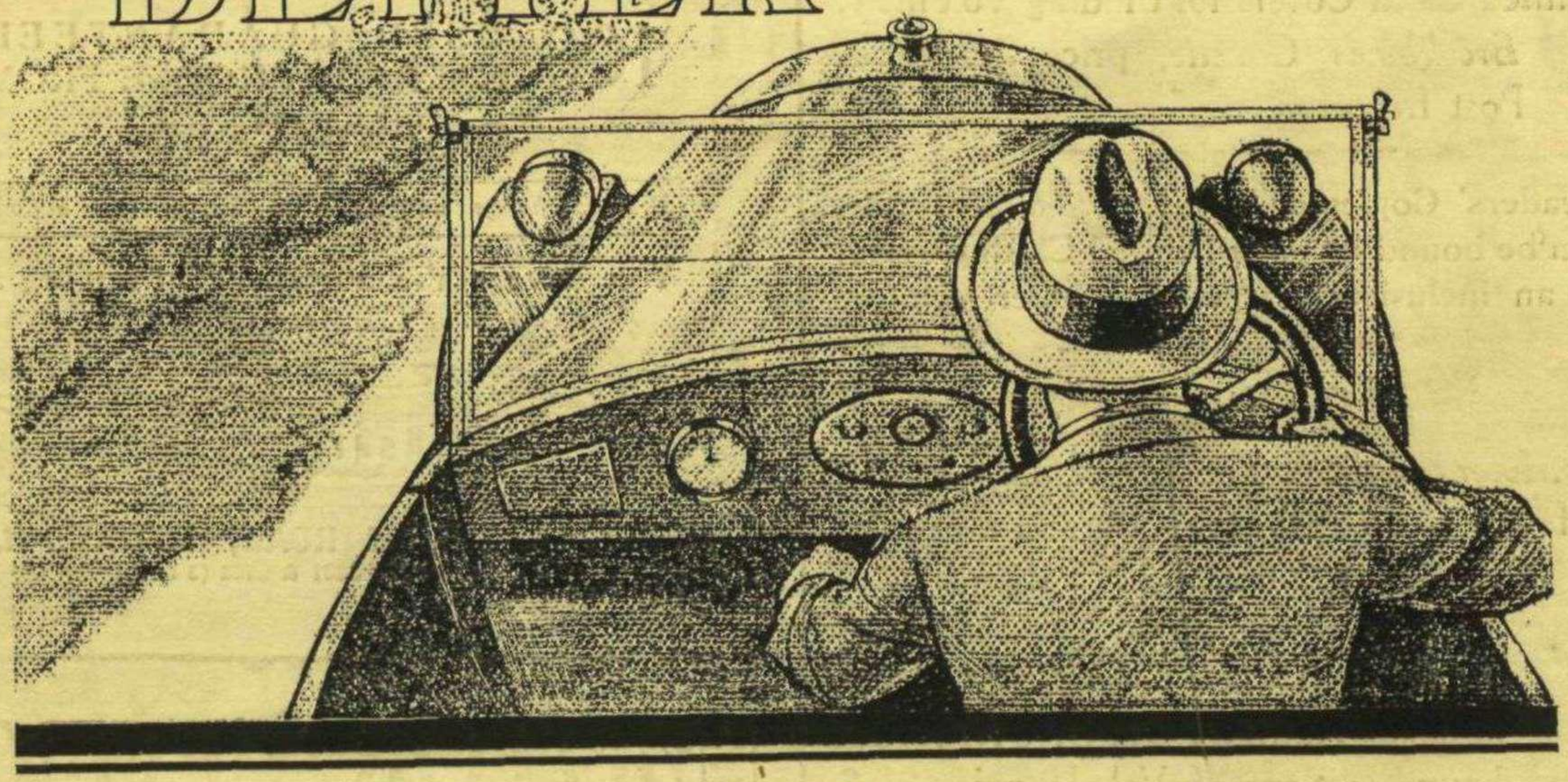
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