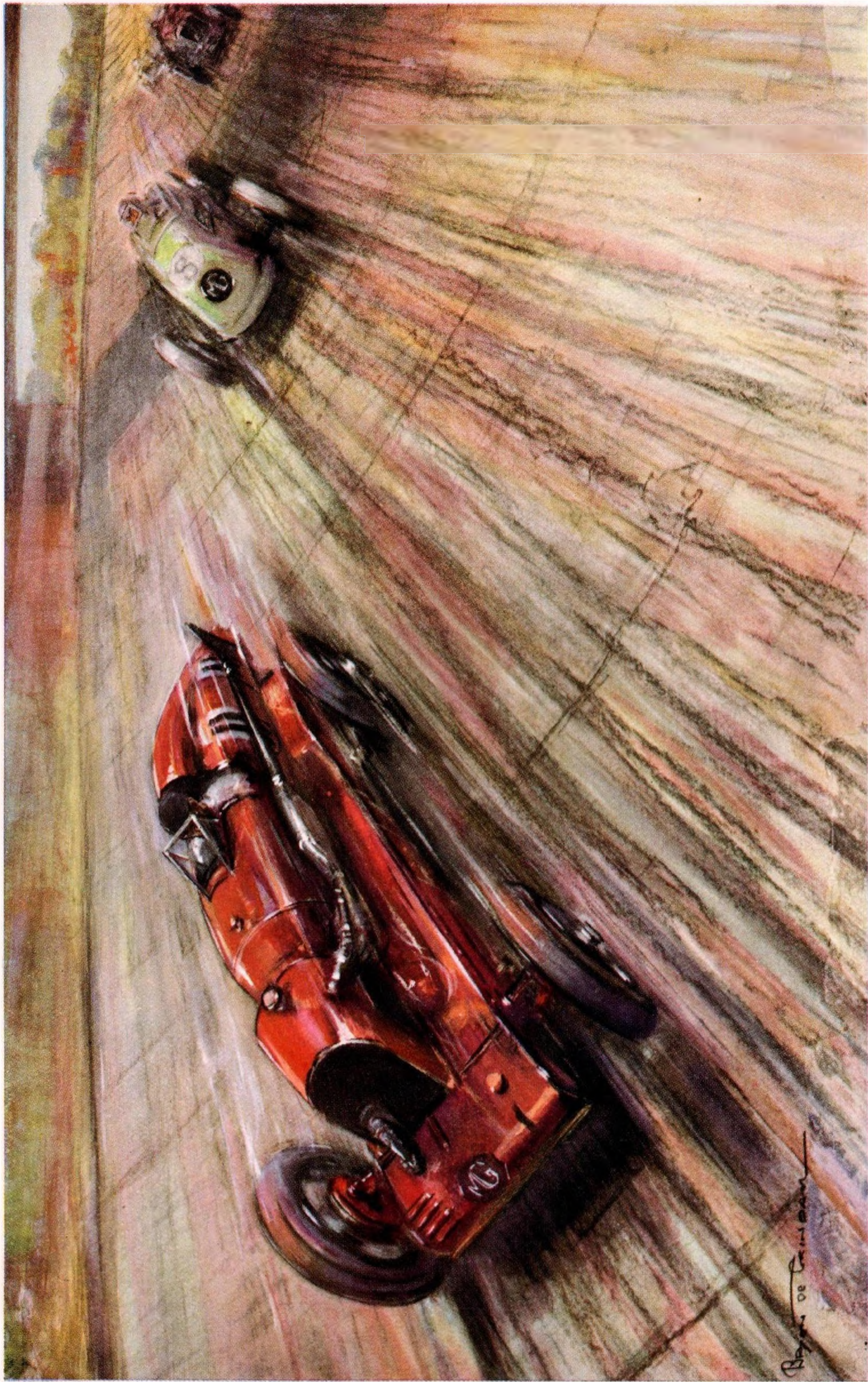


COMBAT

A
Motor Racing
History

LYNDON



R. T. Horton's duel with Captain G. E. T. Eyston in the B.R.D.C. 500 Miles Race of 1932



COMBAT

A
MOTOR RACING
HISTORY

By BARRÉ LYNDON

With an Interlude and Epilogue by

THE RIGHT HON. THE
EARL HOWE

P.C., C.B.E., V.D.

LONDON
WILLIAM HEINEMANN LTD

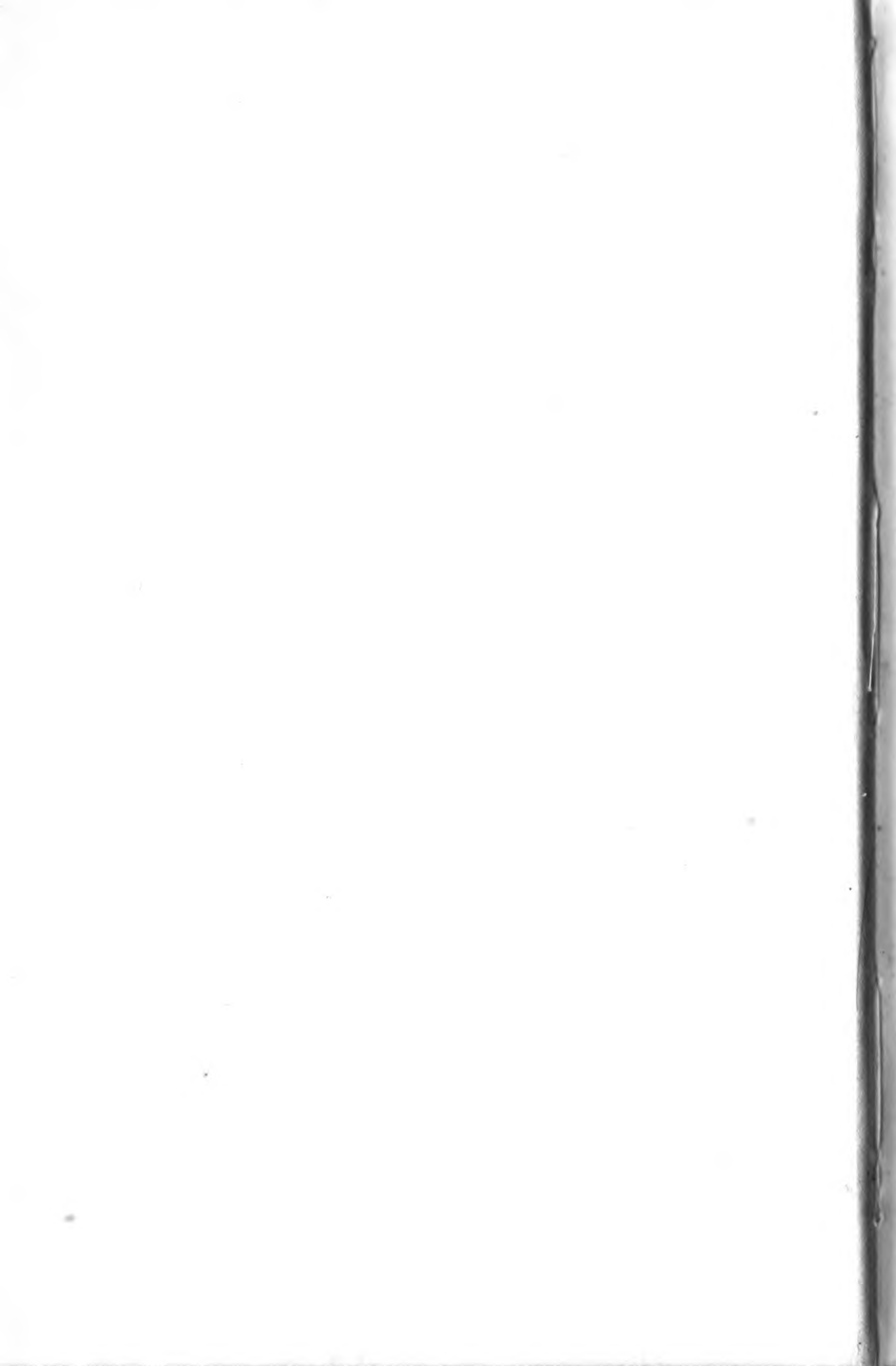


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THE FIRST CHAPTER

THE FLAG FALLS

§ I

NEARLY seven centuries ago masons built a wall around Oxford. Where the rampart formed an angle above the River Cherwell they placed a great bastion, commanding the meadows which sloped down to the stream.

Four hundred years later Roundhead troopers skirmished across the fields and Royalist muskets thudded from the bastion's loopholes, so that many a man died in the ditch outside the wall.

With the passing of time the ditch was filled in and buildings were erected under the ramparts. Two hundred and eighty years after the last Royalist musket had silenced, a fast-looking car stood where a workshop was set in the very shadow of the bastion.

The machine was the first that its designer had ever completely constructed. He had built it especially to take part in as strenuous a test as could well be devised, and the car was due to start in twenty-four hours—but it sagged forlornly, with a broken frame.

This was not very long ago, measured by actual time, but the years between April, 1925, and the present day must be computed as time is known in the world of motor-racing, where events crowd fast and men live the pace of the machines they drive.

Although the car was not a racing machine, it was the designer's Number One. It hinted at his secret,

unvoiced ambition to carry a challenge into the realm of speed. Imperfectly it represented an ideal, and behind it he could see the shadowy shapes of powerful and infinitely faster machines that he hoped some day to build.

No Royalist garrison, faced by a surprise assault on the bastion, could have been more dismayed than the man who gazed at the crippled car.

The broken frame made the stumpy, rounded tail droop sullenly towards one rear wheel, and the fracture offered a foretaste of the blows that motor-racing can bring.

The damage had been done during the car's final tests, and the mishap came as an unfortunate climax to weeks of patient, careful work. The time in which to effect such a major repair was so short that the designer was faced with a clear-cut issue; he could abandon his plans, accepting defeat, or he could fight back by filling every available minute with furious work.

He chose to fight and, in the hours that followed, he laid the corner-stone of his career—a career which was to be filled with the peculiar triumphs known only to those who gain victory in the smoke and dust of road circuits and racing tracks.

§ 2

The workshop was attached to one of a group of garages which supplied new cars and serviced old ones, and was engaged in all the normal business of a similar, big-city organization.

The designer acted as general manager, but he had never been content to give his attention solely to the

THE FLAG FALLS

ordinary detail work of his business. He possessed natural energy and some measure of creative ability, and it is these attributes which produce engineers and builders, as well as artists and writers. A man is creative whether he works with paints or metal, pen or mortar.

Long before his Number One turned a wheel he had been constructing sports bodies for various cars, finally giving his attention to one particular make.

It was a natural step to go a little further and coax enhanced performance from the chassis upon which he built. Even under the comparatively mild tuning which he at first gave them, these cars attracted attention, and he found himself with a growing venture developing beside his normal garage routine.

Then something occurred which directly influenced the construction of Number One. It happened a long way off, and it was some time before the event produced any result.

Quite quietly, the Automobile Club de l'Ouest organized their first Grand Prix d'Endurance on the permanent road circuit just outside Le Mans, in north-west France. Entries were to run for a full two rounds of the clock.

It was the first twenty-four-hour event to be held in France, and was the first big race of its type in the world. It has a claim to real importance because it marked the beginning of a definite change in motor-racing.

The promoters were anything but sure of success. They feared that spectators might grow bored, so they arranged a firework display near the tribunes, which were flanked by a dance-hall with a jazz band. To lend additional interest, an American cocktail bar was transported from Paris, while wireless concerts from the Eiffel Tower were relayed.

COMBAT

The race started at four o'clock on a Saturday afternoon—in a shower of hail. Rain fell for the first four hours, as if to damp the hopes of the French officials still more.

They need not have doubted success, because the spectacle of sports cars at grips was one that held attention from the fall of the flag. Owners of cars have ever been prone to boast about the capabilities of the machines they drive; here were models, twin to their own, settling long-drawn arguments as they actually demonstrated their capabilities on the most famous road circuit in Europe.

When darkness fell, three-litre cars, which had been asked to lap at 35 m.p.h., were doing a mile a minute. All machines set up quite unexpected speeds, providing a race so satisfying that immediately plans were made to repeat it the following year.

The second event was a race to destruction. Only fourteen cars finished out of forty-one starters—and the comment which the event aroused was not missed by the man in Oxford.

He knew that manufacturers were finding it all but impossible to meet the cost of building special machines at fabulous expense for true Grand Prix events, which are relics of the days when nation raced against nation. Firms founded on a reputation for speed welcomed the chance to show their mettle in a test which required only the super-tuning of their normal products to make them ready for the starting line.

As arrangements were being made to duplicate the successful Le Mans event, it was reasonable to conclude that interest in specially-built racing machines might be eclipsed, if only temporarily, and future battles would be largely between sports cars.

THE FLAG FALLS

Apart from this, the designer of Number One had an idea of his own about motor-racing: he believed that the chivalrous amateur was essential to the sport. He knew, from his own experience, that there existed a great company of enthusiastic men whose one ambition was to sit behind the wheel of a racing car.

They could not satisfy this ambition for a variety of reasons, the chief of which was that it was almost impossible to buy an up-to-date machine, quite apart from its prohibitive cost.

In America, there certainly existed enormously expensive Millers and Duesenbergs, but these were intended primarily for professional board-track work, and would not stand up to a race on the road without considerable alteration.

In Europe, racing machines were built almost solely for entry by the firms which designed them, and only when they reached the second-hand market did they become available. They then had very little chance against more modern cars.

On the other hand, if a man were wealthy enough to commission a firm with a racing reputation to build him a car, he would probably find himself running against a team from the works itself, and the professional machines would automatically be tuned to greater efficiency than his own mount.

Le Mans, however, brought the dawn of races for cars which did not require to be specially built. The owner of any sports model could enter, relying upon his own mechanical knowledge to tune his machine. Or, if he lacked this, he could engage the manufacturer to "hot up" the car for him, and he need not fear works entries because there was a definite limit, set down in the race regulations, to the preparatory work that could be done.

In view of all this, it was obvious that keen amateur racing drivers would look around for machines which they could afford to buy, and enter. The consolidation of these opinions and ideas produced Number One.

The car was entirely experimental, and the man who built it knew that he could not hope to construct an ideal machine immediately, nor did he wish to do so.

His aim was to produce a car which would first be tested by sports drivers in trial runs, and in the events which form the fringe of true racing. Out of this experience, he hoped that it might be possible to offer a machine capable of holding its own against cars of great reputation.

As has already been said, he was tuning up a particular make of car and fitting it with a sports body; thus, in some measure, he had already started along the road that he wanted to follow. He now took one of these chassis and stripped it right down, sweeping the frame over the rear axle, to gain low lines and added stability. He rebuilt the engine, planned a light body with staggered seating, then entered for the most searching available trial—to return from his last test run with a broken frame.

§ 3

Most worth-while achievements have small beginnings which appear banal, because they lack the cumulative romance of their endings.

There was nothing banal about that broken frame and the way in which it formed the beginning of a career. It provided an ugly obstacle which would take a long time to surmount if, indeed, it could be overcome at all.

THE FLAG FALLS

Some real tenacity of purpose is suggested by the way in which the designer of the car started repairs, and it presaged the way he would face misadventures to the faster machines he was one day to build.

The man was Cecil Kimber, and the car had been designed from the material in an ordinary Morris-Oxford chassis of that period. The organization of which he had charge was known as the Morris Garages, which was the original enterprise founded by Sir William Morris and, although still carried on by him, it was now only a subsidiary company to the great works which he had created.

Cecil Kimber had been placing his sports bodies on cars from Sir William's factory, marking the completed machines as the produce of Morris Garages, which name became contracted to "M.G."—but he had never yet put into a car the thought and labour behind Number One, the real forerunner of modern M.G.s.

It was on the eve of Good Friday when the fracture was discovered, and the only feasible repair was to shape plates to cover the break. "Kim" had with him a little group of men who reflected his own enthusiasm; they set aside all holiday thoughts and remained behind to help.

All through the night, and for most of Good Friday, Kim worked with them. Late in the day the job was done, and the first M.G. drove away in its first contest—the London—Land's End trial.

This run is one of the most popular known to sporting drivers. Particularly at that time, it demanded a good car and a good man to complete the trial successfully. The chief hazards were the notorious gradients of Porlock Hill and Bluehills Mine, Lynton and Beggars' Roost, with their sharp, ugly corners and indifferent surfaces.

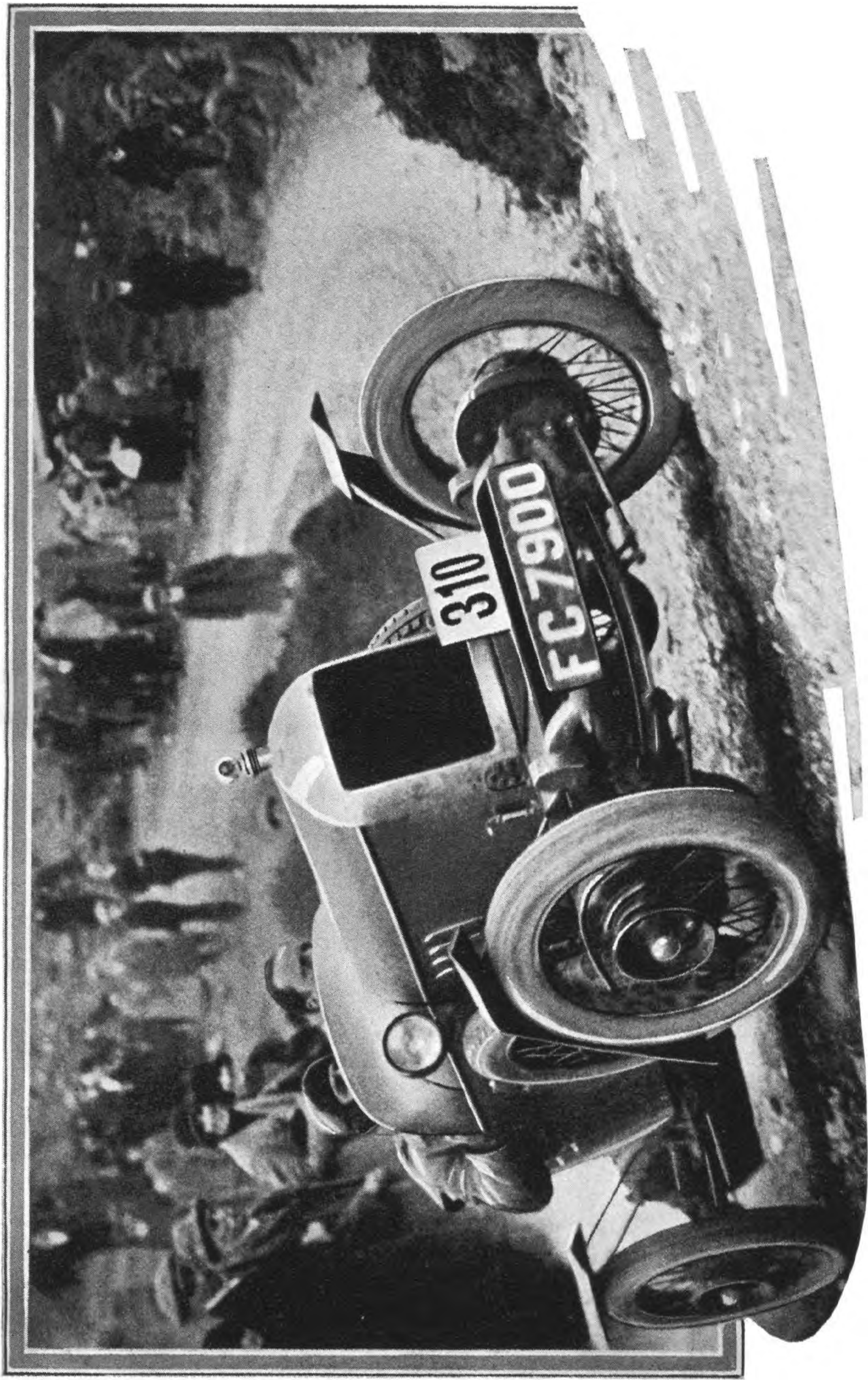
On the way to the start at Slough, Kim pushed the speedometer needle past 75 m.p.h., just to satisfy himself that the car was now sound, and at midnight Number One became a unit in a long line of cars headed westward.

Dawn brought mist which froze on the windscreen, and he became a little uneasy about the stays which held the rakish wings, but the first hill put his heart at ease. He had given the steering a lock like that of a London taxi-cab, solely to cope with hairpin bends, and the machine soared up magnificently.

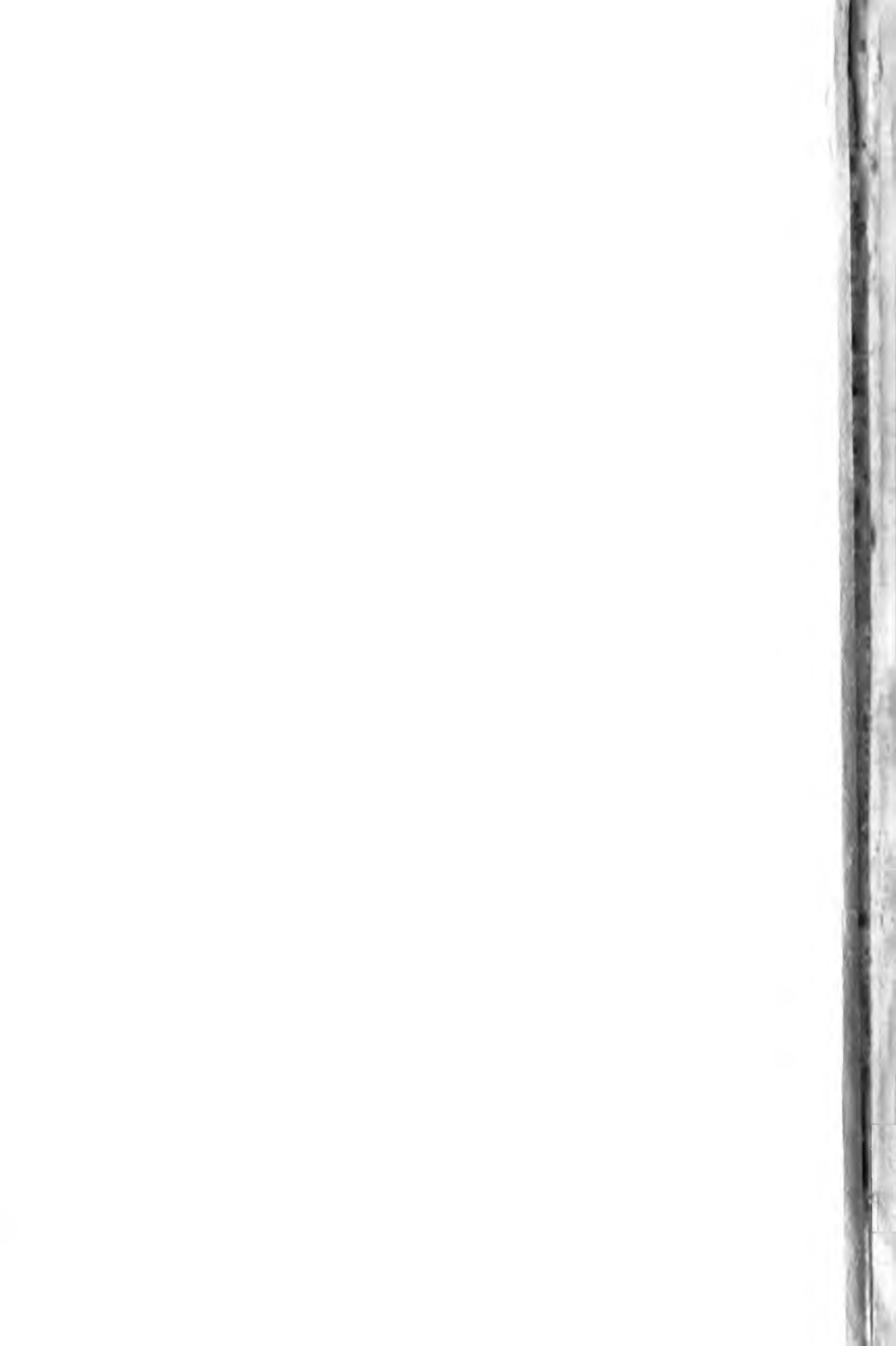
It should then have run on without a hitch, but it did nothing of the kind. Plug trouble and obscure difficulties with the carburettor brought delays which culminated in a puncture that occurred at the top of Beggars' Roost Hill. The resultant check made really hectic driving necessary to the next control, and Kim picked up a full hour over the fifty-odd miles which lay between the summit of the hill and Launceston. That effort was a climax to almost superhuman work between the controls, and brought its reward when the car eventually reached the hostelry which marked Land's End—winning a "gold."

The medal meant much to Kim—more, perhaps, than anything won on wheels could do again—and it gave him the incentive to pursue his ideal. He continued to build special bodies for his M.G. cars, but now he put greater work into them than ever before, modelling them more and more on Number One, and developing the light sports bodies he had designed.

These bodies of sleek aluminium, picked out with rich colours, were graceful and attractive, while their lack of weight increased the performance of the machines themselves. The demand which they created brought



Old 'Number One' attacking Blue Hills Mine hill, with Cecil Kimber at the wheel



forth frantic days—and nights—when Kim and his men worked against time to complete promised deliveries, and soon the little workshop under the bastion had to be abandoned.

In the heart of Oxford, down a narrow turning now known as Pusey Lane, he found some stables. They were dark and dilapidated, with rusted hay-racks in the stalls and roofing which dribbled water at every shower of rain. But the stalls had the floor space that he needed, and a shed at the end promised possibilities as a machine-shop. He began to build his cars where horses had once stamped, while in the machine-shop he installed drills and tools from his garage at home.

The reek of oil replaced the scent of hay, and the jingle of harness was succeeded by the blare of exhausts and the thunder of engines. This evoked complaints from the tenants of neighbouring buildings, but the noise was pleasant to the enthusiastic motorists who found their way to the stables, seeking the man who was building cars solely for them.

The worn roof was repaired and extended. It became necessary to take over another stable alongside, but this soon proved inadequate and Kim had to find still larger premises. He secured them and, in some ways, they were even stranger than the abandoned stables.

At this time he was working in rather an odd way. He was still managing the Morris Garages, which remained a subsidiary company to the great motor industry which Sir William was building. Kim was buying chassis from the parent firm, towing them down to Pusey Lane, and rebuilding them with all the improvements which made a good car still better.

His enterprise was, therefore, a kind of unofficial sports department to the greater organization. It was, at the

same time, almost a Cinderella creation of which no one at the big works took a great deal of notice. It came as something of a surprise to know that it had outgrown its dingy quarters, and when Kim announced that he needed more room, he was offered space at a radiator works which Sir William was then constructing.

This specialised factory stood at Bainton Road, Oxford, and it overlooked a brick-field from which had been dug material for most of the buildings in the north of Oxford. The site had been derelict for some time; the clay had long since become exhausted and water had collected to form a great pool. Kim had discovered the derelict ground near Bainton Road, and had suggested that it held possibilities, as a result of which the radiator works were erected there and, as some sort of return for discovering the site, he was given space in the new factory.

Workmen were still extending it when he moved in, and as fast as one bay was completed another was begun, partly to accommodate the growing output of Morris radiators and partly to make room for Kim and his cars. At first he had half a bay, with his machine-shop in one corner. Presently he took over a whole bay, wresting a newly-built extension from the radiator works.

With the passing months, his M.G. cars made their presence felt in trials and test runs and competitions, and his production increased. He was obliged constantly to extend his floor-space, while the radiators appeared to be striving ceaselessly to edge him out of their factory altogether. Despite this, he managed to obtain a second bay, by which time the fame of Le Mans had grown greater, and interest in that type of race spread—as he had foreseen.

THE FLAG FALLS

It was when he occupied two bays—and the radiator factory had been built out to its limit—that the Essex Motor Club held their first Six-Hour Endurance Race at Brooklands, in May, 1927. This event was akin to a minor Le Mans, with an entry of thirty-two cars, almost all of which were handled by keen amateur drivers.

It was named as possibly the finest race that Brooklands had seen to that date, but no M.G. car ran, and there was more than one reason for this.

Kim felt that he was not yet ready. He had been working steadily and carefully, and wanted to be as prepared as possible before he allowed a machine to go to the starting line. In any case, even had he believed that he could put up a fight, he would not have raced, because he had resolved never to run his cars for the sake of advertisement.

Later on, he consolidated his position. He held himself ready to render every possible assistance to a driver who owned an M.G., and wanted to race it. Kim would tune the car, deliver it and help with the pit arrangements—but he would never enter a team directly from his works, because that would have been unfair to the amateur drivers of his own *marque*.

Yet, although he did not run at Brooklands in 1927, that year saw the first race in which an M.G. car appeared. This initial assault on the racing world occurred in South America.

§ 4

On October 10th, 1927, the two French airmen, Costes and Le Brix, left Le Bourget aerodrome to attempt a flight across the South Atlantic. They arrived

in Port Matal, Brazil, four days later, and at the end of the month a race meeting was held in their honour on the San Martin autodrome.

The track had been completed only a short time before at the expense of a wealthy Argentinian. The concrete course has a lap of 1 mile, 1,540 yards, and the circuit is laid out in the form of a straight-sided oval, with banked curves, and with straights almost a thousand yards in length.

There are massive stands on the outside of the course, facing the pits, and a two-foot rail guards the inside and the outside of the circuit. The track forms the Brooklands of the Argentine, and stands some twelve miles outside Buenos Aires, not very far from a military academy.

Convoyed by a cavalcade of cars, the airmen arrived at the course and inspected the machines lined up for the first race, scheduled for thirty laps. The entrants were rather mixed and included three Rugby-Durant cars, a Citroën, two Chevrolets, a Senechal, a Fiat and an M.G. driven by Alberto Sanchiz Cires, with a gentleman named Miguel Perez Turner as his mechanic.

Cires was favourite for the event, and at twenty minutes past two, on October 30th, 1927, the order was given to "Baje la bandera!"—the Spanish equivalent of "Drop the flag!" The M.G. shot into the lead from the start, with the rivals of Cires ramming the throttle-pedals down to the floorboards.

David Rodriguez, at the wheel of a Rugby-Durant, sat the M.G.'s tail until the fifth lap, then crashed into what the Argentinians call the *empalizada*, and abandoned his car where it straddled the fence.

This was the only incident in the race, and Cires brought his car home in 57 mins. 35-2/5th secs., which

THE FLAG FALLS

gave him an average speed of a shade under 62 m.p.h.

The idea that an M.G. had proved victorious in the first race in which one had taken part was pleasing to Kim, but he could contemplate the victory only through mists of worry, which arose from the very definite necessity for finding new and more roomy quarters.

Out of the seed sown by Number One had grown a neat organization, precisely on the lines that he had plotted two years before. But he was still learning, and he was still waiting a real opportunity to produce a machine which would truly serve the amateur racing driver.

As yet his productions were only a part of the Morris Garages, which in their turn were an associated company of the ceaselessly growing enterprise of Sir William. Had he wished, Kim might have gone on quietly and comfortably managing the Garages and enjoying the sinecure of a safe position. He was compelled by his natural urge to create, and was determined to finish what he had started; he went to Sir William Morris, proposing that he should build a factory solely for the production of M.G. cars.

"What will it cost?" Sir William asked.

"About ten thousand," Kim replied.

There was a little pause. Sir William looked out of the window, then turned back and nodded.

"All right," he said. "Go ahead!"

The interview lasted less than five minutes, and Kim immediately began work on a factory which was to have eight bays. The electric lighting people proved difficult, and he threatened to install his own plant. They thought that he was bluffing, but he was as good as his word, and built his own lighting into the factory. It was a daring thing to do, but the experience proved

useful when later he again came up against the same sort of thing.

The works finally cost just double the figure he had named, but that mattered little, since he was soon producing cars at twice the rate he had been able to make them at Bainton Road—where the radiator people were stretching their elbows now that he had gone.

He found himself head of what he believed to be the only factory in the world solely devoted to the building of sports machines. Until this time he had based everything upon the standard productions from the Morris works; now their design faded further and further into the background.

By the end of 1928 only the front axle lay-out, gear-box and a few minor details remained unaltered, and it was then that the big Cowley factory brought out a small car, of which Kim acquired a couple of chassis for experimental work.

This was the Morris Minor, and he discovered that it was a machine which could be made to go enormously fast. Modified and redesigned as he could do it, and with alterations to the power unit, the car would not be outrageously expensive, and when he designed a body for the chassis and put the car into production, it evoked instant response.

Four M.G. Midgets made hundred per cent performances in the 1929 London—Land's End trial, following the tracks of Number One, and when 1930 opened, M.G.s began to gain real ground. Whole fleets of Midgets won gold medals in events ranging from a high-speed trial at Brooklands to tests over the well-worn London—Land's End route. In South Africa, at the Mulders Drift hill-climb, and again in the attack on Gap Hill, Singapore, the fast little machines proved their worth.

THE FLAG FALLS

Kim had evolved a car which suited the amateur driver, but he was not satisfied. He wanted to try it still further, and arranged to ascend Beggars' Roost Hill one hundred times, without stopping the engine. This hill rises near Lynton, in Devonshire. It is just under half a mile long, and its maximum gradient is one in 3.58, while its average slope is one in 7.74—and this includes sundry difficult turns.

The trial was undertaken by an enthusiast named Kenneth Marsh, who drove simply because he liked it. The test occupied some eight hours, and was completely successful. No work was done on the machine, and the engine was never stopped.

This finally convinced Kim that he had designed a motor-car which would form the basis for something really "quick." There were keen racing drivers, however, who could have told him this, because they had placed orders for the machine some time prior to the Beggars' Roost test, and it was to show its colours in big events before the year was out.

One of these was the Grand Prix d'Endurance at Le Mans—the event which had first turned Kim's thoughts towards racing. By this time it was regarded as the greatest of all Continental events.

§ 5

From this point begins the true racing history.

With the coming of the Midget, and with the birth of the machine that approached his own ideal, Kim outgrew his £20,000 factory. He took over a far larger works at Abingdon, six miles outside Oxford, making his concern a separate entity, retaining

COMBAT

only the letters M.G., by which his cars were known.

The letters stand empty of significance, except their tribute to Sir William Morris. Fiat is an abbreviation of Fabbrica Italiana Automobili Torino, and B.S.A. stands for the Birmingham Small Arms Company—but M.G. means simply M.G.

With allegiance to none, with power units exclusively his own design and chassis to match them, Kim had reached the point for which he had aimed. He had provided a car which amateurs could race, and he could now watch the result of his efforts, striving the while to secure still greater perfection.

With this he must slip into the background, that the cars themselves may, by their worth, show the merit of the man who made them.

THE SECOND CHAPTER

ENDURANCE

§ 1

LE MANS has much motor-racing history. The first Grand Prix de l'Automobile Club de France was held there in 1906; it was a two-day event over a distance of 769 miles, and was won by Louis Szisz on a Renault.

The Grand Prix was run there again in 1913, while in 1921 Jimmy Murphy raced and won magnificently on a Duesenberg specially treated for the event. He had cracked his ribs in a smash during practice, and drove wearing heavy bandages, lending valour to the American victory.

The atmosphere on the Sarthe circuit is totally different from that attendant on any event which the British Isles can show and, like most French races, owns a peculiar air of abandon. With its pine-trees and heath, the course is Surrey-like, and the lap distance in 1930 was 10.17 miles; it has since been considerably shortened. From the grandstands and pits the circuit runs down to the houses of Pontlieu where, a little way back from the side of the road, stands a memorial erected to the memory of Count Louis Zborowski, one of the finest amateur drivers Brooklands and the Continental circuits had ever seen.

He crashed with a Mercédès at Monza, and it was on a machine of the same make, during the La Turbie hill climb, that his father had died before him. It is a little

odd that Zborowski, a naturalised Englishman, should have died in Italy, and yet have tribute paid to him in France.

Beyond Pontlieu—on the very edge of the town—the road rises, then runs wide and fast to Mulsanne corner. From this the circuit swings between pine trees to the Arnage turn, beyond which is the famous White House bend, where occurred the biggest smash Le Mans had ever known. This was in 1927, when five cars crashed in immediate succession.

From the curve the road straightens to the grandstands and pits, which are permanent constructions. At one time the Automobile Club de l'Ouest rented land each year for the tribunes, but the success of their Grand Prix d'Endurance was such that the landowner demanded what was regarded as a prohibitive sum.

The Club thereupon purchased a hundred and seventy-five acres of land for the stands, the pits and a car park which would accommodate some ten thousand machines.

Beyond the tribunes comes the Pontlieu turn once more—or, rather, it did in 1930. The careful negotiation demanded by this corner made it a famous spot on the course; famous, in quite a different way, is the Café de l'Hippodrome, which stands beside the straightaway to Mulsanne.

At one time this was a rough, indifferent looking estaminet, but it has now grown to a two-storey building, with chairs and tables and awnings, replacing the weather-beaten benches which existed when the Grand Prix d'Endurance was first run.

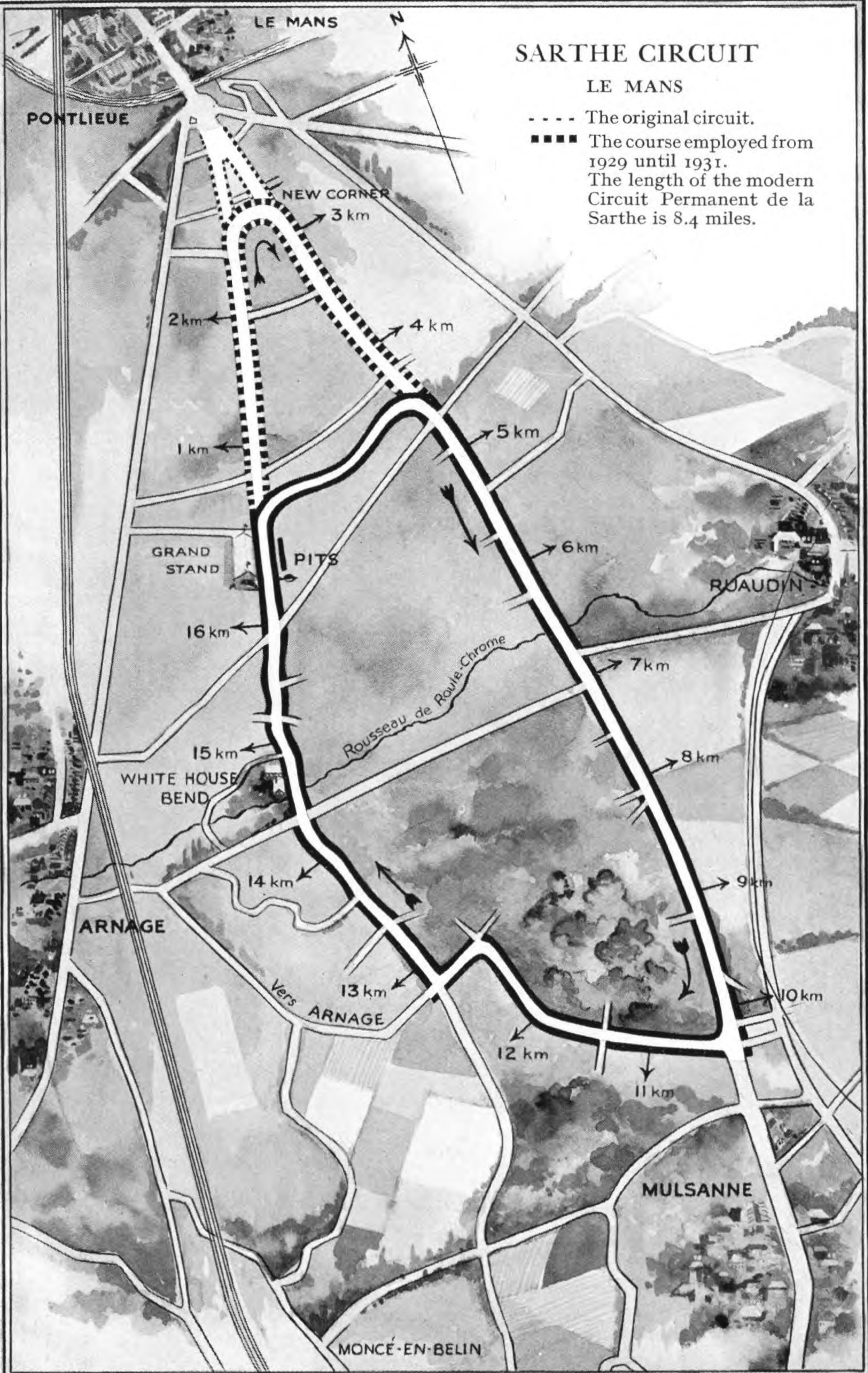
The café forms a rendezvous for drivers and mechanics, team-managers and time-keepers. Before the race, both by day and by night, machines hurtle past, because

LE MANS

SARTHE CIRCUIT

LE MANS

- - - - The original circuit.
- ■ ■ ■ The course employed from 1929 until 1931. The length of the modern Circuit Permanent de la Sarthe is 8.4 miles.



PONTLIEUE

NEW CORNER
3 km

2 km

4 km

1 km

5 km

GRAND STAND

PITS

6 km

ROAUDIN

16 km

Rousseau de Roule-Chrome

7 km

15 km

WHITE HOUSE BEND

8 km

14 km

ARNAGE

9 km

Vers ARNAGE
13 km

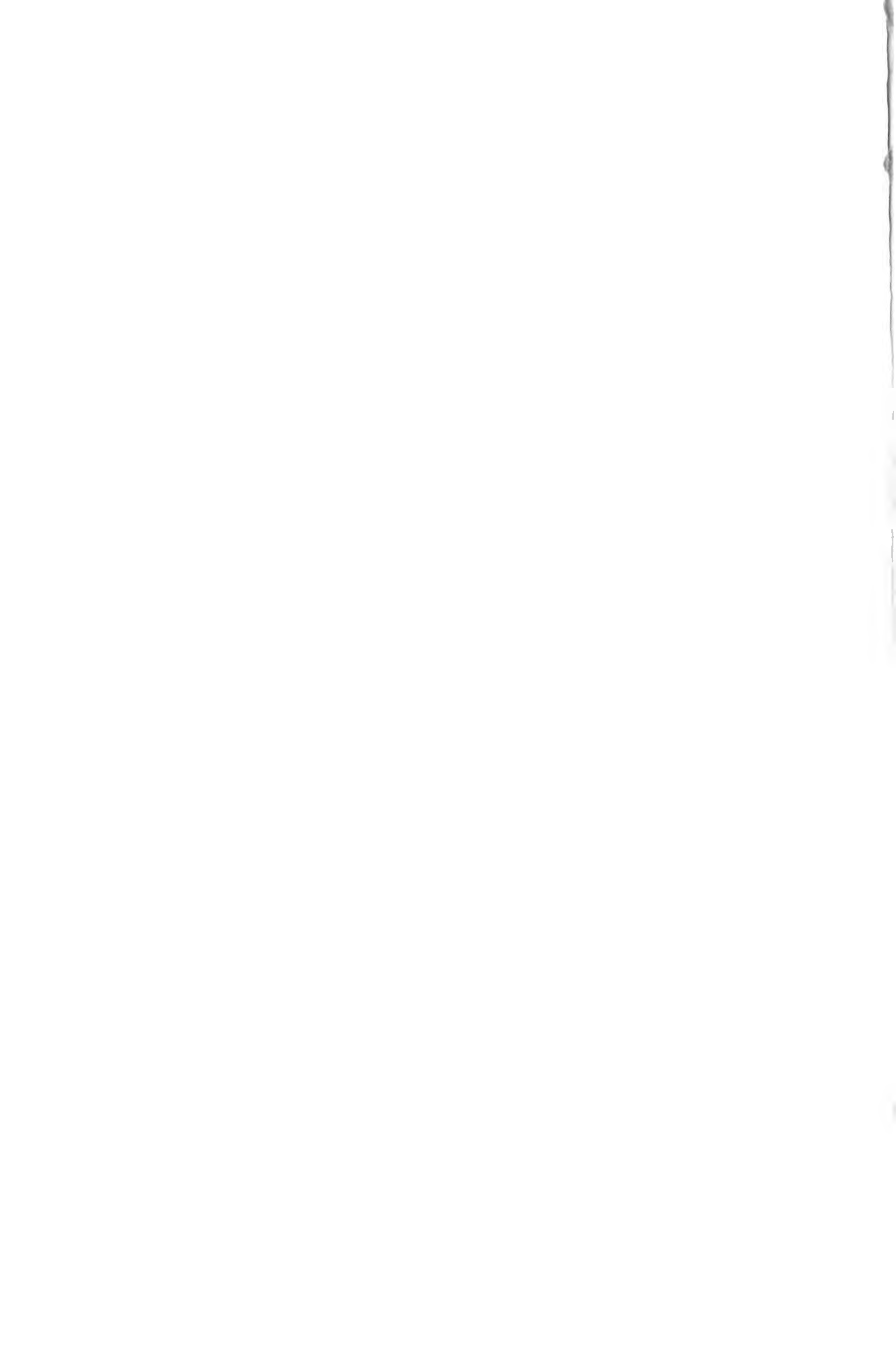
10 km

12 km

11 km

MULSANNE

MONCÉ-EN-BELIN



ENDURANCE

everyone who brings any sort of car to Le Mans makes a point of trying the circuit. They are careful to go by the café at full bore.

With the passing of practice days, the open expanse near the grandstands becomes colourful under banners and blazing advertisements, booths and stalls, and refreshment marquees. Everything there is illuminated on the night of the event, although all lights are carefully shaded to avoid dazzling the driver.

The race itself is peculiar in the fact that the car popularly hailed as the winner may receive no award. Actually the event is three races in one. Cars are classed by engine sizes, and on their first appearance at Le Mans they merely qualify to run for the Rudge-Whitworth Cup the following year; when the final is run off, twelve months later, the car which shows the best performance above its set distance secures the trophy.

In 1926 it required five months for the authorities to determine the winner, which suggests that even the Club has some difficulty in working out its own formula. This does not matter very much, because the car which covers the greatest distance is always regarded as the victor. Invariably, of course, this is one of the larger machines, although it could quite possibly have been beaten on formula by a smaller car.

Each event, therefore, sees some cars running for the Grand Prix d'Endurance and at the same time qualifying for the Rudge-Whitworth Cup, while other machines are competing for the Cup itself.

The 1930 event was split into no less than eight classes, ranging from 500 c.c. machines, which were set a minimum speed of 36.2 m.p.h.—although none entered—to 6,000 c.c. and unlimited capacity cars, which had to do 65 m.p.h.

With the entrants so split up, machines in some classes had to do little more than finish to regard themselves as winners, in some capacity or other. Even this, added to the complicated means of locating the official victor, did nothing to detract from the event as a spectacle.

The three previous races had each been won by a Bentley, and they appeared again in 1930 with a team of three supercharged 4½-litre machines, and another team of 6½-litre, six-cylinder models. Amongst the drivers were Woolf Barnato and S. C. H. Davis, Jean Chassagne and H. R. S. Birkin—men almost unmatched in this type of race.

Their cars were the giants of the event. Ranged against them was a 7-litre, supercharged Mercédès-Benz handled by Rudolf Caracciola. He had won the Belfast T.T. the previous year with the same type of car, when he had defeated a team of “blown” 4½-litre Bentleys.

The German driver intended making a lone effort to lower the Bentley colours, and, as events proved, he was a most formidable antagonist. At the same time the green machines had to face the challenge of two black, fierce-looking Stutz cars with 5½-litre engines, although the American machines were not being piloted by drivers of that nationality.

These nine big cars were each capable of touching 120 m.p.h., promising a real fight when they came to grips. Further down the scale were two Talbots and an exceedingly fast Alfa-Romeo entered by Earl Howe, while amongst the lesser machines was a Bugatti—unique because, for the first time, it brought a feminine element into the race.

The car was to be handled by two Frenchwomen named Mme. Mareuse and Mme. Siko, and if at first they had to support the pitying glances of tough

mechanics and the surprised smiles of crack drivers, they eventually won a measure of real appreciation. They could hardly have selected a more difficult race in which to make their invasion. It was known that the event would be desperately contested, and would almost certainly be far faster than anything which had gone before.

A supercharged Lea-Francis, a B.N.C., and two front-drive Tractas made up the total of entries, with the exception of two of the new M.G.s which Cecil Kimber had produced. These little green cars presently roared into excited Le Mans just before practising began—the first of their *marque* to make an appearance in any great Continental race.

§ 2

One of the two green-painted M.G.s was the property of Captain F. H. B. Samuelson, and the other was to be driven by R. C. Murton Neale, who had never raced on the road before.

Captain Samuelson's entry is interesting because he was precisely the type of man for whom Kim had been working so long. Prior to 1930 Samuelson had taken an M.G. car through two Monte Carlo rallies, and he had also done a good deal of road-racing with other machines. He had gained wide experience, although he had not been able to race so often as he would have wished.

He was a true amateur but, like the great majority, he had always been handicapped by financial considerations. Such considerations are, of course, relative; a man may be quite affluent, and still find it difficult

to indulge in what he regards as the greatest sport the world can show.

In the M.G.—and in the Le Mans event itself—Samuelson had a combination which suited him; he was able to buy a car outright and, since he had driven on the course before, he knew how well suited was the machine to the circuit.

He had begun his career some twenty years earlier, when he bought an 8.9 single-cylinder Sizarre and raced it at Brooklands in 1910. The car cost him seventy pounds, and it won on its first appearance.

He ran in the first French Cycle-car Grand Prix, where his wife acted as his mechanic; she was the first woman to ride in a Grand Prix event, and she now generally acts as his pit-manager.

Samuelson had driven at Le Mans two years earlier, as a member of the Lagonda team. Although he had always adhered to the maxim that a driver's first job is to keep his car on the road, it was in that race that he crashed for the first time in his career. The circumstances were exceptional, and they suggest how experience brings improvement in the racing world.

At that date team cars did not carry identifying marks, and one machine in a team could not be distinguished from another except by its racing number.

The Lagonda drivers were Samuelson, Baron d'Erlanger and R. C. Gallop. D'Erlanger was left at the start with a jibbing motor, and some considerable time passed before he got going. Samuelson drove hard, gaining sixth place in the race, and he was comfortably leading his class when he received a series of pit signals to slow. He obeyed, and had cut down his speed considerably when he hit the straight to Mulsanne, and was amazed to discover another Lagonda coming up behind.

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Samuelson imagined that he must have overdone his obedience to pit signals, and had slowed too much. He thought the car was Gallop's machine and, as race tactics required him to keep well ahead of Gallop, he increased his pace.

He had no means of telling that the car was d'Erlanger's, busy making up lost time. When it still came on, Samuelson opened up again then, finding that the other Lagonda remained on his tail, he gave the engine yet more throttle.

Like this, with one machine striving to get by and with the other maintaining its position, the two arrived at the Mulsanne turn and, in the heat of the scrap, they arrived much too fast. Matters were not helped by the fact that there is a deceptive down-grade to the corner, and Samuelson skidded into a sandbank, to be still more firmly embedded when d'Erlanger rammed his tail. Samuelson was put out of the race, but d'Erlanger was able to continue at reduced speed and eventually completed the twenty-four hours.

It was partly from the lesson taught by this accident that team cars now carry identifying marks: a specially painted wing-tip or, in the case of stripped machines, a splash of colour on the fairing over the dumb-irons—anything which can easily be seen at speed.

Samuelson had therefore good reason to remember Le Mans. It was the place where he had received the one blemish of his racing career, and he was keen to run there again.

Soon after the new Midget was first produced he tried one out in its standard form. He found that it covered the ground with a rapidity that was surprising and—despite the fact that he is a gentleman-farmer in Sussex, and that farming rarely produces the necessary profits

COMBAT

from which to purchase fast cars—he saw that the machine was one that he could make his own. He went back to the factory at Abingdon and made arrangements for a car that he could take to the Sarthe circuit.

The machine was fitted with the bodywork required by the race regulations and, in addition, Samuelson arranged for certain lamp switches which experience had taught him were desirable. Very little was done to the engine beyond the inclusion of a bigger oil-pump to cope with the stress of racing.

As his spare driver—because, obviously two men are necessary for a race of this length—he had F. R. Kindell, who possessed considerable driving experience, and who was then working as mechanic for Cecil Kimber. Another mechanic came over from the works to assist Murton Neale; this was R. C. Jackson—known to almost everybody as “Jacko.” It was his first experience of a road-race, so that the Murton Neale camp was definitely composed of amateurs, but Jacko had very real mechanical skill, and his experience at Le Mans was his first move towards eventual control of Kim’s competition department. In every firm which builds fast cars there is always one man whose character is outstanding and whose practical knowledge of machines seems unlimited, and Jacko—spare, fair, very deft and quick-moving—became such a man for M.G.s.

Samuelson and Kindell took their car down to Brooklands for carburation tests. When these proved satisfactory, they shipped it from Newhaven to Dieppe and, with an old Talbot as tender, drove it down to the course.

They garaged the machine in the Morris-Leon-Bollee works, which also housed the Bentleys, and to this hospitable factory came Murton Neale with the other M.G.

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Practice had hardly started when it was discovered that both cars were running hot. This was cured by hacking louvres along the top of the engine cover, by which time the Bentleys found that they also were suffering from too much heat, and adopted similar tactics.

Samuelson found that he could lap comfortably at between fifty-five and fifty-six miles an hour; this was distinctly good, because he had only the three-speed gear-box fitted at that time.

He and Kindell agreed that they could certainly hope to finish the long race if they drove reasonably—which meant taking no unnecessary risks, and had nothing to do with travelling slowly. The car proved so fast during practice that Samuelson had definite hope of victory on formula; but he said little of this, because experience had taught him that very many things can go wrong with a machine once the starter's flag has dropped.

The supercharged Bentleys, troubled by the heat, were having some difficulty with their fuel; on the day before the race it was decided to raise the compression on two of their machines. This entailed all-night labour, and it was found impossible to do any work on the third 4½-litre entry, which was withdrawn.

The team of three big six-cylinder models, and two of the "blown" cars, came to the line with tactics plotted by which they hoped to encompass the Mercédès. The plan was to make Caracciola go fast in the hope that his machine would crack under the strain. Since everyone knew that something like this was afoot, it was appreciated that the opening laps would be more than usually exciting.

The morning of the race was torrid in its heat, which seemed to increase as the afternoon drew on. The sun

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blazed down on a very colourful spectacle, as the cars were ranged before the long line of pits. Drivers, wearing as little as possible beneath their overalls, took their places on the roadside opposite; when the flag fell they had to run to their machines, start up and get away.

Although only eighteen cars were starting, amongst them were the finest machines that men knew how to build, and they included the fastest standard models that the world had ever seen.

Near the far end of the line was a pair of low-built, fast-looking Tracta cars, forming immediate rivals to the two M.G.s. One of these carried No. 28, and on this Murton Neale was to start in his first road race; Samuelson's car carried No. 29.

The trim, workmanlike green machines were direct descendants of the Number One which had been built in the old workshop under the bastion in distant Oxford. It would have meant something to Cecil Kimber, could he have seen the flag fall, its yellow folds slashing on the air until the tip of the staff stirred the thin dust of the road. But, although he was not at the start, he was on the course, standing in the shade of the tall fir trees on the Mulsanne corner.

The starter's signal was answered by the scuffling rush of light-shod feet as white-overalled men hurled themselves into the waiting machines.

Caracciola landed behind the wheel of his Mercedes in a flying leap, the engine roared, and he went away with tyres scrabbling against the road-surface—first to start in the eighth Grand Prix d'Endurance.

§ 3

The Mercédès gushed blue-black smoke at the Bentleys, coming into action behind. While Caracciola thundered up the slope towards Pontlieu, Birkin put the near-side wheels of his supercharged machine into the gutter, slashing dust at the spectators as he strove to pass other cars which were still getting under way.

“Tim” Birkin was the Bentley pace-maker. He had been given the job of harassing the great German car and, eager though he was to get to grips, the six-cylinder team had left the line ahead of him.

Samuelson saw the bigger machines speeding into the distance as he got going, passing a B.N.C. which had come to the line only a little time before the flag fell; it failed to start and, before the race was more than a few minutes old, was pushed away into the “cemetery.”

The two M.G.s remained together, holding the pace of the Tractas, both drivers keeping cool under the excitement of the start, when it would have been a natural thing to attempt the impossible and pursue the faint dust-haze which the giants of the race had left behind them.

Far ahead Caracciola roared down to Pontlieu, with the three six-cylinder Bentleys hard on his heels, and Birkin on his “blown” machine waiting his chance to slip past them and challenge the white German car for the lead.

All cars were bunched at Pontlieu, but when they hit the straight past the Café de l’Hippodrome they spread out, bellowing down the road, with Birkin coming up—supercharger screaming, his scarf fluttering stiffly in the wind.

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He overtook two cars and was lying third when they cleared the corner at Mulsanne. On the bends to Arnage, Caracciola held them off, constantly glancing back despite his speed—always to see the big, roaring green machines coming on through the murk that his wheels kicked behind.

Close-bunched still, they went through the Arnage turn. Birkin was still gaining and, on the bend before the stands and the end of the lap, he put his foot right down. He thundered past the Bentley which held second place, then settled himself to grim pursuit of the white car ahead.

That first lap set the stage for the biggest fight that Le Mans had seen. Behind the Bentleys came the black, howling Stutz machines—the silent, green, British Talbots—a string of colourful cars, with the ladies in their Bugatti and with the M.G.s giving the watching Kim a real thrill when they appeared at Mulsanne, easily keeping ahead of the Tractas.

On the second lap, Caracciola tried to leave Birkin behind. The German driver wanted to gain a comfortable lead because, with distance in hand, he could take things more easily when his first freshness for the race had passed.

He gave his machine full throttle, and broke the lap record on his second circuit with 86.5 m.p.h.—five miles an hour faster than any car had ever before shown in that race. Yet Birkin held him—and more. Next time round he beat Caracciola's figure with 87 m.p.h.

Covering the course at such a pace involved speeds that were almost fantastic. Down the Hippodrome straight Birkin had to touch 125 m.p.h., and this was his speed when, on his fourth lap, he came within striking distance of the white car.

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It was then, too, that he lost the tread from his off-side rear tyre, and although he knew that it had gone, he did not slow. The only part of the course where he could pass the Mercédès was along what was left of the straight road, because two such enormously fast machines could exchange positions only where the circuit was absolutely clear.

Under full throttle Birkin roared up to the German car. Caracciola, not knowing that his rival was so near, was holding the centre of the road. The blare of his own engine and the piercing drone of his supercharger drowned all sound of the Bentley's arrival.

Birkin could not wait. With every second that passed they were using up sixty yards of the straight. He pulled his machine to the very verge of the road, squeezing past with his outside wheels nibbling at the slippery grass which fringed the course.

Birkin's car turned the scale at two and a half tons; the Mercédès must have weighed almost the same. For split seconds those five tons of wheel-borne metal rocked side by side, moving at above two miles a minute—then Birkin shot into the lead, thundering down the Mulsanne turn, braking desperately and skidding faintly as he went through it.

On the bends to Arnage the canvas began to show through the rubber on his stripped tyre. Safety dictated a stop at the pits, but that would have given Caracciola the lead again. Bentley mechanics, cheering as they saw him pass before the German, also saw the pale strip on his tyre where the tread had been torn away.

In that moment, stop-watches were registering the fact that "Tim" Birkin had lapped at 89.6 m.p.h., breaking all records. No car of any type had previously been taken round the circuit at that speed.

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He vanished, with Caracciola now holding the pace that he set. When Birkin came past the pits again his tyre was disintegrating; fragments of rubber were streaking from it, while shreds of canvas and cord showed white and dangerous.

He went by at two miles a minute. The ugly turn at Pontlieu lay before him, and he was heading at it with a tyre which might collapse at just the worst possible moment.

Silence dropped in the Bentley pit. A spare wheel was made ready. After that they could only wait while other machines in the race flashed past—the Talbots, the Alfa-Romeo and the Lea-Francis, the ladies in their steady Bugatti, then Samuelson with Murton Neale, both travelling with something in hand, followed by the scuttling Tractas.

Minutes dragged slowly by, then came the roar of the approaching Mercédès, the note of its supercharger rising to a shriek as the car arrived—alone. The other Bentleys appeared, then the Talbots, then “Tim” Birkin came in sight at a limping 40 m.p.h., with what was left of his tyre ripped to a tangle of smouldering cord and fuming rubber.

The first round of the duel with the German car was over, but the fight was not ended. Birkin made a wheel-change measured in bare seconds, then flung his machine on. But the tyre trouble which had overtaken the pace-maker repeated itself, and was duplicated on the other supercharged machine.

It was now left to the six-cylinders to hound the Mercédès down; the big cars had already lapped the M.G.s; and presently they caught them again. Samuelson saw the Mercédès coming up and he pulled well over, for the machine to pass with a smashing roar,

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kicking stinging road-grit behind. A few moments later the Bentleys passed one after the other. They seemed to go by in a series of explosions, slamming a hail of stones behind.

The two M.G. cars were touching 80 m.p.h. on the long straight, and were lapping persistently in the region of a mile a minute. Both were cornering with a quick steadiness that was surprising and, on occasions, they matched even Caracciola's speed, where the road bent.

They were holding off the Tractas, which were harassing them in a minor degree, as the Bentleys were harassing the Mercédès. Finally, trouble attacked the front-drive machines and they pulled in at the pits to change plugs, for the M.G.s to draw triumphantly away.

The heat and the speed was proving troublesome to the tyres of the big machines, and on occasions the M.G. drivers came upon one of the "blown" Bentleys limping with a ragged mass of rubber and canvas whirling about one wheel. Presently they saw S. C. H. Davis go by, clinging to the Mercédès tail; when Samuelson and Murton Neale sighted the Bentley again, it was plunged into the red sand of a bank at Pontlieu, with the driver digging fiercely to try and get the machine clear. In the interval, "Sammy" Davis's goggles had been smashed by a stone from the German machine's rear wheels, and he had been forced to pull up and hand his car over to Clive Dunfee, who had skidded on the turn.

For many rounds after that the M.G.s saw Dunfee still digging, then his place was taken by Davis, who worked persistently until night fell. He discovered, when at last he did almost get the car free of the sand, that it was too badly "bent" to drive.

At dusk the M.G.s came in for their scheduled pit stop

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and Samuelson turned No. 29 over to Kindell, while Jack Hicks took Neale's place at the wheel of No. 28. Most of the drivers were changing over now, and the men kept up the fierce speed at which the race was being fought.

Drama always comes with the night at Le Mans, and in this race it was spectacularly provided by Louis Rigal when he took Brisson's place on No. 5 Stutz. Almost at once he had trouble on a corner where the sun had melted the tar, making the surface slippery; he left the road and damaged his exhaust pipe. He continued with the front of his machine festooned by bracken gathered when he left the course, and paused at the pits to secure the pipe with wire.

Not long after that he skidded again, snapping the pipe off short. He wrenched his car back to the road and roared on, but now yard-long flames showed when he opened the throttle, flaring orange-red in the dark as he entered the straight to Mulsanne.

He knew nothing of this until, near the Hippodrome, the bodywork of the machine caught fire and the glare gave him a warning. He switched off the engine and braked desperately—remembering the big fuel-tank at the back of his machine. The car was still moving when he leaped from it—to pitch full-length in the path of a Bentley that was hurtling down.

The great green car was travelling through the falling night at 120 m.p.h. It missed him by inches, and hardly had it gone when the petrol tank of the Stutz exploded. Blazing fuel scattered wide. The mounting flames attracted officials with fire-extinguishers. They worked to try and save the flaming machine while other cars stormed past, their drivers pulling to the outermost verge of the road, the burning Stutz blocking half the course.

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Its smoke rolled like a screen across the straight, and the light from the fire was visible as far away as the tribunes, startling the spectators. They saw only a shuddering column of flame and a livid, quivering glare which was like a threat in the darkness, and they had at first no knowledge of what had happened.

Drivers roaring past the Stutz had to shield their faces from the heat, and were momentarily blinded by the smoke. Nothing could master the flames, and the machine burned for two hours before the blaze died. The car was still burning when Kindell pulled No. 29 in at the M.G. pit, and announced that he had no oil-pressure showing on the gauge. Samuelson jumped over the pit-counter and, as nothing else seemed to be wrong, they disconnected the gauge. On starting up the engine, oil came spurting from the pipe, so that it seemed as if the instrument itself was faulty. If oil was being pumped up to the guage, nothing could be wrong, and it appeared as though some defect had developed owing to vibration at speed.

The gauge was replaced and Samuelson took over the car, complying with a regulation which ordains that, when both drivers work on a machine, the one who was in the pit must continue the race, if only for a lap. After this brief delay No. 29 rolled away. The gauge still failed to register and Samuelson handled the car carefully as far as Pontlieu, then, as the engine showed no sign of distress, he opened up.

He sped up the rise from the turn, and settled down for the rush past the Hippodrome. He was touching 80 m.p.h. when the glare of headlights warned him to pull over. A Bentley stormed up and crashed past; then, through the roar that the big machine left behind, Samuelson heard ominous sounds from his power-unit.

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He slowed instantly. The noise became an ugly thumping. Guessing that a big-end had gone, he toured unhappily round to the pits; his guess proved correct, and it required only a few moments to learn the reason for the disaster. When the larger oil-pump had been installed during the preparation of the car, a suction pipe of greater diameter had been fitted to the sump to accommodate the increased flow of oil. This had fractured, and no oil was being delivered when Kindell first brought the machine in.

Oil had certainly shown in the pipe which fed the gauge, but this could have been only what little was left in the pump itself. As Samuelson realized afterwards, the flow had been very weak, although this fact had not been easy to detect in the darkness. Both Kindell and he had been satisfied to find oil there at all.

Soon the shaded lights that illuminated the pits gleamed on the dusty shape of No. 29, as it was pushed off the course. The misfortune that had overtaken it was one that would certainly be well guarded against in the future, and only by such mishaps can fast machines grow to ultimate perfection.

§ 4

The Le Mans circuit now formed a scene paralleled nowhere else in the world. The night was clear and the stars were constantly eclipsed by headlamp beams which swept the sky like stiff, pallid fingers, as cars roared up the quick gradients of the course.

On bends the shifting rays silvered tree-trunks and cast shadows which darted more swiftly than the cars themselves. At every turn groups of spectators were caught

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momentarily in the dazzling glare, their dimly-seen faces looking ghostly to the drivers.

Through all this Murton Neale and his partner pushed No. 28 on. The crowd did not grow less; the watchers were held by the fact that Woolf Barnato—now leading the Bentleys—was waiting the right moment to challenge the Mercédès again, which at this time had been taken over by Christian Werner.

The glare from the burning Stutz had faded when Barnato pushed his machine close behind the Mercédès. Both roared by the smoking wreck and the Bentley pulled out on the road to shoot past the German car. Instantly Werner replied, surging level with his challenger, so that they hurtled down at the Mulsanne corner, struggling for the lead. The merged beams of their headlamps filled the road with a blinding glare, behind which the cars themselves loomed blackly until, near the turn, the white machine slid ahead, with spectators cowering back at the way in which he went through the bend.

For three laps Werner kept in front, then Barnato passed him once more, making the pace until midnight approached, when he eased up and let the Mercédès take the lead. The German machine went ahead with a screaming roar, only for the Bentley to pounce on its tail and harry it until midnight had gone, when Barnato shot his car in front again.

The British driver was playing a difficult, hazardous game. His cat-and-mouse tactics were calculated to wear the German machine down. In the stress of definite combat, he was compelling Werner to demand that little too much which can crack even the fine mechanism of a thoroughbred machine.

They were still duelling when both were signalled in for replenishment. A brief pause, and they were away

again—for the work of the British car now to show results. The big Mercédès presently came slowly towards the tribunes with its headlamps dulled.

The dynamo had overheated. Both batteries were exhausted, and the oil gauges indicated some trouble. After the stop the frantic efforts of Caracciola and Werner failed to start the engine, although, in any case, the car could not run without adequate lights. The Mercédès retired, and all Bentley cars immediately received orders to slow. Victory for them was now only a question of finishing the course.

While they thundered on, No. 28 M.G. continued to hold its own against the Tractas, which were now running steadily. All night the green car maintained its speed, and the faint haze which showed at dawn brought promise of a day as hot as that when the event had started.

Sunlight revealed the results of the stress of the race. There were twisted mud-guards on the supercharged Bentleys, smashed by spinning tyre-treads. Near the Café de l'Hippodrome stood the calcined debris of the burnt-out Stutz, and not far away rested its team-mate, abandoned and with a damaged rear axle. The giant Mercédès, oil-smirched and forlorn, remained in front of its pit; the car was too heavy to push to the "cemetery."

With daylight Murton Neale relieved his partner at the wheel of No. 28. A little later he ran fast towards Pontlieu, where the tarred surface was beginning to melt under the growing heat of the sun and the action of tyres. Sand had been scattered, in the hope of minimising the risk of skidding, but the result was to make the corner more slippery than before.

Neale found himself sliding, and he tried frantically to straighten out. With a crash he pitched through a light

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palisading at the side of the road, and the car lurched straight at a tent belonging to poilus, who were helping to guard the course. The French soldiers scattered in all directions, and the machine was brought up short by an old kilometre stone.

The car appeared to be undamaged and Neale reversed back to the road, taking part of the palisade with him. He had to wrench away the tangled woodwork before he could start off, and make up for the moments he had lost.

Neale found his steering awry and pulled up at his depot to examine the machine. Jacko leaned over the pit-plank, calling directions as Neale and Hicks straightened things out at the front of the car, when Hicks took it on. At the end of another lap he came in to report that the car was anything but happy. Under Jacko's instructions there was a further bout of repair work, then Murton Neale drove away, and even if the steering remained a little shaky as a result of his crash, it made no difference to the speed with which he now covered the circuit.

Spectators, returning from hastily snatched slumber, began to take notice of this fast green machine, and many calculated its chances of winning on formula, despite the fact that the race had long hours to run.

The sun grew still hotter, and now it seemed to Neale as though he had the course to himself, except when one of the big cars rocked by and vanished ahead. He lapped regularly until nine o'clock in the morning when, near White House turn, the engine suddenly lost power, and there came a clattering which made him ram out the clutch and stand on the brake-pedal. He stopped, with the engine dead.

Tentatively he tried the starter, to find the alarming

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rattle resumed. He climbed out, and it did not take him very long to diagnose severe internal disorders which at first he believed to have been caused by foreign matter that somehow had slipped into the oil supply. He could only push the car off the road, aided by sympathetic officials and spectators, and walk on to the pits. Later on it was found that the crash against the stone, when he went through the fence, was the cause of the trouble which put him out of the race.

By this time barely half the machines which had started were still running. Barnato's car was leading, but the two supercharged Bentleys had joined the M.G.s and the Mercédès in retirement.

With the afternoon a fierce thunderstorm drenched the circuit, and the two remaining Bentleys passed the tribunes with great sheets of spray spurting from their wheels.

The rain ceased and, not long after, the race ended, Barnato bringing his Bentley past the falling tricolour, with the other big six-cylinder close behind. The winning machine had covered 1,821 miles at an average speed of 75.8 m.p.h., setting up a new record for the race. The two Talbots came in, followed by the Alfa-Romeo. The "blown" Lea-Francis took sixth position, then arrived the feminine-driven Bugatti and the two Tractas.

Quietly, yet impressively, the curtain fell on the Grand Prix d'Endurance for that year. While the crowd swarmed round the race-worn cars, and flowers were showered on the winners, one M.G. stood abandoned at the side of the course, and the other rested on a patch of waste ground by the pits. The two had run in their first road-race, and had done their best.

Only by attempt and failure is it possible to learn the lessons which bring ultimate success. Murton Neale had

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done marvellously well, and ill-luck had prevented his finishing. Samuelson, however, felt that he had not given his machine a real chance and that, in his own words, he had not "had a run for his money."

He knew that the Belgian Grand Prix de Vingt-Quatre Heures was being held on the Spa circuit two weeks later, and that it was a race similar to that at Le Mans. While the Bentley drivers were still being congratulated, Samuelson telegraphed his entry to Spa.

He wanted his M.G. to show what it could do before he took it back to England.

THE THIRD CHAPTER

BELGIUM

§ 1

THERE is an accepted idea on the Continent that it is impossible to tell what an English racing driver will do in any given circumstance, and the interest roused by British entries is made the keener by the possibility of the drivers accomplishing something altogether new and strange.

Captain Samuelson followed this tradition when he telegraphed his entry for the Belgian Twenty-Four Hours Grand Prix. His engine was "dead," and he could not be sure of how much damage had been done through the broken oil-pipe; he had never seen the Spa circuit, while Kindell was equally ignorant, although both knew that it was altogether more difficult than Le Mans, making it essential that they should have some practice on the course. It was equally necessary that the car should be in proper fighting trim.

To prepare the car for a distant circuit, and still find time for practice on strange ground, within the space of two weeks, was an undertaking in itself, particularly as Samuelson had only his own resources. But he felt certain that, with reasonable luck, the machine could put up a good show in any twenty-four-hour event, and he was not dismayed by the fact that, according to the terms of the race, he would have to compete against cars bigger than his own.

BELGIUM

Some rest was necessary after Le Mans, but neither he nor Kindell had very much. Crowds were still departing from the town when they began work on the engine, and it did not take them long to discover that entering a car for a race was one thing, but bringing it to the starting line was quite another.

Most racing drivers—and mechanics—believe that if matters run smoothly during preliminary work and practice, the machine will probably blow up during the opening laps of the event. If, however, trouble haunts the car from the moment of its entry, then it stands a chance of being in the running at the finish.

It may be due to this argument that, so far as one can judge, actual work on a racing job is invariably delayed until the last moment. The effect is to fill the days immediately before the event with a rush of frantic labour which, apparently, invites as much trouble as possible and, conversely, provides the highest available augury for success.

There may be exceptions to this rule, yet it is not often that a successful car comes to the line without the appearance, on the night before, of being thoroughly unready and quite incapable of turning a wheel when the rest are marshalled for the start.

The experience of the two men with the first road-racing M.G. was in keeping with these ideas, and might have been regarded by them as an omen of success, if they had had time to think about it. When they commenced operations on the power-unit, they soon realized that they could not possibly hope to complete the work adequately with the assistance and tools at their disposal. It became clear that a proper factory overhaul was necessary, if the machine were to be prepared thoroughly and given a reasonable opportunity at Spa.

“We can’t take the car back to England, and get it to Belgium in time,” Samuelson told Kindell. “It’s only the engine that matters. Let’s take that and leave the chassis here!”

When they discussed the idea, it proved to be the only feasible plan. To travel with the disabled machine would involve towing it behind the old Talbot, which they were using as a tender, and that promised very slow progress. There was also the question of expenses involved in crossing with both cars to England, and bringing them back again.

They decided to take the engine to Abingdon, have it overhauled and tuned up, then rush it back to Le Mans and instal it in the chassis, afterwards setting out for the Belgian circuit. All this, with as little loss of time as could be contrived.

Accordingly the power-unit was dropped into the Talbot and they left Le Mans late on the Tuesday night, to arrive in Abingdon at noon on Thursday. In order to obtain some practice at Spa, it was necessary to return to France the following night, which gave the works barely twenty-four hours to complete the overhaul.

Telegrams had given advice of their coming, and Kim had made plans in advance. The appearance of one of his machines in the Grand Prix d’Endurance had been like the initial fulfilment of his own ideas, while the fact that it had not finished was an incentive to do everything necessary to provide the car with another chance. He instigated what proved to be one of the quickest and most complete overhauls that his mechanics had ever known, or were ever likely to know. Within the time limit the engine had been completely taken down, rebuilt and tested, while a cradle was constructed to contain it aboard the Talbot—since Samuelson had been obliged to

BELGIUM

travel most of the way from France with the engine in the passenger's seat, driving with one hand and holding the power-unit steady with the other.

He caught the Friday night boat and arrived in Le Mans late on Saturday evening. He and Kindell began work at once, only to find that most of their tools had been left behind at Abingdon; Kindell also discovered that, in the excitement of their hurried departure, he had left all his luggage with the tools. They were obliged to replace the engine with a few odd tools from the Talbot and those they were able to borrow from the Morris-Leon-Bollee works.

They worked during the whole of Sunday. Next morning, they looked over the chassis, then tested the car around the now deserted Le Mans course, after which preparations were made for departure. Darkness was falling when they left Le Mans on the Monday evening, starting a forty-eight hour journey to Spa. They were delayed because their journey coincided with some national holiday, and they constantly encountered vehicles handled with the very real abandon of a Continental driver out for the day.

The weather was hot and close, and the sky was heavy with threatening thunderstorms. As if to add one more difficulty to those they had already overcome, the clouds opened just as they crossed the Belgian frontier.

Finally they arrived in Francorchamps after dark on the Wednesday before the race. They were soaked to the skin and exceedingly tired, but the local inhabitants seemed rather aggrieved to learn that the crew of the M.G. had no intention of going out for practice that night.

COMBAT

§ 2

Samuelson and Kindell were the last entrants to arrive for the race. Practising had long since started, and had shown a little of what the event itself might bring. At that time Alfa-Romeo and Bugatti cars were in the heat of their long-drawn duel. The red Italian machines had won the race on the two previous years, and they were now led by Marinoni, who had been on the victorious car each time.

He was backed by Boris Ivanowsky, a driver who was exactly the type of man to put up a tremendous effort when rivals have been worn down by fast work. The third Alfa-Romeo was being handled by Freddy Zehender, who matched the calibre of his compatriots, so that the Italians formed a most formidable team.

Leader of the cars against them was Louis Chiron—experienced in every type of race, from the Targa Florio to the Monaco Grand Prix. His Bugatti was backed by six others, but most of these cars were driven by amateurs with little experience of big events so that, virtually, Chiron was waging a lone battle against the Italian team.

Although Samuelson and Kindell were not racing in direct opposition to the cracks, the odds they had to face were great enough. They were rated with the 1,100 c.c. machines; there were twelve entries in this category, and the M.G. was the smallest car of them all. The race was arranged without any handicap, each class running for individual victory and the actual winner of the Grand Prix being decided by the car which travelled farthest.

Just two clear days remained for practice when, early

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in the morning, Samuelson borrowed rags from the proprietor of the little hotel at which he was staying just outside the town and, to the apparent astonishment of interested spectators, he and Kindell began to clean the machine before they took it out. Samuelson shares with most drivers the feeling that, even for practice, a car should not be put on the course unless its appearance does some credit to the men who have made it.

With the car polished and shining, they rolled it out to the circuit, which they discovered to be very different from anything they had imagined. The Spa course is easily one of the most beautiful in the world. It is set in heavily-wooded hills and in some places the road becomes park-like, with bushes at its fringe and slender pine trees rearing behind them; sometimes silhouetted against the sky, and at others forming a dark green background for the speeding machines.

Swinging out from Francorchamps on his first run, Samuelson struck the circuit at La Source hairpin, from which the road ran downhill to the pits, behind which gleamed the tinted roofs of farm buildings.

Immediately past the pits the course swept sharply over a bridge across a grimy little river called l'Eau Rouge, then rose briefly towards an abrupt hairpin corner. Beyond this turn the circuit climbed a long ridge, dipping over the crest to Burnenville. After that, by curves and quick gradients and sharp slopes, it turned back at Stavelot. From this point the course ran parallel with a railway line, and was fairly fast to Francorchamps and the pits once more.

The distance was nine and a quarter miles, and one tour was more than sufficient to suggest that everything about the car would be stressed to its limit. The hills meant hot work in the gears, and the abrupt corners

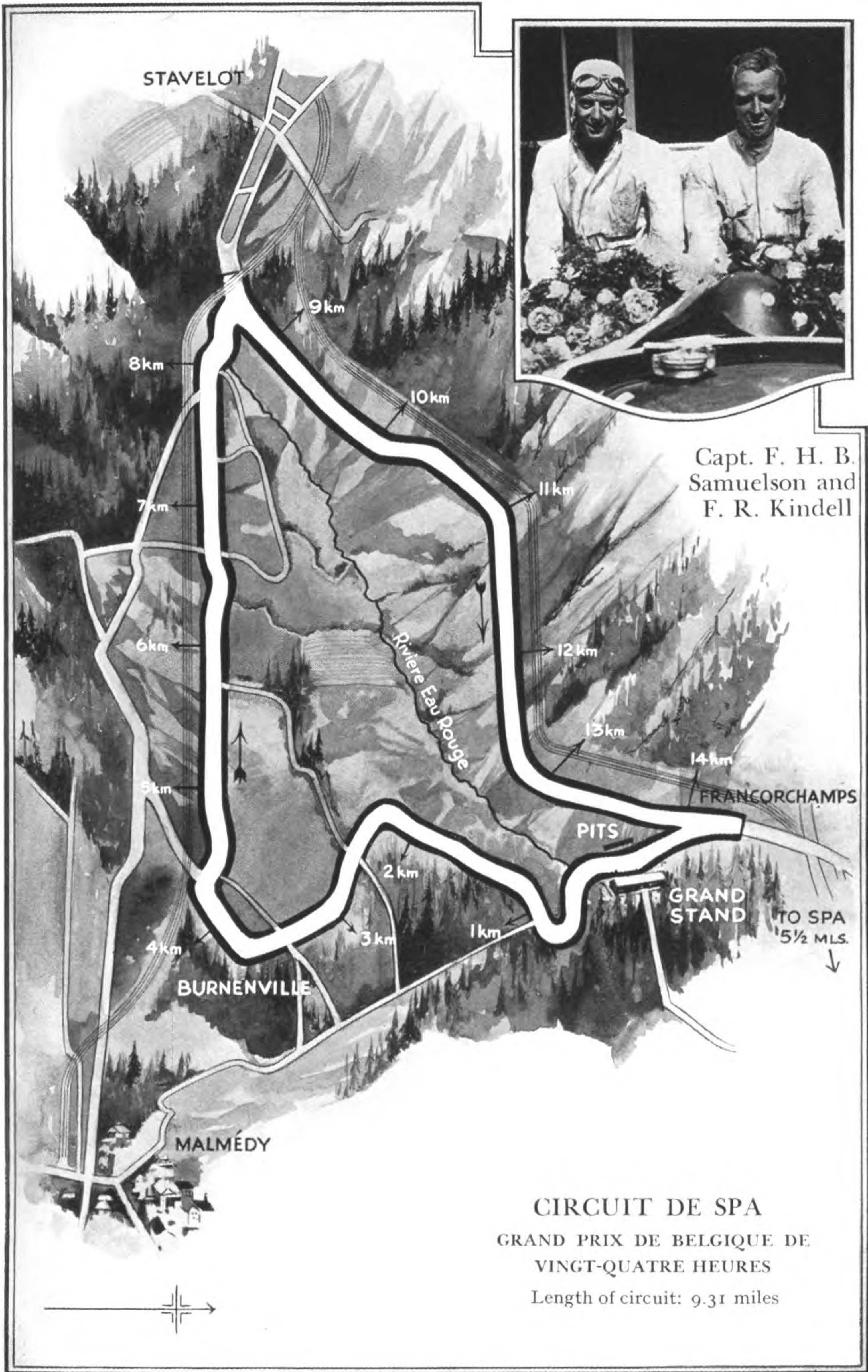
would take toll of the brake-linings—wearing work for both men and machines.

The Belgian 24-Hours Grand Prix had never been won at more than 64 m.p.h., but the record for Le Mans then stood at an average speed of nearly 76 m.p.h. The difference in the time indicates some of the difficulties of the Francorchamps-Malmedy-Stavelot circuit at Spa. In past years the race had invariably taken great toll; hardly more than half the starters had ever been running when the finishing flag fell. Equally, the race tended to become hazardous when drivers began to tire and machines lost their initial tautness, so that almost every corner on the course had seen a wreck.

The surface was good but, in places, the road was heavily cambered, and the M.G. crew took especial note of these stretches. They knew that there were some exceedingly fast cars in the thirty-seven due to line up at the start, and it is not the happiest thing in the world to pull an 80 m.p.h. machine down to the side of a definitely cambered road, and allow something half as fast again to go past—particularly at night.

Samuelson and Kindell took the machine around the course in turn, feeling the corners and learning what they could of their 1,100 c.c. rivals, who included four Tractas, two B.N.C. machines, a S.C.A.P. and a Rally.

As at Le Mans, Samuelson saw that possible victory might be a matter of fast and steady driving. The chances were that the Tractas would set the pace with the B.N.C.s; if his own car could be handled with discretion, it might be in a position to issue a challenge to the leaders towards the concluding hours of the long event. This really amounted to travelling as fast as possible and hoping for the best, since they were running on level terms against the larger 1,100 c.c. machines.



STAVELOT

9 km

8 km

10 km

7 km

11 km

Capt. F. H. B. Samuelson and F. R. Kindell

6 km

12 km

Riviere Eau Rouge

13 km

14 km

FRANCORCHAMPS

5 km

PITS

GRAND STAND

TO SPA
5 1/2 MILES
↓

2 km

4 km

3 km

1 km

BURNENVILLE

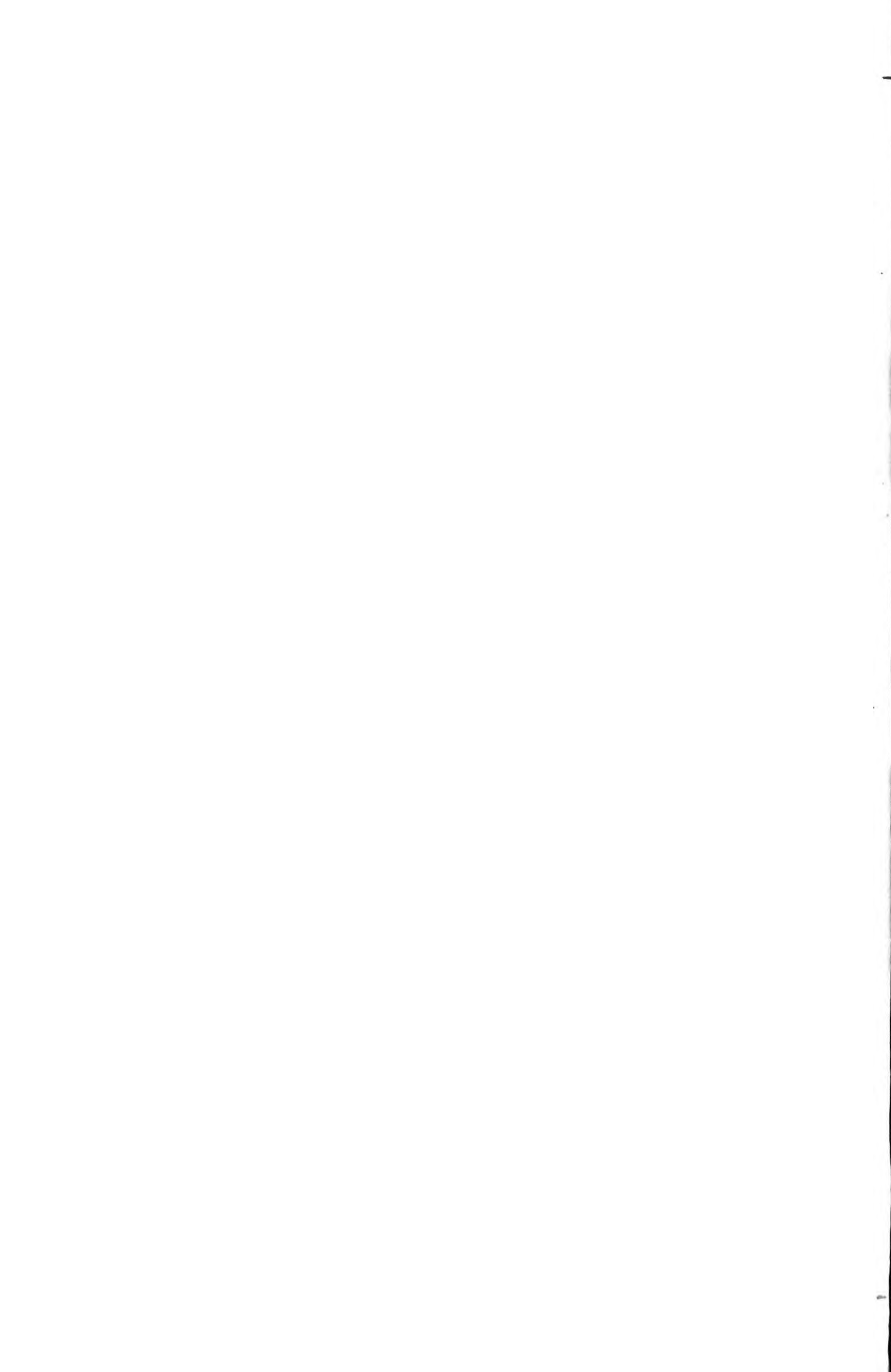
MALMÉDY



CIRCUIT DE SPA

GRAND PRIX DE BELGIQUE DE VINGT-QUATRE HEURES

Length of circuit: 9.31 miles



BELGIUM

He had some difficulty with his pit arrangements, as a friend who had promised to attend to this was unable to get to the circuit. A Dunlop mechanic offered his help, and looked after nearly all the lap scoring, aided by a small Belgian boy picked up from the hotel. Kindell and Samuelson had to arrange their own fuel and oil supplies, and give pit signals, while on their rest periods, with the result that they had very little lesiure while the event lasted.

Practice work when off fairly smooth, and at four o'clock on the Saturday afternoon the M.G. came to the starting line. The event began in just the same way as at Le Mans, with drivers running to their machines. Chiron was first away, and took his snarling Bugatti into the lead, sweeping across l'Eau Rouge and swinging through the turns to the climb towards Burnenville, rapidly drawing away from the pursuing Alfa-Romeos.

The cars, streaking up the long slope, stood out against the dark fir trees which lined it. The sunshine made them appear as bright-lit shapes of flashing colour, with the trim blue car in the lead, and the three blazing red Italian machines shaking off a strung-out bunch of howling Bugattis. Behind these came the pack, jockeying for position, and with the bright green of the M.G. clearly distinguishable—the only British car in the race, and the one with the smallest engine.

Samuelson soon saw that the Tractas were following a plan of their own. He slipped ahead of two, then settled down while the quarrelling Bugattis and Alfa-Romeos disappeared in front. At the end of the first lap, Chiron was almost half a mile in the lead, and the Italian machines pursued him in steady formation past the pits, apparently ignoring the challenge of other Bugattis.

Their tactics were to wear down the Frenchmen, just

COMBAT

as the Bentleys had worn down the Mercédès at Le Mans. Chiron strove to establish a safe lead—precisely as Caracciola had done in similar circumstances a fortnight before. For sixty miles the Frenchman remained ahead, gradually increasing his lead, until he raced up to his pit and stopped. A magneto coupling was giving trouble; it was repaired and he took advantage of the delay to replenish, then shot off again, but the stop cost him his lead.

Marinoni had gone ahead, and the moment that Chiron roared away the Alfa-Romeo pit hung out a "Faster!" signal. Chiron's check suggested that his machine might already be failing him; it was strategy to make it as hard as possible for him to challenge the leader again.

Marinoni took the signal, and clocked 74.5 m.p.h. on his next lap. Chiron, also taking signals from his pit, replied with 76 m.p.h.—representing a gain of under three hundred yards, despite the daring of his effort. With Marinoni holding him off, and with Chiron striving to come up with him, the fight was one to thrill the spectators. The Frenchman's depot was urging him on, and he was driving with all the daring of which he was capable, pressing the Italians hard.

As evening shadows closed down, Ivanowsky took over the lead, allowing Marinoni to drop into second place and snatch what rest he could from the strain of setting the pace. The low, flashing red Italian cars were being magnificently handled, diving at the corners with their paintwork gleaming in the long rays of the setting sun, scuttling round and kicking the curves behind in flurries of spuming dust.

Chiron came to each turn with the throttle wide open, brakes whining at the last moment. At every corner he seemed to lift behind the wheel, his head tilted outwards

BELGIUM

as he judged the curve and put his Bugatti through it with tyres shrilling and exhaust snarling. He passed Zehender and took third place as darkness fell, when the grandstand became outlined by hundreds of coloured lights, and lamps—shaded from approaching cars—were switched on at the pits.

On the slope to Burnenville, the machines showed only as shifting blurs, marked by the occasional ruddy flare of an exhaust, and by headlamp beams which wavered into the sky above the crest of the hill. During the run down to Francorchamps, the lights from the cars could be seen like pencils of brilliant white, darting through the trees. When they took the hairpin, and bore down on the pits, they came with a blinding glare and a rushing roar, silvering the brickwork of the little bridge, then streaking up the slope beyond.

By ten o'clock at night, the leading Alfa-Romeo was a full lap ahead of Chiron, who handed his car over to Guy Bouriât. The relief driver continued the fight until he was forced into the pit with his lights dim and fading. Bouriât and Chiron spent more than half an hour in trying to remedy the defect, and when they failed, Chiron took the car on, with but one lamp winking and glinting intermittently. At times the lamp went out altogether, so, with almost no lights at all, the Frenchman raced on at a speed which appeared to equal his pace by daylight.

It seemed impossible that he could get around the night-cloaked course and the crowd waited anxiously, expecting at any moment to hear that he had run off the road. One car had already crashed and information arrived, even as Chiron went away, that another had hit a tree. In less than nine minutes, the Bugatti appeared again—following one of the Alfa-Romeos, guided by its tail light.

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Following that red glow at such speed was dangerous work, and it seemed impossible that Chiron could continue for very long. Yet, it was an hour after midnight before he came in again, now with his dynamo completely out of action. Chiron was forced to retire. Peculiarly enough, it was from a similar cause as that which had overcome the Mercédès at Le Mans. He had battled just as valiantly as Caracciola had done, making a lone fight against a controlled team and he, too, was forced to abandon the race through a fault which had little relation to the car itself.

On the Sarthe circuit, the Bentleys had slowed when their rival retired. At Spa, the Alfa-Romeo machines continued at the same speed, although they were now quite unchallenged.

§ 3

During the night, the M.G. was handled in turns by Samuelson and Kindell. At intervals, the red Italian machines lapped it while, all the time, the car was gradually creeping up until, when the race was twelve hours old, it held fifth position in its category.

In the dark hour before the first hint of approaching daylight, Ivanowsky and Marinoni were more than ninety miles in front of their nearest challenger—a Bugatti handled by two amateur Belgian drivers, who were running in their first big event.

The fast pace of the leaders had forced the drivers of other machines to travel under full throttle, which needs real skill at Spa and which brought casualties. During one spell of driving Samuelson passed no fewer than five amateur-handled cars off the road, most of them ditched.

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Daylight produced patches of mist along the fast stretch by the railway line. The mist was dangerous because it constantly shifted, and was never in the same place on any succeeding lap. The way in which it unexpectedly obscured bends made fast work hazardous until the warmth of the rising sun cleared the murk away.

The morning wore on, and Samuelson sped up a little, taking third position in his class with a lap speed which, at times, touched 57 m.p.h.—then he slowed, and stopped at the pits with a slipping clutch. Kindell had a remedy for that. He squirted the clutch with chemical from a fire extinguisher, and the car went on. During earlier laps, Samuelson had scrapped against Tractas and Aries machines, but now he covered lap after lap and only occasionally saw another car, except for the wrecks at the side of the road.

The race had grown monotonous when, without warning, came the type of incident which tries a man's nerves more than anything else. Approaching a tree-shrouded bend, Samuelson pulled well over to allow a big Georges Irat to roar past. The car ripped ahead, disappearing around the curve, for Samuelson to follow only a couple of seconds later, with no warning of what he was to see.

He discovered the shattered, smoking remnants of the car which had just passed at the base of a tree, and in the undergrowth beyond sprawled the driver, with spectators running to his aid. Samuelson had only one brief, photographic glimpse of the wrecked car, the sprawling driver and the people caught in odd attitudes as they started towards him, then all was left behind.

The most impressive thing about the crash was the abruptness with which it had happened, and it appeared

COMBAT

to have been caused by a skid on the fast-taken bend. When Samuelson came round again, the driver had gone, and only a staring crowd stood about the still faintly fuming machine. After a while the crowd drifted away, and the Georges Irat became just one more abandoned machine at the roadside.

Ahead of the M.G. lay only a B.N.C.—which had led from the start—and an Aries. The British car continued to pull up on them until, four hours from the finish, when Samuelson was again at the wheel, clutch slip set in once more.

Kindell applied his fire-extinguisher remedy, but that visit to the pit was the beginning of many others. The green machine came in time after time with the same trouble, until every extinguisher that could be borrowed had been emptied, and the M.G. was stopping on every second lap.

The car kept going, but it had to be nursed around the course, and that was a nervous, tiring business. Samuelson now drove the machine, taking no relief because he felt that if he handed the car over to Kindell, and it finally gave out, the reserve driver would blame himself for something that was not his fault at all. If the car was to stop with the finish so near, Samuelson wanted to lay no one else open to possible censure.

In spite of the clutch trouble, the car stood up well, but the constant stops reduced its average speed. It had been averaging over 50 m.p.h., but the slipping clutch slowed it so much that, towards the end, the lap time worked out at hardly more than 30 m.p.h.

The leading Alfa-Romeos, although they had the race in hand, increased their pace, with Marinoni going in front and lapping at 70 m.p.h., finally to win with a distance of 1,654 miles. Ivanowsky came

BELGIUM

in some twenty-five miles behind him, and the ovation which the drivers of the Italian cars received was matched by that which greeted the M.G., which finished fifth in its class.

Flowers were showered upon its crew and, because they had completed the course, their entry fee was returned. The plaudits the car was accorded could hardly have been greater had it actually won. Somehow, the machine had captured the interest and the imagination of the crowd, perhaps because the odds had been so much against it.

The car had borne out all Samuelson's hopes, and would have fulfilled them completely but for the trouble that arose towards the end. It had a very simple cause: washers had not been sufficiently tightened at the end of a gallery in the side of the crank-case, so that oil had seeped into the clutch. It was a detail fault, later to be checked and remedied by the man who had built the car, so that it might not occur again.

Cecil Kimber's first road-racing machine had run through two events, and it had carved for itself a tiny niche in motor-racing history, because it was the first car with an under 850 c.c. engine ever to finish the course in a twenty-four hours international event.

It had acquitted itself more than merely well and, perhaps for this reason, there was more than usual depth to a tribute which Samuelson paid before he left Belgium. A memorial had just been unveiled to a past racing man; it stood near the circuit, and the flowers given to the M.G. were set at the foot of the little monument.

After that, the car was towed away behind Samuelson's long-suffering Talbot, across Belgium to Dieppe, there to be shipped to England.

Later, Samuelson was to race again.

THE FOURTH CHAPTER

TEAM WORK

§ 1

MORE than the quarter of a century has passed since Brooklands track was opened at Weybridge and, in the years that have gone, the first motor-racing track in the world had become the most famous.

It was built at a time when Continental events were attracting a great deal of attention, and Brooklands was constructed in an attempt to overcome the fact that road-racing was not permitted in England.

Cars now cover the track at speeds which are far greater than was imagined possible when the circuit was opened in June, 1907, which testifies to the excellence of the original design. The course is oviform, and is nowhere less than a hundred feet wide. The outer circuit measures 2 miles, 1,350 yards on the centre line, and one curve is cut off by the "Finishing Straight."

As its name suggests, this section was intended to provide finishing points after a race had been fought out around the main circuit. As machines developed this idea had to be abandoned; when cars came up to the line under full throttle there was a danger of their dashing on over the banking, where the straight rejoined the course.

At all ordinary meetings, machines start from the "Fork," where the finishing straight branches from the main circuit. From this point the track is banked around the Members' Hill; this banking is so sheer that

it is impossible to climb it on foot, and it rises to almost twenty-nine feet above the inner edge of the track.

In the days when Brooklands saw really heavy, enormously-powered cars, drivers took these machines so high that their off-side tyres flirted with the broken edge of the concrete at the upper lip of the banking. But the period which produced such monstrous cars is ended. They are rarely to be seen at the track now; equivalent speeds are obtainable from much lighter and smaller-engined cars, which are not flung so high by centrifugal force.

From behind the hill, shooting under the Members' Bridge, the banking eases off to the flat expanse of the railway straight and, as the slope drops, it is possible to gain a complete vista of the course—showing as a broad, level expanse of green, edged by the patched grey of the track itself.

The railway straight is bordered on the outside by a rusted corrugated iron fencing, and ends in a curve on to the Byfleet banking. The negotiation of the turn required some judgment in days gone by, but modern cars hold the concrete so well that, with a machine properly placed, the curve can be taken at nearly full bore.

Along this banking—which obtains its name from a village just outside the track—grass grows raggedly at the inner edge, and behind earthen banks jut squat, black poles carrying the telephone wires which link the white timing boxes set at intervals around the circuit. As elsewhere, the banking carries great, irregular patches where the surface has been repaired.

It ends in a drop down to the flat of the Fork and, although this fall appears gradual, it is enough to kick "quick" cars off the ground, so that they leap momentarily through mid-air. Machines with long, stream-

lined tails are not too popular at Brooklands, since such a tail is liable to grind against the concrete when the springs bottom after the jump.

The track broadens to the Fork and the entrance to the finishing straight, at one side of which is the paddock, with stalls for cars, and a pavilion. About the paddock are small sheds, rented by people who use the track regularly. Some serve as racing camps on the days before big events, and further accommodation is provided by comparatively luxurious garages just outside the actual circuit.

In a setting of pine and fir trees, Brooklands presents odd glimpses of quite surprising beauty, and it has an atmosphere exclusive to itself. Every Continental driver with any pretension to fame appears there at some time during his career, and racing machines of almost every make in the world have turned their wheels on the scarred concrete.

It was here that Cecil Kimber's machines actually made their first appearance in a big race. This occurred before the Le Mans Grand Prix d'Endurance, but the events in France and Belgium have been given precedence because they occurred on the road—the true metier of racing machines.

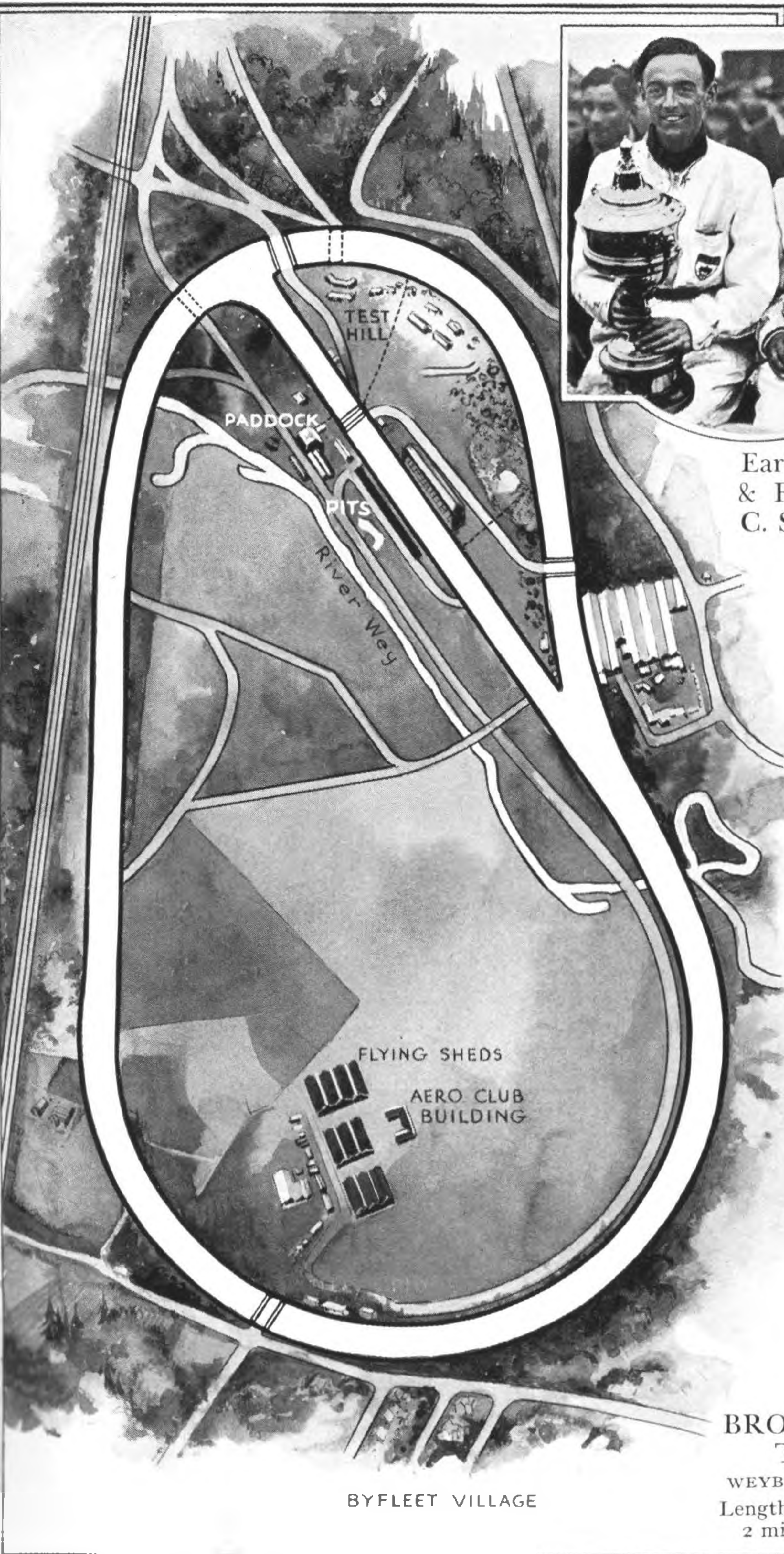
§ 2

Early in 1930, Kim was approached by a very keen participant in motor sports events, who had been a driving member of a racing syndicate.

Such a group enters a team of cars largely for the diversion of pitting the syndicate machines against others. It will be realised that there is a great deal of



Earl of March
& Flight-Lieut.
C. S. Staniland



**BROOKLANDS
TRACK**
WEYBRIDGE, SURREY
Length of outer circuit:
2 miles 1350 yards

BYFLEET VILLAGE

TEAM WORK

interest in planning race tactics and controlling a team; much more of the event is seen from the replenishment depot than from the cockpit.

Cecil J. Randall had tried out the new 847 c.c. M.G. and he wanted to put three machines into the British Double-Twelve-Hour race, early in May. He was partnered by W. Edmondson, and both had been members of a syndicate which had raced at Le Mans and in the first Double-Twelve the previous year. They now wanted to form a group of their own. They thought the M.G. very promising as a possible racing car, and they did not feel like again supporting the expense entailed in entering the altogether bigger machines of their previous experience.

It must be remembered that, at this time, the M.G.s had not then appeared in any sort of race at all, and the syndicate's gesture was a purely sporting one. They wanted to go for the team prize, rather than definitely to contemplate winning, since it was not possible for them to judge how the machines would stand up to so long a race. They found Cecil Kimber ready to assist them in every way, and preparatory work was immediately begun on three cars, although not a great deal was needed to make them ready.

The Double-Twelve was so named because it was run off in two spells of twelve hours each—between 8.0 A.M. and 8.0 P.M. on Friday, May 9th, 1930, and the same hours on the Saturday. It was the nearest thing possible to a full twenty-four hours event, since cars cannot be run at Brooklands during the night—but, as at Le Mans, the car covering the greatest distance was not necessarily the winner.

The victor was decided by "*dividing the set minimum distance figures into the figures for the distance actually covered,*

and thus arriving at a figure of merit to three places of decimals, the third figure of decimals being augmented by one if the calculation shows that the fourth place of decimals exceeds the figure '5.' ”

However one views it, such a formula is rather staggering, and the race authorities had to take special measure to cope with it. Timekeepers were housed in two omnibuses placed at the side of the course and, so rumour said, cohorts of accountants were kept at hand to help with the calculations. The ordinary spectator of the race naturally found the definition somewhat baffling, and was obliged to take all announcements about leadership on trust, pinning interest to the spectacle provided by cars at speed.

In all there were twelve prizes, beside the one for the actual winner, and included a special cash prize for the car with the best performance in relation to its price. This was an innovation, and the race was open to all production models.

When the entry list was completed, Randall discovered that no less than seven other teams were competing, which meant that success on his part would be something of a feat. In addition to his team, two other small M.G.s were entered—one by Miss Victoria Worsley and the other by H. H. Stisted, both of whom, like the members of Randall's syndicate, had had previous experience in trials work and racing.

There was also an altogether bigger 2½-litre M.G. which had been evolved during the winter. This car was built on what became known as the "Tigresse" chassis, but events made it impossible for Kim to devote further time to it, so that the design was not developed. It was entered by H. D. Parker, who was down to drive it with L. G. Callingham.

TEAM WORK

While his team was being made ready, Randall began to look around for drivers, since two men to handle each car was a necessity in such an event. He discovered F. M. Montgomery, who had driven an M.G. in a Monte Carlo rally, and secured him as a partner for himself on one of the machines. Lt. Commander W. Townend, with R. R. Jackson—who had been a member of Randall's old syndicate—formed another crew, and the third car was handled by G. Roberts and A. A. Pollard. This made up the team of six drivers and, once settled, the members of the syndicate set about planning the race.

They designed charts which would show the precise position of any of their machines at any moment, in relation to its rivals. They got out pit signals in the usual way, and schemed a most effective system of timing, rounding up quite a numerous personnel for the purpose. Finally, everything was ready, and they went down to the track to await delivery of the cars from Abingdon.

They arrived late on Monday before the race, and there followed days which Randall found almost heart-breaking.

The machines had to undergo a most detailed scrutiny by race officials, to make certain that they complied with regulations, and the seating positions had to be altered. It was discovered that the tanks would hold only five gallons, which meant that they would have to come in for replenishment every two and three-quarter hours, splitting the race-time up very awkwardly for relief drivers. Added to this, the cars were so new that they had to be run in carefully, and this left almost no time at all for actual practising.

Kim had sent down the very first of all the 847 c.c.

COMBAT

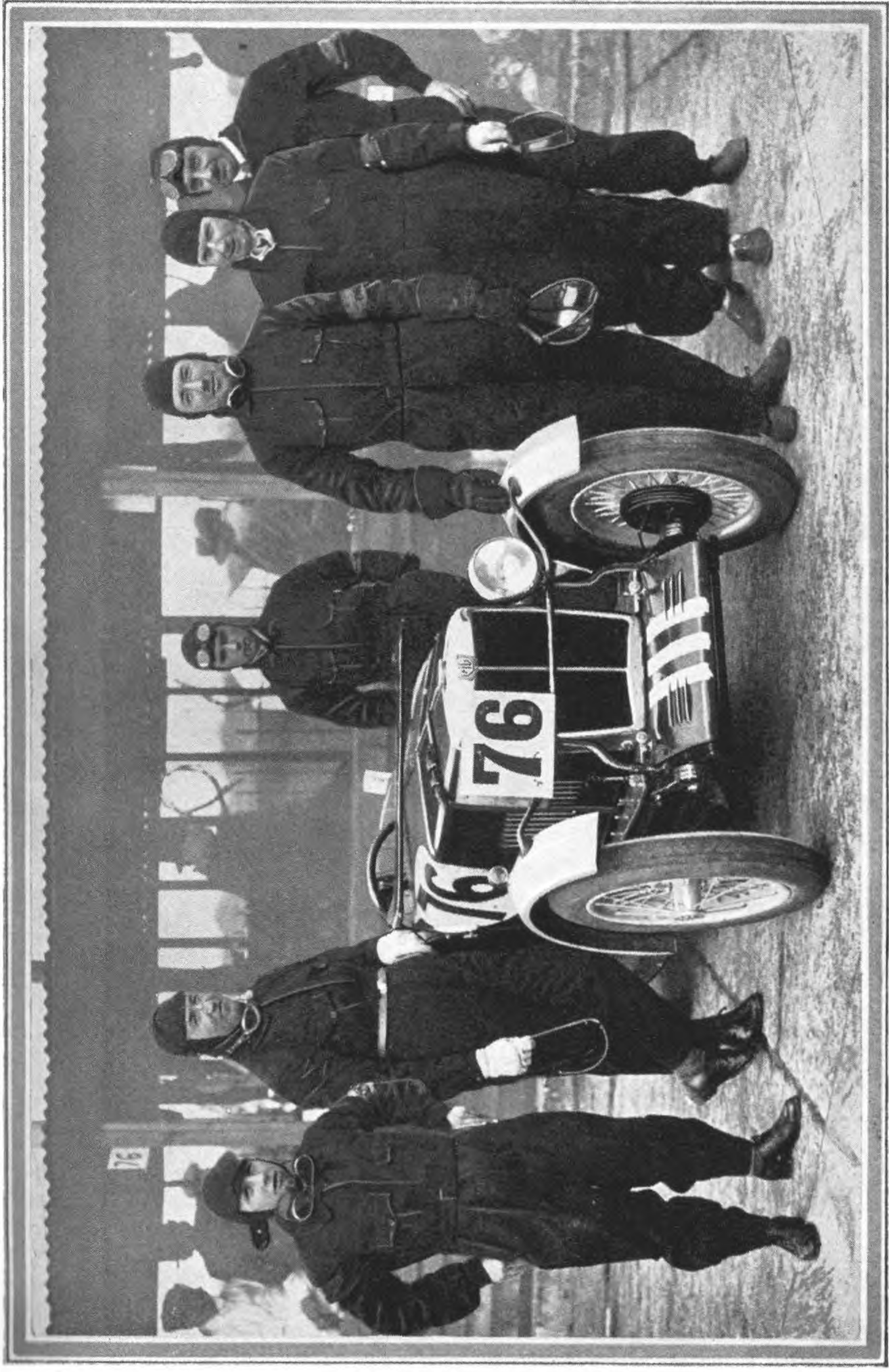
M.G.s for use as a "trial horse." The engine of this particular car had, during experimental days, been polished externally by enthusiastic mechanics, which had earned it the nickname, "Shinio." It was exceedingly speedy and, although it had descended to hack work by that time, it was very much faster than any car in the team, which was naturally disconcerting.

By the eve of the race Randall's machines had received as much "running in" as five hundred miles on the track could give them and, although they were beginning to loosen up a little, none had lapped at more than 50 m.p.h. As a result of this, the depression in the racing camp on the Thursday evening was definitely deep, and it seemed impossible that, even when driven hard in the event, they could lap at more than about 60 m.p.h. Apart from this, storm-clouds loomed over the track, suggesting the unpleasant possibility that the race might be run on a wet course.

It was small consolation to Randall, viewing the team on Thursday evening, that the cars looked very capable; they had neat two-seater bodies, and the exhaust pipe was upswept over the near-side wing, tipped with the "fish-tail" silencer demanded by Brooklands regulations.

In all, fifty-nine machines stood ready to come to the line, representing almost every British firm with a leaning towards racing. French, Italian and Austrian cars brought their colours to the concrete, but an extraordinary feature of the race was that, of the fifteen Continental entries, only five finished.

Two six-cylinder Bentleys were running, partnered by three "blown" 4½-litre machines, and these were challenged by a group of supercharged Alfa-Romeo's. Between these came Parker's big M.G.; the car was



Cecil J. Randall's team for the J.C.C. Double Twelve Hour Race, 1930

Left to right: E. Chapple, Cecil J. Randall (driver), a mechanic, R. R. Jackson (driver),
G. Roberts (driver), Cattlin (mechanic).

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impressive in appearance and, when the race began, its speed was striking.

The Thursday night passed with lights showing here and there about the track, where some camps worked through the dark hours on inevitable last-minute labour. Randall's drivers tried to cheer themselves up and Edmondson, incidentally, had borrowed a caravan which was used as the nucleus of the syndicate's camp; this meant that, during the race, everyone could be supplied with proper food. The success which attended this innovation made caravans very popular the next year.

Very early on the Friday morning Brooklands wakened, and at seven-thirty all machines turned out for the line-up along the finishing straight, which formed part of the course, the banking behind the Members' Hill being cut out.

With need for action, the depression amongst Randall's team lessened a little, but everyone still felt rather hopeless.

§ 3

The morning was cold, but the sky was clear, and chill sunshine lit the drivers as they stood close against their cars. The moment that the flag fell, they leaped aboard and all, so it seemed, got away together.

Scuttling machines of all colours screamed in gear as they dashed towards the long sandbank which marked the turn at the end of the straight. As they strung out, the little group of M.G.s showed clearly, with Randall leading the way. The big Bentleys raced ahead, soon to pass the pits at the end of the first lap with one of the

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supercharged models in the lead, followed by the two big sixes. Close behind were the other two supercharged 4½-litres—then appeared two cars of a team which offered one of the surprises of the race.

These were the Talbot machines, then making their first appearance. They were very fast, very steady and astonishingly silent, and behind them came Callingham's big M.G., also in a race for the first time. For three-quarters of an hour this car lapped at around 85 m.p.h., then, taking the turn from the straight, the throttle jammed wide open. Instantly, Callingham's revolution counter needle raced far beyond the red danger section on the dial, while he fought to take the car safely through the corner.

Once clear, he shot into the railway straight with the engine howling wildly, then he switched off and coasted to a stop near the Byfleet banking. Investigation showed that a little grub screw, holding the butterfly throttle in the carburettor, had slipped out, wedging the throttle.

After some work, the screw was cleared, and the butterfly was adjusted so that the car could crawl round to the pits. The only possible repair was to solder the screw home, and while the carburettor was being dismantled a blow-lamp was started up at the back of the pits.

In charge of this was Frank Tayler, later destined to ride as mechanic in more than one big race and, eventually, to take a responsible position in the M.G. competition department. He used petrol to get the blow-lamp burning and, in his haste, spilled a two-gallon can and started a fire which threatened to engulf the whole pit. He jerked the lamp clear, continuing work while the fire was extinguished. The tiny screw

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was fixed securely in position, and the car raced off.

For a time, it lapped at greater speed than before, then the havoc wrought by the tiny screw became clear. In over-revving under the jammed throttle, much damage had been done; the car came in with a melted big-end bearing and sundry other disabilities which made it impossible to continue.

As if to make up for this, the smaller M.G.s were lapping the 2.6-mile course at surprising speed. To his own amazement, Randall found that he could get around at close upon 70 m.p.h. The stiff engines of the cars were loosening up and as, like others, they warmed to their work, the long race began to grow interesting.

On an Austin Seven, E. Burt lost all the oil from his crank case; a nut slacked off and allowed the lubricant to dribble out on the track, so that he melted a couple of big-end bearings. He pulled into his pit and wired to the works for two new "con" rods, then sent the old ones to a workshop in the track, asking that they should be remetalled, in case those which he had ordered did not arrive in time. He spent most of the remainder of the day waiting at his pit, then worked feverishly when the repaired connecting rods arrived, and drove his car off barely five minutes before the first day's racing ended.

He knew that he could not win, but he was imbued with the spirit which compels a racing driver to try and finish, no matter what happens, and his effort was paralleled by the crew of a Bentley who, later, changed a rear axle. It was this Bentley which, when the race had been running for three hours, backfired at the pits during replenishments and ignited a pool of petrol. Flames blazed madly upwards, catching the car and sending black, greasy smoke across the track before the fire could be extinguished.

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The pits were in the finishing straight, and work there was carried out with some of the cars touching tremendous speeds as they dashed past. The big Bentleys went by at over 110 m.p.h., approaching the turn to the outer circuit so fast that it seemed impossible that they could slow enough to take it safely.

The M.G.s proved to be very fast on this corner and even when, near midday, threatening storm-clouds released a shower of rain, the wet track made no difference to their speed. The rain was heavy and stinging, but it did not last long, although three hours later rain fell again, and this time it brought trouble. A Riley, driven by J. L. Stableford, swung high up on the banking as it cleared the turn, then skidded down the slope beyond. Twice it spun with screeching tyres across the track, pitching to the inner edge.

It turned completely over as it left the concrete and pitched down the grassy bank beyond, with the driver and his mechanic still in the car. Before assistance could be rushed to them, they crawled comparatively unhurt from their machine.

As the afternoon wore on, two of the supercharged Bentleys developed engine trouble and retired, leaving the six-cylinder machines to lead the race, while the M.G. team continued to lap steadily.

The Double-Twelve was an event in which the attrition of fast and consistent driving must have effect. There was no latitude for harsh cornering, and no driver could indulge in full-throttle work and hope to complete the race. It was not possible, during the first day, to point to the eventual victor, because so much could happen before the last hour ticked away, and the only really clear issue was the battle between the eight teams. The Alvis team dropped out first, losing one of

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their machines during the early laps. The Lea-Francis and the Aston-Martin teams failed just after midday, then two of the "blown" Bentleys retired within an hour of each other, and the Lagonda team lost a car at about the same time.

This left only the Austins, the Talbots and the M.G.s to compete for the team prize, and race tactics became of supreme importance. The M.G.s were being controlled by Edmondson, and the accuracy of his calculations was shown by his handling of the cars. Once, when Randall's fuel was running low, and he was due to come in, he signalled the fact to his pit. No "Come In!" signal was hoisted when he passed on his next lap, and he continued with his petrol gauge showing a completely empty tank.

He had visions of running out of petrol at the far side of the track, but the car came safely round again and still he was not called in. Nursing his machine, exasperated beyond measure because Edmondson seemed to pay no heed to his frantic signals, he went on. In what appeared a miraculous way, the engine continued to function, apparently without fuel, and he came in sight of the pits once more, relieved to discover that he was now being permitted to come in.

Randall had angry comments to make about the risk he had run of being stranded. Edmondson, however, knew that the M.G. tanks were flat-bottomed and that, even after the gauge indicated zero, enough petrol still remained to carry a car for six or seven miles. He had let Randall run on because other machines in the team were replenishing, and his arrival would have congested the pit area.

It was both a test of obedience to pit signals—the first essential of a race driver—and of accurate computation, by the team control. The ordeal, despite the

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explanation, was one which haunted Randall for some time afterwards.

Although the stress of the event was taking its toll of other teams, matters were very different with the machines from Abingdon. The farther they travelled, the faster they became, and it proved easy to maintain lap speeds which, on the Thursday evening, had seemed quite impossible.

For most of the day, Randall led the way amongst the M.G.s, then the car driven by Stisted went ahead; the relief driver on this machine was Norman Black, who was gaining experience which, later, was to count for a good deal. Miss Worsley's private entry kept just behind the team for the most part, speeding steadily around and averaging above a mile a minute with quiet consistence.

The race was far from spectacular, except in its cumulative effect, shown by the gradually lengthening list of retirements. There was absolutely nothing to suggest that the first day was to end in stark drama or that, an hour before the eight o'clock maroon spanged out, the race would be marred by a crash destined to mark a new phase in Brooklands history, and, in some measure, to colour the future of racing in England.

§ 4

In the dash past the pits, the fastest machines ran close against the opposite railings, where spectators were crowded. At this point the bigger cars were travelling at much more than 100 m.p.h., and amongst the fastest were the three splendid Talbots. Time and again a group of the bigger machines would roar down the straight, the very concrete shaking under the impact of

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their stamping wheels. Such a bunch approached the turn in just this way at seven o'clock in the evening.

An Alfa-Romeo was flanked by one of the Talbots, No. 22, close behind which came a sister car, No. 21. The first machine appeared to brake and, in the same moment, it skidded. The two Talbots were travelling so closely that the checking of the leading machine brought the other on to it. One front wheel locked against a rear wheel of the car ahead, and both slid towards the railings, to hit the low kerb at the track's edge.

Travelling at such speed, disaster was inevitable. No. 22, driven by Rabagliati, pitched into the railings, somersaulting wildly. The other Talbot leaped the railings without touching them, and struck the time-keeper's box, tearing a great hole in the side and losing its front axle as it rebounded to the track. The car turned completely over, smashing down on the concrete with a terrific impact—yet harming the driver and his mechanic so little that both were able to extricate themselves unaided.

No. 22 burst through the railings, plunging amidst the scattering spectators in a smother of torn grass and flying earth, finally stopping level with the other machine, upside-down and wrecked.

The whole thing occurred utterly without warning. At one moment, the cars were running faultlessly; the next, both were shattered; débris was scattered wide and broken iron railings gleamed, wrenched and twisted, out of the dust and flying smoke. Rabagliati's mechanic was killed outright, and the driver himself was injured. One of the spectators was found fatally hurt beneath the overturned car, and a number of others needed medical aid.

That some misfortune may cause a car to leave the

course is an ever-present risk; it has happened at places other than Brooklands. Its immediate effect at Weybridge was the construction of a low, wooden retaining wall along the straight, just in front of the railings, while Brooklands is now scattered with signs warning spectators that motor-track racing is dangerous, and that they attend entirely at their own risk. But these notices do not seem to have affected the size of the crowds.

The Talbot crash brought the opening day of the Double-Twelve to an end, and the remaining Talbot in the team was withdrawn as a gesture of condolence towards those who had been hurt, and in respect for the men who had lost their lives.

It has been suggested that the race should have been stopped. It is not in motor-racing tradition to end an event because of a fatal smash, although it is customary for any other cars in the same team to withdraw.

§ 5

At the end of the first day's run, seventeen cars had retired. The survivors were pushed off the track, to spend the night in the open under canvas sheeting; they could not be touched until the flag dropped the following morning.

When the cars were rolled out to the pits, half an hour before the start on Saturday, crews became busy replacing the cold lubricant in the engines with heated oil, that they might start at speed. Others made preparations to continue repair work stopped at eight o'clock the evening before.

When the flag dropped, the Alfa-Romeo machines started a real assault upon the position held by the six-

cylinder Bentley cars. The Italians went off under full throttle, gaining ground while other drivers—not daring to take the risk of pressing cold engines—were touring round and warming up.

The issue for the team prize had now become a straight fight between the M.G.s and the Austins, owing to the withdrawal of the Talbots the evening before. One of the supercharged Austins had been in at the pits early in the race, losing much time, but it had picked up as the first day drew to a close, and Randall had very little hope of beating them.

He and Edmondson decided that they could open up a little, as the cars seemed so sound. This they did, and Randall's car was running so well that he soon slipped in front of Stisted's entry.

So the race got under way again, with the Alfa-Romeos travelling magnificently, their leading car handled by Marinoni. He lapped at close upon 90 m.p.h. from the re-start, and maintained his pace by the clever way in which he took the sandbanked turn.

He had plotted a course which put his car through the bend in almost a straight line. He accomplished this by placing the Alfa-Romeo at the far side of the track as he came past the pits, entering the corner at hardly reduced speed and using the banking at the far side of the turn to slow the machine and enable him to dive down to the railway straight.

Marinoni cleared this corner faster than any other driver. He alone beat the M.G.s, which went through it as quickly as the big Bentleys, who were soon fighting hard to keep the lead that they held from the Italians. Marinoni, however, paid for his dashing work. At ten o'clock in the morning he sheared his camshaft drive, and sent to the London service depot for spares;

the car was delayed for three hours before it could run on.

An unusual feature of the race was that, in two instances, messages were sent long distances to secure spare parts for disabled cars. Normally, everything necessary is kept at the pits, with the exception of requirements for major repairs. In an ordinary race there is no opportunity of renewing big-end bearings, or fitting new timing pinions, but the Double-Twelve was of such long duration that these operations were unexpectedly feasible.

Marinoni's difficulties now made victory almost certain for the Bentleys, and left the rest to fight for leadership in their various categories—always with the chance that the great green machines might yet fail.

The race went on, producing the crop of unusual incidents which every speed event must bring. Earl Howe found a hub-cap fractured, and stopped on the railway straight. Running back to the pits, he trundled a jack out to the car, for the wheel to all but drop off the broken hub when he raised the axle, suggesting the closeness with which he had come to disaster.

A Tracta was delayed for two hours; it lost the "fish-tail" from its exhaust, through hitting the concrete on the jump off the Byfleet banking. The car could not continue until the silencer had been retrieved and fitted again.

Stisted slipped from the counter of his pit, when the car came in for a change of drivers at midday, injuring his knee-cap so severely that Norman Black was obliged to handle the car alone during the remainder of the race.

The day wore on, with the M.G.s gaining a little on the Austins, then dark clouds drew across the track and,

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four hours from the end, the skies opened and rain came in a deluge. It fell like steel rods, misting the air and making it impossible to see for any distance ahead. The wheels of every machine flung out a tattered plume of dirty-white spray, and their rear tyres kicked water solidly behind.

The M.G. crews were soaked each time that a bigger machine passed them on the flooded track. Every depression in the concrete was filled with water, which gushed out as the wheels struck it and, in the midst of the storm, trouble visited the Austin team. The "blown" car which had been in difficulty early in the race stopped at the pits, and its crew began work on it, changing the supercharger. An hour slipped past while, up on the Members' Hill, a group of M.G. personnel watched, knowing that victory or defeat now lay with the halted machine. Every minute of delay meant an advantage to Randall's cars.

At the pits, Edmondson stood, watch in hand, marking the way in which his own cars gradually drew level with the Austin performance, and then went into the lead. Another hour passed, then "Archie" Nash sent the Austin off, just as the rain ended and when there was less than an hour to go. He put his foot hard down, but the delay had been too great. Nothing that he could now do was enough to wrest the team prize from the M.G. machines.

At eight o'clock, a maroon spanged and a flag flaunted on the damp air. A big six-cylinder Bentley crossed the line as winner, having travelled 2,080 miles, to be followed by a second Bentley which had covered only twenty-five miles less.

Randall's team took the prize at which he had been aiming, while his own car led all the M.G.s home; he

had averaged rather more than 60 m.p.h., and Black brought Stisted's machine in immediately behind him. Miss Worsley's car came in with 1,385 miles to its credit, finishing twentieth out of the twenty-seven cars that were running at the end.

Incidentally, and as a tribute to his persistence, Burt—the Austin driver who had been delayed for almost the whole of the first day—was still driving valiantly when the flag fell.

§ 6

One thing became very clear to Cecil Kimber, as a result of the Double-Twelve race. Although Randall's team had won the prize they had set out to gain, there was no denying that they had run under a definite handicap.

Their engine size was too small to give the cars a real chance in Class G, because they had only 847 c.c. against the 1,100 c.c. limit in that category. In other words, they had been competing against machines with power-units twenty-five per cent larger than their own.

The limit for Class H, in which the Austins had run, was 750 c.c. The narrowly-defeated Austins had been only 100 c.c. smaller than the M.G.s, while two of the team had been supercharged. Obviously, the M.G. engines—if the cars were to have a fair opportunity in open competitions—must be made either larger or, a less drastic step, they must be made smaller to bring them into Class H.

Kim did nothing about this immediately, but the Brooklands race proved to be the first shot in a campaign which developed into a very definite, if

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extraordinarily friendly, battle with the Austins.

Randall's team had shown the soundness and speed already demonstrated by Samuelson's persistent efforts, and this proving of the cars created a demand which kept the man who had built the now veteran Number One fully occupied.

Then, towards the end of the year which had seen the definite entry of his cars into the racing world, there came a challenge that opened up an entirely new view of high-speed work, and suggested a sphere of activity which he had not previously contemplated.

THE FIFTH CHAPTER

EX. 120

§ 1

SUCCESS in record-making is necessarily transient, but it sets a seal upon a car. The builder of a machine which has done particularly well in a race often considers the possibility of attacking existing record figures, and fixing his machine's performance for all time.

Cecil Kimber had never contemplated making any attempt on records, but something occurred after the Double-Twelve to turn his attention in that direction. This was the victory of an Austin in the B.R.D.C. 500-Miles event at Brooklands; it won at an average speed of 83.4 m.p.h.—a really amazing performance for a car with a 750 c.c. engine.

At that date, the five hundred miles record for a power-unit of this size stood at 62.8 m.p.h. Obviously, the racing Austin could easily raise the official record figure, and, a few days after the event, Sammy Davis brought the same car out at Brooklands with the intention of attacking all Class H records.

At eight o'clock on Wednesday, October 15th, 1930, the attempt started. In all, Davis took a round dozen records and, as if not satisfied with this, he reappeared with the machine a few days later. By the time the car pulled up, it held every record in Class H, with the exception of four; these had been made by Venatier on a Graziade, one of which stood at 96.57 m.p.h.

for five miles—an enormous speed for so small a car.

The Austin had made no attempt upon the Graziade figures but, in all, Davis had collected sixteen records. The feat created some comment, and it occurred just at the time when Kim was considering the situation in regard to the M.G. Midget.

He saw that he must either enlarge the engine or reduce it, to give it the best chance for racing in international classes. Increasing the capacity of the power unit meant making the car more costly, and this he was reluctant to do; but it would not be difficult to reduce the stroke or the cylinder bore, and so bring it into Class H. This, incidentally, would make it a definite rival to the very successful Austin.

If the car were to be ready for the next racing season something had to be done immediately. With winter at hand, it appeared difficult to give the machine any real test—unless it went out for records, which could be attempted at any time of the year.

Some improvements had already been contemplated, one of which took the form of an underslung chassis, and an experimental machine was running about the Abingdon works. It was a green two-seater, and was being used for odd journeys, and for demonstrations of the new type of chassis. It was decided to experiment still further with this model, which was known—from its chassis number—as Ex. 120. It was given cylinder liners and a new crankshaft with a shorter throw, which reduced the capacity from 847 c.c. to 747 c.c. The engine was carefully tuned, but it was not supercharged.

When everything was ready, some place had to be found for preliminary trials. The only possible venue for record attempts was at Montlhéry, the track just outside Paris, but there was little wisdom in taking the

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car over unless it were actually going to attempt records.

Brooklands had closed for the winter and, at first, it looked as if Kim had a car and no place to test it, until the idea was suggested of taking the machine on to some stretch of road and letting it out. It would then be possible to see how it held the ground, and what revolutions it touched during action.

In making the car ready, Kim had been assisted by Capt. G. E. T. Eyston, who had done a great deal of record-breaking, and who had designed a supercharger, forming a company for its production. Eyston's technical adviser was E. A. D. Eldridge, and he also helped in the preparations. Eyston was willing to drive the machine and, despite the fact that the only records they could attempt were held by a supercharged Austin, he believed that the M.G. had a real chance, even though it was "unblown."

The idea of trying out the car on the road grew, and the upshot was that, one afternoon, a lorry—bearing no distinguishing marks—left Abingdon under Jacko's charge and, very early on the morning of December 12th, it was halted beside a stretch of old Roman road just beyond Newmarket.

The car was run off the lorry, and there were no strangers about to see the machine warming up. Eyston donned full racing kit, and soon the quiet was shattered by the fierce bellowing of the open exhaust as the car ripped away, flashing along the country highway again and again.

No times were taken, but it was seen the machine held the road magnificently, and the full engine revolutions were reached. Eyston suggested, when he came in, that the compression could be raised with

advantage; he felt that, once this had been done, the car would be fit for the work in hand.

Accordingly, the machine was returned to the works, while Eyston and Eldridge went over to Montlhéry to make the necessary arrangements for timing an attempt on some of the Austin records.

§ 2

The Montlhéry speedway was opened in October, 1924, and has since become the most-used record-breaking venue in the world—because of its excellent surface, and because neither open exhausts nor night driving are prohibited.

The autodrome stands on high ground, close against the road between Paris and Orleans, near the village of Linas-Montlhéry, rather more than twenty kilometres southwest of the capital. The track circuit measures one and a half miles, but in 1925 a road course was added which, combined with the track, gives a lap distance of 7.76 miles. The extension was completed in time for the Grand Prix de l'Automobile Club de France in July, 1925, run off for the first time in twelve years.

The actual *piste de vitesse* at Montlhéry is a remarkable construction. The track is entirely supported on slender concrete piles, which form a kind of grey, petrified forest when viewed from below. The surface is formed of very smooth, close-grained concrete, and the gaps between its sections have been so carefully filled in that it is not easy to find even small crevices.

Driving round the inner edge of the track, one receives the impression of being inside an enormous bowl. The lap distance is barely half that of Brooklands, and the

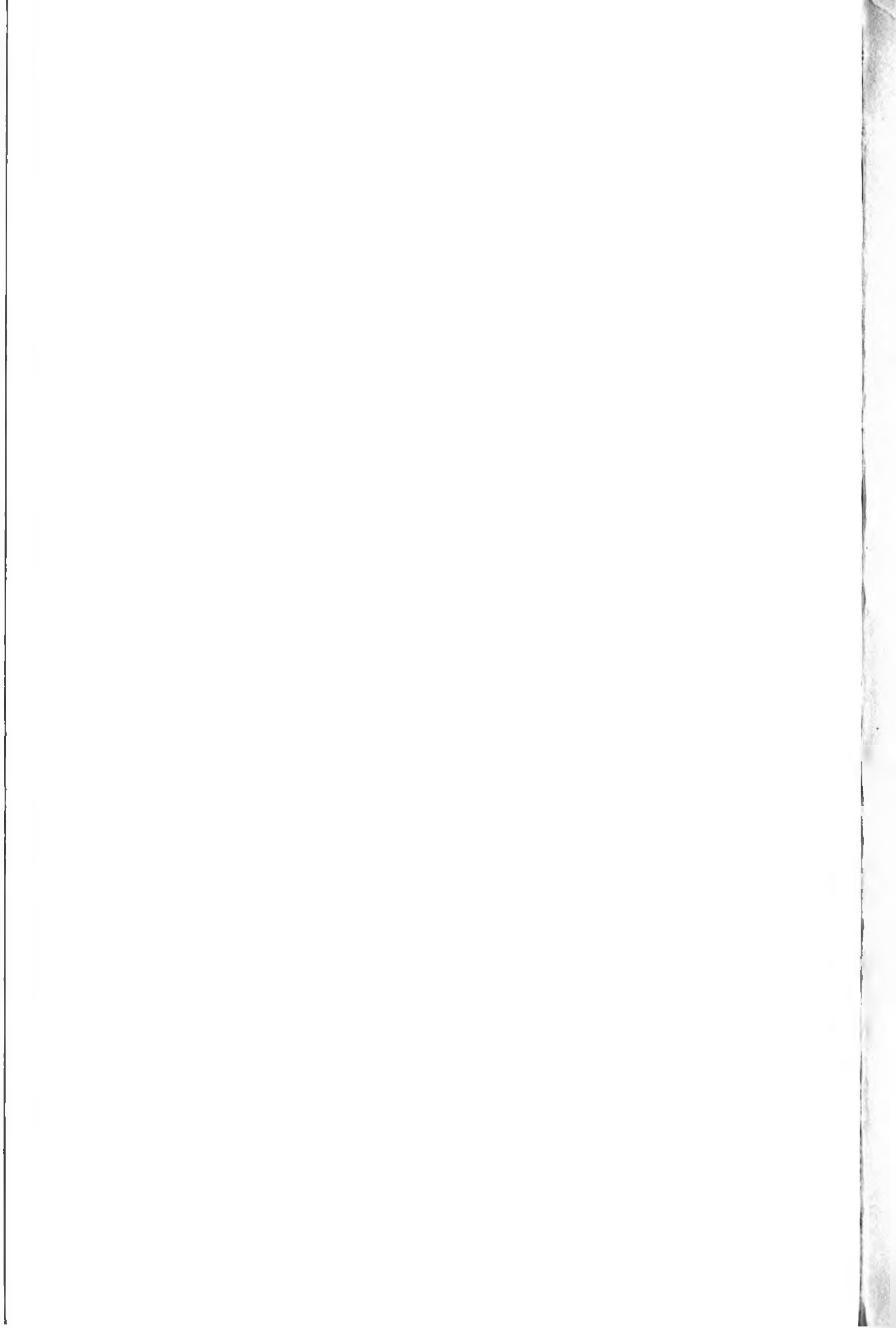
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steepness of the banking may be judged from the fact that, despite the lesser distance, much higher speeds have been attained there than on the Weybridge track, although, of course, this is aided by the excellence of the Montlhéry surface. The two straight sides of the course are very short and the actual flat sections are measured by yards only, being just sufficient to accommodate the length of the grandstand.

The upper rim of the banking was once marked by wooden fencing but, situated on high ground, the track is very exposed, and most of this fencing has been blown down. At one time the huge grandstand had a roof, but this was dismantled because of the winter gales. The course is provided with three big security zones, the backs of which are linked by a concrete fence, which forms a boundary to the interior ground of the track. At the inner edge of the concrete is a wide safety stretch of soft earth; weeds and grass which might grow here are kept trimmed. The pits, facing the grandstand, are sunken, and behind them is broken ground, green with bushes and small trees.

Almost level with the end of the pits begins the road circuit, opening from the outer edge of the track, and although this course appears unusual in plan form, it is magnificently designed, taking full advantage of the contour of the ground over which it runs. The surface is tarred throughout, except on the corners, where concrete is laid.

From the *piste de vitesse*, the road circuit runs almost dead-straight, then falls abruptly in a sudden and surprising dip in front of the Couard bends, parallel with Gendarme corner. Clear of the bends, the road drops abruptly for another turn, and then shoots down to the Bruyeres hairpin. It continues through another



harsh bend, down a fast straight to Les Biscornes, where four turns come in swift succession.

All the way the road is flanked at the left by trees and bushes, and at the inside one gains glimpses of the return road, with wild flowers growing on the stretch of earth between. From Les Biscornes runs a magnificent straight offering a beautiful vista of flanking greenery and bright flowers, at the start of which it is possible to see, far ahead, the white of the concrete surfacing the Virage de la Forêt. Where the straight dips, the corner disappears, then the road rises abruptly in a signal for another sudden, disconcerting drop which carries the car into the long, climbing turn of the corner.

Clear of la Forêt turn, the course bends to Gendarme corner, drops and then levels off into the long, return straight where the surface is scored by tyre-marks left as a permanent indication of the way in which this section is used for brake-tests between races. At the end of the straight, the course bends to the corner by Faye Farm, then swings on to the track at the side opposite from which it started, the debouchment being marked by enormous red posts.

Like the track itself, the road course at Montlhéry bears every evidence of careful planning. It is a definitely sporting circuit, providing greater tests than any road could possibly show and offering bigger hazards. At the same time the width of the course, the fine visibility and the distinctly pleasant surroundings lend an impression that here cars are racing in their proper sphere. Each bend and each corner appears to give scope for driving skill and, at the same time, is kindly to any chance error of judgment.

§ 3

The road section at Montlhéry is not, of course, used for record-breaking efforts. Only the actual track is employed for this, and Eyston knew the French course well. Because of his engineering ability, his interest lay with efficiency rather than with sheer speed and, to him, breaking a record was a greater feat than winning a race. In the record effort, the car has a clear run and cannot be hampered by the proximity of other machines, while the driver's attention can be concentrated solely on getting the best out of his engine.

It was because of this interest in efficiency that he had for long believed in the potentialities of superchargers. At his suggestion, Ex. 120 was adapted to take a blower, but this was not fitted when it left England for the French track. It crossed the Channel on Boxing Day, with Jacko alone in charge.

He had to abandon Christmas festivities at home, but he discovered that the festive spirit still actuated the French driver of the lorry hired to convey the car from the coast to Montlhéry. This man had a spare driver, and both insisted that their wives should travel with the car and its case of spare parts. Also, the lorry's tyres were definitely worn, and the journey was interpolated with endless punctures, most of which Jacko repaired. The long-drawn run culminated in a cheerless midnight arrival at the track.

Days of vile weather followed, during which carburation adjustments were made. Little other work was necessary, and Eyston felt satisfied that he could, at least, make a good show with the machine. They waited for a break in the elements, and the first im-

provement came on New Year's Eve; even then there was a high wind, but the track was fairly dry.

The car was warmed up and tried around the track, then Eyston took it at speed across the timing tape. His idea was first to attempt the fifty kilometre record, then to go on and attack the figures for longer distances.

The Austin record stood at 83.5 m.p.h. for the fifty kilometres, and Eyston broke this with 86.38 m.p.h. He took the fifty miles with 87.11 m.p.h. against 84.3 m.p.h., and broke the one hundred kilometres with 87.3 m.p.h.—some three miles an hour faster than the speed which Sammy Davis had set up.

The old figures had been attained with a supercharged engine of the same capacity as the M.G. That Eyston's car was "unblown" added to the performance—since, in racing, a supercharged car is calculated as having thirty per cent greater capacity than one that is not similarly powered.

With other records in sight, a valve broke and put an end to that attempt, but Eyston had learned enough to make a guess at what the car would do if it were fitted with a supercharger. No car of that capacity had ever done 100 m.p.h., but he believed that the M.G. could achieve three-figure speed, given a supercharger and less inclement weather. Somehow, 100 m.p.h. is a magic figure; from the day when a Gobron-Brille first achieved it, cars of less and less engine size have attained the same goal.

Cecil Kimber agreed with Eyston that the M.G. might manage it. To some extent, the experimental model had proved itself, and Kim was keen to find out just what the capabilities of Ex. 120 might be, and so draw that much nearer to the ideal machine.

It was decided to leave the chassis at Montlhéry, and to

send the engine back to England for a supercharger. Jacko returned with the power-unit, and he lost no time on the journey, because it was known that the Austin camp was also trying to achieve the hundred-mile mark. The M.G. performance had, as it were, been the first real shot in the record-breaking war, and the rival racing personnel was very much alive to the kudos accruing to the 750 c.c. machine which touched three figures for the first time in history.

While Jacko was hurrying back with the engine, Sir Malcolm Campbell was making ready for an attempt on the land-speed record at Daytona—and with him he had an Austin with which he meant to try and break the Class H record for the flying mile, which then stood at 87.7 m.p.h. It was obvious that Campbell would do his utmost to push the Austin through the measured mile at a three-figure speed. The temptation was to rush work on the M.G. engine, and get the car back to Montlhéry for an attempt to do 100 m.p.h. over, say, five kilometres before the Daytona model made its run.

Arrangements at the French track were such that it was not possible to break the mile record there, although longer distances could be registered. It was asking a good deal from Ex. 120 even to try for such speed over a distance almost five times that which Campbell would be attempting, but there was the possibility that the machine could accomplish it and thus gain the coveted honour.

Despite this, work on the engine was not rushed, as may be judged from the test given a supercharger similar to that intended for the record-breaker. This blower was clamped to one of the 847 c.c. engined cars, which was run on to a device known as the "Comparator," where the car was kept under open throttle for two days

at what was the equivalent of 87 m.p.h. on the road, during which time the supercharger ran faultlessly.

Incidentally, the Comparator is a contrivance both startling and unique. It consists of four steel drums set so that the rear wheels of a car each drop between two of the drums. When the wheels turn, the drums spin with them and, being connected to a speedometer, register the pace at which the car would be travelling if it were on the road. The front wheels are steadied by wooden chocks, and the car itself is chained to the wall behind, while the air resistance set up by a machine on the road is artificially produced by a large air fan running in a wooden casing. Actually, of course, the speed can only be comparative; hence the name of the device.

The engine of the car under test gave off power sufficient to move the machine at very little short of 90 m.p.h., although it was standing still. As it ran continuously for two days, any doubts about the supercharger were settled, and the record-breaker's engine was re-erected, when Jacko set out for Montlhéry once more. This time, remembering his previous experience with the French lorry, he drove one of the experimental Tigresse chassis—out of which had been born Callingham's Double-Twelve machine. He was accompanied by Kindell, who had driven with Samuelson in the Le Mans race.

The car was heavily laden with a spare engine and everything which could possibly be needed, and on arrival at Montlhéry it joined Ex. 120 in one of the sheds beneath the actual track. The weather was bitterly cold and, in contrast to the previous attempt, harassing difficulties arose, not the least of which was a course streaked with ice, making it impossible to get the record-breaker out every day.

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There was considerable trouble with fuel, but the machine was almost ready when, on February 5th, information came that Campbell had broken the land-speed record with his "Blue Bird" at 246 m.p.h.

The men at Montlhéry knew that he would take out the Austin immediately, and they waited anxiously for news. They had been working on Ex. 120 for almost a fortnight and, worried by this, it seemed to them that Campbell could not fail, and that he must achieve over 100 m.p.h. Twenty-four hours passed, then they heard that, although he had raised the Class H record by seven miles an hour, his figure was only a shade above 94 m.p.h. A good performance but, to their relief, certainly not three figures.

The goal for which Eyston and Eldridge, Jacko and Kindell were working was still attainable, although they had set themselves a greater task than that with which Campbell had been faced. Since Eyston could not attempt the mile at Montlhéry, he meant to try and touch 100 m.p.h. over at least five kilometres. It was attempting a great deal, and the effort was bound to resolve itself into putting his foot down and simply travelling as fast as possible.

The news from Daytona spurred them on, and they needed some encouragement after the troubles they had experienced. The engine had blown up, and the spare power-unit had been fitted. The supercharger's gearing needed changing and this, coupled with other difficulties, involved so much work that, during the week before the actual effort, on February 9th, Jacko and Kindell laboured for a hundred and twenty-six hours. There are only a hundred and forty-four hours in a working week—although racing mechanics are used to forgetting Sundays.

Finally, on the Monday—three days after Campbell's effort—the car was rolled out to the track, with everything in readiness except the weather, which seemed to grow worse as timing preparations were completed. There was a drizzle of rain, which made visibility difficult and, during his test runs Eyston found that he had to combat a wind of ugly strength.

When all was ready he crossed the tape with his foot hard down, actually making an attack on the only records which the Austin did not hold and which had been set up by the Grazide.

In a shade over six minutes Ex. 120 had collected them all, the highest speed Eyston attained being 97.07 m.p.h. over the five kilometres; the old record was 96.76 m.p.h. He also broke the ten kilometres, the five miles and the ten-mile record—the latter figure being 96.91 as against the Grazide's 96.22 for that distance.

This was a real performance—but it was not 100 m.p.h. Eyston was not satisfied and, in his opinion, there was no reason why he should not try again; the timekeeping officials were available and he was convinced that the machine could do what was asked of it. Jacko and Kindell, however, were tired out, so a telegram was sent for assistance. But by the time help arrived the two were on their toes again, and all began an overhaul of the engine, although little was done to it beyond checking the valve-timing and lifting the head.

Eyston felt that the power output had been reduced by the frigid weather, and an arrangement was contrived by which hot air, gathered from a jacket around the radiator, was fed to the carburettor intake. On test runs this device proved extraordinarily satisfactory, and it was decided to go out on the Monday and try to break the records which the car had set up just a week earlier.

On the night before the run it was suggested that a cowl should be fitted to the radiator. This would have the double effect of giving the car better stream-lining and preventing over-cooling.

Such a cowling is no easy thing to contrive without proper tools, material and expert knowledge. There was nothing available at such short notice beyond some sheets of thin steel. Jacko, however, saw that the cowling could be hammered out by making use of a gully in the garage floor, and Kindell contrived mallets with which to beat the steel to the required contour.

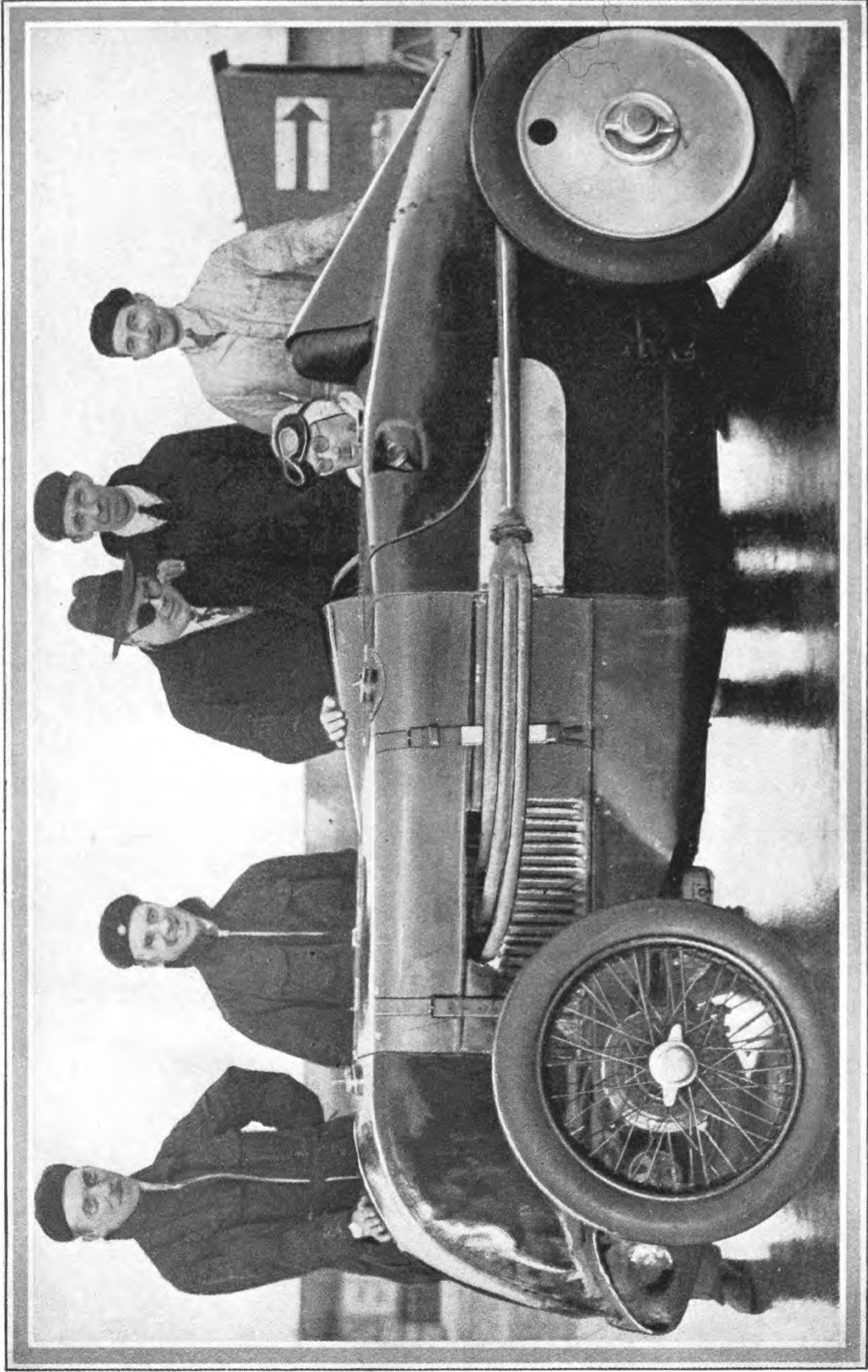
They worked for almost the whole of the Sunday night, pounding the steel sheeting in the gully, while Kindell made new mallets as fast as old ones were broken. The job was completed successfully and the car was pushed out the following morning. Eyston tested it between showers of rain and finally announced himself satisfied.

A message was sent to the timing officials and the scene was set for yet another effort to touch a peak hitherto unattained in the history of speed.

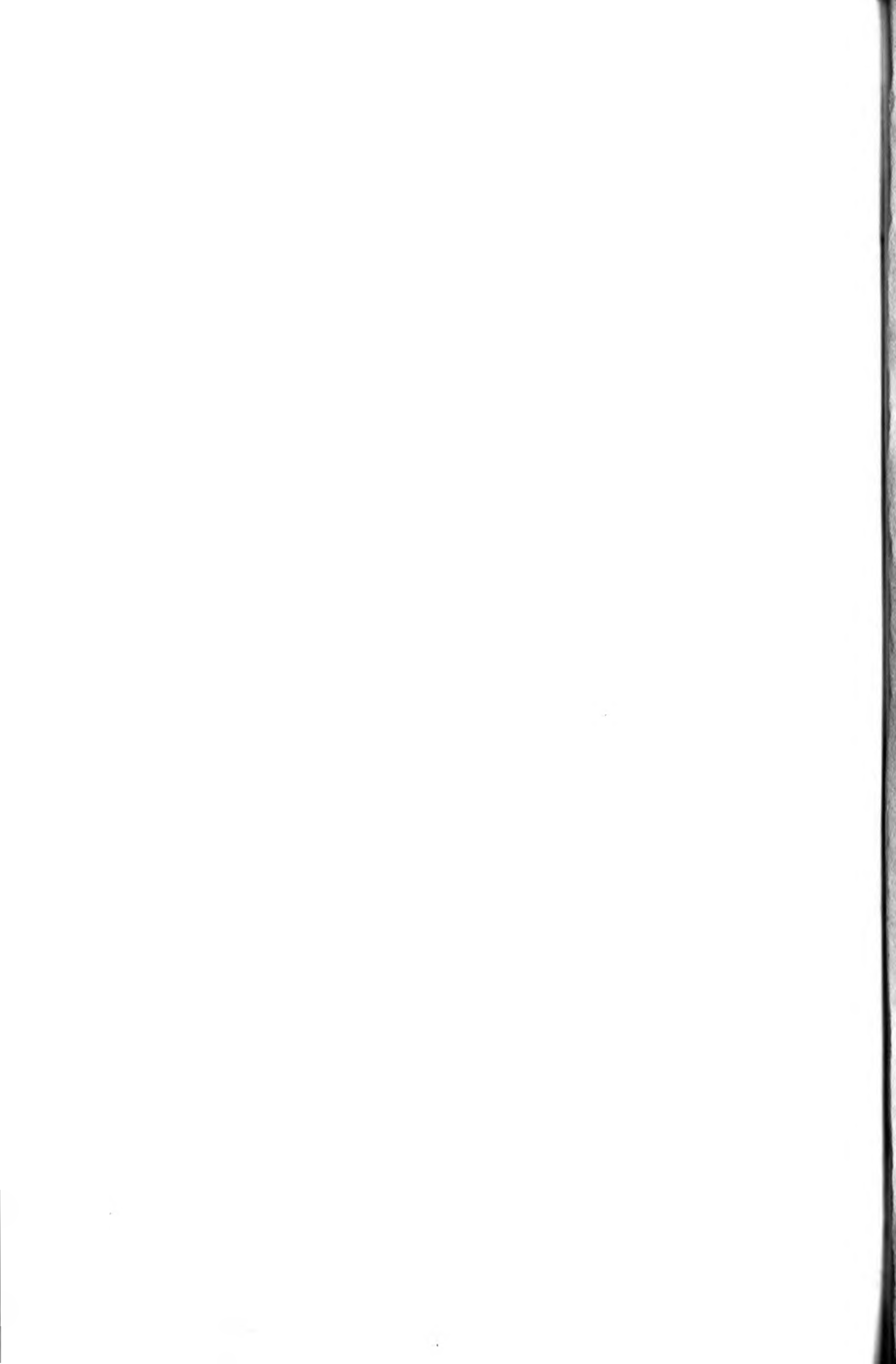
§ 4

There was something war-worn and grim in the appearance of the record-breaker. The radiator cowling, dented and battered from the roughness with which it had been made, was built right out to the front of the dumb-iron fairing, and it looked harsh but effective.

Exhaust pipes protruded from the near side of the engine-cover, merging to a single, unsilenced pipe which ended by the scuttle. A wind-scoop in front of the steering wheel was designed to shoot air over the driver's



Ex. 120 with its battered radiator cowl
Behind the car, from left to right, stand "Jacko," Kindell, E. A. D. Eldridge, Cecil Cousins and Phillips



helmet, while a padded head-rest at the back of the cockpit merged into the short stumpy tail.

The rear wheels carried discs and the car was shod with treadless racing tyres—not the most pleasant type for use on a wet concrete track.

As Eyston had a ten-mile run before him, he planned to start at four o'clock, but—with that peculiarly persistent thwarting which seems to attend almost all high-speed efforts—the car which was bringing the Automobile Club de France timekeepers to Montlhéry crashed on the way to the track. Not until nearly five o'clock—just when wintry dusk was beginning to settle—was everything ready. Then, as Eyston was climbing into the car, a hail-storm swept across the course. He waited until this had eased, then took the car around the circuit for a couple of laps to warm everything up, finally approaching the tape with the revolution-counter showing 6,500 r.p.m. and giving him a speed of just above 100 m.p.h.

As he came up on that wet and slippery track he rammed the throttle wide, asking the engine for every last ounce of power, and he skimmed past the little group watching near the tape with a shattering, snarling roar. He ripped from the short straight on to the banking, where his whole attention was concentrated on keeping the machine on its course and preventing it flying up the slope and over the edge.

As he came round the banking into the wind his air pressure began to drop in the fuel tank, and he had to crane out of his seat for the pump handle. He finished the first lap with only one hand on the wheel, pumping furiously while the car edged itself into a series of wicked little skids.

With the air pressure restored, he slid back in his seat,

and had time to glance at the rev-counter as he completed the lap and shot across the tape, but the glance told him nothing. The needle was surging on the dial, making it impossible to get an accurate reading, because the rear wheels were slipping as they bumped off the wet track.

On his next circuit the air pressure dropped again. Once more he reached out of his seat—once more the car slid viciously, while he worked at the pump until he was able to leave it and concentrate on driving. At the end of the second lap the car was much steadier, and the revolution counter registered an even 7,000 r.p.m.

He saw the group by the tape waving him on, and at the end of the next lap a board appeared bearing the figures "103." Eyston knew that he was taking records above the speed he had hoped to achieve—but he had no time to feel pleased. The air pressure in the tank was falling, and he had to resume pumping.

The wet track, the falling air-pressure, the colossal speed for so small a car and the knowledge that the engine was being driven to capacity—all combined to keep him exceedingly busy. He lost count of distance and an eternity seemed to pass before he saw the watchers running across the track, waving him down and cheering.

He discovered that he had covered five kilometres at the unprecedented speed of 103.13 m.p.h.—six miles an hour faster than the record he had set up a week before and, for the first time in history, a 750 c.c. machine had travelled at over a hundred miles an hour. In addition, he had covered ten kilometres at 102.43 m.p.h., five miles at 102.76, and had pushed the ten-mile figure up to 101.87 m.p.h.

§ 5

When the engine of Ex. 120 was stripped down, it was found that every part of it had functioned without stress, and this served only to persuade Eyston that the machine had not yet reached the limit of its speed. As an engineer he believed—and rightly—that no car attains the peak of its performance until it has been run within an ace of bursting. The M.G. engine showed no signs whatever of blowing up, and Eldridge agreed with him that the machine could be made to go a good deal faster.

The whole effort was, of course, much greater in its achievement than a dash at 100 m.p.h. over the measured mile would have been, since a three-figure speed had been maintained for ten times that distance. It offered complete proof that the new, smaller-engined M.G. was a sound and capable car and, following out his ideas of serving the amateur racing driver, Cecil Kimber fixed the design and offered it as the "Montlhéry Midget."

This was, in effect, the Ex. 120 with a crankshaft giving a shorter throw, an underslung chassis and minor detail alterations. The record-breaker had both a shorter throw crankshaft and a reduced bore, but the bore of the new model was not lessened and in almost only this respect did it differ from the machine out of which it had been bred. With this car in production, Kim definitely entered racing class H, and thus became an open rival to the supremacy which the Austins had hitherto enjoyed. All records in this class were now shared between the M.G. and its rivals, and Eyston's performance amounted to an official declaration of war.

It was a peculiar kind of war, however. On the return of the car to Abingdon, a luncheon was held in which Eyston was the guest of honour, and the chief visitor was Captain Arthur Waite, who controlled the rival Austins. The fact that Captain Waite could accept the invitation, and could reply to the toast drunk to the visitors, is typical of the spirit of the motor-racing world. He admitted that his ambition had been for an Austin to be the first machine of its size to touch the hundred miles an hour mark. Eyston and Cecil Kimber had beaten him, and he complimented them on their victory—but he also hinted that he was building something very special as an answer to the M.G. attack.

Just what form this new car would take remained a secret, and while the rival machine was still in preparation, Eyston made arrangements to assault the one-mile record set up by Campbell's Austin at Daytona.

During its run at Montlhéry the Ex.120 had, at times, touched close upon 107 m.p.h., and it had achieved speeds which considerably surpassed Campbell's for the measured mile. As the car could not be timed for the mile at Montlhéry, Eyston decided to make an attempt at Brooklands as soon as the track opened, and he felt fairly confident of setting the flying mile record at something above the figures he had attained on the French track.

The engine was re-tuned and a proper cowling was made to replace the makeshift affair which had been contrived by Jacko and Kindell. After tests the car was run out to the Brooklands railway straight on Friday, March 13th, 1931, and everything was in readiness by a quarter to nine o'clock in the morning.

The car was push-started in an unusual way. Eldridge took the wheel of a saloon, to the dumb-irons of which a

plank had been attached. This plank was covered with well-stuffed sacking and, when rammed against the tail of the record-breaker, served to push the car forward until Eyston let in the clutch and the engine fired.

He toured around the track for three laps, then came out from behind the Members' Hill with his foot hard down. The sun flashed on the machine as it dived purposefully at the timing strip across the beginning of the railway straight, but the fish-tail silencer—demanded by Brooklands regulations—robbed the machine of the challenging roar it had voiced at Montlhéry.

It crossed the strip at well above 100 m.p.h., streaking on towards the Byfleet banking and the tape at the other end of the mile. Clear of the distance Eyston slowed and turned, to flash across the distant tape on a return dash through the mile—since, for international records, short distances have to be covered each way of the course, the mean rate of the two speeds being that which counts for the record.

He was halfway through the mile when the car slowed, finishing the distance at what was comparatively a crawl. The trouble arose from the plugs and from carburation, since the morning was very cold. When the machine stopped some anxious work was done on the engine, and a second attempt was made, but still the machine proved recalcitrant.

Finally Ex.120 went off for a third effort at a little before ten o'clock and, although it was obviously not at its best, it set up a mean speed for the kilometre of 97.09 m.p.h., while the mile was covered at 96.93 m.p.h.

These figures were well below those registered for the longer distance at Montlhéry and were, for that reason, unsatisfactory. Although they were sufficiently high to take the mile record from Campbell's Austin, they still

did not put the record at 100 m.p.h., and Eyston was disappointed.

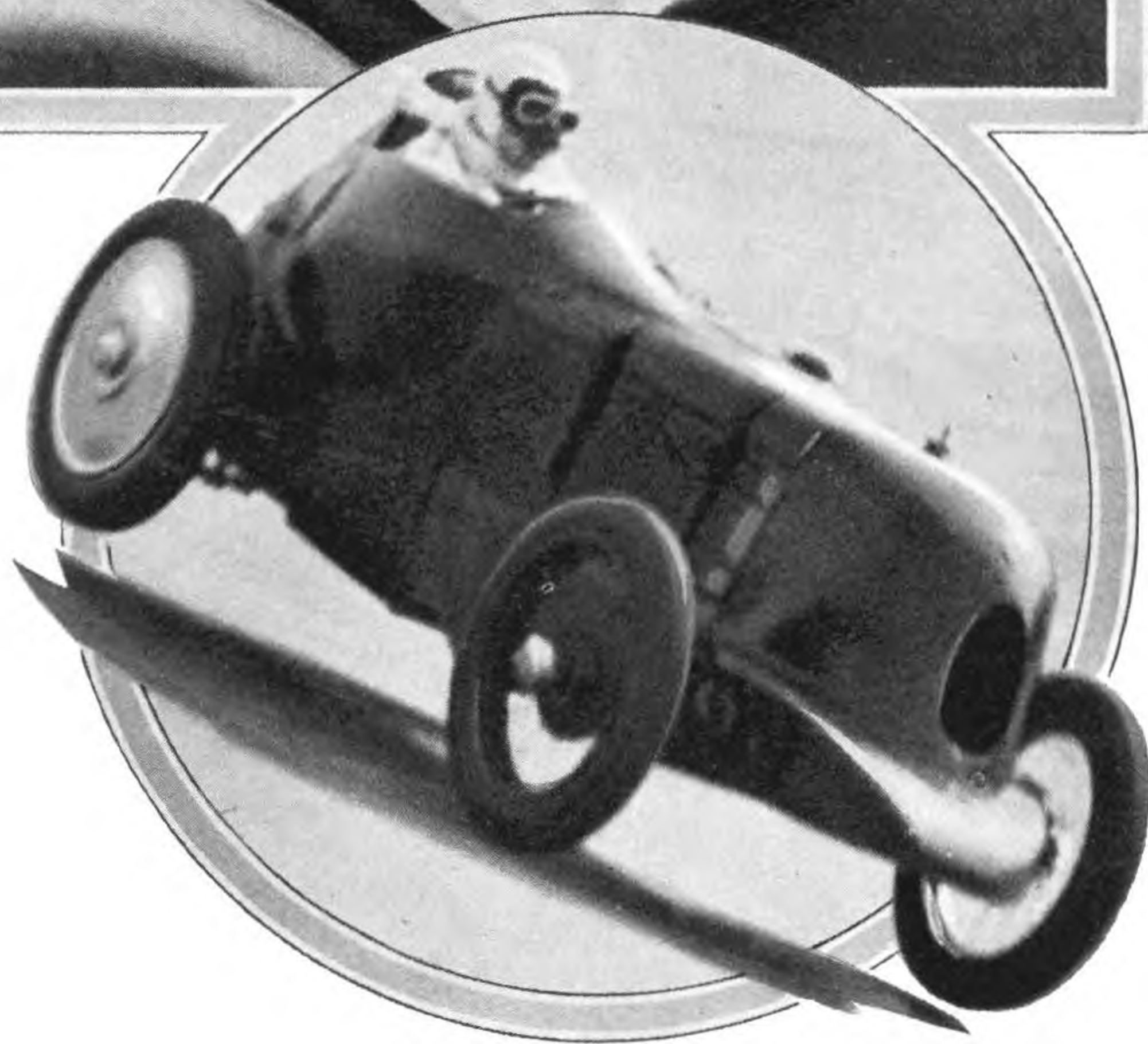
It was impossible to continue attempts. The track had been kept cleared for Eyston and other machines were waiting to work on the concrete. Also it was evident that the engine needed a certain amount of attention before it would be wise to make any further effort. The car was pushed away, for Jacko, Kindell and other mechanics to see what they could do. They worked all day on the car, but no one could be certain of what was affecting its performance.

The difference between ninety-seven and a hundred miles an hour is, in time, roughly one second. It proved extremely difficult to diagnose the reason for the fractional loss of power, and everyone concerned put forward a variety of theories for snatching that one second from the infinity of time.

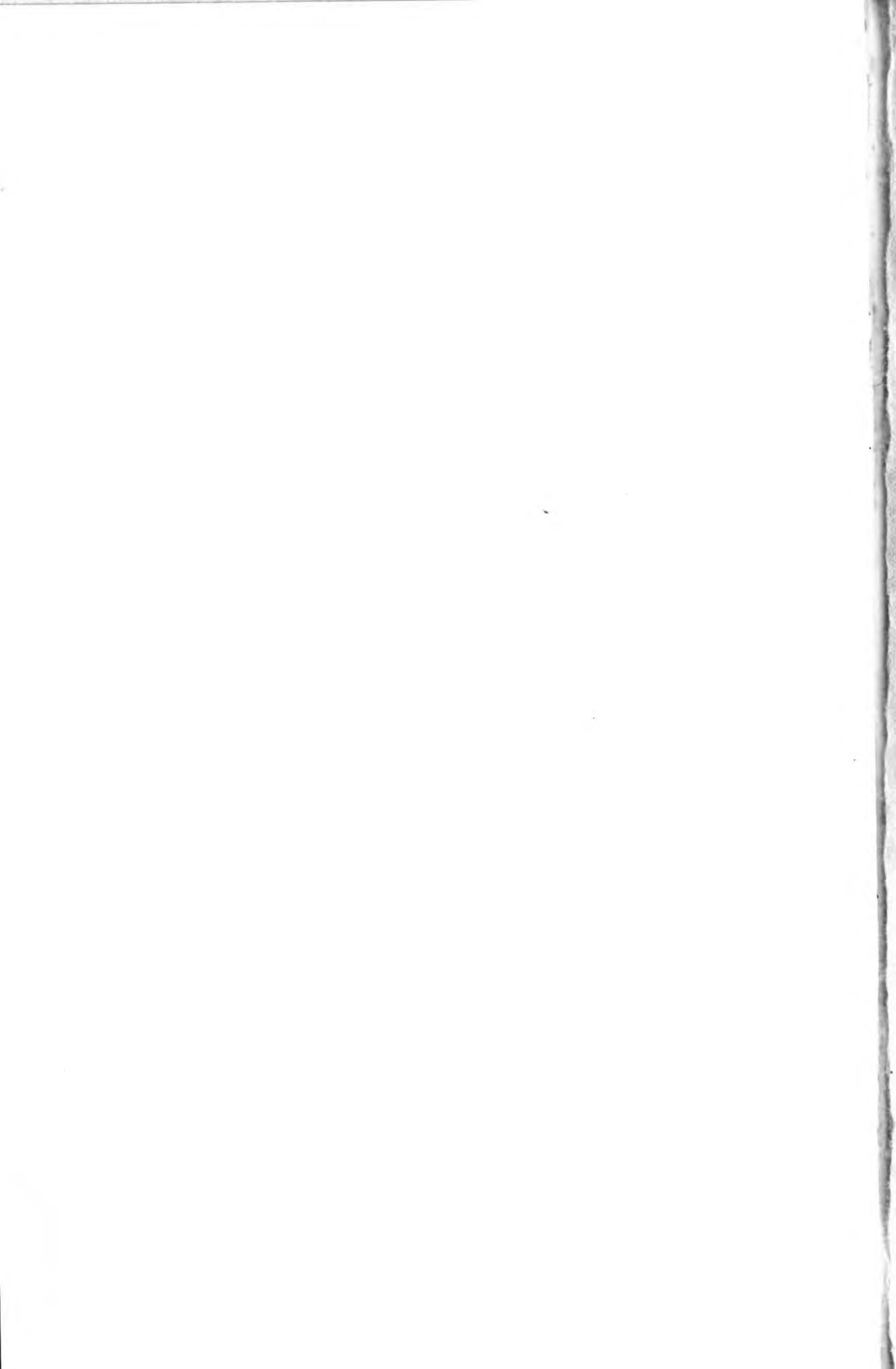
Towards evening the machine was wheeled out for a test run. There could be no question of timing it for the record, but Eyston felt certain that it was now in better trim. He toured round the track to warm up, then put his foot down.

Jacko and his companions stood just inside the track by the Byfleet Bridge, taking his time with stop-watches. They saw the car flash towards them, travelling all out and moving visibly faster than ever before. The watches clocked just under 110 m.p.h.—then came a blur of smoke, a metallic clash sounded faintly above the steady roaring of the machine, and it slowed.

Jacko, staring through the swirl of blued smoke which was left behind, saw the most amazing spectacle of his career. Rolling down the banking was a piston—complete with connecting rod. It was spinning wildly in the shadow of the Byfleet Bridge, and had



Captain G. E. T. Eyston at the wheel of Ex. 120 and, below, in action with the car at Brooklands. Both rear wheels are off the ground, following a bump



been hurled out through the side of the crank-case.

That spinning piston brought record attempts to an end for the time being. The racing season was at hand and no time could be spared for further effort. The first round in the fight was virtually ended, although a month later the Austin firm produced their answer to the M.G. challenge.

This took the form of a car which first appeared at Brooklands on Easter Monday. Its main details were similar to those of Campbell's Daytona machine, but it had been brought much lower to the ground. In order to place the driver's seat well inside the body, the engine was set at an angle, so that the propeller shaft came aslant down the frame, the driver sitting beside it.

A stream-lined fairing was placed between the front and rear wheels on either flank, and the resultant appearance was similar to that of the radiators on Segrave's "Golden Arrow." The car was painted a brilliant orange, and was entered for two races. Sammy Davis was due to drive it but, unfortunately, in the first race of the meeting he crashed and the Austin was handled by Gunnar Poppe.

As if in sympathy with the man who had already broken so many records for Austin's, the car would not show its speed. This, combined with the bursting of Eyston's car, put a definite period to the struggle, but now the war was to be continued in a different field, and the rival machines came to grips again a month later, when the British Double-Twelve was run off once more.

THE SIXTH CHAPTER

H A Z A R D

§ 1

THE chief feature of the third British Double-Twelve Hour race, run off on May 8th and 9th, 1931, was that ten Austin cars were ranged against fourteen M.G.s, all of which had been evolved from Eyston's record-breaking Montlhéry model.

Never before had so many Austins appeared in a big event, and it was perfectly plain that they were there to battle against the invaders of the 750 c.c. domain in which they had been supreme. The Austins were capable, well-tried and backed by a long experience of high-speed work, but the machines from Abingdon were a new design, not yet tested in the heat of a race.

It was impossible to guess how the M.G.s would stand up to the stress of the twenty-four-hour fight. Each car was a twin of the next; if a defect were discovered in one, that fault was almost certain to demonstrate itself in them all, and the result might be unfortunate.

Each machine was entered by an amateur racing driver, and it was a tribute to Cecil Kimber that so many men should want to run his cars, while it showed the soundness of the ideas with which he had begun work. But he had never imagined that a situation like this could arise, and no one knew better than himself how he was hazarding his growing reputation.

A race is the one sure medium for revealing a car's

defects, and rarely has a new-type machine come scatheless through its first high-speed ordeal. For all Kim knew, some unsuspected weakness might show itself, and the result might be the spectacle of fourteen cars in the "cemetery," while the rival Austins roared triumphantly on.

He hoped that such a possibility was very remote, but it existed—and existed most undeniably. For this reason, to permit fourteen of his machines to line up was akin to seeking trouble, yet he could hardly help himself. His purpose was to build machines for amateur racing men, and that a whole fleet of them should be put into the event was no more than a complimentary coincidence. He could, had he wished, have hedged and found some way out of it; but he had faith in the cars, and he believed that they would, at least, stay the course.

For his own part, he could do little more than prepare the cars with the utmost possible care, and he agreed to have mechanics on the track during practice, and to help with pit work. It occurred to Kim that the most convenient arrangement would be to hand the machines over to the drivers at the track, and this resulted in one of the most striking scenes that Brooklands had ever known.

On the Monday before the race the drivers assembled to take delivery, and at the appointed hour the whole cohort of fourteen racing cars rolled in "line ahead" formation down the road to the paddock. Each had been given the racing equivalent to a show model finish, and the bright sunshine picked out their glowing colours as they drew up on the open concrete. Even men who spend half their lives at Brooklands were impressed. Never in the history of racing had so many cars been entered from one factory, and never had

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anyone seen that number of racing machines arrive on the circuit at one time.

Their appearance reflected something of the meticulous care with which they had been prepared, and their brisk scintillation was like an augury for success in the race to come. But Cecil Kimber knew that the polish and glitter would not count for much if the untried machines failed the men who were to drive them, and bringing them to the course in that way was both a gesture of defiance and a challenge to the Austins.

The fourteen cars included four teams, one of which had been entered by the Earl of March, whose cars were coloured green. As his co-driver on one car he had Flight-Lieutenant C. S. Staniland; H. D. Parker and G. K. Cox drove another machine, and the third was driven by Norman Black and C. W. Fiennes.

Another team had been arranged by Cecil J. Randall and W. Edmondson, who had won the team prize the previous year. Randall was not driving, and he remained in the pits with Edmondson. They had made very detailed preparations for controlling the team during the race, including specially printed time-charts. Their cars were painted chocolate and cream, which somehow seemed to stress the lowness of their build. As drivers they had T. V. G. Selby and Gordon Hendy on one car. R. Hebler—who had been involved in the Talbot crash in the previous Double-Twelve—and F. M. Montgomery, who had driven well for the syndicate when they first began operations, were to handle the second machine. On the third car was Ron Gibson, who had done a good deal of fast motor-cycle work, and Len Fell, who had also had some experience but, like his partner, had never driven in a big race.

Another team belonged to Major A. T. G. Gardner,

all of whose cars were distinguished by red wheels. He had secured as drivers Murton Neale and Samuelson, who had been rivals at Le Mans; R. T. Horton—later to become famous with M.G.s, R. R. Jackson, and W. E. Humphreys, another driver destined to find fame at Brooklands.

Samuelson had already ordered a Montlhéry M.G. for the next Le Mans race, but he had his own reasons for not entering the car at Brooklands. In his opinion the race would be so gruelling that any machine which came through it would need a great deal of attention. He was inclined to believe that the Double-Twelve would take so much out of the car that it would be robbed of all chance in any similar and succeeding race—certainly spoilt for Le Mans.

At the same time he welcomed the chance of driving at Brooklands, since it would give him an opportunity of learning something about the new type of M.G., and the knowledge might be invaluable when he took his own machine across to the Sarthe circuit. Equally, Major Gardner was glad to be able to secure the services of a man with so much experience, and, in fact, Samuelson had been racing for more years than anyone else in the event.

The fourth team was a combination of cars. The Hon. Mrs. Chetwynd—due at Le Mans, like Samuelson, that year—had a car with aluminium finish and red wheels, which looked workmanlike and yet reflected in its colour combination something of the daintiness of its owner. Another machine in this team was being handled by H. H. Stisted, who had as his partner Kindell—Samuelson's former mechanic; this machine was cream, with brown wheels. The third car was white, driven by Dan Higgin—and destined to be the sensation of the race.

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In addition there was a lone, blue M.G. entered by H. C. Hamilton, and another was brought down for J. H. P. Clover. This car, however, did not start, but it served its turn in the race; it was placed behind the pits, and was gradually stripped to supply parts as required by the other machines.

None of the M.G.s were supercharged, and opposed to them was a team of three "blown" Austins—entered direct from the works—two other teams that were not boosted, and a free-lance supercharged entry with Vernon Balls at the wheel.

Besides the Austins, the M.G.s had to face twenty-six other cars, all with racing reputations: Bentleys, Invicta, Alfa-Romeo, Talbot, Lagonda, Alvis, Lea-Francis, Frazer Nash, Aston Martin, Riley, and two Maseratis—the Italian cars which were then rapidly building up a reputation for real speed. Earl Howe was due to drive a giant Mercedes, but illness put him out of the race at the last moment.

Nobody could guess what the trend of the race would be, and all the big-car drivers were apprehensive of the speed of the M.G.s. They knew what the "blown" Austins could do, because Sammy Davis had shown something of that in the 500-miles race, but the M.G.s were a mystery. The Montlhéry performance was some indication of their possibilities, but that had been done with a supercharged machine; these models were not boosted at all but, if their design meant anything, they should prove distinctly fast.

Practising opened in a watchful atmosphere, but no outsiders learned much about the M.G.s, because the engines were still stiff, and the drivers spent most of their time running them in. In a race like the Double-Twelve, the great object is to bring a car to the start in

the finest possible fettle, and there is little need to test its maximum speed before the event. On a road circuit, where a man has to learn the course, the situation is different; speed work on the corners with the actual car is almost a necessity. But the Brooklands course was comparatively simple, and a driver could gain what he needed to know by lapping on a practice car.

Most of the competing machines were housed at the track. Randall, however, could find no accommodation and garaged his machines in Weybridge, bringing them back to Brooklands each day; he used an old gravel-pit, close against the inside of the course, as a workshop.

Not a great deal of labour was required on the machines in the way of final preparations, and their general details were all that could be asked. The old five-gallon dash tank had been replaced by a bigger container in the tail, and all rode on Rudge racing wheels, with knock-off hub-caps, instead of those previously secured with nuts. The scuttles were faired-up to form wind-scoops, and the gear-box had been fitted with remote control and a stumpy, handy lever.

Matters went smoothly until the last hours of practice, when the third car in the Earl of March's team blew up. The only quick remedy was to fit a new power-unit, and this meant that the engine would have to be run in. Kim himself drove the car all that night through the rain and mist on the Portsmouth road, turning the car over to Norman Black—the driver—at daylight, when the weather was ugly and threatened a wet opening for the race.

An hour before the start, cars began to appear at their depots, while drizzle fell from a grey sky, soaking the track. The race was being run under the same formula as previous events, but in the opposite direction from

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the year before, which would prevent machines hurtling down the straight past the pits, since they would be obliged to slow in taking the turn from the main circuit.

The idea was to minimise all chance of a repetition of the crash which had occurred during the previous race and, as a protection for the spectators, a stout, low wooden barrier had been erected along the edge of the straight, in front of the railings opposite the pits. Despite this, officials felt a little apprehensive, because the persistent drizzle was certain to make the track slippery, and the falling gradient on the curve to the straight would demand careful driving if machines were not to skid.

All drivers were warned, as they lined up, to exercise some measure of caution. With a treacherous track, a stinging, chilly drizzle, poor visibility and general concern about the possibilities of the M.G.s, few big races have started under conditions less cheering.

The rain hissed down during the few seconds of silence before the start, swirling as the wind caught it. Then, abruptly, the flag dropped and the maroon crashed in a blur of white smoke against the sky. Split seconds later, exhausts roared and three green Talbots surged first from the line.

The only Bentley in the race thundered after them, then came the scurrying pack with azure smoke gushing from blaring exhausts, mingling with the misty rain and forming a veil which hid the machines as they roared towards the distant Byfleet banking.

§ 2

The colours of the cars were blurred by the mist and they became hardly discernible as they strung out. The

leaders swooped in a bunch to the railway straight, water slashing from their wheels as they came down to the turn.

The lone Bentley was ahead—a six-cylinder model driven by Sir Henry Birkin. It slipped faintly as it went through the curve, its driver killing the skids as they started, then the car roared into the straight past the pits, with the Talbot team travelling steadily behind.

After these came the rest, with Dan Higgin's M.G. leading all the 750 c.c. cars and Stisted's cream-coloured machine on his tail. The remainder of the M.G.s were mingled with the Austins, and they seemed to howl defiantly at one another as they shot through the curve into the straight and scuttled past the pits, following in the wake of a red-painted Maserati, the exhaust of which gushed yard-long flames.

That first lap was the beginning of a dog-fight which was to last some time. There was keen rivalry between the M.G. teams, while the "blown" Austins were being driven in a way which showed that their drivers realised the nature of the long-drawn race ahead. The cars were still sorting themselves out on the second lap when occurred the first casualty and the first indication of a trouble which was to haunt every machine. An Austin pulled in with a broken wing-stay, effected a quick repair and slipped away again.

All through the race Brooklands was to send an intermittent stream of cars into the pits with fractured wing supports, loose head-lamps and jarred batteries. The pace became so high, and the track surface was so rough, that the machines underwent a tremendous buffeting. Quite early Kim arranged for new and stronger wing-stays to be made for the M.G.s; these were produced in a workshop on the track and were fitted as they

became needed. As an immediate result of this, he afterwards evolved a special type of wing support which has proved capable of standing up to anything that a race can demand.

Very soon the drivers of bigger cars found themselves obliged to open up for fear that the M.G.s might gain too great a lead. At the end of the first hour Dan Higgin led, lapping at little short of 70 m.p.h., and a half a mile behind him came Stisted, who now began to put his foot down, closing on the white machine until, at the end of the second hour, he had stolen the lead—only to stop at his replenishment depot.

His mechanic dived head-first into the cockpit while Higgin howled past, but the cream-coloured car had clutch trouble, and Stisted was forced to retire. This loss was matched by that of Chaplin's Austin, which dropped out at almost the same time.

Behind Higgin's white M.G. rode three sister cars, and around the track the rest were racing grimly in pursuit. Birkin's Bentley was duelling with a Maserati driven by Guilo Ramponi, who had won in 1929, and their fight ended when the British car rolled in with a melted big-end bearing and was pushed off the course.

The sun came out and, drying the track, made still higher speeds possible, which brought more retirements and more repair work. One of the Talbot crews spent two hours at the pits, fitting a new cylinder head. An Alfa-Romeo went into the dead car park with a broken connecting rod, and another Austin followed it with a fractured crankshaft. Car after car stopped at the pits, to refuel and to take the chance of fixing clattering wings.

Half the first day slipped past, with Dan Higgin building up an unassailable lead, while a string of M.G.s

travelled happily behind him. Higgin knew that he was being chased by a horde of machines, ready to scrap amongst themselves for the lead should his car fail him. At two o'clock he was nearly seven miles in front of Hamilton's M.G., in second place, when Higgin might safely have eased his pace and lessened the strain on his car. Men who were watching, and who knew Brooklands, said that he could not possibly finish the race at such speed, but oddly enough it was Hamilton who failed first, suddenly dropping back and pulling into the pits.

While he worked there Ramponi—who had been maintaining a terrific pace—drew up at his depot, ripped off a loose wing and fitted another. Then, as though to make up for the delay, created a lap record by covering the circuit at 100.19 m.p.h.

Hamilton started again and it was soon after this that a casualty occurred in Randall's team. Montgomery toured in and he was hopelessly diagnosing a broken piston when Ramponi appeared with flames playing around the woodwork of the scuttle, fired by his red-hot exhaust pipe. The Italian driver lagged the pipe with asbestos string and roared away once more.

The afternoon passed to the bellowing of the warring cars as they pursued Dan Higgin. The "blown" Austins were streaking steadily around, but they could not get near the leaders. Pit signals were flying, urging machines to try and gain ground before the first day's racing was done, and then, towards the twelfth hour, trouble touched half-a-dozen cars almost at the same time.

Dan Higgin stopped, and spectators crowded the railings as they watched him and his mechanic work frantically over the engine. After some investigation, the mechanic rammed one finger through a sparking

plug orifice and diagnosed a broken piston, at which the car was pushed away and its retirement announced. It was hard luck for Higgin, but it was left to the subsequent examination of his power-unit to reveal the full extent of his misfortune. It was found that the trouble was not a smashed piston but a broken valve-spring, which could have been replaced with comparative ease, keeping the car in the race, with a chance of victory.

With the white machine in the "cemetery," March took the lead in his green car, and another member of his team rode close behind. Gibson, piloting one of Randall's cars, drew into third place, while fourth position was held by Norman Black.

Higgin had just retired when Ramponi stopped along the railway straight. After a while the crowd saw him pushing his car to the pits with a defective back axle. Thus, one after the other, the two most striking and hardest-driven machines fell out and, in those last minutes, there was more trouble for others.

Major Gardner, like Montgomery, broke a piston and was put out of the running. Then a Riley retired. An Austin fell out, and the Hon. Mrs. Chetwynd's car stopped. She was still working on it when the maroon exploded in the sky, halting the cars and checking all repair work. The machines came in, to be parked under canvas screens in the open, and the first day of the race was ended.

Whatever was to happen during the second day, Kim's products had vindicated themselves. With the Double-Twelve half over, they held the first six places—yet there were men willing to wager that not an M.G. would be in the first three when the race was done. They indicated Higgin, Gardner and Montgomery; so far as was known, all had retired through the same trouble—

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broken pistons. The same fault might make itself evident in the rest of the machines before the flag finally fell.

Only time could show whether they were right or wrong.

§ 3

In contrast to the start on Friday, the track was flooded with warm sunshine as the scarred machines lined up on Saturday morning. There were fourteen less than the day before—grimy, oil-slashed cars, caked by thin, dried mud. Many had wings secured with wire, while headlamps had been hastily lashed into position and every car bore some evidence of the stress of speed.

When the flag dropped and the maroon burst—not a machine left the line. Repairs, abandoned the evening before, were hastily recommended, while other crews treated their engines with hot oil and replenished before they attempted to start. Samuelson discovered that his power-unit had seized during the night. It had mysteriously lost some 500 r.p.m. early in the day, and now he had to work over it for three hours before the engine fired, when, amazingly, it recovered its lost revs and ran well until the end.

Besides Samuelson, the Invicta's crew were completing work started the afternoon before, which involved fitting a set of new pistons. Another car was having its silencer welded, an Austin was being given a new cylinder head, and the Talbot crews were repairing shaken wings with sheet-steel and rubber.

A Lagonda first slid away, to be followed by such others as could move. Mrs. Chetwynd continued work on her M.G. for nearly an hour. Hardly had she left

when Horton brought his car in with engine trouble and retired, to be followed by Mrs. Chetwynd when she pulled in and had her car pushed off the course.

After the fierce pace of the first day, the race began to take on a different character. It became a dour contest of endurance, with every machine behind the Montlhéry M.G.s settling down to press them hard. The leading cars responded to pit signals, easing their pace a little, yet travelling fast enough to bring trouble on those who pursued them, while at noon Randall and Edmondson saw one of their team go up into second place. It was the machine driven by Gibson and Fell, and the syndicate leaders had visions of winning, but held the driver back by signals when they would have chased the Earl of March.

About this time a Frazer Nash pulled away from the pits, after remaining halted the entire morning while its crew fitted three new big-end bearings. They were rewarded for their persistence when, for two hours, the machine lapped at splendid speed, only to find further trouble. They moved off once more, yet again were forced to stop. Still they tried to keep the machine in the race, and not until the car had caught fire did they allow the announcement to be made that they were retiring.

Norman Black came into the pits, and investigation showed that a front spring had broken away. It could not be reached without destroying an official seal which governed the dumb-iron fairing, and which had been placed there to prevent any use of the starting handle. Frank Tayler—who had acted as pit attendant to Callingham the year before—was Black's mechanic, and he yelled for snips, with which he cut through the cowling to get at the spring. A repair was effected in

twenty-two minutes and the car got away. Later in the day another spring went, but Black would not stop.

For hour after hour the long fight went on, while Gibson and Fell gradually lessened the distance between themselves and the leading car until at midday Randall and Edmondson held a consultation.

Edmondson wanted to signal their car to go after the Earl of March. If they did, March's pit would flag him to open out—and he might burst, letting Gibson and Fell into the lead. Alternatively they might catch and pass the leading machine, because the two drivers—for all their lack of experience—had kept their mount in fine condition. But Randall counselled caution. There was the risk that their own car might fail in what must be a long-sustained effort. Added to this, little could be gained beyond the glory of actually winning the race, and that seemed certain to come to an M.G., in any case.

In Randall's opinion it was better to let their car run steadily on, holding at bay the machine in third place, then, if fate ordained that the Earl should drop out, they would take the lead. Accordingly, the two made no change in their plans, but as the afternoon passed all drivers of the bigger machines opened up, making a last desperate effort to catch the string of M.G.s ahead.

With this, trouble visited the Talbots. One after another they pulled in with leaking radiators, jarred by the hammering of many hours on the concrete. The racing man's remedy for this is chewing gum, and the entire pit personnel chewed steadily, reducing the gum to the required consistency. But the leaks proved too big for such measures; other methods were tried with greater success, and the fine cars raced on.

The event, drawing towards its close, found some drivers striving frantically to keep their machines

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running so that they might figure in the list of official finishers, a position attainable only by completing the minimum mileage set their cars.

One machine broke its frame, and was reduced to an agonising crawl as it piled up slow miles. An Austin limped around on three cylinders and, near the end, another pulled in and the crew were about to announce its retirement when they discovered that they had to complete only a single circuit to finish their set distance. Their engine was quite dead, so the driver and his mechanic began to push the machine round the course in order to cover that one lap. At a steady four miles an hour they trundled their car along, while the M.G.s roared around the course which had seen so many cars falter under the pace they had set.

The last minutes of the race ran out and, while the striving crew of the Austin was still at the far side of the track, the checkered flag fell, the last maroon exploded, and the Earl of March crossed the line. He had covered 1,574.9 miles, and had won an event in which no less than twenty-four of the starters failed to finish.

The crowd applauded Randall's entry, handled by Gibson and Fell, into second place, and third position was taken by Hamilton—who had driven single-handed throughout.

Cecil Kimber's cars now held first, second and third places—but Parker's green-painted M.G. came over the line into fourth position, then Norman Black brought his machine in fifth, winning the team prize for March.

The new M.G.s had performed the amazing feat of capturing the first five places in a race as searching as any that Brooklands had ever seen. Apart from actually winning, they had secured the team prize and all class awards, and men tried vainly to find a result that would



J.C.C. Double Twelve Hour Race, 1931

The upper photograph clearly shows what Brooklands can do to a machine on a wet day; the paint has disappeared from the dumb-iron fairing under the impact of fragments torn from the concrete by cars ahead. The lower picture was taken immediately after the Earl of March had won



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parallel this. While the crowd still cheered them, the little dead Austin was pushed slowly home—and the applause which greeted its crew was as hearty as that given the winners.

§ 4

The manner in which Cecil Kimber's cars had scored their overwhelming victory was an answer to those who, the day before, had said that not an M.G. would be placed. The win was complete and decisive, but Kim was not content.

He wanted to learn what the drivers thought of the cars and, on the day after the race, each was asked to give his opinion about his machine and, in particular, to say what faults he had found with it. All were unanimous in agreement that the machines ran too hot; they had detailed comments to make, but that was their chief complaint.

When this had been settled, Kim went into the question of retirements, and learned that they arose from two causes. One was trouble with valve-springs, and the other was caused by broken pistons. Both these difficulties came from the same source. The engine compression was so high that, if valve bounce set in, the valves were liable to hit the pistons, since the clearance was so small. This defect could be remedied by fitting stronger valve-springs, and it was the only real fault with the cars; had it been more serious, not a machine could have finished the race.

The trouble was not difficult to overcome and this knowledge, coupled with lesser matters, made the

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Double-Twelve a mine of invaluable information. Kim acted upon what he learned and, in so doing, he set his machines on the road to achievements which were even greater, relatively, than that at Brooklands.

THE SEVENTH CHAPTER

PHANTOM

§ I

WHILE the unexpected result of the Double-Twelve was still creating comment, Cecil Kimber found himself faced by a situation which, except for its reality, might have been a dream.

Every man who builds racing machines permits himself, at times, to vision a future in which his mechanics work furiously over battle-scarred cars, preparing them for some race in which they must fight hard to hold a new-won reputation. Kim suddenly found himself in just this position. Jacko—now in charge of the competition department—Kindell, Frank Tayler and the other mechanics who had helped to make the Brooklands success possible, were still exulting when they received orders to overhaul no less than seven of the Double-Twelve cars, and to prepare four new machines—all these having been entered for a totally different kind of race, due barely four weeks later.

This was the Irish International Grand Prix, and the 1931 event was the third of the series. Rudolph Caracciola had won with a Mercédès-Benz the previous year; his average speed had been 85.8 m.p.h., and he had put up a record lap at over 91 m.p.h., which suggests that the D-shaped circuit in Phoenix Park, Dublin, was exceedingly fast.

The lap distance was 4 miles, 460 yards, formed by

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roads on which a great deal of money had been spent in an attempt to provide a perfect surface. The effect gave the appearance of a track rather than a road circuit, since the course was obviously finished for speed, and lacked the fortuitous hazards of the ordinary highway.

The circuit included a two-mile straight, beside which the grandstands were set, and this stretch ended at a difficult turn known as Mountjoy Corner. Here the road swung abruptly to the right and, coming at the end of the fast straightway, was deceiving enough to compel many a driver to complete his cornering over the grassy expanse outside the turn.

From Mountjoy the road ran by swinging curves around the back of the "D," dropping steadily past the Zoological Gardens to Gough Corner and the beginning of the straight again. The down-grade past the Zoo was the fastest section of the course, and added to the difficulty presented by the turn in which it ended.

Gough Corner consisted of two right-hand bends, which looked so easy that they could tempt drivers to put their machines into them altogether too fast. At the same time the road here was very wide, giving plenty of room to sliding cars and offering an opportunity to demonstrate different styles of cornering. Around the turn the course rose in a long, easy climb, and this gradient had the effect of cutting down the speed of machines passing the pits and the grandstand, where the road levelled off. Drivers, topping the rise under open throttle, were liable to continue at full bore towards Mountjoy; as this wicked turn could not be treated with disrespect, the corner was a favourite viewpoint for spectators.

Seventy laps made up the distance for the race, and the scheme of the Irish Grand Prix was a little unusual,

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since it took the form of two races, held on consecutive days. The first was limited to cars of less than 1,500 c.c., and the machines ran for a trophy known as the Saorstat Cup. After they had fought amongst themselves, the flag dropped twenty-four hours later for cars above 1,500 c.c., competing for the Eireann Cup.

The machines were handicapped in each event, the smaller cars being credited with a certain number of laps, and the actual winner of the Grand Prix was the driver who covered the course in the least time, in either race. At first sight the conditions seemed a little complicated, but the scheme worked admirably, and a suggestion of what had happened in 1930 may make the event a little easier to understand.

Victor Gillow had won the Saorstat Cup on a Riley, his time being 3 hours, 36 minutes. Next day Caracciola took his Mercédès-Benz over the distance in 3 hours, 28 minutes, thus winning the Eireann Cup and—because he beat Gillow's time—the Irish Grand Prix itself. Caracciola had to cover the full distance of seventy laps, but Gillow, with a smaller car, had been given a credit of nine laps; he travelled 263 miles, while the Mercédès covered 301 miles.

In the 1931 event, held on Friday, June 5th, and Saturday, June 6th, precisely the same conditions prevailed. The fastest machines in Friday's race were supercharged cars of just under 1,500 c.c., and were credited with six laps. The supercharged Austins, of which six were entered, received thirteen laps, and the "unblown" 750 c.c. cars had nineteen laps. On the Saturday "blown" cars up to three litres received four laps start, while the biggest machines—two Mercédès—started from scratch.

In each race all cars left the line together, although

the majority were assumed to have done a varying number of laps before the flag fell. Viewed broadly, the Irish Grand Prix might just as well have been run on the one day, with the bigger machines giving smaller cars a start. Such a scheme, however, would have hampered the fastest machines, since they could not show their real speed on a circuit cluttered by a horde of lesser vehicles, and this was the main reason for the stretching of the race over two days.

For 1931, Earl Howe was driving a blue Mercédès, and B. O. Davis was handling another car of the same make. Two Maserati cars were sent over from Italy—one for Cavaliere Giuseppe Campari and the other for Eyston—while Sir Henry Birkin was at the wheel of an Alfa-Romeo.

Sir Malcolm Campbell was leading a team of Rileys and, amongst the other cars, Dan Higgin had entered an Austro-Daimler for the second day's race, although on the Friday he was driving the M.G. he had used in the Double-Twelve. Higgin had driven in both the previous Grands Prix, as had Major Gardner, who had entered the three cars he had raced at Brooklands. He was driving one himself, and the others were to be handled by Horton and R. R. Jackson.

Quite a number of cars which had run in the Double-Twelve were competing, including the Earl of March's team of M.G.s. He himself was not driving, but both Parker and Norman Black were in his team and the third man was Dick Watney, who had had a great deal of racing experience, particularly at Le Mans.

Gardner's team and March's cars, with Higgin's entry, formed seven of the machines which Cecil Kimber had to make ready. There was also a new car for F. S. Barnes—who had driven an Austin in the Double-

Twelve—and two others entered by W. Kehoe and S. A. Crabtree. This made ten M.G.s in all; an eleventh car was prepared for C. S. Staniland, who did not, however, come to the line.

The M.G. drivers were all amateurs, some racing for the sport of it and others for a particular reason, typical of the latter being R. R. Jackson. He was opening a workshop at Brooklands, where he intended to specialize in tuning and preparing cars for speed events. During the preceding eight or nine years he had been racing three-wheeled cars and competing in trials. He wanted still more practical experience and had readily joined Gardner's team, taking his own foreman to act as mechanic during the Dublin race.

The preparation of the machines gave Kim the chance to incorporate the knowledge that he had gained at Brooklands, but he had to remember that the cars were being made ready for a race in which sheer speed was demanded rather than great endurance. As if intensive work on the fleet of Grand Prix entries was not enough, mechanics were also busy on two cars entered for Le Mans, which was dated for just one week after the Irish Grand Prix—one machine was Captain Samuelson's, and the other was for the Hon. Mrs. Chetwynd.

Altogether thirteen cars were undergoing a complete overhaul in the Abingdon factory, and it is curious to remember that seven of them had run in the Double-Twelve—and that, in Samuelson's opinion, this race had been one which would rob a machine of its best chance in any following event. This was the belief of a very shrewd and experienced driver, and only time could show whether he was right or wrong.

The engines were fitted with stronger valve-springs, to rectify the fault registered at Brooklands. In addition,

stronger road-springs were incorporated as a result of Black's experience in the Double-Twelve. Following the usual spell of last-minute work, the cars finally left the works for Dublin. Frank Tayler went with them as Black's mechanic, and Kim provided two other men to ride as mechanics in March's team; one was Alec Hounslow, and the other was Enever—nicknamed "Squeak."

It is a curious thing that mechanics live so much in the background of racing. Without their knowledge, and practical wisdom, many a fast car would not be as "quick" as its driver finds it. Often the man who takes the knocks and the hammering in the cockpit, beside the driver, has won the race for his chief by slickness of pit-work and desperate eagerness to save seconds during a stop. Now and again one may see the mechanic of a victorious car standing behind the machine, while cameras click as the driver smiles across the bouquets on the dusty scuttle. And the mechanic is just a man who has done a job, so far as most people are concerned.

Of the three mechanics who went with the Irish Grand Prix cars, only Tayler comes greatly into future events—but Alec Hounslow and "Squeak" Enever were working behind the scenes in the big races which followed Dublin, even if they are not named again.

Neither Jacko nor Kindell crossed the Irish Channel; they remained at Abingdon to put the finishing touches to the Le Mans cars—and, as matters turned out, it was just as well that they did.

§ 2

Possibly the busiest man in Dublin during practice was Dan Higgin. With an M.G. entered for Friday and

an Austro-Daimler running the following day, he had to find out how both cars handled during the limited time available. Matters were not helped by the fact that, on the Wednesday before the race, he changed the pistons in the larger car and drove the machine all night to run them in. He got lost in the dark, and magneto trouble stranded him fifty miles from Dublin on the last morning of practice.

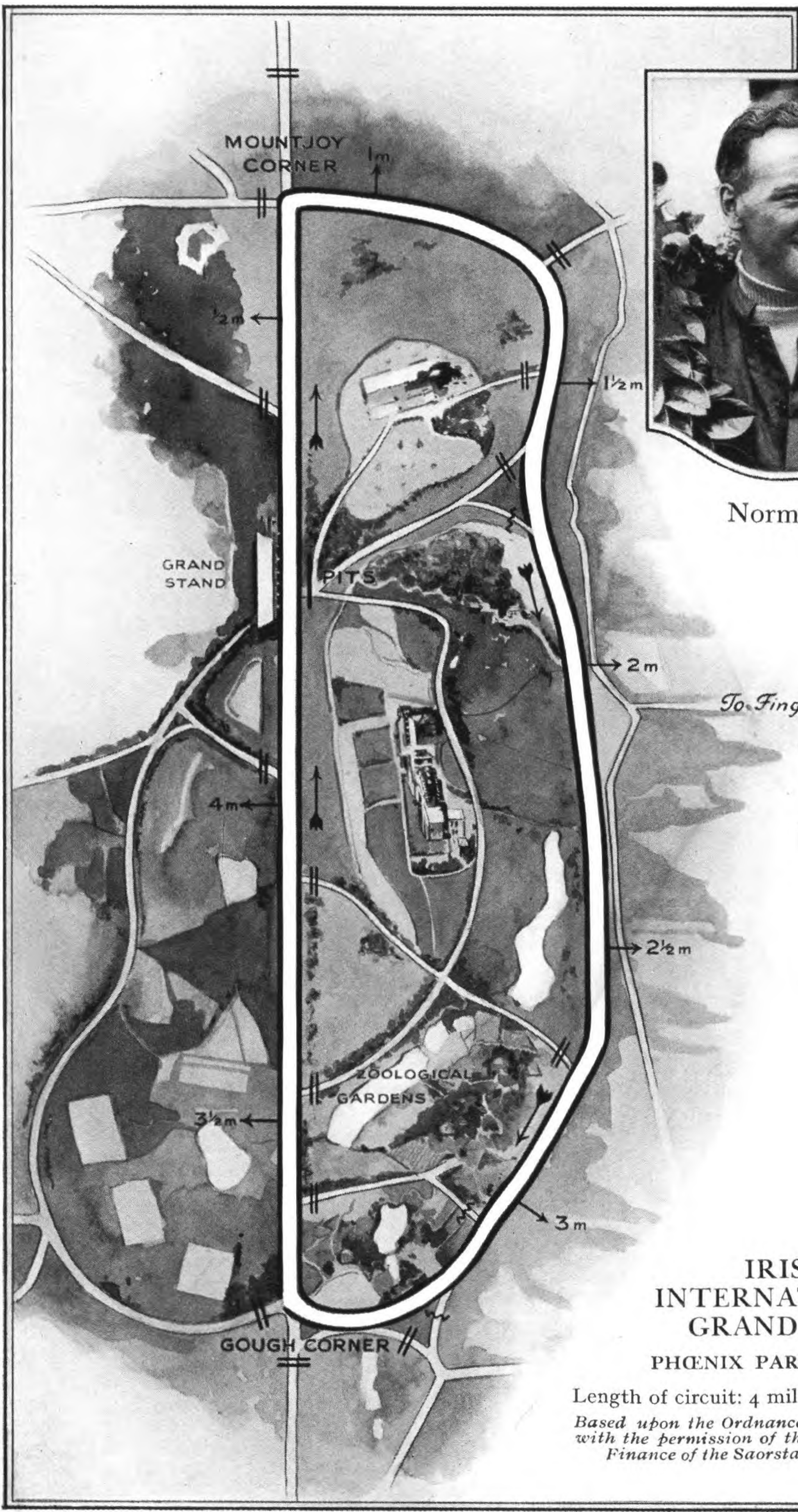
While Higgin was wandering, Eyston's Maserati made a midnight arrival at the docks, where customs officials had remained on duty in order that he might collect the machine in time for final practice.

All Kim's cars were in good fettle, and there was no trouble—except for two cases of bent selector forks—until Norman Black got into difficulties during practice on the day before the race. His gear-box seized at Mountjoy Corner, skidding the machine into the sand-bags, but doing no damage. The car was run off the course and Tayler managed to free everything, after which he took the machine around the streets of Dublin to test it—only for the gear-box to seize again.

He located the trouble as arising from the third speed constant mesh pinion, which had a plain bearing and which had seized on its shaft. A wire was sent to Abingdon asking for a new gear-box, and mentioning the bent selector forks, suggesting that new ones should be sent over.

The telegram, coming hardly twenty-four hours before the race, startled the factory, particularly as Kim had gone to Dublin to see the race. Jacko was at the works, however, and he immediately inspected all the gear-boxes in stock, selecting one for Black's car, and collecting all the steel selector forks that he could find.

It so happened that H. H. Stisted—another Double-



Norman Black

**IRISH
INTERNATIONAL
GRAND PRIX**
PHENIX PARK, DUBLIN

Length of circuit: 4 miles 460 yards
 Based upon the Ordnance Survey Map
 with the permission of the Minister for
 Finance of the Saorstát Eireann

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Twelve driver, and who was to partner the Hon. Mrs. Chetwynd at Le Mans—had been consulting Jacko about their car. He suggested that the quickest way to get the gear-box across to Dublin was by air, and every available aerodrome was telephoned in search of a 'plane. Even the most modest airman wanted fifty pounds for the flight, and no one at Abingdon felt like incurring so much expense. The upshot was that Kindell piled the gear-box and the selector rods on to an experimental Tigresse chassis and started for Liverpool.

Over in Dublin, Black and Tayler had stripped the damaged unit and were waiting anxiously for news. The night passed and dawn came, bringing rain which drenched the City. Black is one of the few drivers who do not mind racing over a wet circuit, but a soaked course was useless to him unless the gear-box arrived in time. It reached the docks at seven o'clock on the morning of the race. At the end of four hours of fast work the car was in fighting trim, tested and ready to take its place on the line. Every effort had been made to keep the trouble secret, for fear that other M.G. drivers might be disturbed by the possibility of similar failure in their own cars during the race. Hardly anyone, other than those immediately concerned, knew what had happened.

As the morning passed all watched the sky anxiously, hoping for a break in the weather. None came, and the machines rolled down to the course in the pouring rain. The park was soaked and water ran in rivulets from the grandstand roof. The rain hazed the fronts of the pits and dulled the colours of the cars, while glistening umbrellas formed solid masses in the enclosures.

The cars were not in stripped racing trim; they carried

lamps and wings, because the event followed the fashion that Le Mans had set. They lined up with silent engines until a maroon flashed against the sky at three o'clock and, after a moment in which starter-motors whined, the twenty-six cars in the first day's race surged away.

There were the ten "unblown" M.G.s and the six supercharged Austins; two "blown" Maseratis with 1,078 c.c. engines and a group of Rileys; a "blown" Alfa-Romeo, and a Lea-Francis. This car took the lead as they roared towards Mountjoy Corner, and went round with the Alfa-Romeo on its tail and the rest howling behind.

As they raced into the long curves at the back of the circuit, Victor Gillow—driving a Riley—began to challenge the cars ahead. In age, he was the oldest driver in the event, and now he added to a reputation that he had already gained for dash and daring. He pushed his machine in front on the down-grade to Gough Corner, and took the double bend in what appeared to be one long, controlled slide over the rain-slashed road. He was still drawing away from the rest when he streaked past the stands at the end of the first lap, but he tried to take the Mountjoy turn too fast.

He skidded furiously, leaving the road and sliding across the grass, the green blades flattening under his hissing tyres. He returned to the course as the pack passed and, despite the delay, he held fourth position when the cars came round again. Driving hard, keeping the throttle wide open, he took Gough and Mountjoy corners in a way which made the thrilled spectators cheer him on, and within two more laps he held the lead again, going in front by virtue of his fast work on the turns.

Most racing men regard skidding as indifferent

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driving, because it builds up stresses in the machine and is not good for the tyres. But Gillow could not help skidding at the pace he was setting—his lap speeds showed 78 m.p.h.—while poor visibility did something to make judgment of distance difficult.

Behind him, Norman Black was dog-fighting with Horton. Parker and Dan Higgin were close behind, forming a bunch that scuttled over the wet course at 70 m.p.h., holding off the supercharged Austins, one of which was being driven with as much verve as Gillow's Riley.

This car was handled by de Ferranti, who slid on the soaked road at every corner, until he lost a wheel at the Mountjoy turn, dropping on to the brake-drum and skating wildly. The lost wheel skimmed across the grass and jumped the railings, plunging into the crowd, but harming no one. The wheel was recovered and de Ferranti replaced it, carrying on gamely until he was forced to retire with trouble set up during his narrow escape.

Within a very little while, drivers and mechanics were sitting in puddles formed by water which drained down to their seats. Most of the drivers were equipped against the weather, and wore celluloid visors, which are about the only things that make fast driving possible in the rain, although Sir Malcolm Campbell found that his was a drawback. A floorboard of his car was loose, and spray from the wet road constantly shot through the gap, smudging the inside of his visor and blurring his vision. Also, his engine had lost its "revs" in an unaccountable way, and he dropped further and further behind the leaders.

In spite of the rain, the pace was high, and the "unblown" M.G.s were lapping almost ten miles an hour

faster than the speed registered by cars of their size the previous year, while Gillow was much quicker than he had been in the former race, when he had run on a dry course.

He held the lead up to half distance, but only by ruthless driving. He knew that Horton and Black were pressing him hard, and he came to the turns wide open, using his brakes to the limit of their power. He trusted his own skill to master the resultant skids but, when the surface dressing began to wear on the corners, his methods brought him close to disaster. One terrific slide shot him on to the path, and he all but hit a heavy wooden barrier.

If Gillow's driving was spectacular, the pursuing M.G.s matched him for daring. They approached Gough and Mountjoy corners under full throttle and when the drivers cut off, using their brakes, the tyres bit through the water that swilled the road, sending it in wild plumes from under the wagging tails of the machines. Through the curves at the back of the course, Black and Horton were clipping the bends; both held in hand that little extra power which they would need towards the end of the race, and made up for it by the daring of their driving.

While they chased Gillow, they were followed in turn by two of the fast, low-built Rileys, and close upon these were the "blown" Austins, one of which soon followed de Ferranti into the dead-car park. J. D. Barnes—brother of S. F. Barnes, who was driving an M.G.—pulled in at the pits and found that he could not re-start his engine. He jacked up the rear axle and put the engine in gear, turning the wheel by hand in an effort to rouse the power-unit, only to discover that it had "packed up." Soon after he retired, the crowds missed Gillow. He had

stopped with clutch trouble; before he could drive on, Horton and Black had gained much ground.

The corners were steadily becoming more slippery, and R. R. Jackson had a narrow escape at Gough, where a car skidded completely round in front of him. He wrenched his machine on to the path, following the tracks that Gillow had made a little while before, and the crowd applauded as he cleverly slid his car clear of the balking machine, taking it partly on to a grassy bank before he regained the road.

The steady rain came pitilessly down, while Gillow strove to make up the time that he had lost. His clutch still lacked bite, and he tried to go yet faster through the corners. Again he left the road at Mountjoy, and not long afterwards he disappeared from the race; his clutch had developed a trouble that there was no time to remedy. This put Horton's red-painted M.G. in the lead, and his numbered plaque was pushed above the rest on the great scoreboard over the pits. This board showed the relative positions of all cars, indicated by coloured plaques which climbed slowly.

Horton was in Gardner's team, and Black—now in second place—was driving for the Earl of March. The two represented rival teams and Black, who had dropped some distance behind, opened up. He was timed on every lap by tall, keen Cecil Cousins, one of the men who had been with Kim from the early days. He was in charge of March's pit, and could see that Black must catch Horton before the end of the race. Now that Black was putting his foot down, however, there was a risk that he might blow up and let the Rileys in, so Cousins was given orders to signal Black to slow.

Cousins wanted to see Black win; he had worked with the driver and with Tayler on the gear-box before the

race, and remembered all the worry and anxiety they had been through; but he had been given instructions to signal Black, and he had to obey orders. He did show a signal—but it was the one which meant “O.K.” instead of “Slower!”

No one noticed this. Only Cousins knew that it was the wrong one, and he alone knew why Black continued to gain on Horton until, at last, the two machines came up the straight almost together, with the leader giving his machine full bore, and starting a fight that lasted for the next seven laps.

Time and again, Black went in front along the curves at the back of the circuit, and he was always in the lead when the two came through the Gough turn. Horton, however, showed greater speed along the straight past the pits, and invariably went ahead before they reached the Mountjoy corner.

For lap after lap the two fought it out, their wheels raising bow-waves of water where shallow pools flooded the circuit. Both were driving at the limit and, finally, Black held the lead down the straight, kept it during the next lap, then increased his distance every time he went round, so that his plaque on the scoreboard climbed steadily above the rest.

Black was two minutes in front of Horton when there were but ten laps to go, then something happened which looked like robbing him of all chance of victory. He overtook Watney on the first bend at Gough corner and, as he was passing, the other machine slashed into a sheet of water. It sprayed solidly over Black and his mechanic, drenching the cockpit and gushing through the louvres of the engine-cover. The power-unit began to misfire. Water had splattered the ignition coil, and for a lap and a half the car limped round, missing badly.

At March's pit, champagne had just been produced in view of Black's possible victory. It seemed almost as if it could not be used in celebration, and that Black must stop when, suddenly, the engine picked up and he put his foot down hard again. Encouraged by the fact that he had slowed, everything behind him was trying to catch him, but he now seemed to be going more strongly than ever.

The Riley team had sped up, travelling in formation. Their only rivals for the team prize were Major Gardner's three M.G.s, which Horton led, and Gardner's pit had become alive with signals as the cars received orders to open out and counter the Riley's challenge. The last laps of the race were run with everything behind Black shifting at peak speed. No one could tell whether Gardner's cars or the Rileys led for the team prize, and the drivers could only answer pit signals and travel all-out.

The M.G.s came to the corners with throttles wide open, to brake and go through the turns with the tyres wailing. They scuttled up the straight with revolution counter needles in the red, and the drivers holding their machines at speed into Mountjoy Corner so that it appeared impossible for them to get round, and that each approach must end in a disastrous slide on the grass. Yet, somehow, the cars cornered safely again and again until, at last, the checkered flag was made ready for Black, and its damp folds unfurled on the air as he crossed the line—winner in the first big race he had ever run outside Brooklands.

Horton followed two and three quarter minutes later, and ten seconds behind him came Gardner's M.G. Two of the Rileys arrived next, then two more M.G.s. Of the twenty-six starters, only fifteen finished. With Black

first, Horton second, and Gardner third, Kim's cars had scored a one-two-three victory, while Gardner's machines won the team prize, snatching it from the Rileys by just forty-five seconds.

Norman Black had secured the Saorstat Cup with a running time of 3 hours, 21 minutes, 20 seconds. On the morrow, the bigger machines would try to beat his speed; if they could not, then he had also won the Irish Grand Prix.

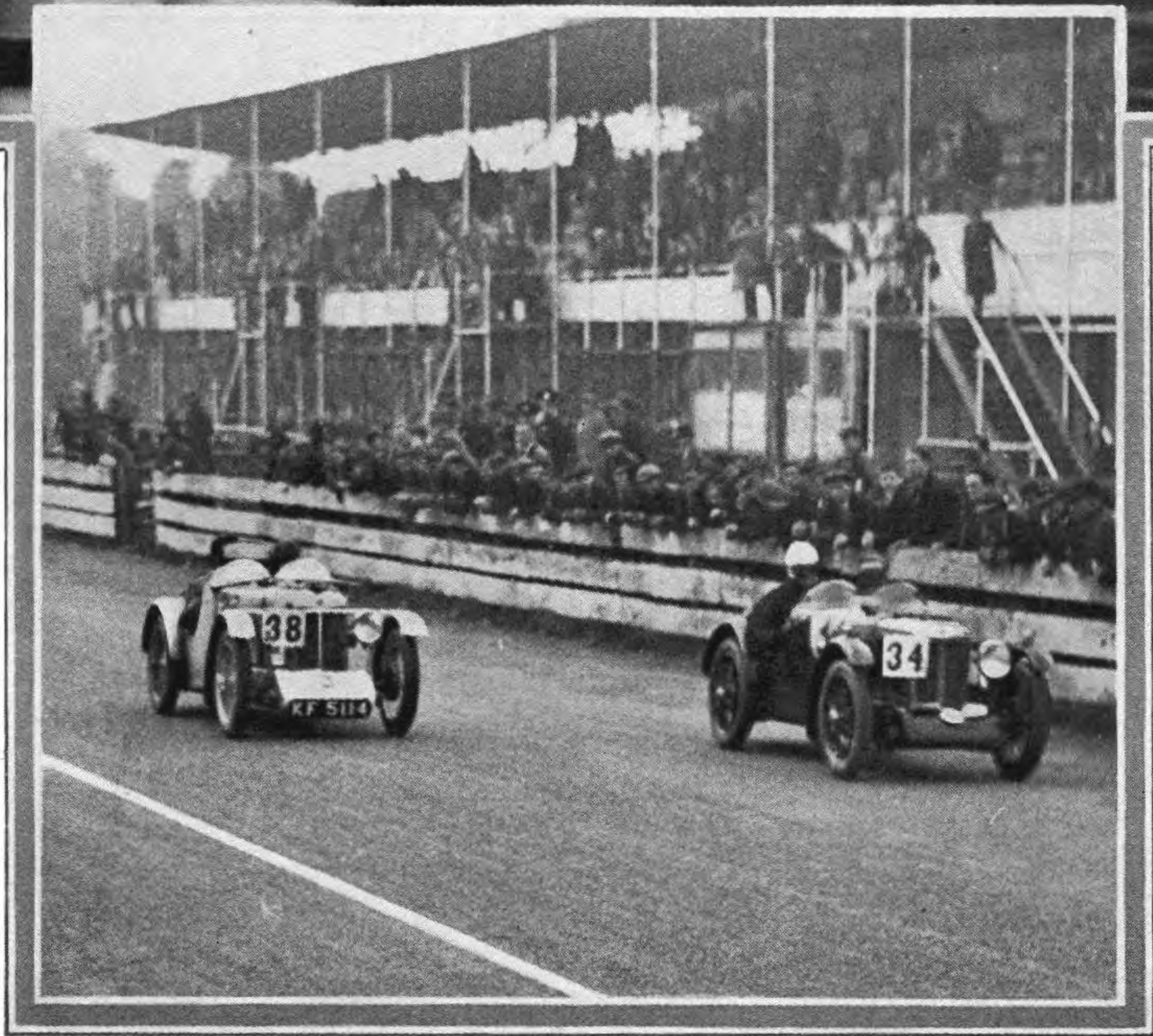
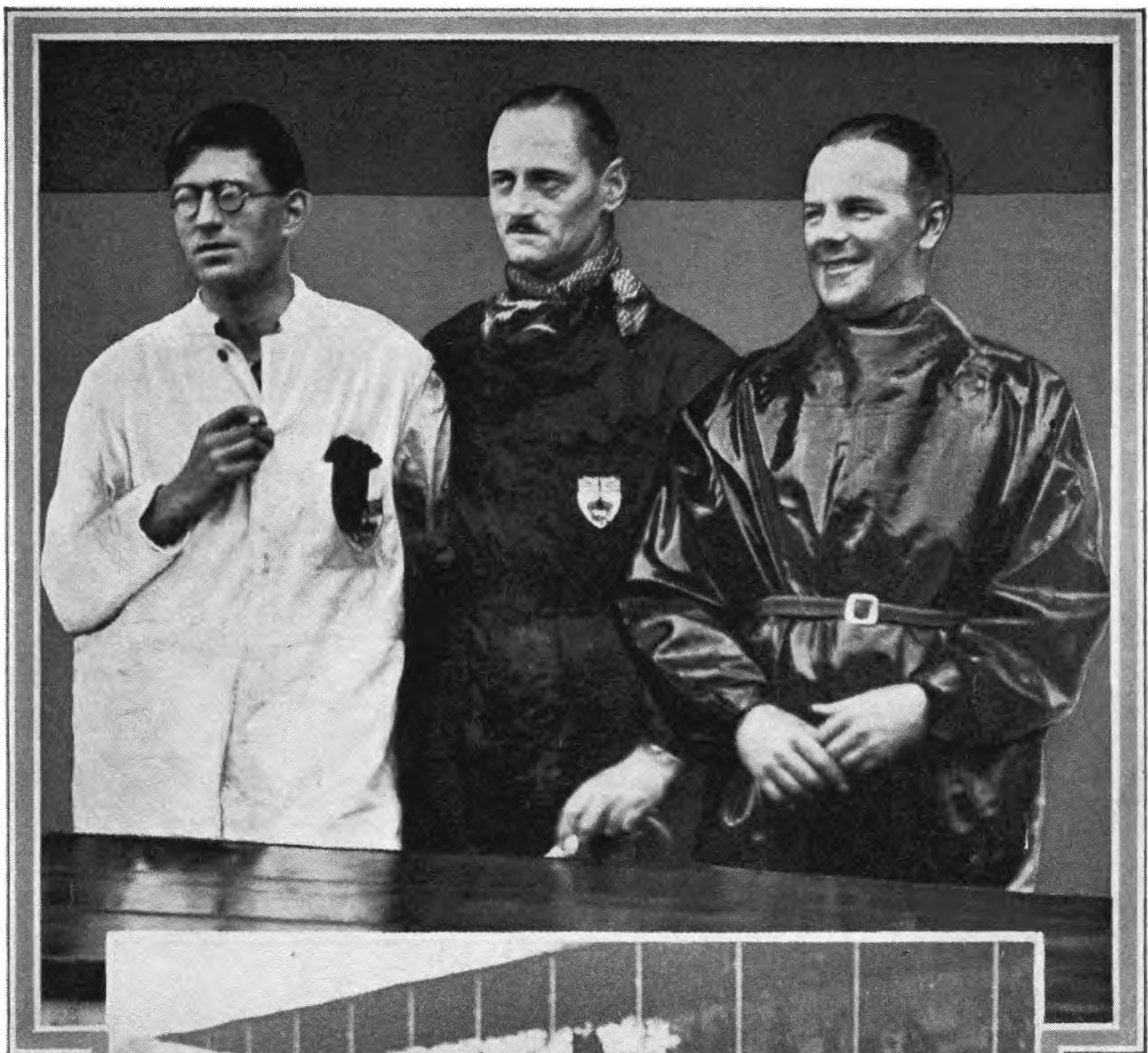
§ 3

Although Black's M.G. was not on the course during the following day's race, its plaque was shown on the scoreboard duplicating, lap by lap, its progress in the Saorstat Cup. It was as though the wraith of the machine were on the circuit, with the cars in the Eireann Cup race striving to overtake it.

He had averaged just below 65 m.p.h. In order to win the Irish Grand Prix, the biggest machines—the two Mercédès—would need to maintain almost 90 m.p.h. for the full distance of 301 miles. This paralleled the speed of Caracciola's record lap the previous year, and to ask the German cars to average this pace over the whole course seemed to be asking the impossible.

There were, however, very few racing men willing to say that Black could not be beaten because, with drivers like Howe and Campari, Eyston and Birkin on machines which were the latest product of Continental practice, the Eireann Cup might produce surprising speeds.

It rained during the whole of the morning, but the sky cleared at noon and the sun came out to dry the track, favouring the heavier cars. The two Mercédès appeared,



Irish International Grand Prix, 1931

R. T. Horton, Major A. T. G. Gardner and Norman Black, immediately after the race, and (below) Dan Higgin on No. 38, and Major Gardner, on No. 34, passing the grandstand

COMBAT

with the twin Maseratis, handled by Campari and Eyston; two Talbots, Higgin's Austro-Daimler, an Alfa-Romeo driven by Sir Henry Birkin, and an Invicta.

A white flag dipped, a maroon burst and the cars ripped away, with Birkin skimming the verge of the road as he challenged the rest for the lead while the massed machines charged Mountjoy Corner. Earl Howe put his blue-painted Mercédès in front when they reached the turn; he held the lead through the curves beyond, and his car flashed in an azure streak through the double bend of Gough Corner, ripping towards the stands with Davis close at his tail.

Within the faint smoke from their exhausts came Campari's blood-red Maserati—Eyston almost at his side and Birkin close behind. In a bunch, all five thundered past, the thin scream of superchargers shrilling above the bellowing exhausts, shaking the sunlit air.

There was more in the scene than the spectacle of five extraordinarily fast machines travelling so closely. The Maseratis and the Alfa-Romeo were credited with a four-lap start from the giant Mercédès. Howe and Davis had to shake them off; if the Italian machines could sit on their tails, then neither of the Mercédès could win.

Howe knew this, and he put his foot hard down, lengthening his lead and smashing the lap record which Caracciola had set up the year before. Howe clocked 91.8 m.p.h., and, to accomplish this speed, he had to keep his supercharger in action all the while.

The art in driving a Mercédès was to use the blower as little as possible on the intermediate gears—when leaving a corner, or employing it to boost the car up to maximum speed where necessary. Campari and Eyston, in the two Maseratis, were now following the tactics that

the Bentley drivers had used at Le Mans; they were forcing Howe to keep his supercharger engaged continuously, believing that the German car must crack under the unnatural stress. Although the Mercédès cars were leading the field, Campari swiftly forged ahead on handicap—but Black's plaque on the scoreboard lay well in front of him. The cars were still getting into their stride, when Dan Higgin dropped out with a boiling radiator, eventually to retire.

When half an hour had passed, Campari still led—but many were watching Birkin. He was handling his car with beautiful precision, travelling with a steadiness which gave little indication of the tremendous speed he was touching on the run down to Gough Corner. He appeared content to remain just behind Campari and Eyston—who were travelling together, dogging the Mercédès—until dark clouds swept up and a storm burst, just when the race was an hour old. Forked lightning gashed the clouds, and thunder drowned the roar of exhausts. Rain fell solidly, visibly slowing every car—except Birkin's.

He put his foot hard down, passing Eyston. Soon he drew level with Campari, catching him on the straight and challenging for the lead. The Italian had been holding his machine one-handed, trying to shield his goggles from the rain, but now he gave all his attention to driving. For half a mile the cars travelled wheel to wheel, the spray from their tyres mingling, then the Alfa-Romeo slipped in front and Campari placed his mount at Birkin's tail, taking his pace until the rain eased.

When he could see better, the Italian driver opened up, and they duelled for half a lap before his Maserati pushed its scuttling red shape in front—when Birkin

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immediately regained the ground that he had lost, and slid ahead once more. They fought it out around the course. First one took the lead, then the other, while Eyston came up behind. He was shaping to join the dog-fight when his engine began to misfire, and he slowed at the pits. He was still changing plugs when Campari skidded to a stop in front of the depot, shouting and pointing to shattered goggles as he climbed out of his car.

A lens had been broken by a stone flung from a wheel of Birkin's Alfa-Romeo. As Campari dashed to the pit-plank, Ramponi—the Maserati reserve driver—jumped for the car. He refuelled while Campari's eye was being examined, then slid into the driving seat and sent the car away, taking up the fight with Birkin, while Eyston followed.

At the pit, it was found that Campari's eyeball had been bruised, but it was not cut and, when it had received attention, he wanted to take the wheel again. But it was decided to rest him and give Ramponi the chance of snatching back the seconds that had been lost through Campari's misfortune.

Out on the course, Howe's Mercédès was gaining ground now that the rain had stopped. He passed Ramponi and took second place, only to be flagged in for replenishments. His pit-work cost him only twenty-nine seconds, and when he left he set up speeds which all but broke the lap record he had made earlier.

At the head of them all, Birkin was still trying to overtake the phantom M.G. and, with the race half run, his plaque drew almost level with Black's on the scoreboard. He had caught up, but much could happen yet, and it was then that the pace told on Howe's machine. Traveling all out through the curves along the back leg of the course, his supercharger began to fail him and he lost

speed. He continued to put in fast laps, but he could no longer be dangerous to Birkin and the Maseratis.

Now Ramponi was flagged in, so that Campari might take the wheel. The crowd cheered him away and, with one eye bandaged, he shot down the course, pursuing Birkin. The Italian did not spare his engine on the straights, and took the corners as he had never gone through them before—gaining on the leader with every lap that he covered. He came to Mountjoy Corner at 115 m.p.h., his car trembling under the brakes, exhaust snarling as he changed down, to go through the turn with the machine rocking and the tyres scrabbling on the road. He took the first bend at Gough in one fierce dive, then pulled his Maserati close in at the second curve, ramming his foot hard down and throwing the car into the straight as the turn eased.

The race between Birkin and the "phantom" M.G. was now so close that it was impossible to tell which was leading, but both Birkin and Campari must stop for fuel before the race ended, when Black's plaque would gain from the delay. Birkin was flagged in, and he came to the pits with his mechanic half out of his seat, jumping from the car the instant that it stopped. The Alfa-Romeo paused only twenty-seven seconds before it zoomed away, its tank replenished with sufficient fuel to carry it over the remaining quarter of the race.

The crowd cheered Birkin off, then Campari was called in. He worked desperately with his mechanic, slinging in fuel and oil, but he could not match Birkin's cool pit-work, and he lost much time before he restarted.

Just before Birkin's stop, Eyston had worked his car up to third place. Barely had he secured the position than he ran short of petrol, although he managed to struggle to the pits. Soon after he left, the second Mercédès lost

speed through supercharger trouble, leaving Eyston to fight for third place with Lewis, on one of the Talbots.

In front of these two, Campari was trying to make up the time that his pit-stop had cost him, and Birkin was lapping again and again at 90 m.p.h. His halt had put Black's invisible car definitely in the lead, but the Alfa-Romeo was being driven at such speed that it seemed Birkin must yet win. Campari knew that he could not catch the Alfa-Romeo now, but if Birkin stopped for any reason, the Maserati might still snatch the lead.

The crowd watched the board with its tinted plaques. Always—elusive and tantalising—the one that represented Black's car remained ahead, but now never more than by a few seconds.

The last minutes of the race ran out, and the spectators cheered Birkin as he dashed past the stands to enter his concluding lap, and to make his final effort to clip off the few seconds by which Black still held the lead for the Grand Prix.

Three minutes of suspense, then Birkin appeared at Gough Corner. He came roaring through it and, as he raced up the straight, Black's plaque slid to the top of the board—eleven seconds before the finishing flag fluttered down.

Birkin had won the Eireann Cup with an average speed of 88.8 m.p.h.—but Norman Black had won the Irish Grand Prix by just eleven seconds.

Campari was second, and in third place came Lewis's Talbot, with Eyston's Maserati in fourth position.

If Birkin had finished twelve seconds sooner he would have won the Grand Prix. It is impossible to guess where he might have picked up those few seconds during the race. The rain had not lost them to him, because it had made no difference to his speed, and

his essential pit-work could not have been more rapid. It was simply that the ghost car had beaten him.

§ 4

After the race, Black's winning machine was driven from the scrutineers to the docks and shipped across to Liverpool. Half a mile out of town, the gear-box seized again, as if to remind everyone of the trouble which had occurred on the eve of the Grand Prix. It was odd that it should have happened both before and after the race, but had not shown itself during the event.

Cecil Kimber saw in it a defect that must be overcome—and he remembered the Le Mans cars, then on their way to the Sarthe circuit. Unless the trouble was rectified, those two machines might be robbed of their chance in the race. First, however, some way of solving the difficulty must be found. Work to this end was started immediately and was, later, to have its reaction at Le Mans.

The Irish race had revealed two things: the gear-box defect and the apparent error in Samuelson's opinion about the gruelling effect of the Double-Twelve on a car. All seven M.G.s from that race had gone through the Dublin event without a single failure, showing nothing of any strain as a result of the long Brooklands event.

Although they had stood up to the work, the race had been a short one, and the Le Mans course might yet show some soundness in Samuelson's ideas, because six cars—including the Hon. Mrs. Chetwynd's M.G.—which had run in the Double-Twelve were now due to appear on the Le Mans course.

THE EIGHTH CHAPTER

NINETY SECONDS

§ 1

CARS for the ninth Grand Prix d'Endurance were assembling at Le Mans while the Irish Grand Prix was actually being run off.

The Bentleys, which had dominated the event during previous years, were not running, but five nations were competing with twenty-six cars of such quality that they could not fail to uphold the reputation of the greatest twenty-four-hour race in the world.

A single big Mercédès-Benz arrived in the town, with Boris Ivanowsky and Henri Stoffel as its drivers. There were three American cars—two Chryslers and a Stutz—and three new 5-litre “blown” Bugattis. These French machines were to be handled by two Italian drivers and three Frenchmen, with Louis Chiron—from Monaco—as their pace-maker. A single Bentley was entered as a private venture, and amongst other cars was a team of Alfa-Romeos, one of which was to be driven by Earl Howe and Sir Henry Birkin, who came over immediately after the Irish Grand Prix.

The English cars included two Talbots, a team of Aston Martins, and two “unblown” unsupercharged M.G.s, one of which was the car that the Hon. Mrs. Chetwynd had driven in the Double-Twelve. She had Jacko to make the machine finally ready for the race, while Samuelson had Kindell as mechanic and spare

driver on the other car.

Mrs. Chetwynd, partnered by Stisted, took their machine straight across from Abingdon. It had undergone much the same preparation as the cars for Dublin, with the addition of certain modifications to the wings and cockpit, in order to comply with the Le Mans regulations. The car, however, had a silver body and red wings, when it should have carried England's international racing colour: green. The Grand Prix d'Endurance authorities, however, were chivalrous enough not to insist that the car be repainted.

Samuelson collected his M.G. and ran the car down to his Sussex farm a couple of days before he was due to leave. Kindell and Jacko joined him there, and all crossed to France. The journey was uneventful, and it gave Samuelson a chance to consider the opposition that he would have to face. The entry list suggested that there would be a merciless fight between the Bugatti team and the Alfa-Romeos, which had just won the Mille Miglia. It seemed to Samuelson that the pace would be exceedingly fast from the start—so fast that it could not last, and he judged that it would be wise not to set his scheduled lap speed too high.

He imagined that quite a big percentage of cars would crack up long before the twenty-four hours was ended, because the Alfa-Romeos and the Bugattis were certain to touch speeds that would infect everyone else with a desire to open up, and that promised trouble. In the result, Samuelson was correct; only nine cars finished after a race in which the early laps were most fiercely contested.

Arriving at Le Mans, Samuelson rolled his car through the gates of the Morris-Leon-Bollee factory, and the work of "readying" the machine began. He and

Kindell were able to put in plenty of time on it, because they had only to refresh their memories of the circuit, but Mrs. Chetwynd and Stisted spent many hours on the course.

Both cars had some difficulty over fuel and, after experiment, it was decided to run on pure benzol. Because the engine had a tendency to overheat, Kindell and Samuelson drilled an enormous number of holes in the dashboard and, at the same time, opened up the bonnet louvres. Their only other alteration was to substitute more powerful headlamps for those fitted on the car.

The Hon. Mrs. Chetwynd and Stisted carried out much the same programme, and both cars proved themselves to be satisfactorily fast during practice, which was from nine o'clock at night until six o'clock the following morning. Everything ran so smoothly that Samuelson began to grow a little suspicious; it seemed impossible that they could arrive at the start with so little to trouble them. Nothing out of the way occurred, and they cleaned up the machines in readiness for the scrutineers, when Samuelson was officially informed that his entry was the smartest-looking and best-kept car in the event.

He had always taken a pride in any machine that he was racing, and this was a pleasing compliment, but it tended to make him feel that something disastrous must happen before the flag fell. The blow came that same evening, in the form of a telegram from Cecil Kimber, advising the M.G. crews that the Irish Grand Prix had revealed a fault in the gear-boxes, and that he was sending out an expert to make necessary adjustments.

Nothing could be done until the expert arrived, and he appeared on the Friday evening before the race. He had

a heavy load of spares and he was tired but, after a meal, he immediately began work. The gear-boxes on each car had to be stripped down, and a third speed "idler" with a ball bearing substituted for the one which had shown itself as liable to prove recalcitrant.

This necessitated all-night work on the eve of the race, but the M.G. crews were not alone in this, because the Alfa-Romeo camp was also active. The Italians had suddenly come to a decision that they, also, would run on benzol, and this involved altering the compression ratio and fitting new pistons to their three machines. The new parts arrived by air, and not until midnight before the race were the engines rebuilt, when the new pistons had then to be run in. One of the engines burst during this time, so that only two of the team eventually came to the line. The Italians were still at work when the M.G.s were brought out at dawn, to be tested and found fit for the race.

Apart from the Alfa-Romeos and the M.G.s, the Bugatti and other teams also decided to use benzol, and the morning of the race discovered an unusual situation—there was no fuel in Le Mans on which the cars could run.

For the 1931 race, replenishment had to be made from tanks mounted above the pit roofs, whence hoses ran down to the fronts of the depots. Regulations required that the fuel should be placed in the tanks, which were then to be sealed by the officials, but the lorry bringing benzol for the race was missing. It did not arrive until close upon two o'clock, and the cars were to be sent off at four.

The morning of the race—June 13th—was torrid, and the heat seemed to increase as the day wore on. The cars lined up on a tarred road-surface which was melting, and

the power of the sun was such that mechanics poured water over the tyres of the waiting cars, or covered the wheels with sacking and canvas. As the hour of four approached, a steady breeze brought some relief from the heat, fluttering the flags on the stand and billowing the advertisement banners.

Outstanding amongst the waiting machines were the Bugattis, with black, square-built fabric bodies, triple headlamps, and with oil-filler spouts protruding from their engine covers. The green of the Talbots and the Aston-Martins gleamed against the colours of the rest, and right at the end was Samuelson's M.G., close against the silvery shape of Mrs. Chetwynd's machine.

The starter stepped forward with his great yellow flag, and the humming of the crowd ceased. Spectators pressed to barricades, and the flag suddenly swooped down. As always at Le Mans, there followed moments which were peculiarly hushed until the starter-motors whined shrilly, engines roared, and the cars moved away.

A 5-litre Chrysler shot off first, and the three Bugattis surged after it, then the road became filled with scurrying cars, their tyres hissing on the melted surface, with the M.G.s shooting into the heart of a bunch of bigger machines—all bearing forward in the rush to Pontlieu.

§ 2

Albert Divo and Louis Chiron pushed their Bugattis in front as the cars raced at the first turn on the course, passing the big Chrysler. The black Bugattis drew away from the rest as they raced on to the narrowing road that ran to the Rue de Circuit—the short section built to cut

off the Pontlieu hairpin. As they cleared this and hit the rise up to the straight past the Café de l'Hippodrome, Stoffel's Mercédès—which had been balked by machines leaving the line in front of it—shook off the smaller cars and streaked in pursuit of the leaders. Birkin followed with his Alfa-Romeo, his team-mate close on his tail.

The Bugattis charged up the slope and, at the crest, the white German car overtook Rost's black machine and passed—Birkin's Alfa-Romeo still clinging behind. The merged thunder of the close-running cars slammed across the circuit to the spectators in the stands as the Mercédès ripped past the Café and overhauled Divo in the furious dash down the straight to Mulsanne.

Birkin also tried to pass, taking the pace the Mercédès set, but the tree-shrouded corner swooped up and he dropped back. The machines stormed down the road between the woods to the bends at Arnage, then went through the corner and rushed on to where spectators were crowding against the enclosure barriers and craning in the stands, eager to see who led at the end of this opening lap.

Chiron's black Bugatti appeared first, and the Mercédès showed in the thin haze of dust and smoke which spun behind the car, as Henri Stoffel pulled his great machine to the side of the road, intending to pass along the brief straight before Pontlieu.

Out of the speed-spume that they raised came Divo's Bugatti, with its racing number already dimmed by the dust that other cars had kicked back. Birkin lay fourth, with the Alfa-Romeo, and close upon him was another Bugatti with Rost at the wheel. Marinoni, on the second Italian car, had dropped behind.

The machines rocketed past, with nothing to show that one of them had been marked down to play a tragic role

before the next two hours had gone. They went by with their tyres hissing noisily against the sticky tar on the road, then the pack came into sight and in the heart of a group of striving cars showed a Bugatti which was being driven by Mesdames Mareuse and Siko—appearing at Le Mans for the second time.

The Talbots were well up, and not far behind showed the Aston-Martins, then came a spate of machines which were followed by Samuelson. Behind him was a lone Arrol-Aster and Mrs. Chetwynd's silvery M.G. The cars vanished towards Pontlieu, leaving Brisson's Stutz at the pits. He worked on the big American car for a minute or so, trying to rectify failing oil-pressure, while the howl of the machines drifted back on the hot air. He started again, but for the next three hours he had to stop on almost every round, finally to retire.

At the far side of the circuit, Stoffel was trying to push his Mercédès in front of Chiron, but the French car still led at the end of the second lap, and now Chiron tried to shake Stoffel off. He opened wide when he cleared Pontlieu, drawing away from the white car with a tremendous burst of speed, to find himself travelling too fast into the Mulsanne turn. He could not possibly get through the corner, and he shot into the escape road, leaving the Mercédès to take advantage of his delay, and roar ahead while Chiron was reversing back to the course.

With the road empty before him, Stoffel put his foot hard down, and in the next half-dozen laps he built up a lead of nearly a mile. During this time Marinoni—Birkin's team-mate—began to bring his Alfa-Romeo up, and it became possible to see something of the race tactics which the rival drivers of the Italian and the French cars had planned.

Birkin was lying third, waiting for either Chiron or Stoffel to crack under the fierce pace they were setting. Marinoni pushed his car past Rost and Divo, taking fourth position, so that the two Italian cars rode together, with the two black Bugattis close behind them.

Birkin and Marinoni were prepared to profit by anything which might happen to the cars ahead—while Divo and Rost were there to challenge for leadership if some mishap occurred to their team-mate, Louis Chiron, who was driving grimly in pursuit of the German car.

The two Alfa-Romeos and the two following Bugattis were placed ready for anything, and the drivers were willing to keep their cars in those positions for hours, if need be, while their rivals were worn down. But only for two laps did they travel in the formation for which they had worked—then the whole appearance of the race changed in a matter of minutes.

Birkin's engine began to misfire, and he came to the pits with brake-shoes hissing and the car sliding on the sun-melted surface of the road. He worked swiftly over plugs and shock-absorbers, while the Italian pit-staff yelled excitedly. Hardly had he left than the big Mercédès appeared—with the remnants of a rear tyre slashing about one wheel.

The crowd looked for Louis Chiron, expecting to see him dash past and take the lead again, but he did not come into view; he was limping through the bends to Arnage, with a tyre flattened and stripped of its tread.

Without warning, the three leading cars were checked, and now Marinoni's red Alfa-Romeo went in front, while Divo and Rost saw the chance that was offered them and passed the stands with their exhausts snarling on a vicious, crackling note, hardly a dozen yards between them.

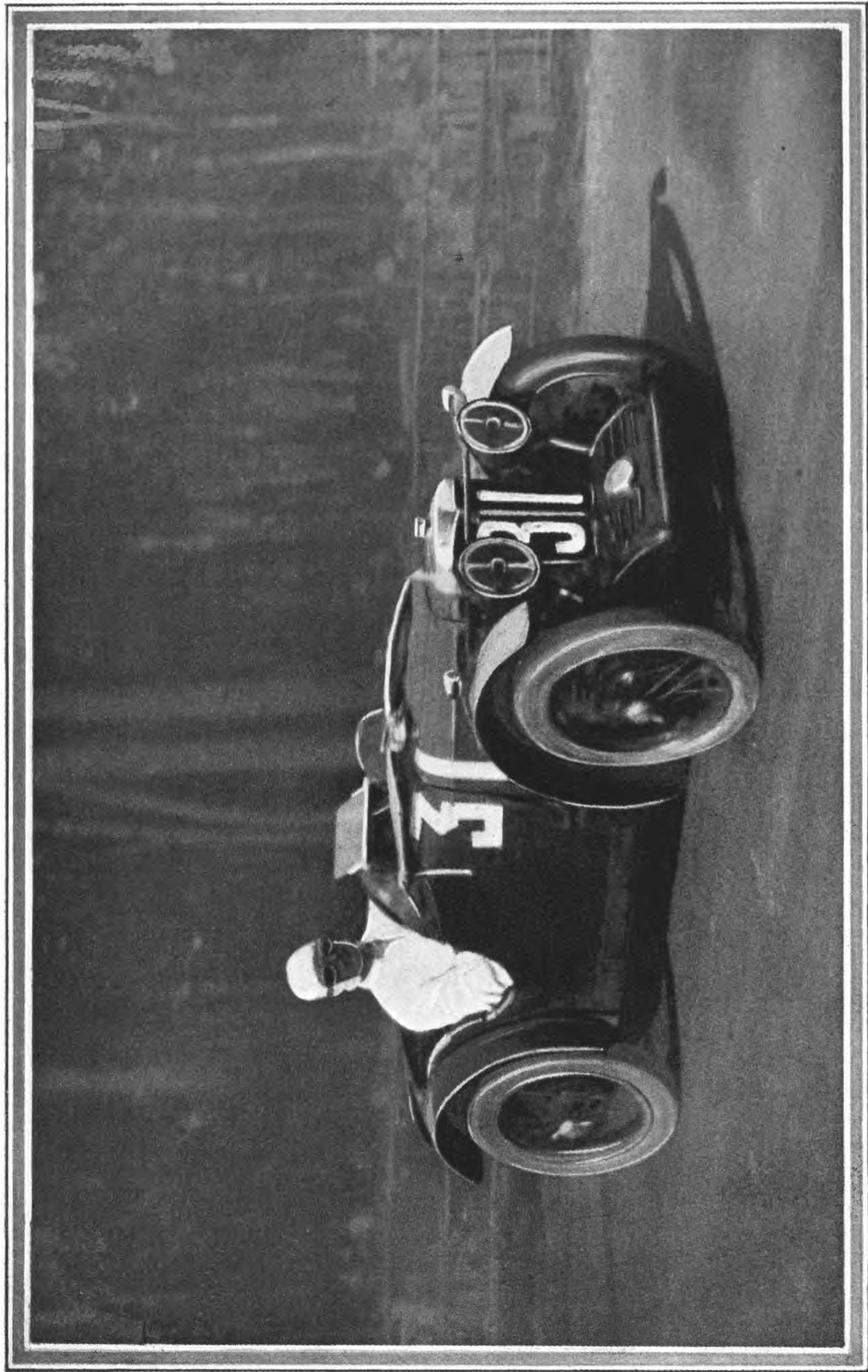
COMBAT

Birkin's delay had dropped him to seventh place. Chiron fell in behind him, and the Mercédès found itself amongst the strung-out pack, Stoffel driving hard to regain the position that he had lost. He passed car after car, then roared in front of Chiron, overtook Birkin, swept into fourth place, and stormed on—with the Bugatti and the Alfa-Romeo closing up as they tried to sit his tail and use him as a pace-maker.

Behind them, the two Talbots were coursing steadily around the circuit. The team of purposeful Aston-Martins were lapping regularly and, further back, Samuelson drew further and further away from the Hon. Mrs. Chetwynd's gleaming M.G., gaining fractionally on every lap. He was now driving to a scheduled speed slightly faster than that which she had set for herself and Stisted.

At close upon six o'clock, Chiron suddenly closed down on Birkin, and the two entered the grandstand stretch together. Chiron gave his machine full throttle and pulled his car to the far side of the road, dust skating from his tyres as he came level. For long-drawn moments the black machine and the red Alfa-Romeo hung together, then Chiron slid in front, for Birkin immediately to tuck in behind him.

They were close as they went through the Pontlieu bend, but Chiron drew away as they topped the rise into the straight past the Hippodrome—and that was fortunate because, hurtling towards Mulsanne, he lost the tread of a rear tyre. The Bugatti swerved full across Birkin's track before Chiron could regain control and draw his machine to the side of the road, allowing the red car to flash past, when the French machine rolled slowly on to the pits, and Chiron changed a wheel for the second time in two hours. There were some who read a



Le Mans, 1931

Captain F. H. B. Samuelson cornering at Mulsanne, just before Rost crashed

meaning in these stripped tyres, but none could judge how tyre trouble was destined to affect the other cars in the same team.

The other Bugattis were persistently chasing Marinoni on the leading Alfa-Romeo, and presently he scuttled down the Hippodrome straight. The car's roaring was echoed from the front of the building, and barely had he passed than the two pursuing black Bugattis appeared, Divo leading. They pitched along the sunlit road under full throttle, diving down the faint slope to Mulsanne—when a tyre tread stripped from Rost's near-side rear wheel. It struck the wing, then wrapped itself around the inside of the wheel, jamming the brake gear and locking it solidly, throwing the machine into a 100 m.p.h. skid.

At that point the road is wide, and the car slid across it at a tangent, heeling as it leaped the grassy verge, shattering a palisade and jumping up a grassy bank towards the trees beyond. Three men were watching the race from this bank, and one dropped flat, when the car passed over him; another flung himself into the wreckage of the palisade and escaped unhurt, but the third was hit by the car.

Rost, unable to hold the machine, had ducked into the cockpit, clinging to the steering wheel. His shoulder was dislocated as the car hit a tree, shearing clean through the trunk so that it afterwards seemed as if the tree had been felled by some gigantic axe.

The impact flung Rost out, while the car charged on into the wood, plunging amongst the spectators until it finally crashed, wrecked, at the foot of a tree. It left a disastrous trail behind it; one spectator was fatally injured and four others were hurt, while Rost sprawled at the roadside, with a damaged shoulder and a head-

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wound, suffering from shock which left him dazed for nearly twenty-four hours.

Samuelson, who had seen a similar crash at Spa, passed just afterwards. Blue oil-smoke was then spuming from amongst the dimness of the trees, and a crowd was rushing up beyond the splintered trunks. Long before his M.G. reached the grandstand, other drivers had slowed to inform officials of the smash.

§ 3

The Bugattis were using the same type of tyre as they had employed in the Targa Florio race a month earlier. They had heavy treads and, although they were excellent for the mountainous Sicilian course, where it was not possible to attain really high speeds, they did not appear satisfactory for two-miles-a-minute bursts along the back straight at Le Mans. The cars had aluminium wheels, with the brake-drums built into them. Possibly heat generated by braking for the turns had an effect upon the tyres.

Chiron had been pulled up twice by thrown treads and, while the smoke from Rost's crash still hung upon the air, he arrived at the pits with yet another stripped tyre. At once the other Bugatti in the team was flagged in. Presently both cars were driven from the course, and an announcement was made that they had retired.

Later Ettoire Bugatti, the builder of the machines, said that he would not again race his cars in any event where they were obliged to carry touring equipment, or where they had to run during the night. In his opinion, a cast tread could not be thrown clear of the wheel if the machine were fitted with wings, and

this fact was undoubtedly a contributory cause to Rost's disastrous crash.

§ 4

With the withdrawal of the Bugattis, the aspect of the race was completely altered again.

The Mercédès took second place behind Marinoni, while the two Talbots suddenly leaped into the picture, appearing behind Birkin, who was in third position. Not so very far in rear of the Talbots were the Aston-Martins.

Slowly the shadows closed in and night came. The sky was clear, and there were no clouds hazily to reflect the headlamp beams of cars cresting the slope up to the Café de l'Hippodrome. With the arrival of darkness the Mercédès was held up by a series of burst tyres, and trouble began to attack the British cars. Lewis, on a Talbot, lost the knob from his gear-lever—a small matter, but one which gave him a sore and damaged hand by the time that he came in for replenishment. The other Talbot had difficulties with a fuse, but it kept going.

The Aston-Martins were pulled up by the fittings to wings and headlamps, which began to break away. While these matters were receiving attention, the lone Bentley fell out at Pontlieu with a broken crankshaft. Then, unexpectedly, Mrs. Chetwynd's car failed to come round. Stisted had taken over, and the machine was almost half an hour overdue when the driver came running to the pits. He had abandoned the car at White House turn.

He thought he had missed a gear, allowing the engine

to race to the peak of its revolutions, when it had broken a piston. But, later, Jacko helped to push the car in and he discovered that a key had sheared in the timing gear.

The night wore on, and Samuelson's car began to climb up in the race positions. It gained from twelfth place, taking advantage of the delays to machines in front.

An hour after midnight distant lightning flashes showed, and at two o'clock in the morning a thunderstorm burst. Rain fell violently for a little time, and it had a double effect. Birkin had been closing up on the leading Alfa-Romeo, and he went in front of Zehender, who had now taken over Marinoni's machine. On the wet road, Birkin drew further ahead, and the storm put Zehender out of the race in a very unusual way. He pulled in at the pits to raise his windscreen, which had been folded flat along the scuttle. As he left, one of the Talbots appeared and, following the Italian from the pits, the driver opened up, clinging to Zehender through Pontlieu and showing an astonishing turn of speed as they raced down towards Mulsanne.

Zehender tried to lose the machine through the bends beyond and he entered the Arnage turn too fast, skidding off the wet road and stopping with a crash. The only apparent injury was a buckled wing and a damaged headlamp but, in some mysterious way, the car lost speed. Later it was discovered that the back axle had suffered, and the Alfa-Romeo had to be withdrawn. It left Birkin leading, with the two Talbots in second and third places; the Mercédès—delayed by its tyres—now went after them.

The dark hours ran out and sunlit dawn came. It revealed the Aston-Martins still running at an even speed, but with their wings and headlamps held in place

by wire and cord. One of the cars eventually lost a mudguard, and the wing was so damaged that it could not be replaced when, in accordance with the regulations, the car had to retire.

Soon afterwards, the tail of Lewis's Talbot began to sag. Ropes and straps failed to provide a remedy, and the car fell out of the race. This meant that three of the machines which had run in the Double-Twelve were now in the dead-car park; the Talbot, an Aston-Martin and Mrs. Chetwynd's M.G. Their trouble might have had a foundation in the Brooklands event, as Samuelson had feared possible—but he himself now received a check.

He had handed over to Kindell who, on one lap, was crowded at the entrance to the Pontlieu turn. The driver of a bigger car entered the corner much too fast, cutting in front of Kindell and then braking hard. Kindell locked his steering over to miss him and spun two complete circles, during one of which the tail of the car hit a grassy bank. The driver did not stop, and nothing appeared to be wrong, but trouble developed not long afterwards.

Jacko was now in Samuelson's pit, since the other M.G. had retired, and at nine o'clock on the Sunday morning he saw that the body of the car was down at one side. He advised flagging the machine in next time round and, when it stopped, they found that a rear spring had come adrift at one end as a result of the skid into the bank at Pontlieu.

To get at it, Samuelson and Kindell had to cut away part of the body, when they found that a bolt which held the spring in position had worked out. Kindell tried to hammer it back, but this had no effect, and an attempt was made to wire it securely in position.

Samuelson drove on, but the bolt speedily worked loose again. He had previously discovered that the fifteen-gallon fuel tank in the tail had an effect during cornering, and that fast work was liable to make the machine slide outwards. The loose spring made careful cornering still more essential, while the load was constantly thrown on the far side of the car, so that the other rear spring also worked loose, but neither Samuelson nor Kindell allowed this to make much difference to their speed. They realised that something was liable to happen at any moment, but they were grateful that it was not the front of the machine which was at fault, otherwise they must have stopped altogether.

Birkin and Earl Howe had taken their Alfa-Romeo a full seven laps ahead of the thinning field now. The Mercédès passed the Talbots and, as time went by, Samuelson began to creep up on formula, climbing from twelfth into eighth position, then moving steadily higher. With the approach of noon the last of the Bugattis disappeared, the Chryslers had already dropped out, and less than two hours from the finish another Aston-Martin vanished from amongst the runners.

When there was only an hour of the race to run, Samuelson slipped into third position on formula. He was handling the car during the last period of the race, trying to forget the dangerous possibilities of the loose springs. They affected the rear axle, which was using a lot of oil, and he was wondering whether it would hold out, when trouble came from an entirely unexpected quarter.

There remained just a little more than half an hour to go, when he approached the spot where the Hon. Mrs. Chetwynd's car had been abandoned, to hear a startling clatter from his engine, accompanied by

a gush of oil-smoke from vents in the bonnet.

He stabbed at the clutch pedal, and the power unit did not stop so he rolled slowly on. Obviously something had happened, but he dared not halt to raise the engine cover, dreading what he might find. He ran slowly towards his depot and stopped, informing the pit crew that "something terrible" had happened. A chorus of voices adjured him to keep the engine running, and the car moving, at any cost.

He knew that, according to the rules, a machine must complete its final lap inside thirty minutes; the idea behind this was that the car would thus prove that it was in a condition to run and, thereby, qualify for an award, if it were placed in the race. Samuelson knew that he had only to finish to take third position, and he glanced at the clock on the dashboard. It showed the time as just after three-thirty; all he had to do was to travel slowly around the circuit and finish at four o'clock, and he drove on.

The engine was not making a great deal of noise now, but it was firing only on three cylinders. Carefully, expecting at any moment that the power-unit would die under him, he rolled down to Pontlieu while, back at his pit, an appalling discovery was made.

Samuelson had actually left before the half-hour—his dashboard clock was wrong. He was liable to take too long over his last lap and find himself disqualified. Jacko leaped over the fence at the back of the pits and made a dash across the marshy ground inside the circuit. He raced towards the far side of Pontlieu, in hope of being able to signal Samuelson and advise him of his danger. Jacko reached the road just in time to see the car go by, too far off for his frantic shouts to reach the driver.

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Slowly, Samuelson drove the machine down to the straight past the Hippodrome café and through the Mulsanne turn. He took the bends at Arnage and toured back to the stands again, glancing at his clock as he reached the White House bend.

According to the clock, he had been round in four minutes less than the half-hour, and he stopped the machine, waiting until four o'clock showed before he rolled towards the tribunes, halting by his pit as Earl Howe ran up to congratulate him.

The Alfa-Romeo which he had shared with Birkin had won with a distance of 1,875 miles, and the Mercédès was second with 1,805 miles. Flowers were loaded on to the M.G.'s scuttle, while British drivers crowded round to congratulate him—Jacko and the rest hoping that their own calculations of the time might have been wrong, and saying nothing of their fears to Samuelson.

Soon the loud-speakers began to announce the result of the Grand Prix d'Endurance, but the M.G. was not mentioned. Following the result came the brief information that the M.G. was disqualified because it had not completed its last lap in the minimum time imposed.

Samuelson had left his pit on his final round of the course just one and a half minutes before three-thirty; if he had loitered at the depot for that ninety seconds, he would have covered the circuit in the time allowed.

He could easily have done it, because he had stopped for four minutes almost in sight of the stands but, as it was, that minute and a half disqualified him, and the car lost its place in the race on a technicality.

It was more than disappointing, but the regulation existed and, although it permitted no argument, it could not detract from the performance of the machine, which had finished where almost a score of others had failed.

When the engine was examined, it was found that a connecting rod had broken just above the big end. The piston had completely disappeared, but the rod had been flung out through the side of the crankcase, and was discovered jammed against the frame.

§ 5

Samuelson's experience at Le Mans provided Cecil Kimber with information which helped him still nearer the perfection of his machines, and it gave further proof of the value of racing as a contribution to progress.

Later, at the Abingdon factory, precautions were taken to prevent any recurrence of the trouble with the bolt which secured the springs, while the connecting rods were improved in design.

Another sidelight was the effect of the race on the six cars from the Double-Twelve. Only two passed the finishing flag at Le Mans. Samuelson was of the opinion that the others might have been weakened by the long Brooklands event; on the other hand, many cars fell out that had never run at Brooklands.

It is difficult to judge how correct may have been his ideas, because the seven Double-Twelve M.G.s all finished the course at Dublin. This race, however, lasted less than four hours; the Le Mans event was six times longer.

Whatever inference may be drawn, Samuelson seemed to change his own opinion after Le Mans. If the Double-Twelve could spoil a car for future races, it is reasonable to argue that the Grand Prix d'Endurance would leave any machine in still worse fettle—yet he immediately entered his own car for the German Grand

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Prix at the Nurburg Ring, due to start in five weeks' time.

Also, while he was on the Sarthe circuit, he came to the conclusion that the machine needed a supercharger to enable it to run at its best. In any case, circumstances were forcing Cecil Kimber to boost his engine, and Samuelson's decision to race his car in Germany, with a supercharger added, proved helpful.

Le Mans was still emptying of spectators and racing crews when the two M.G.s were placed on lorries and sent to Dieppe, whence they were to go on to Abingdon for attention. Samuelson returned to his Sussex farm, where he remained hay-making until it was time to collect his car and start for the Nurburg Ring.

THE NINTH CHAPTER

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§ 1

WITH their victories at Brooklands and Dublin behind them, the M.G. machines had upset all ideas about the speed of a 750 c.c. car, and this automatically brought an adjustment in handicap events. The next really big race was the Tourist Trophy, on the Ards Circuit, Belfast, due towards the end of August.

The previous year, supercharged 750 c.c. cars in the T.T. had been given a start of five laps; for 1931 such cars received only four laps, while "unblown" 750's would have only the start previously given to boosted models. In other words, in this race of over four hundred miles, an unsupercharged 750 c.c. car received only 13.6 miles start—the length of one lap—more than the boosted models, and this suggested that any "unblown" M.G.s would be handicapped right out of the race. Obviously, to hold his own, Cecil Kimber had to provide his entries with blowers.

Kim knew that amateur drivers who had run his cars at Brooklands and in the Irish Grand Prix would be racing at Belfast. Although Eyston had proved, at Montlhéry, that the engines would stand up to supercharging, and although the design of the machine was founded on the record-breaker he had driven, it would be wise to try out a "blown" car in some other race before the flag dropped at Belfast. Samuelson's decision to have

his car supercharged for the Nurburg Ring—which took place five weeks before the Belfast race—offered an opportunity to secure valuable data in plenty of time for the T.T., and work was begun on his car the moment it arrived at the factory.

Drivers of no less than ten different nationalities were shown in the entry list for the Grosser Preis von Deutschland, held on Sunday, July 19th, 1931, and amongst these was Hugo Urban-Emmrich, a Czechoslovakian, who had acquired the M.G. which Stisted had driven in the Double-Twelve. He also wanted his car supercharged, so that Kim found himself with the chance of double-checking any conclusions about the racing performance of his cars when provided with blowers.

Urban-Emmrich was a wealthy paper manufacturer with a business in Prague, and he was a true enthusiast. He had driven on the Avus track, near Berlin, and had raced a Talbot in the German Grand Prix the year before. Although Stisted's car had sheared its flywheel during the race at Brooklands, no real damage had been done. The machine was actually a car kept at the factory for experimental and works purposes. It had been loaned to Stisted and was now lent to Urban-Emmrich for the race at Nurburg; in each case, however, both Stisted and the Czechoslovakian driver paid every expense in connection with the car and the event, so that the machine was in no sense a works entry.

It was now completely overhauled and, like Samuelson's, it profited from what had been learned at Dublin and on the Sarthe circuit, precautions being taken to lock the bolt which had given springing trouble in France.

Jacko and Kindell were detailed to take the machine to Germany, and they had instructions to assist Samuel-

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son as much as possible. He was entering in a purely amateur effort, not relying upon such semi-professional assistance as even Kindell might have been able to render, while the race was comparatively short, and he did not need a reserve driver.

Urban-Emmrich, however, had little knowledge of the car, and it was essential that he should have expert advice available. Apart from this, it was desirable to have two really good men at hand to serve both cars, not so much from fear that the blowers might create difficulties, as that the special nature of the German course might upset calculations made in England, where few had any real experience of the comparatively new Rhineland circuit. One other helpful factor was that G. E. T. Eyston went over to the Nurburg Ring for the race; he had designed the supercharger used for the Montlhéry record-breaker and, as the blowers on the two M.G.s were copies of the one which had been so successful, he would be able to draw useful conclusions from their performance.

Urban-Emmrich met his machine, and the two mechanics, at Dover. The car had black body-work, which gave it a very sleek appearance that greatly attracted its driver. They crossed to Ostend, where Jacko and Kindell discovered the driver's own mechanic waiting with a Talbot chassis which carried a box body; this bore tools and absolutely complete pit equipment for the race.

They started the journey to the Nurburg Ring, arriving nearly a week before Samuelson left England with his own machine. He knew very little concerning the German course although, like everyone else, he had heard quite startling stories about it. During the run from the coast he met Dudley Froy, who had entered a

Riley; Froy and his companions informed Samuelson that the Ring was "the most terrifying track on earth." He thought they were exaggerating, but he discovered that they were very near the truth.

The Nurburg Ring is the largest specially constructed racing course the world has yet seen, and its total circuit covers 17.4 miles; this includes sections not normally used for speed work, although they are included in trials and tests. It is set where the Eifel hills look down on the little town of Adenau, some forty odd miles from Cologne. The course was built by men recruited from the ranks of the German unemployed, who were occupied for nearly two years in the work, and who surfaced it throughout with tar macadam, except for concrete on the brief double straight by the grandstand.

The walls of an old castle stand on a hill-crest, high above the tiny village of Nurburg, dominating the course. Viewed from the air, the circuit appears as an irregular ring drawn over the tree-scattered, tumbled countryside, and completely encircling the ancient stronghold. Other villages lie inside the Ring, but the course was so designed that no part of it formed a public road, and spectators making their way to a race do not travel along the circuit at any point.

By the time that Samuelson arrived in Adenau, Urban-Emmrich's machine had been stripped to racing trim, an open exhaust fitted, and he had begun practice, thereby handling the first supercharged M.G. ever prepared for a race of any sort. Jacko and Kindell had some difficulty with the fuel, and they concocted various mixtures before they found one which suited the car, upon which Urban-Emmrich promptly broke the unofficial lap record for 750 c.c. machines, with a speed of 58 m.p.h.

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He took his car on to the course every day, but Jacko could not persuade him to practice during the rain which fell for three days prior to the race. This was unfortunate, and it may be regarded as contributing to what occurred to Urban-Emmrich after the starter's flag fell.

The Czechoslovakian driver's practice work was in full swing, and he had been a week on the course, when Samuelson arrived in Adenau, and presently drove up to the Ring, accompanied by a Delage which was acting as tender. He then made his first survey of the Nurburg Ring and discovered that, at the start, the road ran from the stands and pits into a loop, formed where the course turned back on itself and again passed the stands. A space of barely ten feet wide lay between the two sections of road, and here the pits were placed; they were built of concrete and were sunk in order not to obstruct the view of both roads.

From the return road, the circuit dipped to the left, then ran by twists and turns into the valley above Adenau; on this long down-grade racing machines could attain really high speeds, but had to be controlled with skill because of the sudden bends and sharp curves. Beyond a bridge across the river that runs through Adenau, the road climbed, at times levelling off and then rising until it reached a long switchback which carried it to the stands once again, completing the circuit of fourteen and a quarter miles set for the German Grand Prix.

Samuelson first went around the course in the Delage, and one survey was sufficient to assure him that it was quite impossible for anyone to learn the circuit in the way that a driver memorises a more normal track. The ceaseless bends and twists were confusing, and the only

means of obtaining guidance was to learn by heart the names shown on signboards set at the side of the road. Nearly every length of brief straight, every hill and bend, was marked by some name, but it was rarely an easy one for an Englishman to remember.

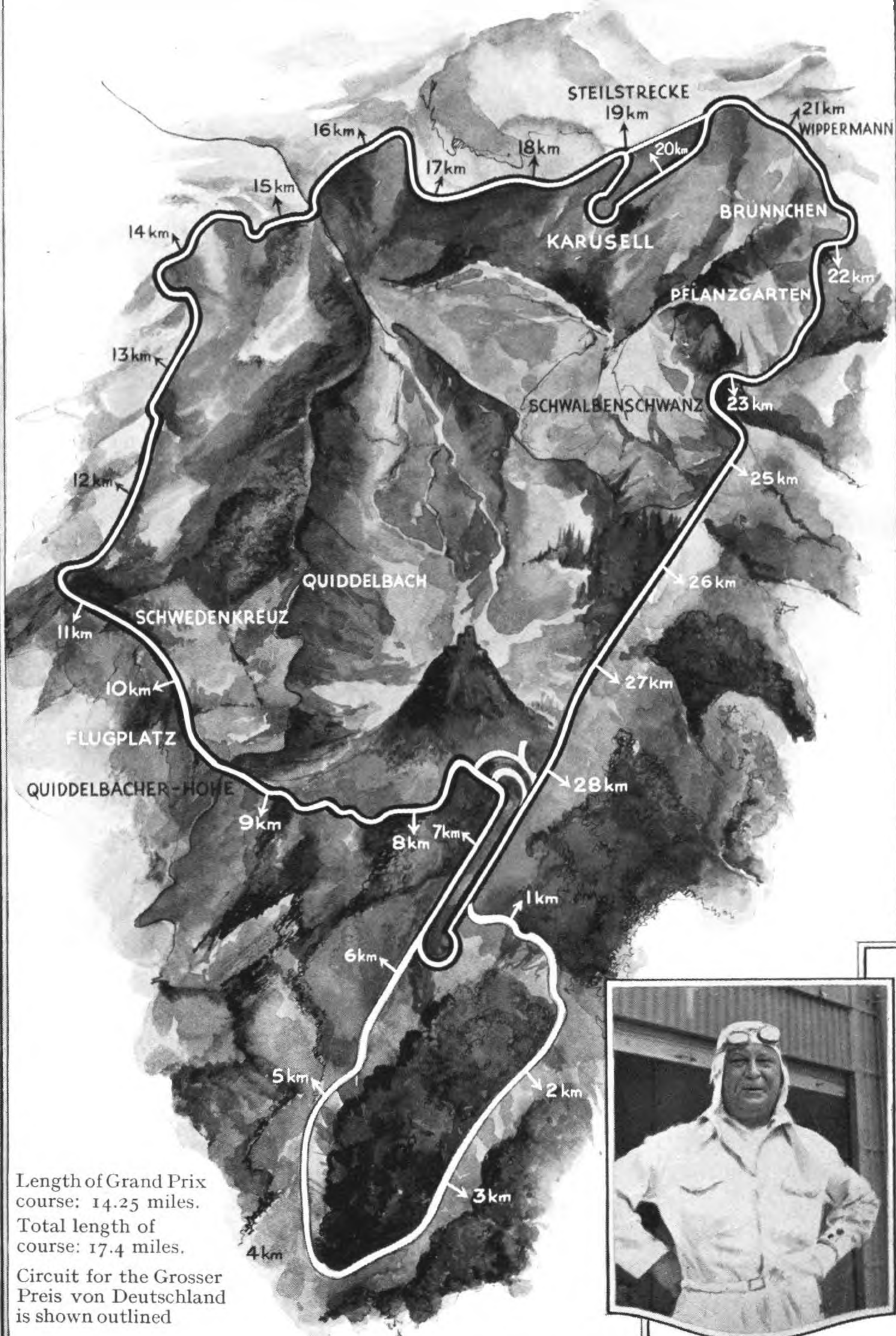
Samuelson discovered the *Karussel*, where the road swung round in an almost complete circle, easing off what would otherwise have been a most dangerous hairpin bend; he found the *Schwedenkreuz*, the *Pflanzgarten* and the *Schwalbenschwanz* turn, the *Quiddelbacherhohe* and the *Flugplatz*. Almost the only one he could recollect after the first survey was a bend simply called the *Kurve*, concerning which Urban-Emmrich had made a surprising discovery.

On the inside of this bend was a wide ditch, partly formed by the bank at the side of the road. This bank had been surfaced with concrete, and the Czechoslovakian found that the fastest way to take the *Kurve* was to put his car into the ditch and go round on its concrete banking, returning to the road where the broad gully eased off. It was dangerous; if the car travelled too fast it was liable to slide outwards, and if it went too slowly the machine was certain to overturn. The speed had to be judged to a nicety, and Urban-Emmrich became very adept. When Jacko heard about it, he attempted the feat; he certainly accomplished it, but admitted that it scared him sufficiently to make one effort quite enough.

For some time Samuelson toured around the course, trying to accustom himself to the idea that, on the fast down-grades, big machines in the race would be travelling at two miles a minute, falling towards some almost crazy turn at the foot—and that he himself would be descending at as much above ninety miles an hour as he could conjure from his supercharged machine.

NURBURG RING

RHINE PROVINCE, GERMANY



Length of Grand Prix course: 14.25 miles.
Total length of course: 17.4 miles.

Circuit for the Grosser Preis von Deutschland is shown outlined



Hugo Urban-Emmrich



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He found hills which climbed abruptly, with the road whipping in a curve at the crest, and there were places where the course was a ledge cut along the shoulder of a slope, with the ground dropping steeply from the outer edge to a wooded valley far below.

The circuit was a magnificent feat of road-engineering. The grandstands, pits and garages for competing machines were the finest that Samuelson had ever seen. Everything was impressive because of its typical German efficiency—but Dudley Froy had not exaggerated when he spoke of the terrifying nature of the circuit itself. The chief pastime of experienced drivers, during practice, was to inveigle an unsuspecting enthusiast into the cockpit and take him for a ride, with the result that drivers were constantly leaving the pits accompanied by bronzed and healthy-looking gentlemen, returning with companions who were colourless and wan.

Urban-Emmrich practised entirely on his racing machine, but Samuelson learned what he could of the circuit from the Delage, using his "blown" racer only as much as was necessary to find out how the car handled. The supercharger was just what had been needed to enable the machine to show its real ability, and almost his only trouble during practice was the breaking of a petrol pipe. That apparently unimportant incident was destined to have some reflection in the race itself.

It was not possible for either driver to make any definite plans concerning the actual running of the race. Each was a rival to the other, and it was fairly clear that Urban-Emmrich hoped for fine weather and the chance to put his foot hard down, while Samuelson could only drive as he had done before: as fast as circumstances permitted.

There were two classes in the German Grand Prix, one

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for cars of unlimited capacity, and another for machines under 1,100 c.c., in which class the "blown" M.G.s would be racing against Froy's Riley. The large cars had to cover twenty-two laps—313.6 miles—and the 1,100 c.c. cars were set eighteen laps—256.6 miles; all machines were to leave the line together.

A complete team of Mercédès was led by Rudolf Caracciola. There was an official team of Bugattis and two red Maserati machines—one of which Sir Henry Birkin was driving. Two Alfa-Romeos were down to be piloted by Tazio Nuvolari and Borzacchini. Earl Howe had entered a green-painted Bugatti, and an American named "Red" Shafer had brought over a "Shafer Special," which he had raced at Indianapolis. His was an unexpected entry, because it is rarely that an American competes in Continental events, since the prize money offered is not sufficiently high to tempt a man across the Atlantic.

Practice revealed that the race would develop into a dog fight between Caracciola's Mercédès, Louis Chiron's Bugatti, and the two Maserati machines, with the Alfa-Romeos helping to set the pace. On a course like the Nurburg Ring, the real ability of a driver is demonstrated beyond all doubt, and the drivers on the entered cars—the finest machines in Europe—were as good as their machines, all of which suggested that the German Grand Prix for 1931 would be as hard an event as the mighty Nurburg Ring had yet seen.

Apart from the M.G.s and the Riley in the smaller class, there were two Amilcars, a Salmson and a team of D.K.W.s—front-wheel-driven German machines with twin-cylinder engines, which had proved themselves surprisingly fast.

The three days prior to the race brought incessant rain,

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and the Sunday morning was dull and cloudy, for rain to fall again, growing more and more heavy as the hour of ten approached. In spite of the weather, Urban-Emmrich appeared attired completely in white, offering a very smart contrast to his black car. His tie, shirt, overalls, shoes, sweater, gloves, and crash-helmet were all white, and his only splash of contrasting colour was a flower which someone had sent him with good wishes for the race.

In all thirty-one cars came to the line, and final preparations were made during rain that swept in great sheets over the course. Great crowds of spectators had been gathering since dawn, and their one ambition was to get as close as possible to passing machines; on some sections of the course, their feet lined the road-edge, which was very disturbing to drivers taking a curve with the machines all but sliding on the wet surface.

The cars were called by whistle to the starting line, and Earl Howe sat in the cockpit with his famous umbrella opened over his head while he waited for the flag to fall. Four blue Bugattis were drawn up beside him, and their engines were not run until only a few seconds before the start, in order to avoid all possibility of oiling up their racing plugs. Not until the Bugatti engines were roaring, did Howe hand his umbrella to a mechanic.

Exhaust smoke swirled upwards through the down-pour, and the rain was so heavy that it was not easy to see the starter's flag as it dropped, when a maroon flashed against the dull sky, and the echoes of its explosion were lost in the roar of the machines as they left the line.

§ 2

The Mercédès cars slid a little as their rear tyres spun on the wet track. They found grip on the concrete and swept away, with the red Maseratis and the Alfa-Romeos at their tails, the Bugattis closing behind and forming a blue cluster in the group of scudding machines as all raced for the loop at the end of the short straight.

They swung round it, then came back on the other side of the pits with water spraying high from their wheels, the Mercédès in front. Froy's Riley showed almost level with Earl Howe's green Bugatti, and behind were the two M.G.s, riding the short, stumpy tails of the D.K.W.s. In a strung-out mass, the cars took the left-hand turn and vanished on the run down to Adenau, leaving behind only the reek of oil-fumes and fading echoes that were gradually subdued by the steady beat of the heavy rain.

In the line-up, Urban-Emmrich had been well ahead of Samuelson. Cars took position at the start in accordance with priority of entry, and the Czechoslovakian driver's machine was No. 66, while Samuelson's carried No. 88. The German authorities had a peculiar way of numbering their race entries, and ignored all odd figures; the machines were labelled No. 2, No. 4, No. 6, and so on. The last car in the entry list carried No. 96; in the ordinary way this machine would have been No. 48, although nothing like that field actually came to the line. The purpose of the German race officials is not clear, unless the device is a somewhat circuitous method of avoiding the universally disliked No. 13.

At the end of the first straight, Samuelson saw Urban-Emmrich disappear around the turn, and things so

happened that this was the last he saw of the other M.G. He himself left the D.K.W.'s behind and followed an Amilcar through the falling bends and curves; he swooped across the bridge above Adenau, racing up the long climb beyond until abruptly his engine petered out on a steep slope short of the *Karussell*.

The D.K.W.s passed and disappeared ahead as he climbed from the cockpit to investigate the cause of the stoppage, conscious of spectators staring from the wet grass at the roadside. Few things in racing can be so dismaying as a stop during the opening lap, with the possibility that, after weeks of anticipation and work, something may have happened to prevent the driver even getting a run on the car.

Samuelson found petrol trickling to the gritty road, dribbling from the front of the machine. It came from the nut securing the feed pipe to the carburettor; this was the pipe which had broken during practice and, although the nut had remained secure after the repair, it had chosen this moment to slack off.

The simple job of tightening the nut was not easy. Samuelson had to leave his car in gear, because the hand-brake had no ratchet, and the machine crept slowly backwards on the steep gradient while he sprawled on the wet road, jabbing with a spanner at the loosened nut, barking his knuckles against the supercharger casing, and crawling after the car as it gradually rolled away from him. It was almost ten minutes before he was able to start up and get away, with no means of telling how much petrol he had lost, which meant that he must stop at the pits to fill up.

While he worked to get the car moving, all the others had sorted themselves out. Caracciola had put his white Mercédès in the lead, and a hundred yards behind him

COMBAT

was Fagioli on a Maserati, with von Morgen driving a Bugatti at his tail. Close behind him was a quarrelling group of machines: Nuvolari with his Alfa-Romeo, Chiron's Bugatti, Stuck von Villiez on a Mercédès, and Sir Henry Birkin—driving his Maserati with shirt-sleeves rolled above his elbows, despite the pouring rain.

These cars stormed past the pits, slashing water from the pools on the concrete, and soon a pack of smaller machines appeared, with Scaron setting a fast pace on his 1,094 c.c. Amilcar, and Dudley Froy bringing the green Riley up behind him. They had barely gone by when Urban-Emmrich appeared in front of the D.K.W.s, then, after a long interval, Samuelson stopped to fill up; his appearance relieved his worried pit crew, but by the time he refilled his delay had cost him some fifteen minutes.

He was still at the pits when Caracciola appeared again. He was lapping at 66 m.p.h., handling his Mercédès as he alone can drive the big German car on a wet road. He touched astounding speeds on the drop down to Adenau, and although Fagioli was still behind him, Nuvolari was closing in with his red Alfa-Romeo. The rest of the machines passed in little bunches, which meant that every bend on the circuit was providing a fight as the groups of cars cornered. Samuelson had got away some time before Urban-Emmrich passed with his black machine, travelling fast. He swept around the loop and dived to the tarred road once more—and no one saw him again in the race.

Jacko and Kindell watched for him as the cars passed at the end of the third lap, and began to grow alarmed when he did not appear. No news reached them, and when Jacko tried to walk around the course to find out what had happened, he was halted by officials. Signals

from his pit told Samuelson that Urban-Emmrich had stopped, and he watched for him while he opened up and began to recover the time he had lost. He kept a look-out at every strangely named section of the course, and was amazed to see no sign of the black-painted M.G. or its white-clad driver.

Two hours passed before it was learned at the pits that the Czechoslovakian had skidded completely round on the *Schwedenkreuz* curve, sliding backwards off the road and falling down a slope beyond, to climb comparatively unhurt from his car.

Nuvolari now brought his Alfa-Romeo up to challenge Fagioli for second place. For three laps the drivers of the two rival Italian machines travelled together, until Nuvolari saw his chance to pass as they dashed by the stands. The Alfa-Romeo skidded as it went by, but Nuvolari held it and vanished with the Maserati taking the spray from his rear wheels when they went down to Adenau. Chiron received pit signals and sent his Bugatti after them, drawing closer and closer as the laps passed, waiting for the chance to duel against them both.

In the driving rain Caracciola was supreme. His heavier machine held the wet road-surface in a way which gave him superior acceleration out of the ceaseless bends, where full-throttle work caused lighter cars to slide. Nuvolari, Fagioli and Chiron, leaders of their rival teams, could only strive to maintain the pace he set, in the hope that the rain would ease and give them the chance to go all out in pursuit.

Further back Dudley Froy was chasing Scaron's Amilcar, and these two were gaining on Earl Howe's Bugatti. Samuelson overtook the D.K.W.s, passing two of them and tucking in behind the third car, which was behaving in an extraordinary way on the corners, where

it shuddered violently under the stresses of braking and turning, so that its wheels pattered wildly on the wet road.

The M.G. was lapping fast, scuttling through the turns and clocking 55 m.p.h., which compared well with the record lap that Urban-Emmrich had made on a dry course during practice. Occasionally Samuelson was drenched as big cars smashed past, kicking back a hail of wet grit and small stones, and once "Red" Shafer went by just as a group of Italian cars overhauled the Indianapolis machine. The American car looked large and almost unwieldy against the low-built Continental models, and presently Shafer dropped out, troubled by his shock-absorbers.

At almost half distance Chiron overtook Fagioli and Nuvolari in one fierce burst of speed, jumping into second place just before Caracciola's Mercédès came streaking to the pits, its tail wagging as the driver braked. Waiting mechanics jacked up the rear axle, changed both back wheels and replenished the tank in seventy-five seconds. The white car left as Chiron came in for replenishment; he took on water, oil and fuel so smartly that he gained twenty seconds on the leader.

Other cars now pulled in. The Mercédès all changed their rear wheels, but the pit-work of the drilled German crews was so swift that they actually gained time during the stops, completely changing the positions in the race. When general replenishments had ended, Caracciola still led with Chiron behind him, but the Bugatti was now followed by two other Mercédès, and Fagioli had dropped to fifth position.

Birkin had been oiling his plugs on the down-grades and had fallen back. Earl Howe's Bugatti had lost its tune, so that Scaron's Amilcar and Froy's Riley passed

him; behind Froy were two more Amilcars—then came the green M.G., which had worked up to fifth place in the 1,100 c.c. class. Samuelson had made up lost time and was now receiving pit signals as he made an effort to overtake an Amilcar, which lay barely three minutes ahead.

When Caracciola had only seven laps to cover the rain ceased, the leaden sky broke, and a wind began to dry the track. At that moment Fagioli dropped out, but the rest of the Bugattis and the Italian drivers opened up. Chiron was rather more than two minutes behind Caracciola, and this was the chance for which he had been waiting; he put his foot hard down at the start of the sixth lap from the end, gaining fifteen seconds on his next circuit. He left behind the two Mercédès which had been dogging him, and Achille Varzi—on another Bugatti—shot past them into third place. The great difference which the rain had made in the race now became apparent. On his next lap Chiron clipped another twenty seconds off Caracciola's lead, then Varzi broke the lap record for the day, covering the Nurburg Ring a full quarter minute faster than the best that even the leading Mercédès had done.

Nuvolari now raced his Alfa-Romeo in front of the two Mercédès, and went after Varzi. The three drivers behind the leader—Chiron, Varzi and Nuvolari—drove over the streakily wet course at desperate speed, but calculation showed that, in order to overtake Caracciola, Chiron had to gain more than twenty seconds on every lap. Only by the fiercest possible driving could he clip off a bare score of seconds on each round, and it was plain that the leader could not be caught—unless he slowed.

The crowd, enlivened by the change in the weather, rose every time the striving machines passed the grand-

stand, cheering Caracciola on. While Chiron pursued him desperately, Dudley Froy was being signalled "All-out!" He had been chasing Scaron all through the race, and now the driver of the leading Amilcar had stopped. His engine had begun to misfire and, while he sought the cause, the low-built green Riley passed him. Scaron had carburettor trouble; when he cleared this and raced on he found that the delay had been far too great for him now to catch Froy, and his pursuit was unavailing.

The last laps of the Grosser Preis von Deutschland ran out, and Froy's machine was actually the first to finish, with an average speed of 58 m.p.h. It gave him victory in the 1,100 c.c. class, but the Grand Prix itself could be won only by a car in the larger group, and fifteen minutes after flowers had been showered on Froy's car Caracciola was cheered across the line. He had covered the course at 67.3 m.p.h. Chiron took second place just seventy-eight seconds behind him. Varzi was third and Nuvolari ran into fourth position. Birkin's Maserati, delayed by oiled plugs, came tenth and Earl Howe finished close behind him.

Samuelson's M.G. gained fifth place in the 1,100 c.c. class, and his final lap was his fastest in the race, suggesting the fine condition in which his machine finished, and providing the strongest possible contrast to the ending at Le Mans.

§ 3

Before the race ended Urban-Emmrich turned up at the pits, and when the last car had crossed the line Jacko and Kindell drove the unlucky driver's Talbot to the scene of the crash.



Grosser Preis von Deutschland, 1931

The rescue party photographed after finding Urban-Emmrich's wrecked machine.
The picture indicates the rugged country in which is set the Nurburg Ring

NURBURG

They found the car some forty feet down the side of a ravine, jammed against a tree-stump. The only way to retrieve it was by sheer man-power, and fifteen big Germans hauled it up on the end of a rope, when it was found that the two wheels were badly buckled and the steering rod was bent. Repairs enabled the machine to be towed to Adenau, after which the car was taken back to England. It had run in two races and had been unfortunate each time, but its career was not yet ended.

The German Grand Prix had revealed no defects in either of the M.G.s. It was unfortunate that Urban-Emmrich disappeared from the event so early, but that was just bad luck. In practice his car had shown up splendidly under its blower, and Samuelson had made a fast, trouble-free run; in view of the fact that he had been matched against much bigger machines, and that he was driving on a strange and very difficult course, his performance had been splendid.

The race had served as a definite trial of the super-charged models, and now Jacko and Kindell hurried back to England. Samuelson left Adenau, with racing ended for him until the next year should bring the beginning of a fresh season.

Capt. G. E. T. Eyston—who had been on the scene during the whole of the race—also crossed the Channel, satisfied that his blower would do all that it was asked when the M.G.s left the starting line on the Ards circuit.

THE TENTH CHAPTER

PIT WORK

§ 1

THE International Tourist Trophy race of the Royal Automobile Club was first run on September 14th, 1905. The event was introduced to develop a normal type of car, and had never been contested by stripped racing models. It was held regularly until 1908, when interest turned to purely racing machines and the T.T. was abandoned; with the exception of a revival in 1914 and again in 1922, the race lapsed until the contemporary series started in 1928.

In some measure the Tourist Trophy was the forerunner of the Le Mans type of event, and it is largely due to the interest roused by the races on the Sarthe circuit that the T.T. has more than regained its old importance. All races had been run in the Isle of Man, but a new course was found for the modern series of events, known as the Ards circuit. It starts some five miles outside Belfast and the road is shaped in a definite triangle, embracing almost every possible type of bend and corner. The nearest point to the city is Dundonald Hairpin, from which a straight run of rather more than a mile leads to the grandstand and pits. The road then turns at Mill Corner, to rise up Quarry Hill and enter Bradshaw's Brae, where it snakes quickly on to a falling straight which leads beneath a railway bridge into Newtownards.

PIT WORK

The circuit crosses the main square and opens on a two-mile straight which runs down Strangford Lough. This fast stretch ends in two long bends and, beyond a level crossing, the circuit twists into Comber village. Clear of the houses, the road dives beneath the railway and runs through Ballystockart until it passes under yet another railway bridge; then, by a last straight of a little less than a mile, the circuit reaches Dundonald hairpin and turns back to the pits again.

The circuit was, in 1931, scattered with a score of first-aid posts, strategically situated, and every dangerous corner had its warning sign. The road was given a special non-skid surface, and minor alterations were made in the light of knowledge gained from previous events, so that the entire circuit was in very fine condition.

As the cars began to assemble for the only two mornings of practice allowed, Ettoire Bugatti announced the withdrawal of his team of 5-litre Bugattis. The T.T. machines were to carry touring equipment—lamps, wings, windscreens and so on—and the French manufacturer was putting into effect the resolution that he had made after Le Mans: never again to run his cars in an event where machines were not in racing trim.

On the first morning of practice dark clouds seemed to split in the sky and the circuit was deluged. B. O. Davis—driving the Mercédès which he had taken through the Irish Grand Prix—skidded into a fence. In trying to avoid him, Dudley Froy, who was handling an Invicta, crashed through the same fence further along. Davis was not hurt, but Froy damaged his wrist and was unable to ride in the race. A third crash during the opening of practice occurred to F. S. Barnes, driving the M.G. he had used in Dublin. He skidded on the flooded

road by Ballystockart and his machine overturned, ending all his hopes for the race.

In spite of the weather, Earl Howe and Sir Henry Birkin—both driving Alfa-Romeo machines—covered the circuit at a much better pace than the drivers of the official Italian team. These included Campari—his eye now quite recovered—Borzacchini and Nuvolari. The latter put his foot down during the fine weather which came with practice the next day, beating the speeds of Howe and Birkin, and driving with a dash which revealed his fiery spirit and showed the magnificent pace of his red machine.

There were two 2½-litre Maseratis entered—one with Capt. G. E. T. Eyston as driver—and a third 1,078 c.c. machine of the same make, with Henken Widengren at the wheel, this being another car which had run at Dublin.

An Aston-Martin team, four Rileys, four Talbots, and a team of Frazer-Nash cars were entered, while five “blown” Austins directly opposed the M.G.s. Of these, three formed the Earl of March’s team and three more belonged to Major Gardner—all having run at Dublin. Higgin’s car was in the race, and amongst the remainder was the machine that H. C. Hamilton had run in the Double-Twelve. All the cars were “blown” with the exception of F. M. Montgomery’s, who had the car he had driven for Cecil J. Randall at Brooklands. Every car had been completely overhauled, compression had been reduced to accommodate the blowers, and very trim, light aluminium bodies had been fitted.

The drivers entered in the M.G. teams were the same as at Dublin. Few had any experience of the T.T. circuit, and Norman Black, in particular, showed his keenness by the hours that he spent studying the course.

PIT WORK

He used a saloon car to drive out and survey the bends, then he walked the circuit, examining the corners and the road surface again and again until he knew the road as well as any driver. When he was not on the circuit he would don overalls and lend his mechanic, Frank Tayler, a hand on the machine. Black had learned much since he had begun serious racing, and his victory in the Irish Grand Prix had taught him that only by thoroughness and careful detail work can a driver and his car come well-found to the starting line.

When practice ended all the M.G.s were looked over. Tayler and Black removed the cylinder head of their machine, and this was still being replaced when the driver turned in to rest before the race. His mechanic was assisted by Cousins—who was once again representing Cecil Kimber on the circuit—and these two took the car out at 2 a.m. to give it a final test around the course.

Approaching the dark grandstand at 70 m.p.h., Cousins suddenly asked if Tayler had put on the brake. The mechanic had done nothing of the sort, but Cousins was convinced that the car had slowed abruptly. Dismayed, they returned to the garage, discussing possible causes of the check on the way. Tayler suspected a thrower ring in the back axle; if this dried up, it was possible to get a momentary seizure, which would make it seem as if the brake had been applied. They spent the remainder of the night in proving the accuracy of his diagnosis, but discovered that everything was in good trim, and dawn found them checking over the machine for the last time.

Tayler tightened up the oilskin which had been wrapped about the distributor, and saw that the cowl over the carburettor was secure. This had been fitted

because Black had an idea that it might rain; the cowl would prevent water washing up from the road on to the carburettor, which was, of course, placed close against the supercharger, set between the dumbirons. Apart from the temporary difficulty with Black's car, no M.G. crew had any untoward experience; Tayler had no regret at working all night, since that was in the best racing tradition and paralleled his labours during the dark hours before the Irish Grand Prix.

A total of forty-four cars lined up on the sunny Saturday morning. They were arranged in a formation worked out by the officials, so that batches of machines could be started according to their handicaps. Some of the cars were given clear credit laps—Montgomery's M.G. had five laps—others had both credit laps and time; the Aston-Martins, for instance, were given two credit laps, plus eight minutes and forty-eight seconds. This system of handicapping robbed the opening of any possible drama, although all cars got away within ten minutes.

§ 2

At the fall of the flag the Talbots swept from the line, leaving first because of the handicap arrangements, which gave them just ten minutes start from the "blown" Mercédès on scratch. Rather more than a minute later seven other cars left—the Aston-Martin and Frazer-Nash teams, and the small Maserati. Forty-eight seconds after that a bunch of fifteen machines started—all M.G.s and Austins, entering another round of their fight for supremacy in the 750 c.c. class. Only one car lagged, and that was Norman Black's.

PIT WORK

He and Tayler had arranged for what they hoped would be a flying get-away. Tayler had chocked the back wheels with stones, the handbrake was off, the car was in gear with the clutch held out and the ignition switched on, while the mechanic sat with his palm poised over the starter button, ramming it down when the flag fell. The starter-motor whined, but by the time that the engine fired the rest were dashing into Mill Corner, with Cooke's Austin and Parker's M.G. struggling for the lead.

Barely had the cars topped the hill than the flag sent off the five blue-painted Rileys. First away was Victor Gillow, who put his foot hard down right from the start. He pulled wide as he put his car into the sharp left-hand turn beyond the pits—and he skidded. His wheels spun on to the grass verge, and the machine headed straight at a telegraph pole; in avoiding this, Gillow slid back to the road, skidding across it to hit a bank, where the car reared upwards before it turned completely over. While spectators slid down to extricate Gillow and his companion, the two crawled out, abandoning their machine and walking back to the pits.

The first sensation of the race, and the first retirement, had come while some machines were still waiting to leave the line, and the dust from Gillow's crash hung on the air when five Alfa-Romeos, two Invictas, and the big Maseratis shot off. Campari leaped ahead at the corner, with the others travelling wheel-to-wheel at his tail as they flashed up the slope to Bradshaw's Brae.

Further around the course the Talbots were making the most of their start, while the M.G.s were fighting amongst themselves and against the Austins. Black swiftly made up ground, and he began to pass machines on the straight down to Newtownards, catching Horton's

red M.G. just before they dived under the railway bridge and entered the town.

It was against Horton that Black had fought in the closing stages of the Irish Grand Prix, and now they duelled again. Black sat on Horton's tail, while the red machine tried to leave him behind. Horton changed to third through the bends, howling in gear, while Black remained in top, taking the other's speed and giving his power-unit less work. It is always easier to follow a car than to set the pace, and Black remained pressing the leader of Gardner's team until Horton suddenly dropped out through a most unusual failure—his float-chamber snapped off.

These two were still fighting when the Alfa-Romeos and the rest came into the race, and the Italian cars left only two machines on the line. One was Montgomery's "unblown" M.G. and the other was the big Mercédès; they left together because Montgomery had exactly five laps start from the German car. When the flag fell the M.G. seemed to cling to the tail of the blue-painted German machine until suddenly the great car swept in front, creating an ever-widening gap as its full-throated roar drowned the cackle of the smaller machine's exhaust. They disappeared around the turn and the crowd relaxed, but spectators lining Bradshaw's Brae saw Montgomery chasing the Mercédès through the bends, flying after the big car as it dived for the railway bridge at Newtownards and vanished amongst the buildings. Possibly deceived by the German machine's speed, the M.G. driver pitched into a fierce skid when he reached Newtownards Square, but recovered and carried on with only a shade less dash.

The pacemakers for all teams were setting fast speeds. No one knew quite what was likely to happen, since the

PIT WORK

supercharged M.G.s were just as much a mystery as the "unblown" Montlhéry type cars had been when they made their first appearance at Brooklands. All that drivers could do was to go as quickly as possible and trust to pit signals to give guidance after two or three laps had been covered.

Soon after the Mercédès went from the line, Brian Lewis brought his Talbot past the stands, having averaged nearly 75 m.p.h. from a standing start. Close behind were his team-mates, then came the next bunch of machines which had been released. One of the Aston-Martins dropped out at the pits, and a Frazer-Nash which had started with it had already paused at the far side of the course—which made one crash and two stops before the Mercédès was half-way round the circuit on its first lap.

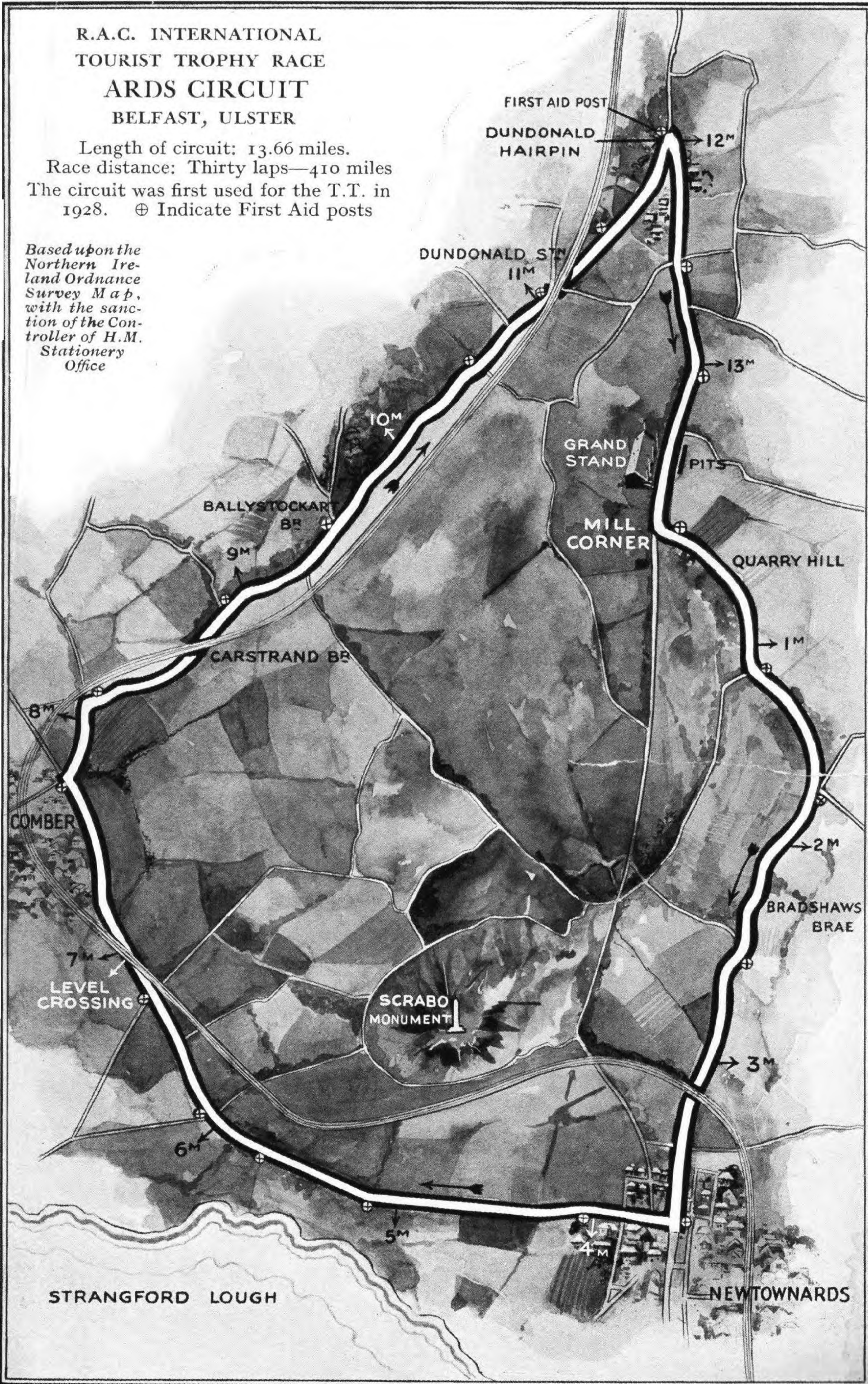
A few moments later E. R. Hall appeared, leading the M.G.s, having set up a 750 c.c. lap record with almost 67 m.p.h. Crabtree's green car was on his tail, and behind were half a dozen cars from Abingdon, with Black well placed. In rear appeared Cooke's Austin, with the rest of his team in formation behind. These had barely vanished around Mill Corner when a snarling howl was heard down the road and the Alfa-Romeos appeared.

Birkin's green-painted car showed in the lead; he had covered the first lap at 77.3 m.p.h., breaking the record that Lewis had set up bare minutes before. Howe's blue Alfa-Romeo was behind him, and through the thin dust which they kicked back appeared the red machines handled by the Italians, with Nuvolari driving furiously in an effort to catch Howe. They passed with a blaring roar, streaking up Quarry Hill. Presently the rest of the cars came by, the Mercédès making up on the leaders.

R.A.C. INTERNATIONAL
TOURIST TROPHY RACE
ARDS CIRCUIT
BELFAST, ULSTER

Length of circuit: 13.66 miles.
Race distance: Thirty laps—410 miles
The circuit was first used for the T.T. in
1928. ⊕ Indicate First Aid posts

*Based upon the
Northern Ire-
land Ordnance
Survey Map,
with the sanc-
tion of the Con-
troller of H.M.
Stationery
Office*



Now that the first lap was over, the race really began. Birkin knew that the Italians were after him, and he put his foot down on his second lap. Campari managed to pass Nuvolari and challenged Earl Howe; he slid in front, but Howe left him behind on the hazardous curves between Comber and Dundonald hairpin. Howe remained second to Birkin, who now broke his own record with 80 m.p.h., the highest speed at which the course had ever been covered. While the time-keepers tabled his record, Nuvolari's engine cracked, and he came in sight with his machine gushing oily smoke. He pulled up at the pits; his power-unit had been overstressed in his pursuit of Howe. He started again, but got no further than Bradshaw's Brae, where his engine gave out completely.

When Birkin had completed another lap, signals showed from the Alfa-Romeo pit. Campari opened wide in response, now passing Howe and starting a grim pursuit of Birkin; Campari and Borzacchini—on the third car in the official Italian team—were as much rivals to Howe and Birkin's private entries as if they had been mounted on different makes of cars. Apart from this, the M.G.s were leading on handicap; at the end of four laps Hall was in front on handicap; Montgomery had been taking his "unblown" machine round at such speed that he was only a second or so behind him on formula. Birkin was in third place, and Campari was thirteen seconds in rear, while Howe was travelling not fifty yards from his tail.

If the Alfa-Romeo signals had an effect upon Campari they were like a warning to the M.G. drivers. The leading positions were so closely contested that seconds made a difference, and now Crabtree suddenly pushed his M.G. in behind Hall's, while Hamilton and Norman

PIT WORK

Black came up to take fourth and fifth place behind Birkin, slipping their cars in front of Campari—so far as handicap positions were concerned.

The M.G. drivers were all going hard, providing a spectacle that held the crowd. Stop-watches showed that they were as fast as the Alfa-Romeos through the corners, flashing into the turns like thunderbolts, and going through them at speed which seemed to invite disastrous skids. Again and again Hall came to a corner at so great a pace that it appeared humanly impossible for him to get round; he left the spectators gasping as, with tyres shrieking, he held his machine to its course, replacing tyre-scream with the roar of his exhaust when he kicked the throttle open and left the turn behind.

Only on the straights did the bigger cars have a real advantage, and the way in which the smaller machines fought to hold off the Alfa-Romeo attack was a tribute to the skill and nerve of Hall and Crabtree, Black and Hamilton, and the rest. They forced the howling Alfa-Romeos to travel at full bore, and Campari did his utmost to clip something off the thirteen seconds between himself and Birkin, while Howe gradually lessened the fifty yards which separated him from the Italian driver.

He roared into the grit kicked from Campari's rear wheels as they came down Bradshaw's Brae and, in pulling out to pass, Howe skidded on the second bend. One front wheel hit the edge of the footway and the tail of the car slammed round; it smashed into a hedge, leaping through mid-air as it dropped, landing squarely in a potato-field six feet below.

Howe was not hurt, neither was his mechanic, and the machine was driven on across the field, when Howe regained the road and ran on towards the pits, where

he discovered that the fall had damaged his braking system, and he had to retire.

When Howe vanished, Campari had no longer to worry about a machine on his tail, and he went all out after Birkin, putting up a new lap record with a speed of 80.75 m.p.h.—which brought him within sight of Birkin on every straight stretch.

Such pace had its effect on other drivers, who were forced to go faster than they wished at the early stages of the race, and casualties were the result. Dan Higgin's M.G. limped in, and he retired with a broken valve-spring. Cooke had already skidded his Austin into the sandbags in front of a butcher's shop at Comber while he was challenging the M.G.s, and now he blew a cylinder-head gasket; he replaced it, but eventually had to retire. He had been travelling very fast, and he left Don Barnes and Goodacre to make the pace for the Austins, driving so furiously in their efforts to hold the M.G.s that the crowd watched for them on the corners.

As the laps ran out Birkin found himself chasing the M.G.s in much the same way as he had driven in pursuit of Norman Black's phantom car at Phoenix Park. This time, however, he was pursuing Hall and Crabtree, and he was rewarded when Hall blew up just outside Comber; immediately afterwards Birkin shot ahead of Crabtree and took first place, with Campari behind him. Then, answering pit signals, Hamilton took his blue M.G. into fourth place, with Parker on his tail, and Norman Black in sixth position, all of which gave the M.G. machines four places in the first six when the race was an hour and a half old.

The cars began to come in for replenishment, and the pit-work amongst the M.G. drivers showed how they had profited by previous experience. Parker took in

seven gallons of fuel and adjusted his shock absorbers in rather less than forty seconds. Norman Black had been flagged in, but his mechanic had missed the signal. He took it when they passed next time, but on their approach to Dundonald the engine began to misfire from lack of fuel. Black coaxed it on, and they rolled up to the pits, where Tayler made up for his default by his speed in replenishment.

In thirty-two seconds he took on three churns of fuel—fifteen gallons—then they were away again, sucking two half-lemons, having gained valuable time on the cars in front. That swift pit-work made all the difference in the result of the race.

§ 3

The pit-stops gave the crews of the depots time to tell their drivers how they stood. It was plain to the leading cars that they must find still more speed if the Italian machines were to be held off, and the pace increased.

Borzacchini, who had been travelling steadily behind Campari, received orders to go faster, and yet again the Alfa-Romeo signals appeared to have an effect upon a machine other than that for which they were intended, because Birkin at once smashed the lap record again, with 81.1 m.p.h. But Borzacchini capped it with 81.2, and immediately afterwards Birkin came in for replenishment. Campari then took the lead amongst the Italian cars—but he himself had still to come in for fuel and might not keep the lead for very long.

As Birkin left the pits the Mercédès arrived, and Davis handed over to his relief driver. The big car was still at the pits when Major Gardner took his M.G. past, for

the German machine to pursue and overtake it just as they cleared the railway bridge outside Comber. The Mercédès was travelling at tremendous speed, and it slithered into the Major's car as they came through the curve beyond the bridge. There was a tremendous crash and, interlocked, the machines lurched to the side of the road. For an instant it appeared as if both would overturn; then the German machine leaped clear while Gardner's car—literally pushed off the road—smashed into the ditch, bucking and rocking until its impetus was exhausted. Partly by chance, partly by the driver's skill, the machine did not turn over and its crew escaped any real hurt, but the smash was particularly unfortunate for Major Gardner, who had experienced more than his share of ill luck, and who was not involved in the crash through any driving fault of his own. One wheel was buckled and the side of the car where it had been hit was demolished, making it impossible to continue.

While this incident was occurring there was drama opposite the grandstands. Campari had come in for fuel, and barely fifty seconds afterwards he was off again—just as Birkin came by, with Borzacchini on his tail. Campari went off with a war-like howl, sliding in behind the two; Birkin had now lost his lead, and the three machines were travelling level, because Borzacchini had not stopped, and this had given him the chance to overtake the others.

With no distance between them, they stormed Mill Corner and Quarry Hill beyond. In Bradshaw's Brae Birkin's machine got into a double slide just where Howe had left the road, but he straightened out and was still in front on the rush down to Newtownards. They went through the town, the crowd gasping at their speed, and Campari did his utmost to pass along the straight to

Comber, both rocking by Black's M.G., with Borzacchini coming like a red thunderbolt after them, leaving a dust-flume which momentarily blinded Norman Black.

Birkin could see Campari from the tail of his eye and, striving to keep ahead, he took the turn into the town too fast. He saw that he could not get round, and he rammed on the brakes, the wheels locked and the car slammed into the sandbags. Behind him Campari found the course all but blocked by his rival's car, with everything masked by flying dust. He braked hard, then slung his machine into the escape road, while Borzacchini ripped past them both and went ahead.

Norman Black, arriving a few moments later, saw the race leaders in difficulties, and that inspired him to keep his machine moving as near the limit of its speed as he dared. He roared on at full bore towards Dundonald, while Campari reversed back to the course and went away, leaving Birkin extricating his car and inspecting the damage. He replaced a wrecked front wheel, then found that the frame had been bent. He did his best to keep the car running, but the braking system was disordered, and he was eventually obliged to retire.

The excitement occasioned in Comber by Birkin and Campari had barely died when Fiennes—who had taken Watney's place as driver in March's team—all but lost control on the turn. Barely was he clear when Montgomery struck the sandbags—to be all but hit by a bunch of passing cars as he backed out and got away. The whole village was in a state of fierce excitement as a result of this, and the harsh cornering which the crowd had seen was an index of the way in which the T.T. was now being fought out.

When Birkin could no longer challenge for the lead, the race had a changed aspect. The Alfa-Romeo pit-

stops had set Crabtree as race leader; Hamilton's M.G. was ninety seconds behind, and Black was chasing him hard—lying only one second behind Hamilton now—then came Borzacchini and Campari in fourth and fifth positions.

Neither of the leading M.G.s was in the same team; Crabtree was striving to hold his own, and Hamilton was doing his best to overtake him, while Black was using all his knowledge of the circuit to come up with them both. If the crowds on the corners were looking for thrills, they had them now; Black knew that Birkin and Campari were delayed, and that this was a real chance to drop them well behind. He went through the corners with the engine turning just short of those last revolutions which may ask too much of a car—but Hamilton beat his effort.

He was very close to Crabtree, and he made a great effort to bring him back and put him behind. Hamilton had already been marked by racing men as a driver who would make a name for himself, and he showed his ability now. He went round the course without a fault, placing his machine for each turn on exactly the right line to go through at the absolute limit of speed, and he broke the 750 c.c. lap record with just 70 m.p.h.—only to snap a valve rocker and fall out.

Black automatically took second place, and he began to gain a little on Crabtree with every lap. His mechanic—Tayler—was watching the scoreboard each time they passed the pits, counting the laps, and as the time drew near for another replenishment stop, he began to work out just what his actions would be when they did pull up.

They were flagged in, and twenty-eight seconds after they had stopped they were moving off again, with a refilled petrol tank. The brevity of their halt, compared

with Crabtree's stop, brought them so close to the leading driver that he sped up still more in a desperate effort to keep in front, only to skid into the sandbags at Comber and tear away a mudguard. He flung it on to the back of the machine, his mechanic holding it there; he was forced to pull up at the pits and wire the wing back into position, while Black took the lead. That trouble on the corner, and the ripped mudguard, cost Crabtree the race.

The T.T. was now approaching its crisis. Crabtree was in second place, Campari and Borzacchini lay third and fourth, and when these two passed the pits, five laps from the end, a signal showed from the dark front of the Alfa-Romeo depot, hung out for Borzacchini. It told him to pass Campari and take the lead; his engine had not been thrashed in the early stages, and was in better condition for a final attempt to overtake the M.G.s.

Borzacchini obeyed, and there followed a marvellous exhibition of hard driving. In order to catch Black, the Italian driver had to lap the 13.6 miles of the circuit in 10 minutes, 7 seconds. After he received the signal he lapped in 10 minutes, 9 seconds, then came round in 10 minutes, 10 seconds, which was not quite fast enough. His pit hung out a board bearing "M.G. 42." It told him the car he had to catch—and it also told Black and Tayler how fiercely they were being pursued.

Black could do no more than ram his foot hard down on the throttle pedal, and make still further use of the knowledge he had gained when he had studied the circuit for so many hours before the race. Although Borzacchini was failing to catch him by only two or three seconds on each lap, if Black misjudged a corner, or skidded awkwardly, he might be

delayed sufficiently to let the Italian into the lead.

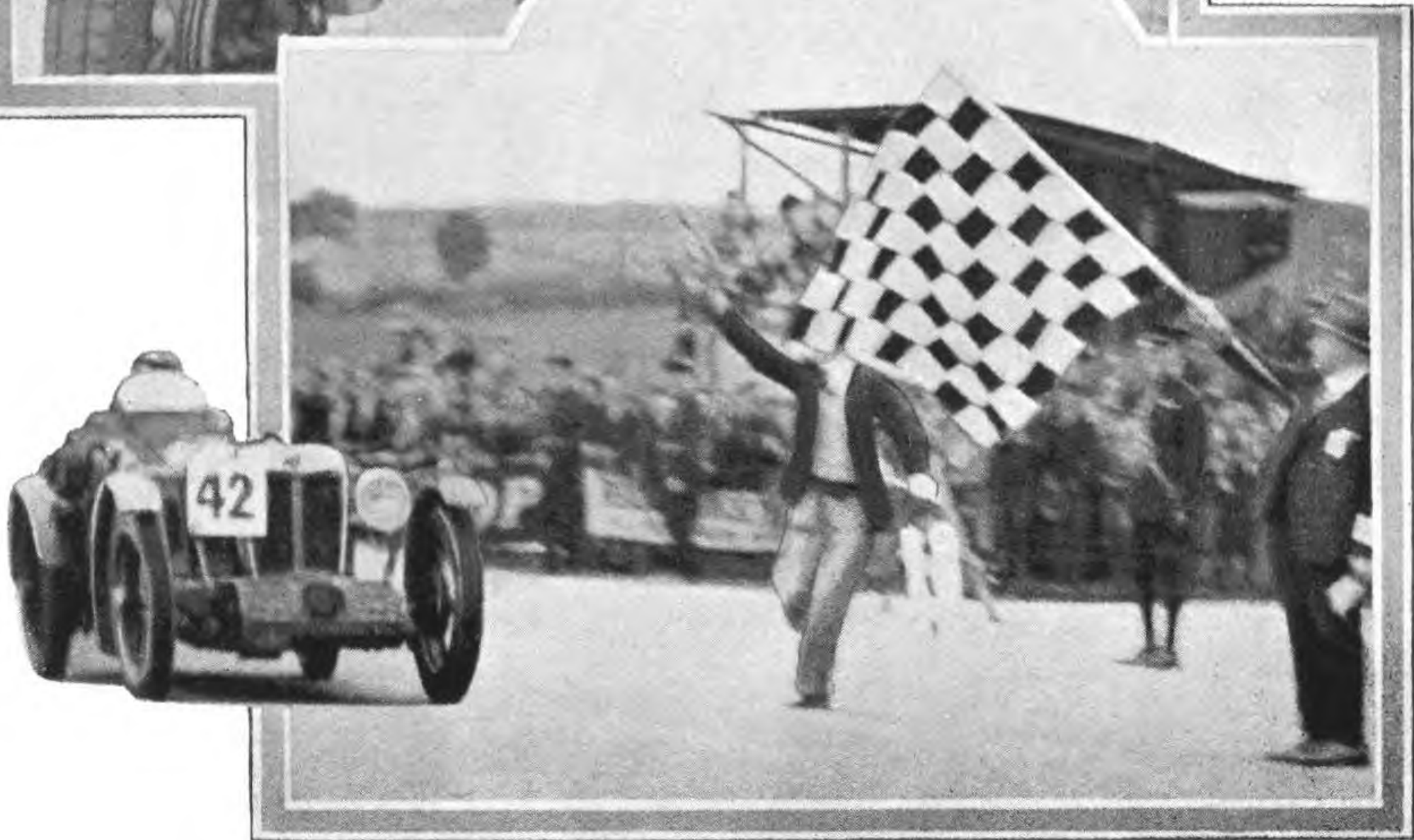
When Borzacchini came by the mechanics in his depot waved him wildly on, hanging out over the pit-plank and yelling. Every driver was now travelling all out, and the closing stages of the race brought one last incident. At Ballystockart, where Barnes had turned over in practice, Field's Invicta lost a rear wheel; the car crashed on to its brake-drum and slewed wildly across the road before the driver could bring it to a stop. He replaced the wheel, but the delay made it impossible to complete the course inside the time limit.

Borzacchini hurtled past while he was working on his car, and with two laps to go the Alfa-Romeo had rather less than three minutes to make up; behind him Campari slowed and dropped back.

Norman Black had the throttle pedal rammed to the floor boards, and Tayler was looking backwards all the while, expecting at any moment to see the red car come up behind. On every turn the crowds were cheering Black on—his exhaust bellowing and gears screaming above the supercharger's throbbing drone as he went through the corners, driving flat out over every yard of the circuit.

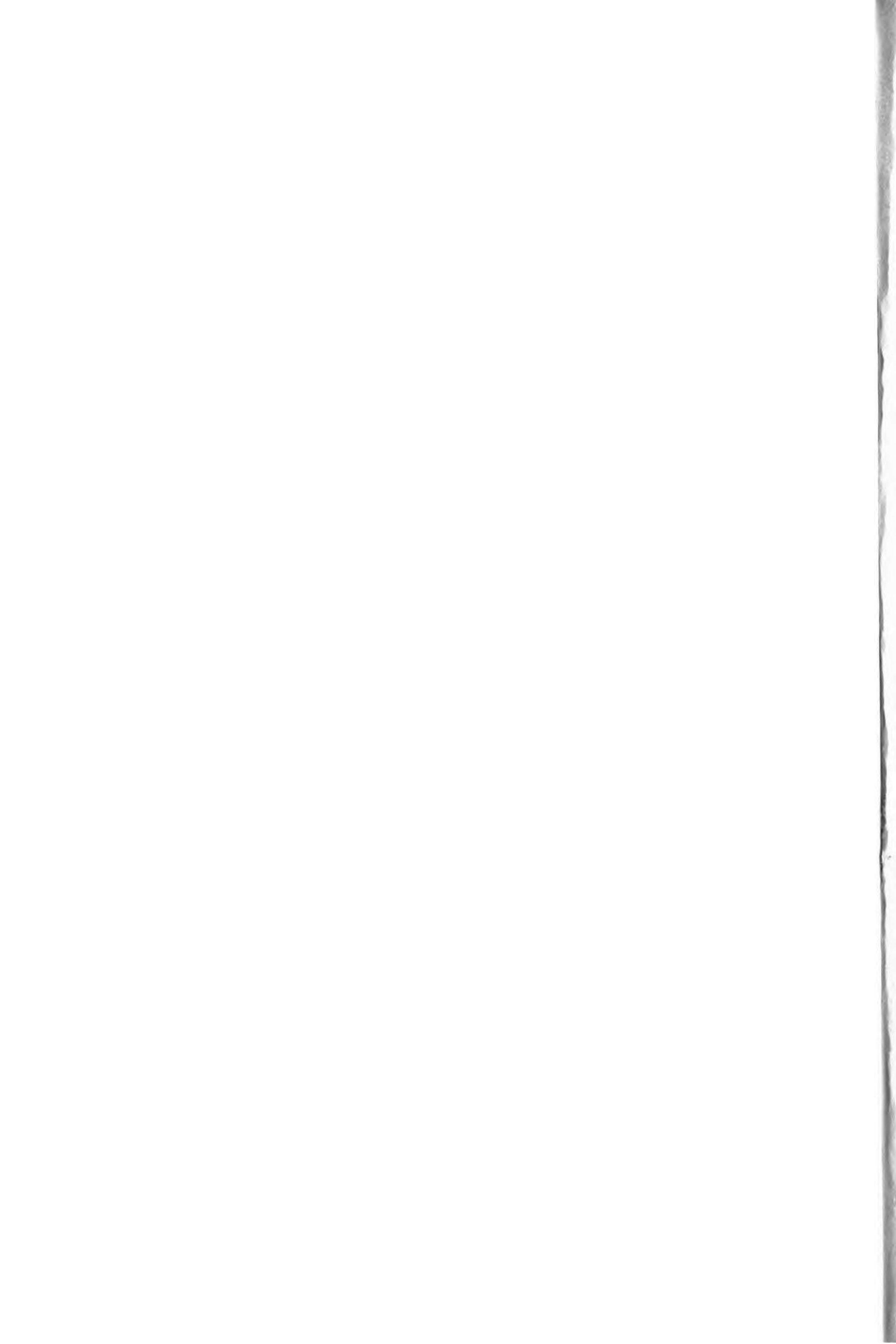
He came past the pits, entering his last lap. He was just a minute and a quarter in front of Crabtree, who had received a signal to travel at his limit. Borzacchini was ninety seconds behind him—and if the Alfa-Romeo could not catch Black, it might overtake Crabtree and steal second place.

The two M.G.s scuttled on, driven as Cecil Kimber's cars had never been driven before. Again the crowds on the corners cheered Black as he passed; they cheered Crabtree and then waved Borzacchini on as his flashing red machine appeared. Black went through the square



Ulster Tourist Trophy Race, 1931

Norman Black discarding his poncho as he climbs from the car after the race, and, below, passing the checkered flag that signalled his victory



at Newtownards, and Tayler watched backwards all down the straight to Comber. They swung through the village, the railway bridges echoing their exhaust note as they ran towards Dundonald—and still there was no sign of Borzacchini. They took the hairpin and Black stamped the throttle wide for the last time during the dash to the finish, to see the checkered flag unfurling on the air and an official waving his number as he passed, telling him that he had won.

Borzacchini had not caught him, but the crowd saw Crabtree appear from around the hairpin. As he cleared it, Borzacchini arrived at the turn with brakes shrieking, fairly leaping after Crabtree's M.G. They roared towards the finish, with Borzacchini streaking up and thundering past, crossing the line just five seconds ahead of Crabtree and gaining second place.

§ 4

Norman Black had won the 1931 T.T. at an average speed of 67.9 m.p.h., finishing just seventy-two seconds in front of the Alfa-Romeo. Three of the "blown" M.G.s were amongst the first seven cars home, and the difference in time between Black and the machine in seventh place was less than four and a half minutes, which suggested how cleverly the cars had been handicapped, since the handicapper's ideal is to bring all machines across the finishing line together.

Of the forty-four starters, only nineteen finished, five of these being cars which Cecil Kimber had prepared. The event showed the value of the new superchargers and, from that date, M.G.s were hardly ever to race "unblown."

COMBAT

Like most big, fast-run events, the T.T. caused some controversy. Many believed that Borzacchini might have won, had he been told earlier in the race to go all out; on the other hand, his machine might not have stood up to the tremendous pace if he had received the signal much before the end.

Crabtree might have won but for his misfortune with the mudguard. Black might not have secured the lead at all if his pit-work had not been so swift and alert. But speculation is useless, save where it suggests a guide for the future.

It was a great victory for Norman Black, who thus had won two events of very real importance. More than this, it was a victory for Cecil Kimber—he had seen the checkered flag fall in the finish of one of the world's oldest races while a car that he had built crossed the line. That was something of which he had never even dreamed in the days when he worked in the shadow of the old bastion at Oxford.

THE ELEVENTH CHAPTER

FULL BORE

§ 1

WHEN the British Racing Drivers Club held their first Five Hundred Miles Race at Brooklands in 1929, they inaugurated what immediately became the world's fastest long-distance event. It was introduced largely because there was no race in the Brooklands calendar which gave drivers the opportunity of a really good "blind."

It would have been hard to find the chance of this even on the Continent, because Grand Prix events were all run over road, or road-type, circuits and included hampering corners. Races at the Monza speedway certainly did permit continuous driving with the throttle wide open, but a man had to spend some time in learning the track before he could get around at any real speed, and only a few drivers in England could sustain the expense of travelling to Italy.

Although events for special racing machines were very few, the B.A.R.C. meetings had done much to maintain this type of car, and it was fairly certain that the prospect of being able to tread really heavily on the throttle pedal would attract a good field. In the first race twenty-eight machines came to the line, and a supercharged 4½-litre Bentley won at a speed of 107.32 m.p.h. Until that time the record for a race of this distance had been held by Peter de Paolo, who set up

101.12 m.p.h. with a Duesenberg at Indianapolis in 1925.

Although speeds attained on two different tracks are not usually comparable, Brooklands and Indianapolis have some similarities, since the American track has a lap distance of two and a half miles. It must be a little slower, because there are four turns to negotiate, but it has been lapped at just under 110 m.p.h. for fifty miles, which suggests what speeds might be achieved if the specially-built American racing jobs could stay the full distance without losing their tune.

It is doubtful whether an Indianapolis car could count as a rival in the Five Hundred Miles Race at Brooklands, since it would be unlikely to stand up to the hammering of the track. At the same time, the Bentley which won in 1929 might not have registered that performance on the American course, because Indianapolis demands certain peculiarities in a car. If one considers that the Indianapolis machines are constructed exclusively for their work, and that the Bentley was primarily a road-racing machine, the result of the B.R.D.C. race does show some superiority, and the 1930 event carried that even further.

A speed of 112.12 m.p.h. was averaged by Dr. J. Dudley Benjafield and E. R. Hall, again with a "blown" 4½-litre Bentley. This was five miles an hour faster than the year before, but was not good enough to secure victory; the event is run on a handicap basis and was actually won by the Earl of March and Sammy Davis, who shared the wheel of an Austin and put up 83.4 m.p.h.

When the time drew near for the third race of the series, it was obvious that records would again be broken. The 1931 event was held right at the end of the season,

when drivers had not to save their cars for following races, and knew that the whole winter lay before them, offering plenty of time in which to effect repairs if an engine burst—all of which was conducive to real speed. Apart from this, however, the success of Cecil Kimber's machines had made a considerable difference to the handicaps.

The year before, a supercharged 750 c.c. car had been set a handicap speed of 82.3 m.p.h.—for 1931, such a machine was asked to do 93.97 m.p.h. In other words, the M.G.s had shown such greatly increased development that they pushed the handicap in their class up by more than ten miles an hour.

This was both a tribute to Kim's products and a spur to other machines. Although the handicap for a "blown" 4½-litre Bentley, for instance, remained the same it was obvious that, if the M.G.s could maintain their set speeds, both the Bentley and everything else would have to travel to some purpose. Also, the event formed the last round of the year-long struggle between the Austins and the M.G.s, and there was no doubt that they would start a high-speed dog-fight.

The entry list included some of the fastest available cars. Sir Henry Birkin was down to drive an Alfa-Romeo; H. W. Purdy had put in his Thomas Special—an extraordinarily low-built, eight-cylinder 1,493 c.c. machine which had been designed by the late J. G. Parry Thomas and which could be extremely speedy. The new, specially-built Austin designed for records was also in the event.

Capt. G. E. T. Eyston was down to drive an M.G., but had to cancel his engagement. In order not to waste the entry, the wreckage of Urban-Emmrich's car was sorted out and the machine was reconstructed in four days.

Kindell was offered the wheel and found that, in spite of the rapidity with which it had been rebuilt, it needed very little adjustment after it arrived on the track.

The car was a single-seater, and Kindell's only real trouble was with the seat itself. It was one normally used by testers at the works, and even when it had been cut right down he could not get sufficiently far into the car. Eventually, he went through the whole race sitting on a half-inch slab of rubber with a strip of elastic, taken from an aeroplane shock-absorber, fastened over his thighs to keep him in position.

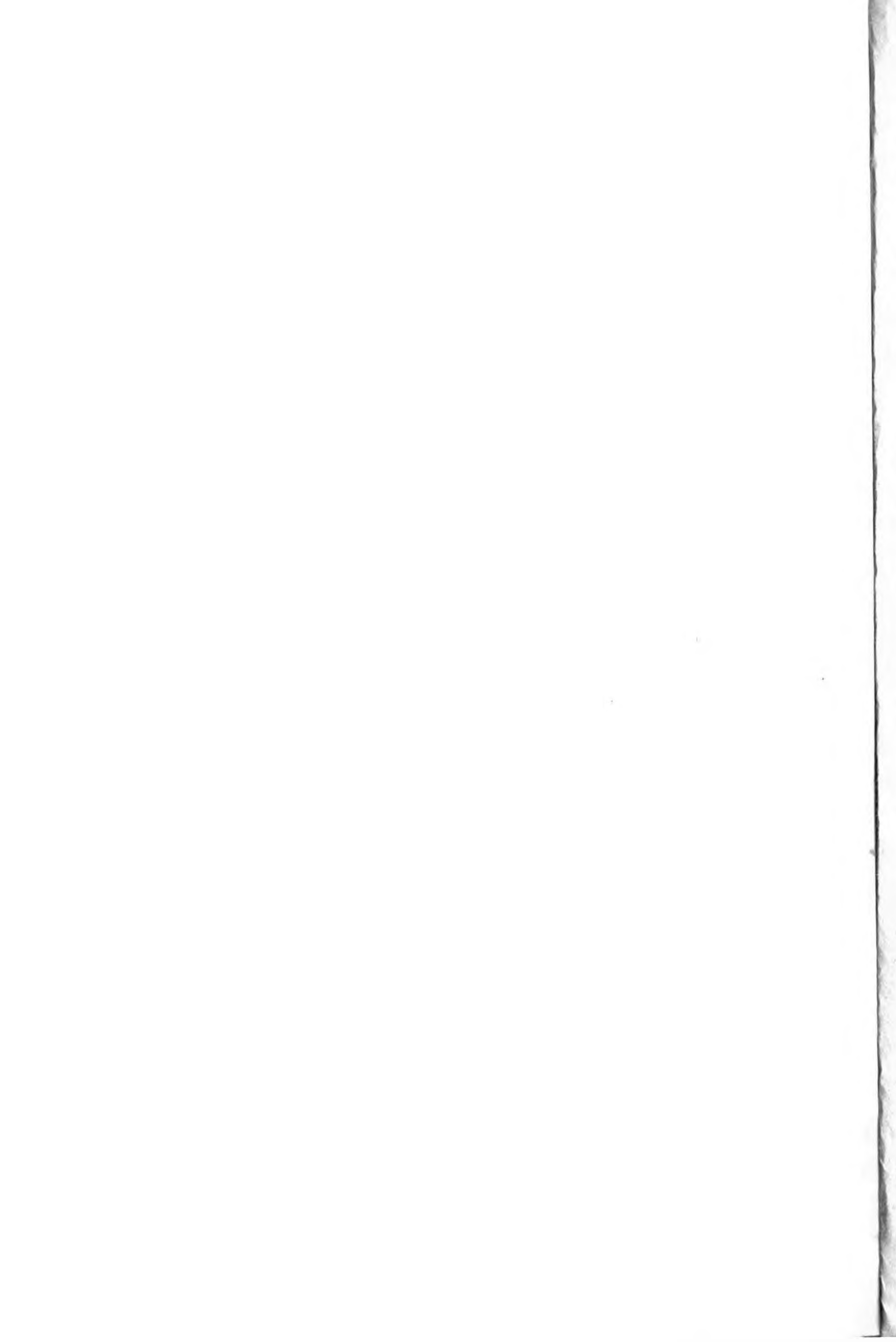
Another single-seater M.G. was entered by E. R. Hall, who had been on the fast Bentley the year before. The Earl of March put in his three M.G.s. Once again he had Norman Black and H. D. Parker on two of the cars, and he himself led the team. Major Gardner was driving an M.G. Dan Higgin brought his now famous white machine to the track; Crabtree was also running, and J. H. P. Clover entered the unsupercharged M.G. which he had driven before at Brooklands.

Against these was an official Austin team of single-seaters. These cars were painted a vivid orange, and had exceedingly short tails into which was merged a streamline fairing for the driver's head. Apart from these four Austins, there was one other entered by Vernon Balls. This had an unusually light body and the whole car weighed barely eight hundredweight, not very much for a machine capable of touching 100 m.p.h.

Amongst the bigger entries was a team of Talbots, a six-cylinder Bentley—with Jack Dunfee and Cyril Paul as drivers—and two Mercédès; one was entered by Stisted, who was driving with B. O. Davis, and the other was owned by Prince Dimitri Djordjadze, who had Zehender as his driver.



On the starting line for the B.R.D.C. 500 Miles Race, 1931
The Austins are in the foreground



The period of practice was a little peculiar, because everyone was watching the M.G.s and the Austins, wondering whether they could beat their handicaps. Each time that one of them put in a fast practice lap, the crews of other cars made calculations concerning their own scheduled speeds. But no one could determine how near their limit was the pace which the 750 c.c. cars showed and, as the day of the race drew near, most drivers came to the decision that all they could do was to go as fast as possible until the event settled down, then ride to pit signals afterwards. The general opinion was that the only signal received by any driver would be the "All-out!" nailed permanently to the front of the depot.

Practice saw little incident amongst the M.G.s, beyond minor adjustments, with the exception of March's car, which ran a big end just before practice ended, and mechanics worked until dawn to get the car running again. Another driver who found trouble on the eve of the race was A. F. Ashby, whose long-tailed Riley broke its crankshaft. Ashby had no resources other than his own, and his mechanics were men employed by him at his Hendon garage; they volunteered to work all night and towed the car home, labouring ceaselessly there until the last possible moment, returning to the track just fifteen minutes before the start.

Forty machines came to the line-up at the Fork on October 3rd, 1931. The race was being run round the outer circuit of the track and, at ten-thirty in the morning, Clover's "unblown" M.G. made a solitary start, no other car being due to follow it for nearly half an hour. The race was so arranged that all machines had to travel the full five hundred miles, and Clover actually had an hour and twenty-one minutes start from the two Mercédès, which were on scratch.

COMBAT

Clover began lapping at 80 m.p.h., again and again passing the supercharged M.G.s and the Austins which remained fuming on the line. At the end of twenty minutes Clover was travelling at 83 m.p.h., and his exhaust note had a peculiar *whoom* which seemed to express the car's determination to make the most of its lead. Some twenty-five minutes after he had left, the "blown" 750's were sent away.

They went off with a howl which lifted towards crescendo as they shot on to the banking around the Members' Hill, with Dan Higgin jockeying his white car through the pack, eventually to steal the lead by inches only as the machines swooped at the railway straight. They left Driscoll's Austin on the line, and had vanished by the time his engine fired and he crackled off in pursuit.

When he disappeared around the hill, Higgin was already nosing his machine on to the Byfleet banking, clearly in the lead. The comparative quiet of the track was shattered by the blaring of exhausts as the Austins gave battle, trying to catch the white machine. The cars came off the banking to the Fork, wheels stamping as they scudded over the bumps in the concrete, completing their first lap and streaking past the Rileys which were waiting to be released. Twice more they passed, then the flag dropped for the 1,100 c.c. machines, which were followed later by a group that included a beautiful Amilcar driven by W. E. Humphreys; the machine was supercharged, and parts which are usually covered with dull paintwork had been chromium-plated, flashing as the car went away.

At intervals others left, then Benjafield thundered off with the "blown" 4½-litre, accompanied by the six-cylinder Bentley, which had no supercharger. Three

FULL BORE

minutes later, the two Mercédès accelerated from the line, so that all machines were now in the race—except for half a dozen which had retired before the German cars started.

§ 2

Dan Higgin's white machine had covered its first lap at 75 m.p.h. from a standing start, and for three laps he led the rest at an increasing speed. He was touching just under 100 m.p.h. on his fourth lap when he ran a big end, which formed an unhappy climax to the bad luck that had dogged him all through the season.

The M.G. drivers had only six minutes start from the Rileys, one of which had been entered by Sir Malcolm Campbell. This car had lapped during practice at a shade beneath 110 m.p.h., and was regarded as a very possible winner. It started with C. S. Staniland at the wheel; he covered his opening lap at 84 m.p.h. then let the car out and began to gain on the M.G.s and Austins at a slashing pace. He averaged 105 m.p.h. for the next four laps, but that was the end of his effort. His crankshaft broke on the next circuit, and the car was out of the race before Campbell had a chance to drive it. When he fell out, Whitcroft, on another Riley, took up the chase.

By hard driving Cushman had pushed his Austin into the lead, with Crabtree and Hall riding their M.G.s at his tail, forcing him to keep his foot hard down. Both were holding their machines in; they had the speed to pass, but preferred to let Cushman make the pace, and soon the three were lapping at 95 m.p.h. But this was not enough to hold Whitcroft back; he overhauled all the 750 c.c. cars and slid into the lead, with two other

COMBAT

Rileys behind him. At once, pit signals flapped from the M.G. pits, and the drivers asked their machines for a little more speed. Crabtree shot past Cushman, Hall followed, then Norman Black came up behind, passing them all. He covered the next four consecutive laps at 96 m.p.h., only to fall out of the fight with a blown gasket.

With the M.G.s making their attack, the Talbots came into the race, led by Brian Lewis, who was soon sliding round the circuit at 117 m.p.h. He needed his speed when Dunfee started with the big Bentley, lapping at 124 m.p.h.

Until he slowed after the opening laps, Dunfee was holding the Bentley at more than ten miles an hour above his handicap; Lewis's Talbot was seven miles ahead of its expected pace, and Birkin—averaging 118 m.p.h.—was six miles an hour faster than he was scheduled to travel. In face of these tremendous speeds, the smaller cars were eclipsed. It was inevitable that the big machines should go ahead; but they might not last and their tyres, stressed by the pace and the greater weight they bore, might give out and cause delays.

Jack Dunfee handled the great green Bentley in wonderful style, and the car passed the pits with a rushing roar, streaking by anything which chanced to be going across the Fork at that moment. Touching 130 m.p.h. on the flat, it gave a startling impression of what real speed means, as the thunder of its engine and the throated bellow of its exhaust echoed from the black front of the Vickers shed. The car was like some giant moving through a field of lesser machines, every one of which was now doing its utmost to fight the Bentley off.

Steadily, however, Dunfee brought it into second place, with only Whitcroft's Riley ahead. Behind him was

Birkin's Alfa-Romeo, and then came Lewis on his Talbot. The combined average speed of the four leading cars was 112.5 m.p.h. and the field started to crack under the strain of trying to keep up. There was nothing for other drivers to do except travel as fast as their cars could be made to go.

Retirements came one after the other, while the race leaders sped grimly on. Clover had back-axle trouble and stopped for good in the railway straight. Parker's M.G. pulled in again and again, because the overheated engine made the cockpit like an oven. Ashby's Riley gave trouble with fuel and plugs and, although he struggled on for a while, he was forced to abandon the car. Howe's Bugatti broke a piston, then yet another Riley joined the dead machines. The Mercédès which Davis was driving suddenly began to give off rolling clouds of smoke, which wavered like a distress signal on the air and presaged the car's immediate retirement. The Thomas-Special, after lapping at 107 m.p.h., stopped with ignition trouble and did not restart, then Gardner's M.G. came into the pits for attention and was presently pushed off the course.

By the time that the big Bentley had been in the race for an hour and a half, fifteen cars had fallen out, and Dunfee was remorselessly shortening the distance between himself and the leading Riley.

In the fight between the M.G.s and the Austins, Crabtree still held the lead, with Hall immediately behind, the Austins and the rest of the cars from Abingdon coming gamely after them—until Goodacre's Austin stopped at the pits, boiling furiously. When an attempt was made to push-start the car, after it had received attention, hot water spouted from the exhaust pipe, suggesting trouble in the cylinder head, which the

COMBAT

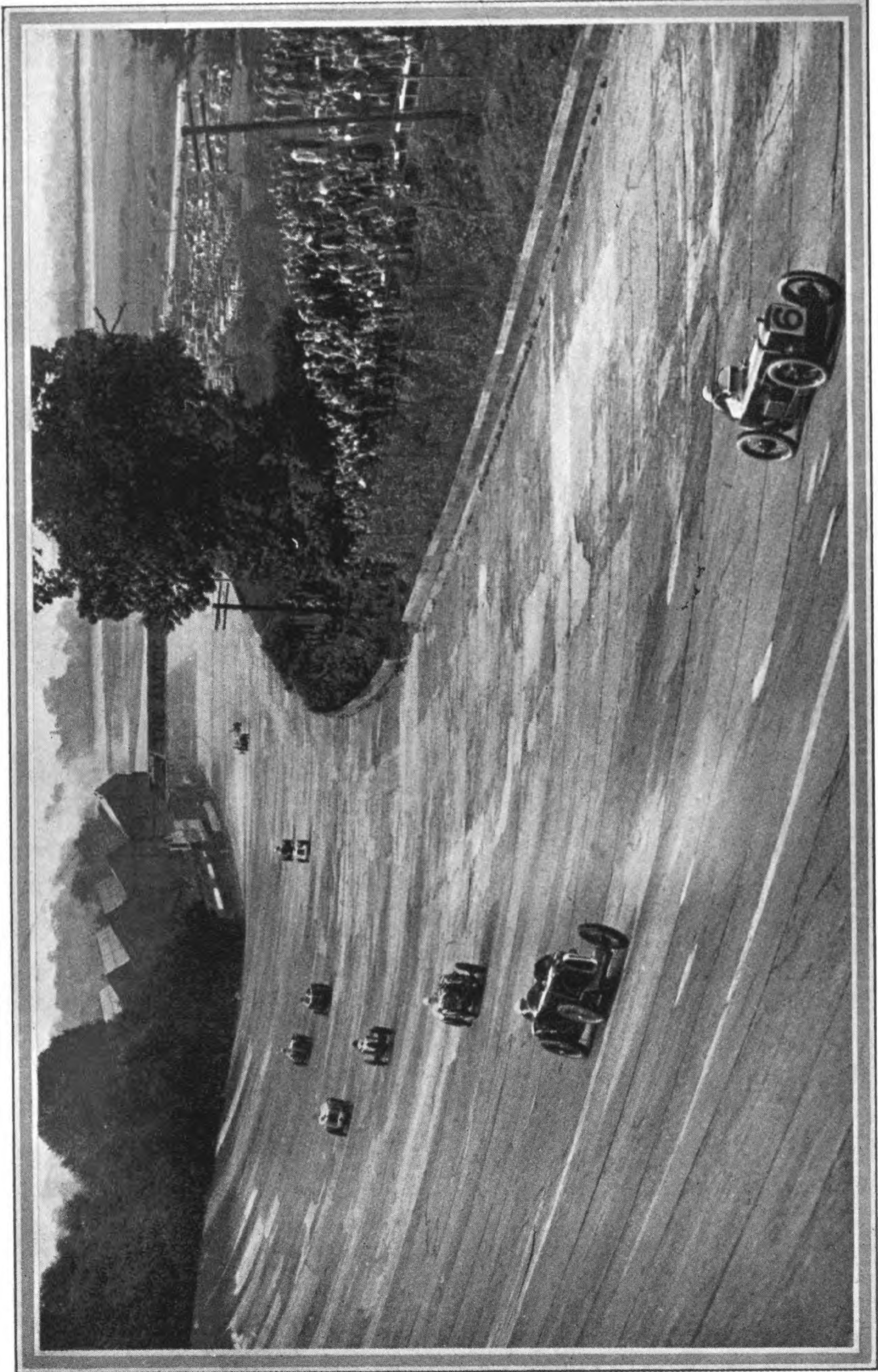
driver immediately began to replace. At that time, the Earl of March had already gone out of the race with a melted big-end bearing, which meant that a total of five M.G.s had blown up under their drivers' efforts. Casualties were to be expected at the pace which Crabtree and Hall were setting, both of whom were passing the pits with their revolution counter needles showing 100 m.p.h.

Birkin had been awaiting a chance to challenge Dunfee, but now he stopped with carburettor trouble, and while he was at the pits Zehender's Mercédès came in to change plugs; it went on, lapping at 120 m.p.h., before further trouble stopped the car altogether.

Dunfee, thundering over the concrete, brought his great car in position to wrest the lead from Whitcroft. The Riley had been running fast and faultlessly but now, with the Bentley bellowing triumphantly as it bore down, Whitcroft's machine drifted to the bottom of the Byfleet banking, coasted some distance, then stopped. Presently the driver began to push it slowly on; the crankshaft had broken.

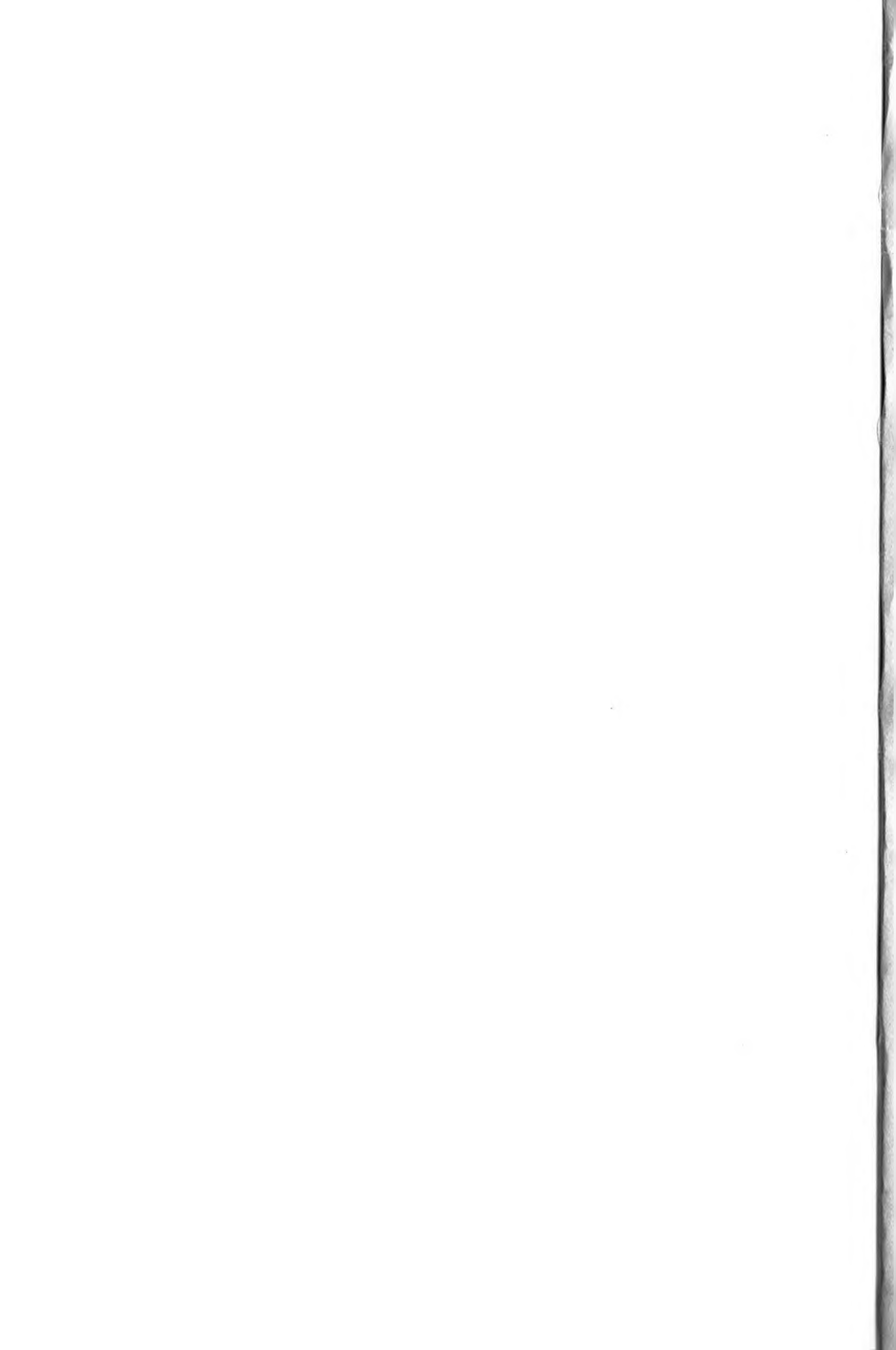
Dunfee automatically took the lead, now with Lewis's Talbot behind him, while Hall slid past Crabtree and appeared in third place, just as trouble began to overtake the Austin team. They were using a new type of radiator, and these began to fail them. The cars stopped one after the other, and finally the whole team was withdrawn, leaving the M.G.s alone to uphold the class in which they were running, and it was soon after this that Parker came to the pits, his engine rattling. He retired, leaving only Hall, Crabtree and Kindell to carry on.

All this time, Kindell had been travelling well, occasionally lapping at just above 100 m.p.h. His car started to lose speed as the race wore on and, in order to



The B.R.D.C. 500 Miles Race, 1931

An impression of Brooklands track, looking towards the Fork. The positions of the machines, some laps after the start, indicates the closeness of the fight between the smaller cars



increase his pace, he tucked in behind the larger machines every time that one passed him, using its slipstream to draw him on. He did not gain very much when he tried this on the straights, but it aided enormously on the climb around the banking behind the Members' Hill.

Hall was now struggling to hold third position against a Talbot driven by Hindmarsh, and his place became secure when the Talbot began misfiring. The driver stopped, but nothing he could do would make it fire on any more than five cylinders, and his delay allowed Humphreys, on the trim Amilcar, to come up into fourth place behind Hall. Another change amongst the leaders occurred when Lewis—on the Talbot in second position—made a tremendous sprint, and snatched the lead from Dunfee.

Of the forty machines which had started, only eleven were now running—an hour from the end. The casualties had been very high, but of the eleven cars left three were M.G.s, one of which held third place while Crabtree, in sixth position, was doing his utmost to pass a Riley which lay immediately ahead.

The track seemed quiet with so few cars running, and Lewis drove hard to maintain his lead, but his tyres were wearing, and his pit flagged him in to change all wheels. This delay let Dunfee go in front and Lewis dropped to second place, falling so far behind the leader that it was plain he could not catch the big machine in the half-hour which remained before the race would end.

The Bentley thundered steadily round, and it was as the car entered its final lap that the last incident of the race occurred. On the Byfleet banking, Kindell had pulled down to give room to Humphrey's Amilcar; the moment that the machine passed, the M.G. driver

tucked behind its tail. Close together, they ripped under the Byfleet bridge—when the Amilcar's front axle broke.

Kindell saw the car's tail come round as it slowed and, for an instant, he thought he would hit the machine as it slewed full across his track. He wrenched his own car upwards, while the other dived down the sloping concrete, to hit the earthen bank at the bottom. The driver was uninjured—but Humphreys had only two laps to go. It was the hardest possible luck to be robbed of fourth place at a moment when the checkered flag was being made ready for the finish. Humphreys was still examining his battered machine when the big Bentley crossed the line. It had held an average speed of 118.39 m.p.h., breaking all records.

Actually, the car also broke the world's record for five hundred miles, but the feat did not register because, to secure a record, only the actual crew of the car may work on it during the attempt, and the Bentley had been assisted by pit mechanics during replenishment.

Lewis brought his Talbot into second place with an average of 112.9 m.p.h., and E. R. Hall's M.G. came third. A Riley was fourth, and Crabtree's M.G. secured fifth position, while Kindell was still racing round the track in an effort to complete the distance before the circuit was closed.

§ 3

Only ten cars were still running at the end of the Five Hundred Miles race, and three of these were M.G.s, one being third and the other fifth. The event had been very hard on machines, and the troubles which had caused the retirement of the remainder of the cars from Abingdon

were varied. Parker and Black had been stopped by blown gaskets, while March, Higgin and Gardner had run big-ends. These matters had little significance, and did not suggest defects in the machines; any engine will burst if too much is asked of it, and the Five Hundred had demanded a very great deal. The performance of the three finishers rated high against the long list of retirements.

The three M.G.s secured the team prize, because Hall, Crabtree and Kindell had nominated themselves as a team before the race began, and were the only team to finish. In addition, Hall secured the trophy for winning his class, and another because his was the first machine to finish on which the car and its components were exclusively of British manufacture. He also took a challenge trophy as nominator of the winning team, and another for securing third place in the race.

Weighted, as it were, with awards, the M.G. was rolled off the course, a dusty and scarred victor in the battle which had begun against the Austins early in the year.

Although the racing season had ended, the Brooklands event did not bring the fight to a conclusion. There had been developments during the latter part of the summer which carried the struggle on until the eve of the New Year and, even then, there was only a brief pause before hostilities were resumed.

INTERLUDE

Having read so far in the proofs, I feel compelled to make some comment, so strikingly do the preceding chapters show how Cecil Kimber's days became filled with unexpected events, while racing experience had improved his cars in a way which could never otherwise have been attained.

The very men whom he had set out to serve had rewarded him by the knowledge they gave him of his machines.

One can see how, behind the excitement of the racing circuits, he had been watchful—listening to what drivers had to say, analysing the broken parts of his burst engines, finding out why they had failed and making sure that it would not be repeated.

No car ever constructed is perfect at the start; the best machine is the one based upon the elimination of its faults, because it must draw nearer and nearer to real efficiency.

Obviously, he never thought that his efforts to serve amateur racing drivers could bring such results, or could react so much to the benefit of the cars he had designed. In just one season, they had demonstrated a development which had taken the racing world by surprise, and the single-seater had shown a speed which would have seemed an absurd prophecy if anyone had made it a year before.

It seems a long way back to the days when, on their first appearance in a big race, the drivers of the cars had been sick at heart because none of the machines would lap the track at more than a mile a minute. But, in hardly more than a year, the developed cars were travelling at a hundred miles an hour.

To me it now seems a long time since the days of the little workshop in Oxford, when Kimber had worked on his Number

INTERLUDE

One and had dreamed of the cars he hoped to build. And now a long, hard road lies ahead.

Men know what the cars can do, and the racing world can no longer be taken by surprise. The fight must be increasingly harder.

And Kimber cannot go back. He can only go on.

Kim.

THE TWELFTH CHAPTER

BURNT OUT

§ 1

ONE of the outstanding features in any struggle is that the combatants are compelled to follow lines of action never previously contemplated. Somehow matters develop.

Having once, however, tentatively entered the fight for records, Cecil Kimber could not retreat, and his initial success had compelled the Austin people to build a special machine in answer to his challenge.

Kim's own record-breaker had thrown a piston down the Byfleet banking, ending matters for the time being, but the new Austin car was so promising that it was likely to regain the rival firm's lost records unless a very real effort was made to hold them.

Conferences took place at the Abingdon factory and culminated in a scheme to build an M.G. which was to be as special as the new Austin. Everything was naturally kept as secret as possible, and the only information which leaked out was that the old record-breaker was being reconditioned and made ready for long-distance efforts. No one beyond the factory—and not many inside it—knew about another car which was being built to retain the short-distance records that were the immediate aim of the new Austin.

While work was going forward, Leon Cushman took the Austin out at Brooklands one rainy Saturday early in August, 1931. There was a high wind, and he had to

BURNT OUT

wait for heavy rain to cease before he attacked the standing-start mile and kilometre records. He took both these with speeds of 74.12 m.p.h., and 65.01 m.p.h., after which preparations were made to attempt the flying mile and kilometre figures which Captain Eyston had set up on the same track during the morning before his car failed on its evening test run.

Plugs were changed, and the discs on the Austin's front wheels were removed, because Cushman found that the gusty wind affected his steering; then the car came roaring down the railway straight once again, scudding over the damp, patched concrete. He covered the mile at 100.67 m.p.h.—against Eyston's 96.93 m.p.h.—and he went through the kilometre at 102.28 m.p.h., again beating Eyston's speed, which had been 97.09 m.p.h. Although the Austin had not surpassed the speeds Eyston had touched at Montlhéry over the five kilometres, Cushman had beaten the figures registered for the short-distance records, and he had done more than enough to show the possibilities of the machine. Also, since it was the car's first appearance on a record attempt, it might be taken for granted that further work would realise its full capabilities. It had travelled fast, but it could almost certainly be made to go a good deal faster.

Barely was Cushman's effort over when, a little unexpectedly, an entirely new factor appeared. Until this time, the 750 c.c. record attempts had been the subject of what might be regarded as a private war between the Austins and the M.G.s. Four days after Cushman's run, a 750 c.c. car—known as the Ridley Special—rolled on to the concrete. It had been designed and constructed by Viscount Ridley at his home in Northumberland, and its appearance was a surprise.

Ridley had built it simply because fast cars were his

one great interest. He had been associated with Eyston in the production of the supercharger which had proved itself at Montlhéry, and he had been experimenting privately with a 750 c.c. engine for some time. Before he brought the car down to Brooklands, he tried it out in the grounds around his home, and the machine now required very little in the way of final preparation. So far as outsiders could observe, all that had happened was that a mechanic produced a set of special plugs from a bag, screwed them into the engine, and Ridley was then ready to go for records.

He drove the car himself, and achieved the amazing figure of 105.4 m.p.h. for the flying kilometre and 104.5 for the mile, beating Cushman's four-day-old performance and attaining the highest speed yet registered in Class H records, surpassing even the best that Eyston had done.

That Ridley could come to Brooklands and collect coveted records in this way was a distinct surprise. He was like some buccaneer in the realm of high speed, swooping down unexpectedly and capturing records for which the rival firms were struggling and which they had regarded as their exclusive booty. Both Cecil Kimber and Captain Waite—who was in charge of the Austin racing department—saw the possibility that Ridley might, with a little more tuning, push the figures very much higher, and his achievement was the more unusual because he had no factory behind him, and was his own technician.

While his performance was still a sensation, definite news of the new M.G. record-breaker leaked out. This was the machine which had been in process of construction during the summer and, in its own sphere, was destined to create as great a sensation, achieving

figures relatively as high, as the giant cars which have pushed up the world's land-speed record at Daytona Beach.

§ 2

The new car was officially known by its chassis number—Ex. 127—but everyone associated with the machine called it the “single-seater,” and, from first to last, it was designed for the work which it had to do. It was the result of decisions made after the initial appearance of the special Austin, and its creation produced many problems.

The car had to be light, otherwise it would be slow; yet it must possess strength greater than a normal machine, or it would fail under the stresses of enhanced miles-per-hour. Its engine had to be built to give off the limit of available power, and the stream-lining had to be as near perfect as it was humanly possible to achieve. The first drawings for the design were completed in May, 1931, and the actual construction was carried out by Jacko, aided by two mechanics and a boy. Everything, including the engine, was built from standard parts with the exception of the special requirements of the unusual design.

The engine was set at an angle of seven degrees, so that the propeller shaft came aslant down the frame, which meant that certain parts of the car would be abnormally stressed; these parts were made from the finest known metals, and the greatest attention of all was given to the back axle. Because of the propeller shaft position, the differential came close against the near side of the frame, which gave one long and one short axle shaft. These

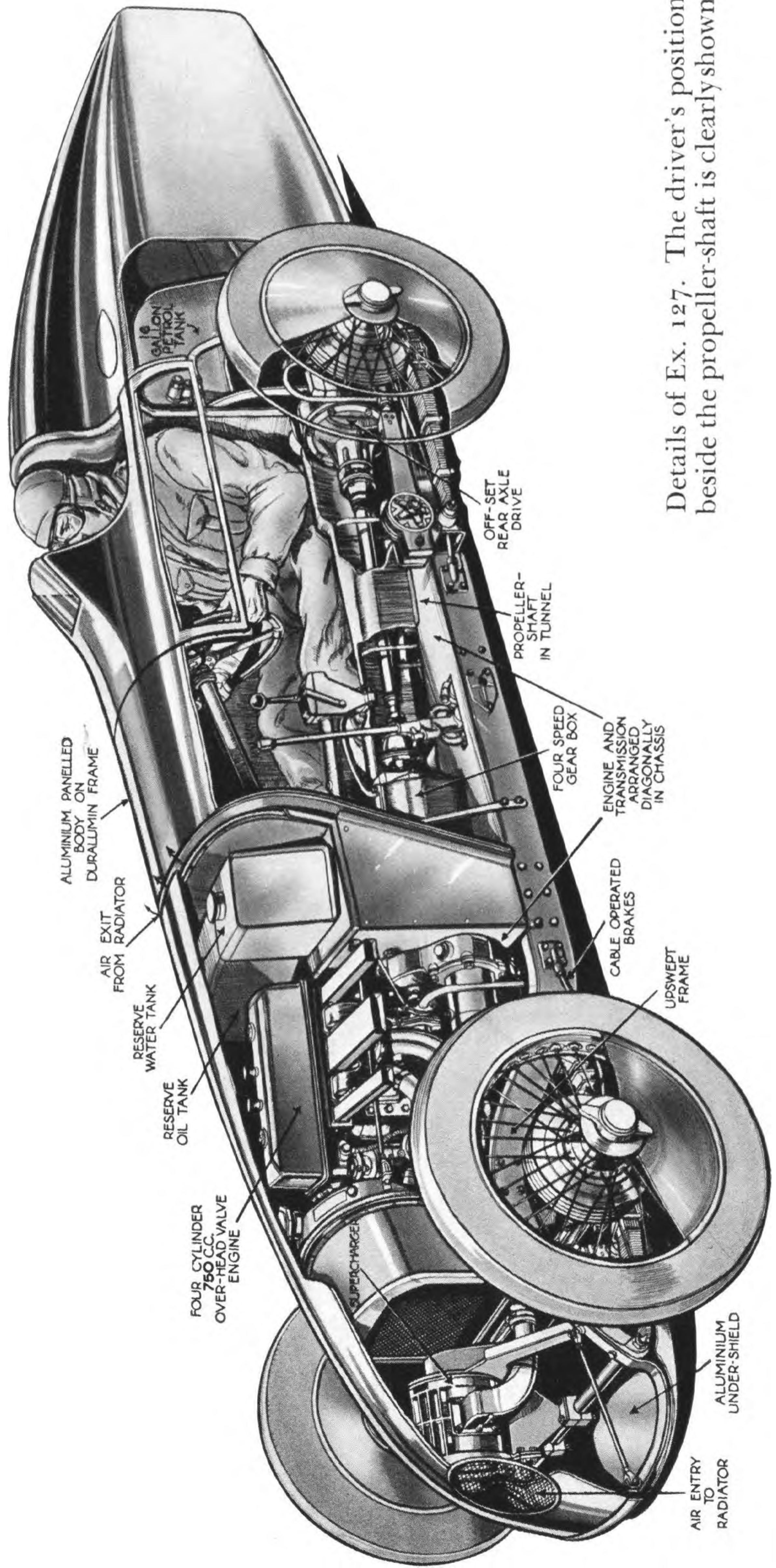
shafts were made from chrome-molybdenum 100-ton steel—the highest tensile steel obtainable—and the axle-tube was made from the same metal, machined from a solid block. The crown wheel and pinion were cut from 80-ton case-hardening steel.

The remainder of the car was, in the main, erected from parts used in the construction of a normal model, but everything was, of course, tested and fitted with the utmost possible care. The engine was actually the spare power-unit for the old record-breaker, and this machine was made ready for long-distance work side by side with the single-seater.

Although the old engine was used, it was completely rebuilt and all work on it was beautifully done. The cylinder head fitted its block so closely that it formed a completely air-tight joint; a joint so perfect that it was possible to lift the block itself by the metal-to-metal adhesion of the head alone. All other fitting was done with equal accuracy, and the result was to make the unit so free from oil-leaks that its exterior always remained speckless and clean.

During construction, the propeller shaft was tested up to 7,000 r.p.m., and was so designed that its critical speed came at 9,000 r.p.m.—which revolutions it would not touch in actual work. This was vital, because the shaft ran diagonally down the frame solely in order that Eyston might sit beside it, riding right inside the car, protected from the spinning shaft only by a thin casing of metal.

The bodywork was built around him—tailored, as it were, to fit. When completed, it was so light that a man could quite easily raise it above his head with one hand, and the whole car turned the scale at only ten and a half hundredweight. The model for the body was made up by



Details of Ex. 127. The driver's position beside the propeller-shaft is clearly shown

BURNT OUT

Jacko, working partly from drawings based upon Captain Eyston's suggestions. The model, when tested in a wind-tunnel, gave an air-resistance so unbelievably low that lumps of plasticine were placed on it to increase the resistance and to verify the original figures.

The machine was, in its first conception, intended only for records up to ten miles, while the old car—Ex. 120—was to attack the longer-distance records held by the Austin camp. Some alterations had been made to the older machine; petrol, spare oil, and water tanks were placed in the cockpit, occupying the body-space normally left for the mechanic. In addition, dual pipe lines, twin oil-gauges, twin switches and air-pressure gauges were installed to make certain that no single failure of instruments or feed-pipes could spoil a long run by bringing the car to a halt.

When the M.G. plans became known, the information was startling enough to send the special Austin at once to Montlhéry. It was hoped that, on the faster track, the machine would regain its lost records before the single-seater could run. While the Austin was on its way, work was completed on the two M.G. cars and, four days after the rival machine had left England, the new record-breaker was placed on a lorry, Jacko took the wheel of Ex. 120, and the two cars started for France.

For the first time, the Austins and the M.G.s were to use the same track, and the camps would actually be face to face in the fight for records.

§ 3

Montlhéry autodrome is generally admitted to be the fastest track in the world, and a number of drivers have

established themselves there, continuously engaged in record-breaking work. They house their machines in sheds constructed under the concrete, and one of these was occupied by Mrs. G. M. Stewart, who is quite the finest woman driver that any track has ever seen.

For some time she had been working with a car based upon a Miller chassis, which had been brought over from America, and with this car—sometimes called a Derby-Miller but, correctly, a Derby Special—she held three world's and ten class records, and she had taken seven other records with a different machine. After Eyston and his confrère, E. A. D. Eldridge, hardly anyone was more familiar with the Monthéry track, not excepting even the Citroën mechanics, who employ it all the year round for testing the products of their factory.

It was arranged for Mrs. Stewart to drive the Austin in an attempt on the one-hour record, after which she would attack the figures that Ridley had set up. The reason for this plan was that the M.G. had been the first 750 c.c. car to travel at 100 m.p.h., and the next outstanding achievement would be to do a full hundred miles inside the hour. Obviously, there was more value in hitting such a mark than merely pushing the flying mile or the five kilometre record higher. Whatever an M.G. car could afterwards do in an hour, the Austin would have been the first to crowd one hundred miles into sixty minutes and its feat would stand for all time. Having attained this, the car could give battle against the single-seater over the shorter distances.

The Austin camp began work immediately and, during test runs, Mrs. Stewart found that the machine was so low-built that its tail hit three bad bumps in the track, particularly one situated exactly over the sheds where the M.G. machines were housed. The wheel

BURNT OUT

fairings were removed and the tail was lifted, overcoming the trouble, after which two attempts were made on the hour record.

Both efforts failed, however, and they were more than enough to disclose the Austin plans. Naturally, Eyston could not stand by, working on the single-seater, and allow the rival camp to secure the hour record, so the new car was wrapped up and put in a corner of the shed, then Jacko and his companions gave all their attention to the Ex. 120.

The car was swiftly made ready and taken out with the idea of seeing how it motored. It had never been properly tested since its reconditioning and, as it roared around the French track, every member of the Austin camp who could secure a stop-watch clocked the car; they made the discovery that the machine was lapping at between a hundred-and-six and a hundred-and-eight miles an hour. If the car could do this on a test run, when it was not being pressed, it was obviously in condition to break every short record in sight and might even cram one hundred miles into the hour. Besides this, it was backed up by the new single-seater—a quite unknown quantity.

Captain Waite and Mrs. Stewart saw that they must do something immediately, and the best thing seemed to be to try and break the five kilometre record—since the flying mile could not be taken at Montlhéry—in the hope that they might still beat Ridley's figures and that their success would force a change in the M.G. plans. They could go for the hour afterwards.

That same evening they rolled their record-breaker on to the concrete; Mrs. Stewart rammed the throttle wide open and the car covered the five kilometres at a speed of 109 m.p.h., beating Eyston's old record. Following this,

the machine was brought in and the engine was stripped down, for the Austin mechanics to work all night and most of the next day. At six o'clock in the evening, the car appeared again and the M.G. mechanics knocked off work in order to watch its third attempt to cover a hundred miles in an hour.

The yellow machine started splendidly and for thirty-five minutes it travelled steadily at well over 100 m.p.h., then, suddenly, there came an unnatural clattering and the car snaked down the banking in a series of skids. Mrs. Stewart coolly battled for control, mastered the machine and brought it to a stop, when it was found that transmission trouble made further attempts impossible. The car was packed up and, two days later, was sent back to England, leaving the track to the M.G. camp. Twenty-four hours afterwards, G. E. T. Eyston climbed into the Ex. 120 to try for the hour record.

The tanks in the cockpit so restricted the driving seat that he had considerable difficulty in wedging himself into the machine. Eyston is magnificently built, gifted with the strength needed to hold fast-moving cars over long distances, and so tightly did he fit the driving seat that Jacko had to lift the engine-cover and reach under the dash in order to grip the driver's shoes and work his feet forward to the pedals.

Once he was settled in the car, Eyston covered three laps at 102 m.p.h., and finding everything running sweetly, decided to make his effort. He brought the machine in, filled up, and at one o'clock on September 25th, he sent the Ex. 120 away, clocking 94 m.p.h. from a standing start on his first lap, then pushing the speed above 100 m.p.h. on his next circuit and holding it.

The air was close and warm and he watched his oil temperature with some anxiety, because it had been high

during his test run. The car handled well, and his only trouble was with air-pressure in the tank. As on his previous record-breaking run with the car, he had to pump furiously at intervals.

There was very little drama in the actual run. He kept the car travelling well within its capacity at a scheduled speed, but when fifty-eight minutes had gone the watching men heard the engine misfiring. They listened anxiously, dreading that something might go wrong in the last minute of the hour to wreck the record effort; but the car picked up and entered its last lap, running as steadily as ever.

It came safely round again, and the men at the track-side cheered it past. Eyston had done all that he had set out to do, and he had covered 101.1 miles in the hour. His M.G. was the world's first 750 c.c. machine to accomplish the feat, and now the driver went on to do a supplementary lap, just to make certain that he completed the full distance. The engine had been turning over at 6,800 r.p.m., and, considering the length of its ordeal, the exhaust note was still crisp as the machine disappeared from view, then, abruptly, the little group of mechanics and officials heard the engine cut out.

They remained gazing, expecting to see the car appear on the far banking. There was no sign of it, and all realised that something unexpected had happened. Jacko rushed for a car, accompanied by Marney, a mechanic who had been assisting him all through the preparation of the two record-breakers. As they raced away, both saw a column of smoke rising ahead, but neither associated it with the Ex. 120 until, swinging round the curve of the track, they saw the machine standing on the broad strip of sandy ground which fringes the inside of the course, burning furiously and

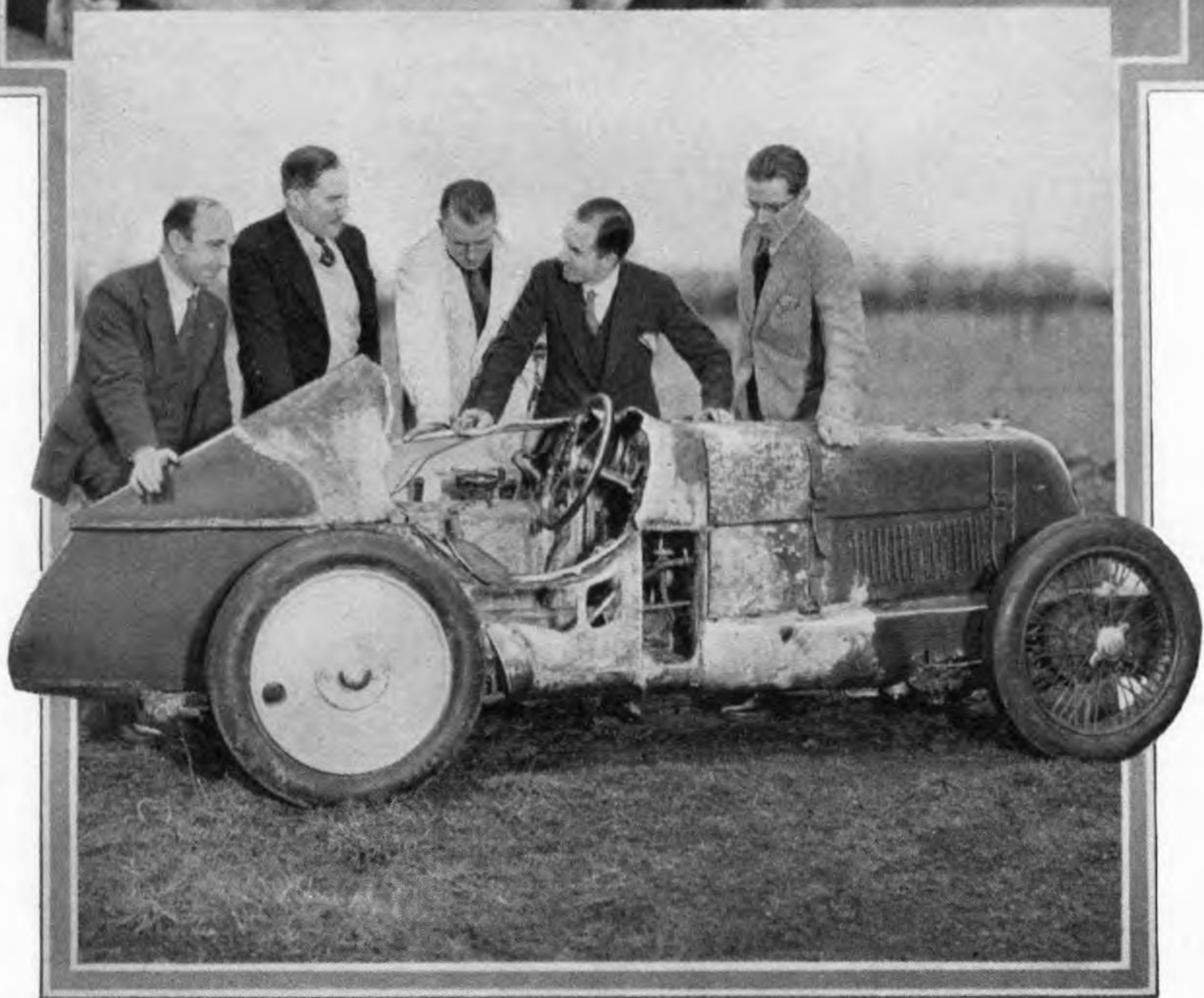
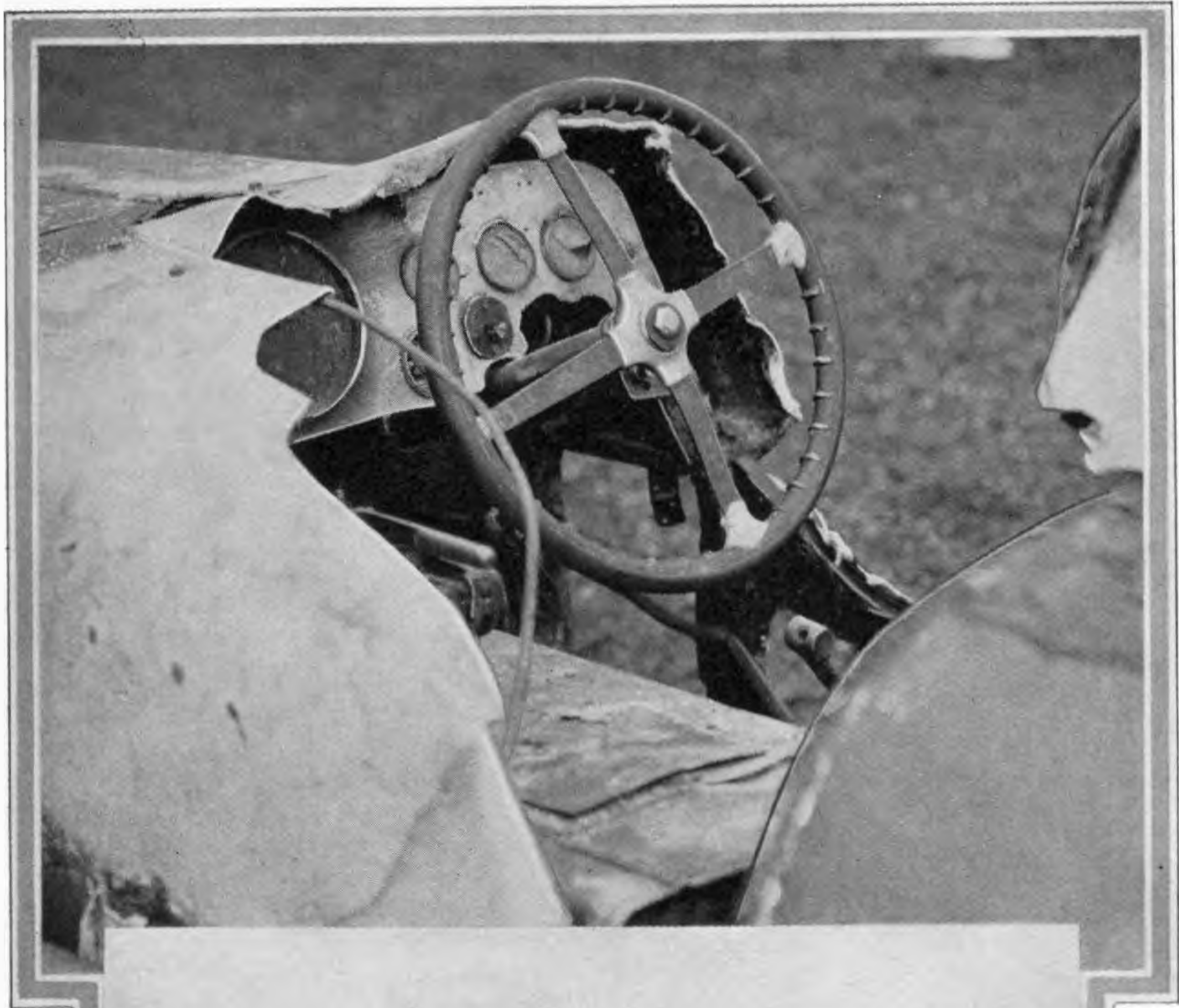
with its nose rammed against a great earthen bank.

They stopped and leaped out. Flames and smoke were gushing from the racing car, but their only thought was for Eyston. They remembered the difficulty he had in getting in and out, and it seemed that he must be trapped in the flaming cockpit. Shielding his face with his arms, Jacko kicked desperately at the side of the body, smashing the panelling, while Marney burned himself badly as he tore at the metalwork behind the driver's seat. Only then did they find that Eyston was not in the machine.

Choked by the smoke, singed and stung by the blaze, they stared up and down the track. There was not a soul in sight, nor was there any sign of Eyston on the towering bank against which the car had stopped. By this time help was arriving; hissing extinguishers flung their contents on the flames, and earth was heaped on the car, although it was burnt out by the time that the fire was overcome.

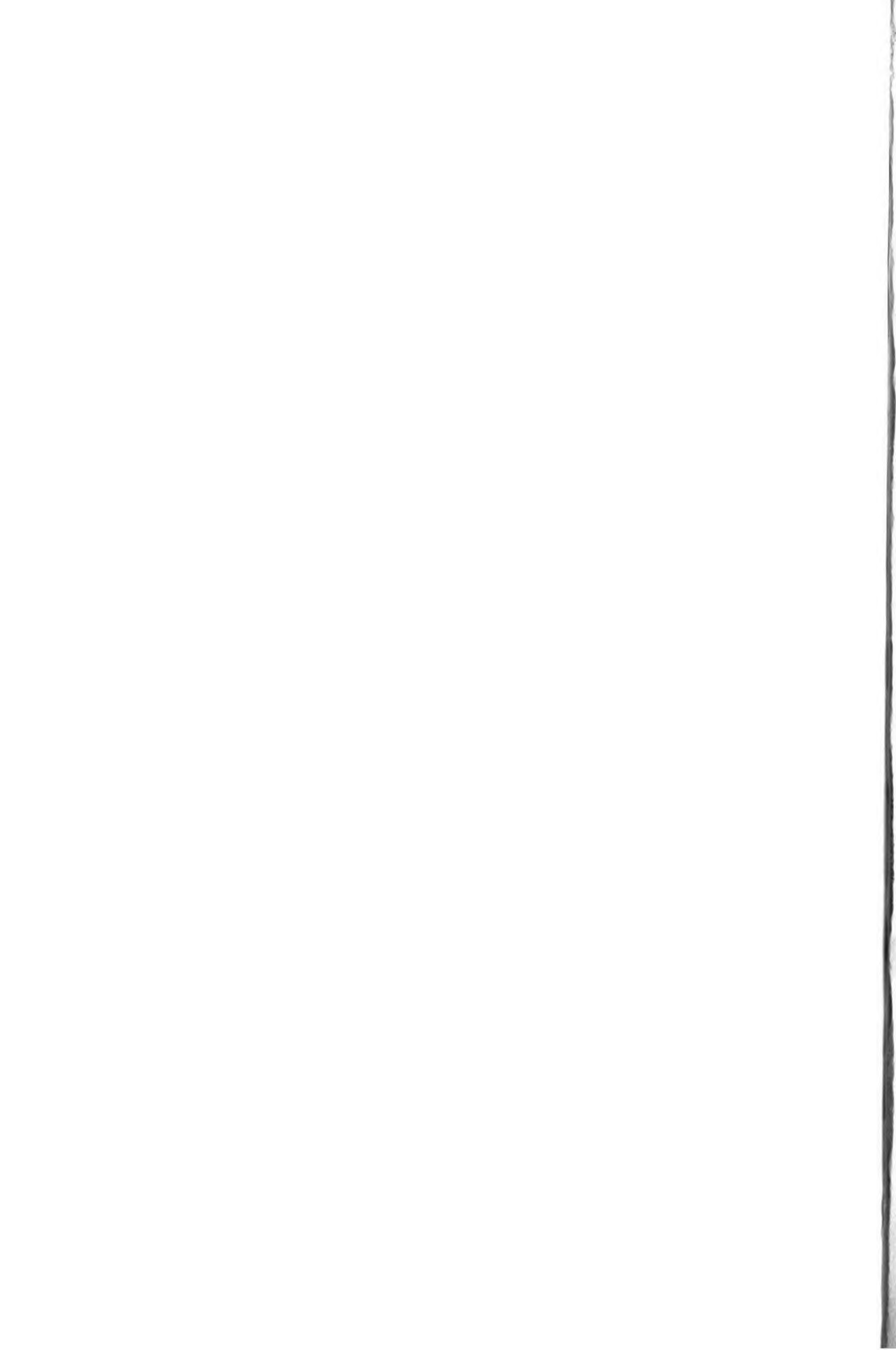
All this while the driver was still unaccountably missing, and it was not until later that the mystery was solved. On his supplementary lap, Eyston suddenly found flames gushing about his feet; a petrol union had broken and blazing fuel was flooding the bottom of the car. He was then travelling at above 100 m.p.h., and he struggled up in his driving seat, taking his foot off the throttle, but the flames forced him higher, gushing all around him as he steered the car towards the inside of the track. That he managed to get out of his seat at all is something which still puzzles both himself and those who knew the machine.

The heat became unendurable, and the machine was still doing a mile a minute when Eyston jumped from it. By good luck, he landed on the soft earth at the inside of



A view of the cockpit of the burnt-out record-breaker.
Below is a photograph of the machine, taken during
Eyston's convalescence

Left to right: G. Propert, Captain Eyston, "Jacko," Cecil Kimber and
J. A. Palmes



the concrete, and the car continued for two hundred yards, slowed by the sandy soil, before it stopped. Rugger and horse-riding had taught Eyston how to fall, and he landed without breaking any bones, but he was hurt by the flames and was too shaken to get up.

The whole thing had been seen by a Citroën official, who was testing a car on the track—since Montlhéry is not closed for record attempts except when a certain special type of timing apparatus is employed. The Citroën man happened to be big and enormously strong; he picked up Eyston—who weighs well above thirteen stone—beat out his burning overalls and carried him to his car, dropping him in the back and driving on at top speed to the first-aid station by the stands. He had gone before Jacko arrived, which explained the mystery of the missing driver.

Eyston was very badly burned and was in great pain, but he was cheery enough when the M.G. men told him of the records that he had taken; there were five in all: the fifty kilometres and the fifty miles, the hundred kilometres and the hundred miles, and the one-hour record.

“That’s fine!” he said. “We’ve done the hour—now for the single-seater!”

After that he was rushed to a hospital in Paris, where he passed a bad night, but began to pick up the next day. Once it was known that he was on the road to recovery the work at Montlhéry went forward again.

§ 4

With the one-hour record achieved, the wrappings were taken off the single-seater. Since Eyston was incapacitated, Eldridge agreed to drive the car, and few

men were more experienced in record work. For the seven years following 1920 he had been almost exclusively engaged in record attempts, usually driving cars reconstructed by himself. During the two years prior to 1927 he held every 1,500 c.c. international class record in existence—an amazing achievement; then a crash affected his right eye and he gave up high speed work. But, from that time, he had been behind the scenes in many record runs.

Everyone was now anxious to find out whether the car could regain the five kilometres record which the special Austin had snatched. During test runs Ex. 127 was driven by a member of Eyston's staff; this was Albert Denly, who had achieved some fame by taking over a hundred and fifteen records in one year with a 500 c.c. motor cycle. Denly is compactly built and small in stature and, amongst a variety of nicknames, he answers to "Giant."

He found that the car would cover two laps, then the radiator would begin to boil. Attempts were made to rectify this by modifying the undershield to shoot air up to the engine, but the real cause of the trouble was the position given to the supercharger. This was bigger than the one employed on Ex. 120 and, when positioned in front of the radiator, blocked the flow of air through the small hole in the stream-lined cowling which formed the engine-cover.

Endless efforts to remedy this were made as the days drifted past and over in England the factory people grew impatient. There were reasons why it was desirable that the short records should be taken as soon as possible, and the idea was suggested of trying to do something with the machine which Kindell had driven in the recent Five Hundred Miles race. This car was tuned up and

taken to Brooklands, where Kindell drove it. He found the machine's performance peculiar; it did 102 m.p.h. with such consistency that even when he eased the throttle it seemed unwilling to go any slower, but it was quite impossible to conjure greater speed from it.

Following this, Kim went over to Paris to see Eyston. Gaining details of the difficulties with the single-seater, he agreed that an aeroplane type radiator should be tried out. Eldridge designed one which could be let into the cowling above the supercharger; this was made and fitted, when tests showed that it was satisfactory enough for an attempt on records. Arrangements were made for Eldridge to try for everything between five kilometres and ten miles, and to try and eclipse the 109 m.p.h. that the Austin had attained.

On the afternoon of Saturday, October 17th, 1931, when Montlhéry was flooded with bright sunshine, Eldridge took the car past the timing box in a flying start and covered five kilometres at a speed of 110 m.p.h.—smashing Mrs. Stewart's record. He kept on but, just before he could take the five miles record, he blew a gasket and at the same time several of the radiator tubes burst, so that scalding water was blown back over the driver's feet.

The failure of the temporary radiator stopped the attempt. The single-seater, however, had shown its pace, and its speed again lifted one of Kim's cars to the peak of all records in the 750 c.c. category. No car in Class H had ever travelled so fast before.

When he received the news in hospital, Eyston agreed upon the advisability of returning the car to the works, fitting a smaller blower and setting it lower down, so that the original radiator would be no longer obstructed. The car was conveyed to Abingdon, and hardly had it

arrived when Lord Ridley made another appearance at Brooklands with his Special.

His intention was to assault the new figures which Eldridge had put up. His was a courageous, single-handed effort but it ended in disaster. He was travelling fast past the Fork, in the reverse direction of the track, when the car got out of control where the Vickers shed forms a bend in the course.

The machine skidded into the corrugated iron fencing, just beyond the Fork, tearing through and plunging into the trees beyond. The frail bodywork was completely shattered, yet Ridley escaped with what might be regarded as comparatively minor hurts; the chassis itself was not greatly damaged, but the crash put him out of the running.

By this time the Austin had been reconditioned and had arrived at Brooklands to make one last attempt on records. The plan was not to try and beat the five-kilometre figures; instead, the car was to go after all long-distance records up to six hours, with Leon Cushman and Driscoll handling the machine.

This was the Austin camp's final assault in the year's campaign and their effort was successful. They took six records in all, including the two hundred miles and the six-hours record.

After that, in what might be regarded as a gesture of finality, the authorities closed Brooklands for winter repairs.

§ 5

The closure of Brooklands did not end matters. Eyston was now rapidly recovering, and the man for

BURNT OUT

whom the single-seater had been built looked ahead towards an achievement which, a year earlier, would have been regarded as all but impossible. He wanted to drive the machine at 120 m.p.h. and bring to M.G.s the highest honour then in sight amongst Class H records.

In other words he intended to attempt to travel at ten miles an hour faster than Eldridge had done, and that was essaying a great deal. The higher speeds became, the more difficult it was to raise them further. Hardly two years before no 750 c.c. car had travelled at more than 96 m.p.h., and Eyston had then jumped the figure to 103 m.p.h., after which it had lifted only a little each time it was improved upon: first a hundred and five, then a hundred and nine and, finally, a hundred and ten miles an hour.

Men had worked steadily on the car after its return to Abingdon, making it ready for the time when Eyston would be able to drive again. The alterations suggested after Eldridge's effort were carried out, and the sloping, make-shift radiator was discarded, while the root of the overheating trouble was removed by fitting a super-charger of smaller capacity, set fully between the dumb-irons.

In the middle of December the single-seater was sent across to Montlhéry, where "Giant" Denly drove it for tests and Jacko did the tuning. All worked hard on the car because Christmas was drawing near. Eyston had left Paris for London and, although he was still limping a little, he was eager to drive the moment that Ex. 127 was in trim. Eventually he received a telegram advising him that the machine was ready, and he left London on the night of December 21st, accompanied by Eldridge, and reached Paris the following morning.

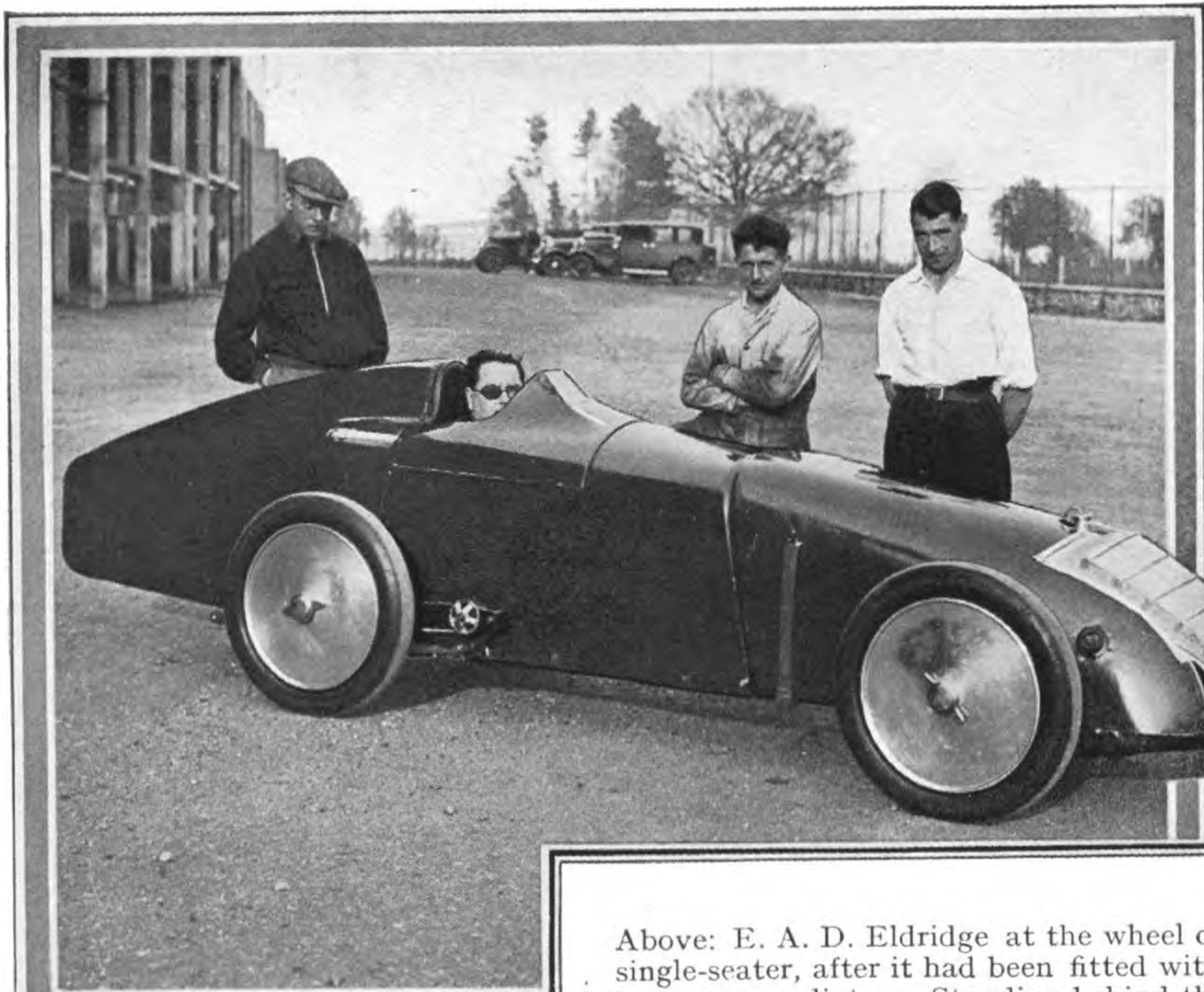
Since leaving hospital Eyston had not handled any

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sort of car and, under the circumstances, it was no light matter to undertake the driving of a two-miles-a-minute machine in frigid weather on a track which, he guessed, would be streaked with ice. He would have preferred to go for the flying mile, but this being impossible at Montlhéry, arrangements had been made for him to attempt records between five kilometres and ten miles on the 22nd.

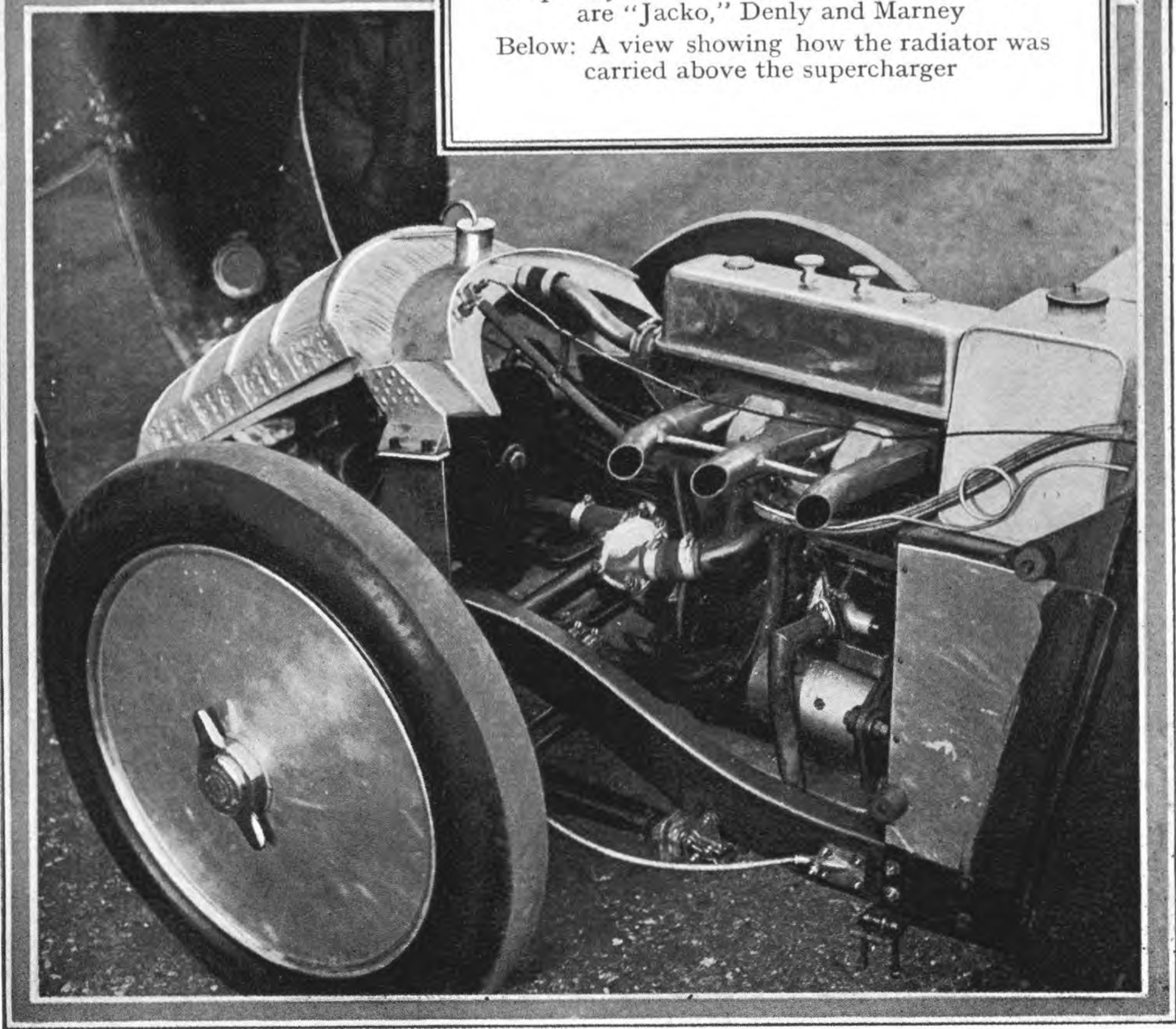
In the morning Jacko telephoned Eyston's hotel in Paris and advised him not to come out to the track, because the concrete was covered with hoar-frost and ice. Eyston told Jacko that he was determined to run, and gave orders for the track to be swept where the straights merged with the banking. This was being completed when he arrived.

A keen wind was blowing and the air was very cold. Jacko had tuned the carburettors to counteract this, and test runs showed Eyston that the machine was in really good fettle in view of the adverse conditions—the wheels left marks on the frosty banking as he went around, and the tyres hissed on the swept sections where the surface was freezing again. The last preparations were made, and the sleek, green single-seater went off once more, with Eyston nursing it to speed on the slippery track, then opening the throttle wide for a flying start. The machine roared past the watchers, who stood dreading that some patch of ice might put the hurtling car into a disastrous slide. But Eyston had chosen his course during his preliminary run, and he held the machine safely, while tense seconds slid by and the car roared round again and again until, after 1 minute, 37.45 seconds, he broke the five kilometre record with a speed which completely beat anything that had been done in Class H before—114.77 m.p.h.



Above: E. A. D. Eldridge at the wheel of the single-seater, after it had been fitted with the temporary radiator. Standing behind the car are "Jacko," Denly and Marney

Below: A view showing how the radiator was carried above the supercharger





BURNT OUT

He went on and shattered the five-mile record with 114.74 m.p.h., then took the ten kilometres at 114.72 m.p.h., and completed his run by pushing the ten-miles record up to 114.46 m.p.h.

The whole run had lasted for less than five and a quarter minutes—and that odd fifteen seconds prevented Eyston registering 120 m.p.h. over the whole ten miles. But he had pushed the speed almost half-way to the mark he had set himself—at a time when he was still suffering from the effects of his previous run—when the track had been in vile condition and the freezing weather was all against the car.

All this made his feat one which stood out beyond anything which he had previously done, yet Eyston's urge to win the utmost efficiency from a machine left him unsatisfied. He believed that the car could do all that he wanted, but there was no time to attempt anything more. Christmas was at hand, and no one wanted to spend it on the frozen concrete of Montlhéry, so that the machine was packed up, to arrive in England on Christmas Eve accompanied by the men who had worked on it for so long.

Over the holiday Eyston thought things out. It was, he realised, demanding much of the single-seater to try for two miles a minute over a long distance, but he might touch the figure if some course were found on which he could attempt the flying mile. It would be still better if that mile were a straight run, where the car would not be slowed by the banking of a track. There was only one place in England where such a run could be made, and this was over the lonely sands at Pendine, Carmarthenshire.

On those sands Parry Thomas had died in an attack upon the world's land-speed record, and in them had

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been buried the battered remnants of his great car. Here, too, Jules Foresti had turned over at 150 m.p.h. during a similar effort, after which the sands had been banned for record-breaking.

Eyston believed, however, that the ban might be lifted to permit the single-seater to run, and give him the opportunity of attaining the peak of speed that he had set himself.

THE THIRTEENTH CHAPTER

P E N D I N E

§ 1

WITH the new year, it was definitely decided to try for 120 m.p.h. with the single-seater, and to make the attempt on Pendine Sands; but nothing could be done unless the R.A.C. was persuaded to lift its ban. Pendine had been prohibited solely because it did not provide a stretch long enough to give big machines sufficient room in which to slow down after attempting world's record speeds even though, at the time of the ban, the figure was barely 200 m.p.h. The single-seater was altogether smaller and, since 120 m.p.h. would be the reasonable limit of its speed, the same danger did not exist. The ban was raised, and definite work on the car now began.

At Montlhéry, the machine had a ground clearance of three and three quarter inches. This was altogether too little for the sands, where bumps might be encountered; accordingly, the undershield was lifted to give a clearance of five and five-eighths inches—that is, about an inch more than the breadth of a man's hand.

The run was intended to be absolutely straight, so a solid back axle was fitted, since a differential formed unnecessary weight, while special precautions were taken to combat the sand when it began to fly under the passage of the car. It was important to prevent grains getting into the engine, and a cage of exceedingly fine wire mesh was placed over the air intake.

Other record-breakers at Pendine—notably Campbell—had been troubled by water lying in thin sheets over the surface. On one occasion Campbell had driven his machine one-handed, while he used the other to try and clear his screen, doing this at 170 m.p.h. Eyston knew that visibility was of great importance; his car was so light that he would have constantly to hold the machine on its course, and the least deflection from the straight might mean trouble. At Montlhéry he had been assisted, to some small extent, by the banking; at Pendine he would have to remain upon a course restricted by the length of the timing tapes, and only clear visibility would enable him to keep on the measured track.

Study of the question made it reasonably certain that, before any run was completed, spray and sand would fog his windscreen, and discussion of this evolved a new type of windshield. It consisted of a short, sharply-raked piece of shatterless glass ending a quarter of an inch below two other strips, which ran upwards at the same angle and had a space of less than half an inch between them. The theory was that the twin glass sheets above would act as a funnel, drawing between them anything flung on to the lower part of the screen, while the driver could look out through the open space between the bottom strip and the upper pair. He would actually not be gazing through glass at all, and the suction of the funnel, aided by the rake of the unusual screen, would prevent anything reaching his eyes.

An experimental windshield was built and fixed to a fast car. Jacko straddled the engine cover, with his back to the radiator, and tossed bits of paper at the new screen, while Eyston drove at fifty miles an hour over the roads around the factory. They found that everything

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hitting the screen was drawn upwards and whirled above the driver's head, proving that the funnel device worked well.

Not satisfied with this, a further test was devised. Frank Tayler donned waders and a mackintosh and stood against a concrete wall, holding the screen before his eyes. Jacko turned on the full force of the most powerful hose available, when Tayler found that he was able to gaze through the narrow slot without a spot of the fast-flung water reaching his eyes. If water, driven straight at the screen, could not touch his face, it was certain that Eyston would not be troubled either by spray or sand if he used the windshield at Pendine. It was, accordingly, fitted to the single-seater which, by this time, had become known as the "Magic Midget." It was Kim who had christened it, attracted partly by alliteration, but more by the fact that "Magic" contained the letters M.G.

While the last tuning work was being done on the car, Eyston, still wearing bandages, went up to look at the sands. He found that, at 100 m.p.h., the surface dragged faintly at the tyres, and formed a course that was very different from the firm concrete of Montlhéry. The sands were slower, but this should be offset in the record attempt by the fact that he would be making a straight run.

During his absence the finishing touches were given to a suit of overalls which had been specially made for him, fashioned entirely from asbestos. His ordeal at Montlhéry had been such that he did not want a similar experience, and with this suit he would remain unharmed even if the machine did catch fire at speed. Although there was no real risk of this, Eyston would have been the first to admit that the asbestos over-

alls had a definite psychological value for himself.

When all work that could be done at the factory was completed, Jacko went to Pendine in charge of the machine. It was housed in a barn belonging to Wilfred Morgan—a man who knows the sands better than anyone living, and whose knowledge and assistance had been invaluable to drivers who had brought their cars to Pendine in previous years.

Morgan owned a Ford car which might be regarded as a museum piece, with wings rusted into holes and body-work pitted by the salt air. The machine never ventured on the sands without carrying four planks, on which the car was run whenever it was halted for more than a few moments; but for this precaution it would sink, since the sands are made treacherous by the water which seeps up from beneath as the tide turns.

Morgan's knowledge was invaluable, because he was usually able to forecast the condition of the sands as much as a day before, and could indicate whether the surface would be smooth enough for work and—still more important—when it was most likely to be favourable for the record-breaking effort. The sands varied according to the weather and the direction of the wind; sometimes they would be left dry but ridged, and at others they remained swilling in water even when the tide was at full ebb.

News of the record attempt had leaked out, and there was always a crowd to watch the car on its final test runs; and during these the mechanics made a curious discovery. Sand invariably plastered itself against every projecting nut, clinging in a perfectly stream-lined form. A camera-man who chanced to be there, and who had seen former record efforts, told Jacko that Parry Thomas' mechanics had discovered the same effect on the bigger

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car, and the men had moulded plasticine around the nuts, following the stream-lined shape which the sand made.

If sand jammed against projections in this way, it was obvious that they provided some resistance against the air, and that if this could be lessened it would assist the car. The resistance of the nuts might be infinitesimal at slow speeds, but that resistance must build up to quite calculable proportions as the pace increased. This had been realised by Sig. Haugdahl who, in 1922, covered the flying mile at 180.2 m.p.h., and was the first man to reach three miles a minute on land; his feat did not register because the American records were not then recognised by the International Federation, and the effort was a one-way run on Daytona Beach. Haugdahl had actually stream-lined every nut on his machine and had spent three complete weeks in balancing his wheels.

Eyston now purchased all the plasticine in the vicinity, and his mechanics carried out the hint that the sand itself had given. The last preparations were made, and Morgan forecast a slightly wet but quite flat surface for Monday, February 8th, 1932. It was decided to make the attempt on that day.

§ 2

While Eyston was getting ready at Pendine, his brother was with Campbell on his way to Daytona, where the latest "Blue-Bird" was to attempt to travel more than twice as fast as the pace which Eyston had set himself. The preparations at Pendine almost matched those in Florida so far as work was concerned, and there were some elements of worry.

Travelling up to Carmarthenshire on the Sunday, Colonel Lindsay Lloyd—the R.A.C. timing expert—was involved in a crash. Fortunately he was unhurt and the apparatus was undamaged, but when the first news reached Pendine the accident was given so serious an appearance that for a time it seemed as if no attempt could be made. While Lloyd continued his way, volunteers visited every cottage around Pendine, requesting that all dogs should be kept within doors until midday on the Monday. This precaution was a necessary one; a dog on the course would be a very real danger to Eyston.

Visitors began to arrive, and Pendine village was soon filled. Spectators were forced to seek accommodation elsewhere, finally putting up at places thirty and forty miles distant. Hundreds more people continued to arrive as evening fell, during which time a mechanic was making an all-out run from the factory; the single-seater had blown a gasket during its last test and the mechanic was bringing up spares which might be needed. Neither Jacko nor anyone else minded the last-minute hitch, regarding it as a good omen.

With the first hint of dawn, cars began to roll ceaselessly into the village. The stream of traffic thickened, and soon a force of constabulary arrived to help police the course, while a lorry-load of Territorial engineers came to lay telephone wires, so that communication might be maintained from one end of the sands to the other.

The work of marking the course and setting the timing strips was begun, while the number of visitors steadily increased until some five thousand were lining the sand-dunes. It was amazing that so big a crowd should gather, since the attempt had not been advertised in any

way. They lent an atmosphere of excitement, which made the whole setting as different as possible from the almost academic nature of the record efforts at Montlhéry.

The sands were scoured for chance obstacles as the tide finally ran out and vast numbers of flat, keen-edged shells were observed; fortunately these had no effect on the tyres when Eyston made a trial run in a fast car. He found the sands water-logged and soft, and this fact had already bothered the time-keepers. The surface was so wet that the pegs for the timing strips were sticking out for more than two inches. This difficulty had to be overcome before Eyston could start; if a tyre hit one of the pegs at two miles a minute the record attempt would probably terminate then and there.

A big Mercédès was made ready to act as tender to the car; it was to follow Eyston up and down the course in case anything went wrong, and was equipped with fire extinguishers and a first-aid box. The morning slid away as one difficulty after another was overcome, then Eyston received word that everything was ready.

The course had been laid out at the eastern end of the sands, partly because a survey showed them to be firmer there, but also to avoid driving too closely to a huge, black limestone cliff which marked the western limit of the flat stretch. This cliff, looming from the sand, made it difficult for a driver to judge distance and speed if he ran directly towards it, and its influence was avoided by remaining as far away as possible.

The car rolled out to where planks had been placed to support it and the engine was started. The roar of its exhaust shattered the quiet as it was warmed up and, presently, the sound swelled to crescendo when Eyston sent the machine off the boards. He eased open the throttle and dashed through the measured distance at

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118 m.p.h. before he swung on to the boards at the far end of the course. This preliminary run was, of course, not officially timed, and its purpose was to tune the whole machine for the big effort. The measured mile included the kilometre so that, with each run, he would be attacking both the mile and the kilometre records.

Eyston was all set for the actual attempt and mechanics were about to push him off, when he received a message that the timing apparatus had broken down. Eyston cut out his engine and waited. Minutes dragged by. Blankets which had been placed over the radiator and engine cover were removed and the car was push-started in order to warm it up again, then the engine was switched off once more, because the timing officials were still working to locate and repair the fault.

Time passed. The sky became more and more cloudy, and the air grew bitterly cold. Again and again the engine was started up, to be switched off after a little while, and still Eyston waited for the word to go. He had made one fast run and was keyed up for another; the calm, patient way in which he remained sitting in the car was a real tribute to his nerve and self-control. He watched patches of water gradually grow broader as the tide turned and water began to percolate the sand, seeping to the surface. With every minute that went by the condition of the course grew a fraction less favourable for the car, but not until more than two hours had passed was the timing fault rectified.

The car was warmed up once more. Eyston was now eager to get his work done before the sands became worse, and he sent the machine off the boards with a howling roar. The trim green machine flashed towards the banner which, strung between two posts, marked the start of the mile, the Mercédès thundered

along behind, and the record attempt had fairly begun.

Although the posts were fifty feet apart, the actual timing strip was only twenty-five feet long, placed in the centre of the space between the uprights and, at what he knew was over 120 m.p.h., Eyston flung his machine towards the dead centre of the opening between the two posts. The front wheels sent tattered sheets of spray and sand over the car's nose, but the new-type windscreen worked perfectly and the low shape pitched itself forward, kicking back a great plume of water and sand which completely hid it from the following tender.

The single-seater flashed under the banner and streaked through the measured mile, rocketing across the timing strip at the far end, then slowing before it turned on to the boards set in readiness to receive it. Glances at his revolution counter while he was in the mile had shown Eyston that he had been moving at between a hundred and twenty-three and a hundred and twenty-four miles an hour—but that speed was not registered. Once again the timing apparatus had failed.

During his wait, frequent tests had used up all the ink in the little pen which marked a paper slip in the apparatus, recording the time; the pen had been dry, and Colonel Lloyd was making a frantic effort to fill it when Eyston crossed the strips under the banners indicating the measured mile.

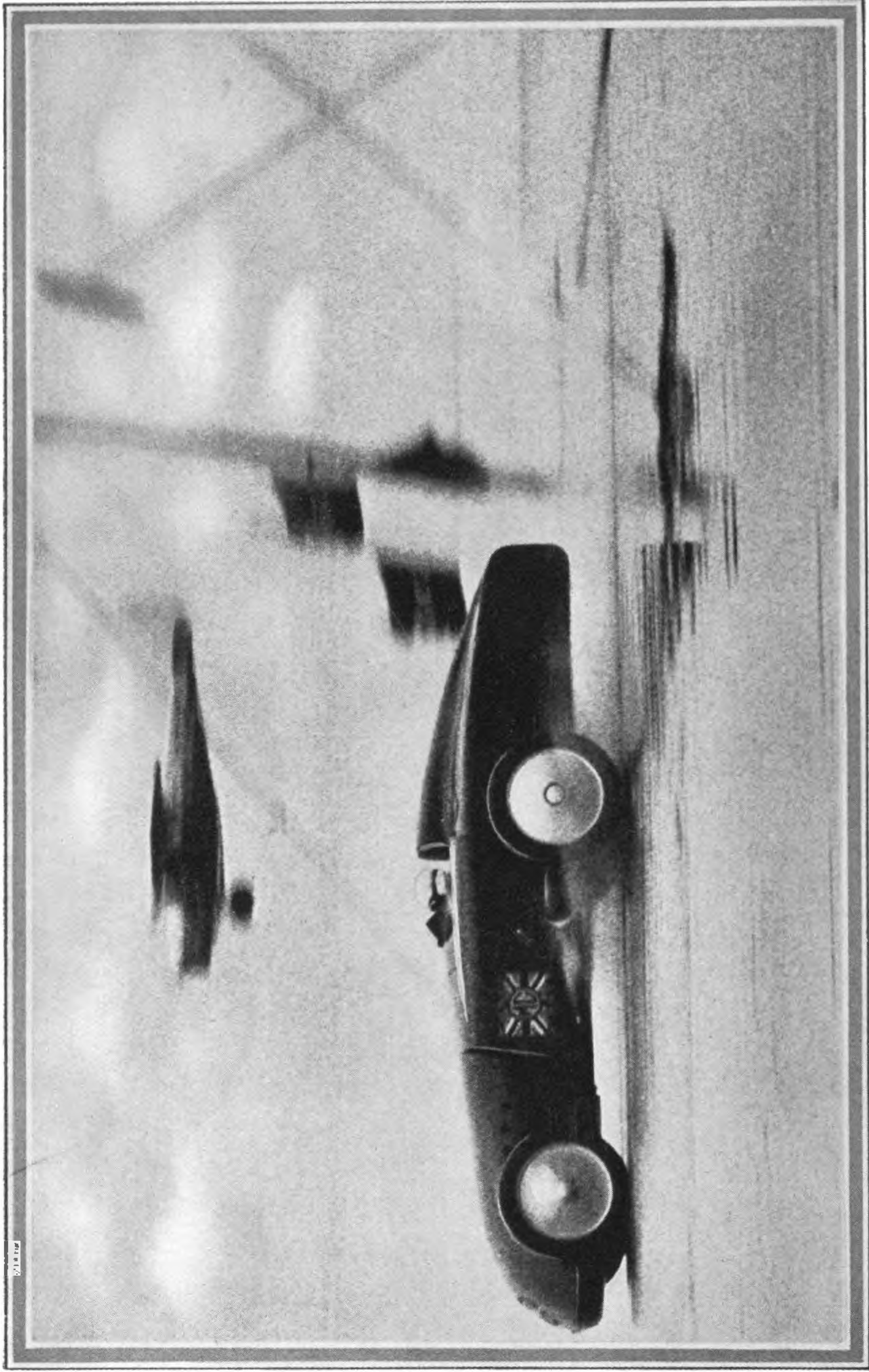
This was disconcerting after the previous long wait and, by this time, Eyston felt that nothing more could possibly go wrong, but the delays had adversely affected the course. On his next attempt he took a run of almost a mile and a half to the first timing strip, but he could not open the throttle immediately after leaving the boards because the sand had grown soggy and bumpy. Each bump, kicking the rear wheels from the

ground, allowed the engine to race, and he had to handle the throttle carefully to prevent over-revving.

Inside the mile itself he encountered a bad patch of water-logged sand which slowed the car so much that the check was visible to those who watched; they could actually see the car pick up speed as it gained the firmer ground beyond. He had also to try and avoid the wheel-tracks which he had made on his former runs, and which left the sand ridged.

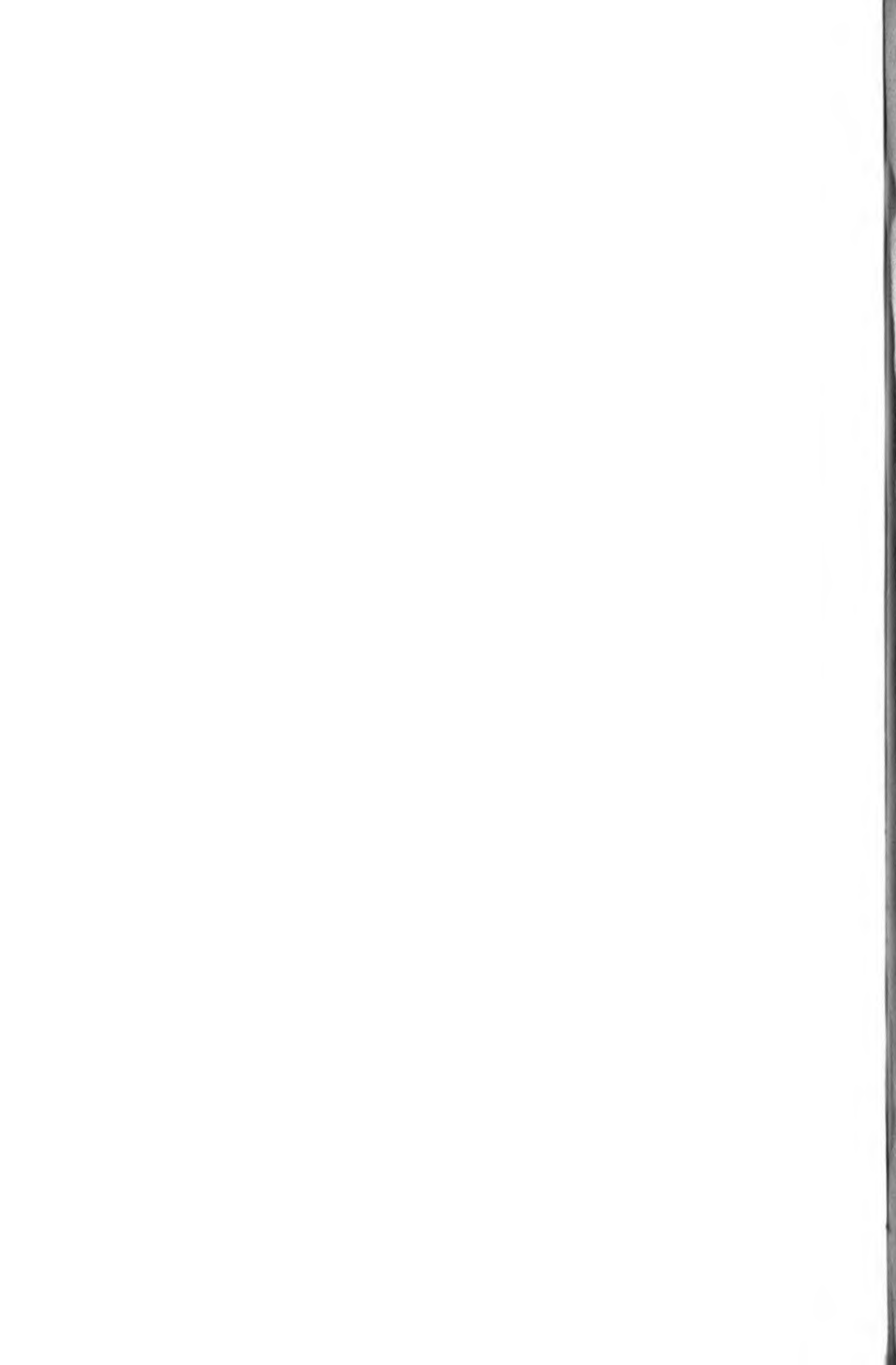
In spite of all this the car went through the mile at 119.48 m.p.h.—and was nearly lost when Eyston stopped short of the boards and the wheels immediately began to sink. Only the desperate efforts of two mechanics and a policeman rolled it to safety, after which Eyston hurtled over the course again, but he could not now hope to attain the magnificent pace which he had achieved on the untimed run when the timing-pen ran dry. His best reverse run was 117.30, and this gave him a mean speed for the mile of 118.39 m.p.h. If he could have made one of his runs only three-fifths of a second faster, he would have set up the figures he had intended to touch. In any case, he had actually done over 120 m.p.h., and if his first fast run had been timed he would have registered an official speed of at least 121 m.p.h.

The "Magic Midget" had attained a success that could not be tabulated, but the car had officially pushed the peak speed in its class still higher, securing the flying mile and kilometre records and the latter, curiously enough, showed a speed less than that over the greater distance. This was accounted for by the bad patch which had slowed Eyston on the course; it occurred almost in the centre of the kilometre and affected that figure. Continuing through the mile, he had a longer stretch of good surface on which to pick up speed again.



At Pendine, 1932

Captain G. E. T. Eyston coming out of the measured mile. The blurred outlines of the aeroplane, and the clear picture of the car, prove that Eyston was travelling faster than the machine in the air.



§ 3

Everything had been against Eyston from the start. The delays could have hardly been more unforeseen, or more unfortunate; but he had done well, although he had not officially accomplished all that he hoped.

He would have remained on the sands to make further attempts if it had been possible. Many things prevented this, and one was the financial aspect. It would have been a costly matter to have kept timing officials and others waiting while the car was made ready again, and the machine obviously needed attention after the strain of running at as near the limit of its performance as circumstances permitted.

A very highly tuned racing engine is comparatively delicate. There was no assurance that, retuned under the indifferent conditions at Pendine, the car would give its best, and work on it would occupy some little time; the only thing to do was to slide the sand-streaked machine on to a lorry and take it back to the works. The decision was made reluctantly, but once it had been agreed upon, reflection made plain the unsuitability of Pendine as a venue for record-breaking.

The sands offered so many features to militate against success. Given straight runs following his first dash down the course, 120 m.p.h. would have been certain for Eyston; but the timing officials could not be blamed. Their task had been hard enough, because the very nature of the damp sand made it no easy matter to rig all their kit. Yet again, even Wilfred Morgan could not say more than a day in advance whether the course would be in fit condition; he would never be absolutely definite in his opinion, and days might

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run into weeks before the sands were at their best.

Eyston and Cecil Kimber agreed that any further attempt would have to be made at Montlhéry, but this could not take place until the track was approved as a setting for the mile record, although efforts were then being made to get the course admitted for these short-distance attempts.

All that could now be done was to put the single-seater away until the racing season was ended, when it might be possible to bring it out again and complete the achievement of which Eyston had been so narrowly thwarted.

THE FOURTEENTH CHAPTER

ONE THOUSAND MILES

§ 1

THE opening of the 1932 racing season found the M.G. machines in a very different situation from that of twelve months earlier. They had won three of the biggest races—the Double-Twelve, the Irish Grand Prix, and the T.T.—and had ended the year with third place in the world's fastest long-distance event, while the single-seater's records had shown a supremacy which matched the racing successes.

It was evident that any victory gained during the months which lay ahead would be won only after hard fighting, since handicaps were bound to be revised very thoroughly and the odds against the cars must be much greater. Besides this, the first really big race at Brooklands produced certain changes.

For years now racing had been dominated by events for standard sports machines, and there were many who argued that these had served their turn. The great defect was that they gave very little opportunity for the testing of new ideas, and there is nothing like an actual race for revealing the defects of any fresh effort to gain speed.

Stock car events had developed machines in many ways, but no good purpose could longer be served by hampering entrants with a host of regulations which had lost their value. Bugatti's decision after Rost's crash on

the Sarthe circuit had clearly shown what manufacturers thought, and many were in agreement with him that wings and windcreens, hoods and lamps were now unnecessary fittings in a race.

Consideration along these lines brought into existence a Thousand Miles race, organized by the Junior Car Club and run off at Brooklands in place of the Double-Twelve, which had been held there during the past three years. Regulations revealed considerable latitude in the preparation of cars and in their equipment, because the machines could come to the line in what amounted to stripped racing trim, although they still had to be standard models. But fuel tanks, feed-lines, instruments, batteries, brakes and induction systems could be varied from the normal, and there were similar concessions which would undoubtedly help a driver to get the best out of his car.

The race was planned to last for two days, just as the Double-Twelve had been. It was run under handicap, but it had this virtue: the car which first covered the distance was the winner. When the regulations were issued, it was found that supercharged machines were so handicapped that "unblown" cars of the same capacity had an advantage. The result was that, of the thirty-nine entrants, only three boosted machines came to the line, and the M.G.s which arrived for tuning at the works had their blowers removed.

Major Gardner had entered his three cars, which were now a year old and had run in at least three big events; he had Hamilton as his co-driver, while R. R. Jeffress and Cyril Paul handled the second machine, with F. S. Barnes and J. D. Barnes on the third car. Norman Black had bought the car which Hamilton had driven in the last T.T. and had put in this machine. The Hon.

Mrs. Chetwynd entered her silver and red Le Mans model. Manby Colegrave was racing again, and Donald N. Letts had entered another M.G. S. W. B. Hailwood was racing the car that he had used in the T.T., and his was the only one which did not arrive at the factory to be made ready.

The rest received the usual reconditioning, but trouble developed when practice began, and it arose from a peculiar cause. The majority of the cars were comparative veterans, as the life of a racing machine is usually judged. In the old Grand Prix days it was rare for a manufacturer to build a team of cars which obtained successes during one season and remained fast enough to win the following year. The general idea was that cars should be disposed of as more or less out of date after one season, and a new team built.

With stock car racing the life of a car became longer, mainly because it was not so viciously stressed and could not be so highly tuned as a specially-built machine. For all that, not many could stand the strain of a full season's racing and start another in fighting fettle. It was a tribute to the M.G.s that they were very much faster than they had been at their first appearance, but the races they had endured now began to have a curious effect. When practice started for the Thousand Miles at Brooklands cylinder head gaskets broke down; they were replaced, only to blow again. This happened so constantly that it was puzzling, and some time passed before the cause was analysed.

It is a fact that metal which is to be subjected to high stresses, where heat is involved, should be seasoned—in much the same way as timber. Most racing firms have stocks of cylinder heads standing in the open, where they remain for as long as three years, losing their greenness.

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The cylinder heads fitted to the Thousand Mile entries had not been subjected to this process, and they had begun to warp; the defect was fractional, but it was sufficient to give trouble.

Once Cecil Kimber knew the reason, he took measures to have all future cylinder heads treated in the proper way. For the moment nothing could be done except to make an effort to fit the heads more perfectly to their blocks. Even this was not altogether successful, but Jacko and Tayler evolved an unusual type of gasket made from steel, copper-bound and with a paper fitting around the water ducts.

The queer gasket overcame the trouble, but only for another to develop. The course was the same as that for the old Double-Twelve event, and in coming through the corner on to the finishing straight the engines almost invariably misfired. It needed a good deal of experiment to discover that the dash down the railway straight was too much for the plugs, which failed momentarily under the engendered heat. A change of plug put matters right—then arguments arose about Norman Black's petrol tank.

It was made from aluminium, and contained baffles to prevent the fuel surging. It was considerably lighter than the standard fitting and, although it was excellent for the perfect road surface of the T.T. course—where the car had last run—the general opinion was that it might give trouble during the far longer Thousand Miles race over the Brooklands' bumps. Black, however, liked the tank and the clever arrangement of its baffles and no advice could make him change it.

While other cars were being made ready, nothing at all was seen of Hailwood's entry. He finally arrived so late on the track that he had barely time to put in

sufficient practice laps to qualify for the race. Watching him on the course, it became evident that his engine was in very indifferent tune; as the car had not been to the works, an offer was made for Jacko and other M.G. mechanics to do what they could to prepare the car. This involved working all through the night before the race, but quite a number of other camps were doing that, and Hailwood was finally sent to the line in as good trim as the rest.

The atmosphere prior to the event was quite different from that usually existing before a Brooklands race. There was an odd sense of rivalry, and this possibly arose from the psychological effect of being set a definite distance of one thousand miles. This lent some similarity to the famous Mille Miglia, even if the similarity arose only from the distance to be covered, and knowledge of the desperate nature of the Italian event gave colour to the coming race.

Seven teams were entered, and these were matched against lone entries which would certainly set a fast pace, since the drivers had to consider no one except themselves. The almost complete absence of superchargers put the machines on very level terms, promising a real fight inside each class and an equally vigorous scrap against other cars on handicap.

The race was so arranged that the start given to smaller machines was split—they received half on each day—and the first day's racing would stop when one of the cars had completed its five hundred miles. The event was run off on Friday and Saturday, June 3rd and 4th, 1932, and at 10 a.m. on a cool morning, under a cloudy sky, the M.G. fleet left the line, taking a start from the bigger entrants.

They went away in a howling, struggling bunch,

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fighting amongst themselves because, for the first time, there were no Austin entries against which to give battle.

§ 2

As the grouped machines slid on to the Byfleet banking Jeffress took his black-painted car into the lead. The rest roared close at his tail, stringing out when they charged down the railway straight, bunching again as they came through the turn and raced past the pits on the end of their first lap.

The healthy crackle of exhausts, voicing the tune of the high-revving engines, blared in the ears of the drivers of larger machines as the M.G.s went by, with Jeffress starting to set the pace at 76 m.p.h. Norman Black's dual-blue car rode just behind the leader, and Mrs. Chetwynd's silver machine played a waiting game amongst the pack behind. It would be almost forty minutes before the next bunch of machines came in chase of them, and the M.G. drivers settled down to a spell of fast work.

On the third lap Stan Barnes came by with his car tailing behind the rest. He pulled in to put things right by changing all his plugs, and he had hardly got away when the pace told on two other machines: Donald Letts and Manby-Colegrave stopped with blown gaskets.

These two cars formed units in one team, and their pit was in a state of excitement as the work of removing the cylinder heads began. By the rules of the race, three members of a pit crew could work on a car while it was at the depot, and overalled mechanics attacked the machines frantically. With the rest of the pits silent, and everybody watching, the few yards of concrete

fronting this depot became the setting for an exhibition of frenzied energy and, in the general mêlée, one mechanic began to work on the wrong car and was half-way through the job before he discovered it. He could not leave what he had started, and his desperation helped to complete the replacing of Lett's gasket in something approaching record time.

While these two cars were still halted, six Rileys were sent off. One car was being handled by slender, dark-haired Mrs. Wisdom, and as her partner at the wheel she had a tall, fair-haired girl who had driven to England from Australia a few months before—Miss Joan Richmond. The official Riley team took the lead, Whitcroft leading and Mrs. Wisdom close behind, to begin lapping at above 85 m.p.h. Such speed was unexpectedly high; it threatened the smaller cars from the start, and all the M.G.s sped up.

Hamilton closed on Jeffress and the two were together on the Byfleet banking when suddenly Hamilton slowed, rolling on to the railway straight and stopping, presently to push his car towards the pits with the bearings melted in two big-ends. The machine was pace-maker in Major Gardner's team, and because the other two cars—handled by Jeffress and Barnes—were running well, it was essential to keep Hamilton's disabled mount in the race, in order to try for the team prize. Effecting repairs would be a disastrously long job, and someone thought of changing the engine completely. A new power-unit was brought from the M.G. stores now established at the track, and three mechanics started to rip the old engine out and instal a new one. They completed the work in three and three-quarter hours.

Out on the concrete Norman Black was playing a lone hand, and he made the first answer to the Riley chal-

lenge. He began to chase Jeffress when Hamilton fell out, and went into the lead just as the next batch of cars shot away from the starting line, soon to be followed by Humphreys on the Amilcar which had been so unlucky in the Five Hundred Miles race some months earlier. Presently a group of Talbots streaked off, then came Earl Howe's "blown" Alfa-Romeo, following an Invicta, and finally Sir Malcolm Campbell took a Mercédès down the straight, starting from scratch, just a hundred and six minutes after the first M.G.s had left the line. Not until almost the last moment was it decided that the German car would run. The mechanics had been fitting pistons all night, and the work had not been completed until daylight.

The Alfa-Romeo began lapping at above 100 m.p.h. and the Talbots touched 95 m.p.h., but not until half a dozen laps were covered did the Mercédès speed up, and even then it went around at barely 96 m.p.h., because the driver knew that if he opened out he was liable to seize his engine.

While the Mercédès was working up speed, the silvery M.G. came to the pits, with the Hon. A. D. Chetwynd at the wheel. Steaming water was spouting from unexpected places and Chetwynd announced that the engine had "thrown a rod"; then he retired.

Long before that Letts had got going, having changed his gasket in under fifty minutes. Manby-Colegrave took half an hour longer, delayed by the fact that the gasket blew again the moment that his engine was started up, and the whole process of fitting a spare had to be repeated.

When these two machines came back to the track they found that Norman Black was holding his lead. The Rileys were coming up fast, but he was doing his utmost

to keep them off, helped by the fact that his machine came through the turn to the pits at a pace as fast as that of anything in the race. Quick though he was, he kept a little power in hand, knowing that there was a long way to go, and presently he pulled in for fuel. His former mechanic, Tayer, was at his pit, and found that Black's aluminium tank had begun leaking. The leak was only slight, and the car started off once more, but the check had cost Black the lead and a Riley went ahead, with the red machine driven by Mrs. Wisdom very close behind it, and another Riley in third place. Through Black's delay, Jeffress slipped into fourth position, having covered 190 miles in the two and a half hours that had passed.

The atmosphere in which the race was now being run grew peculiar. Before the fall of the flag everyone had expected the event to become hectic, but now that the race had started it was realised that team tactics and wise driving only would enable a car to complete the course. At the same time the men who were not running in teams could afford to travel as near the limit as they dared, forcing the others to lap faster than they wished. Above all this, the Rileys were showing a steady, unexpectedly fast pace which suggested that they might run away with the event, if they lasted.

It became a race in which controlled teams sped up or slowed in accordance with what happened to their rivals, all the time watching the assaults of the unattached drivers. Now the Talbots began to challenge the Rileys, opening wide and lapping at 98 m.p.h., while the Mercédès was delayed by a loose spare wheel and the Invicta—driven by Dudley Froy—came into the pits; the car's reserve petrol tank was overflowing, and that was only the beginning of troubles

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which led to its retirement an hour afterwards.

Norman Black, now picking up on Jeffress, found his tank leaking badly. He made signs as he passed his pit, and Tayler was ready for him when he came in. It was his fast replenishment work which had helped Black to win the T.T. the year before, and he was as swift as ever now. In fifteen seconds he refilled the tank and the car got away, leaving just as the Mercédès appeared with a deflated rear tyre.

Smoke was gushing from the rubber as Campbell stopped; the moment that the wheel had been removed mechanics stripped the hot tyre and it immediately burst into flames. It was hurled through the back of the pit, where it lay burning against the grass, smouldering for the rest of the day. The Mercédès swept off, but almost at once its supercharger gave trouble, reducing its speed so that it became no faster than the Talbots, which were now closing in on the Rileys.

Black knew that he would have to call again and again at the pits to refill his leaking tank, and that he must make up for this delay. He put his foot down, streaking around the course at very little under 80 m.p.h., passing Jeffress and taking fourth place, but holding it only for a few minutes because he, in turn, was passed by Lewis on a Talbot. Ahead of them Harvey's Riley had taken the lead from Whitcroft, who had been delayed because his starter pinion worked up against his flywheel. Behind Harvey was Mrs. Wisdom, and Whitcroft now fell into third position.

All the Rileys were travelling at better than 85 m.p.h., and Lewis opened up a little more on his Talbot. The leaders responded, while Norman Black became harassed by another Talbot, which again and again tried to steal ahead in race position. Black kept fifth place only by

the excellence of his driving, and he came off the Byfleet banking with his machine saving yards as he clipped the turn to the straight, employing all his knowledge of the track to maintain his speed.

He was hampered by the leaking tank and, as the day wore on, he had to come in at shorter and shorter intervals. At first a refill lasted him a full hour, but the time steadily shortened as the leak enlarged; always, when he came in to the pits, Tayler replenished in a clean-cut fifteen seconds, doing his utmost to help his driver.

Sir Henry Birkin took over the Alfa-Romeo from Earl Howe, who had worked up into sixth position, his machine being the fastest in the race. Birkin was at first slowed by mysterious misfiring; that was eventually traced to a loose wire on the switchboard, and when it had been put right he pushed up the car's speed until he was lapping at 102 m.p.h.

The race had settled down now. Black was leading all the M.G.s, but his constant calls at the pit were exasperating. He suggested changing the tank, but calculations showed that—because of his mechanic's smart replenishment work—it was better to carry on; Black was losing less time than he would have done by effecting a replacement.

The fast Talbots crept nearer and nearer the leader. Lewis slid into second place, then the Talbot behind Black sputtered and passed him, pulling back the Rileys and tucking in behind Lewis's machine, to ride third in the race. The Mercédès fell further and further behind, losing its fish-tail silencer and being still further delayed, and the afternoon of the first day wore out with all drivers struggling to hold the positions they had gained, at the same time striving to keep

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something in reserve for the next day's racing.

The leading Riley slid nearer and nearer the five hundred mile mark, and a yellow flag dropped when it completed the distance. The cars came to a stop with half the thousand miles covered, to show that a Riley led, two Talbots were behind it, and Mrs. Wisdom's car was in fourth place, with Whitcroft's Riley fifth. Norman Black was sixth, and a Talbot lay between himself and Jeffress.

The cars were pushed into the paddock, there to be left until the following morning, and discussion diagnosed Black's trouble. One of the baffles had worked loose, creating a leak where it had been welded inside the tank. No repair was possible and, in any case, the car could not be touched until the race restarted the following morning. All that could be done was to run on, with the driver harassed by the knowledge that stops for fuel would grow more and yet more frequent as the leak inevitably became larger.

§ 3

An innovation in the Thousand Miles race was that cars could, for the second day's start, be towed in gear from the paddock to the line, and the engines could be warmed up before the flag fell. This meant that machines could run under almost full throttle from the outset, and made the break in the race less likely to have any real effect.

Despite this, not a car moved when the starter's flag fell the next morning; this was because the smaller machines were due to leave before the rest, by virtue of the handicapping arrangements, and that most of them

needed attention. Mechanics began to change the petrol tank on Gardner's and Hamilton's car, which had received a new engine the day before. This tank had leaked badly towards the end of the previous day and the new tank was filled with petrol before it was fitted, in order to save time.

The drivers got going one after the other, except Barnes, who could not start his engine. Over three-quarters of an hour went by before his M.G. left, by which time Manby-Colegrave had sheared a dynamo coupling and had come in for repairs.

The rest left as the flag dropped for them, but the fast Alfa-Romeo was held up by a broken exhaust pipe. When this had been secured, Earl Howe started with the machine, and he was working the car up to its old speed when a connecting rod snapped and smashed through the side of the crankcase.

The tense atmosphere in which the race had begun had now definitely given place to a dour persistence on the part of drivers to keep running. For a long time the machines roared round uneventfully, except that Norman Black began to repeat his calls for fuel. Then it was seen that Mrs. Wisdom and Miss Richmond were closing on the two Talbots in front; they went ahead of them one after the other, while a third Talbot—driven by Rose-Richards—passed Black and then slid in front of Whitcroft. The race now became a clear fight, with two Rileys leading from three Talbots and another Riley in rear of them, but hardly had this situation developed than the third of the Rileys—Whitcroft's—developed carburettor trouble and slowed, so that Black shot ahead of it. Very soon afterwards the leading Riley's clutch brought the machine to a stop and Mrs. Wisdom took the lead, with the three Talbots hounding her, while

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Black held fifth place again, Jeffress close behind him. All of the cars were travelling fast, rapidly building up their total of miles towards the thousand; Mrs. Wisdom was lapping at 84 m.p.h., and the leading Talbots were steadily clocking 96 m.p.h.

Black was averaging 76 m.p.h., in spite of his pit stops; an attempt had been made to repair his leaking tank with a patent cold solder, but this had shaken out. Black was getting annoyed at the constant checks. He put his foot down still harder, while Tayler did his best to clip time off his replenishment work, but found it humanly impossible to refill in less than fifteen seconds.

Black was not alone with petrol tank difficulties; a Talbot arrived at the pits with its tank-filler spout broken off, and the tank was completely changed. Then Hailwood's M.G. came in with its tank punctured where a mounted stud had torn away. "Squeak" Enever wrapped sacking round a wooden plug, driving this into the hole, and the rough repair held effectively for the rest of the race.

Rose-Richards—on the Talbot in front of Black—stopped with a choked petrol supply, and the M.G. promptly took fourth place, after which, as if encouraged, Black began lapping still faster than before, again edging up towards 80 m.p.h., although his calls at the pit were made at increasing intervals. The afternoon wore on and he managed to hold his own, slowly closing on the two Talbots ahead, who could not quite catch the ladies in the leading Riley.

With Mrs. Wisdom drawing nearer and nearer the end of the thousand miles, Lewis's Talbot began to misfire and presently stopped temporarily. At that Black put his foot hard down, Tayler tried to hurl fuel still more rapidly into the tank, and the M.G. snatched third place,

keeping this position when Lewis got going again, after changing all his plugs.

The long race was now very near its end and the Talbot driver opened right up, pushing his machine to its limit. Norman Black knew that he was being pursued, and he needed no signals to tell him to go all out. He skimmed the grass that jutted from the inside edge of the track as he clipped the turn on to the Byfleet banking, and he forced his car close into the curve when he ripped off the banking to the railway straight, coming down the flat in one terrific burst of speed, seeming hardly to slow as he entered the corner that led to the pits.

He kept Lewis behind him, then ten minutes from the end he pulled in for his last replenishment. The car was now using—or losing—petrol at the rate of almost a gallon a minute, and another fifteen gallons was slung into the tank, for Black to hurtle away, holding off the pursuing Talbot until the checkered flag fell as Mrs. Wisdom's Riley crossed the finishing line with an average speed of 84.4 m.p.h. A Talbot took second place and Norman Black's M.G. came third, having averaged 75.5 m.p.h. for a thousand miles. Jeffress ran into sixth position.

§ 4

The Thousand Miles race was interesting for a number of reasons. Black's speed, despite his stops, was some ten miles an hour faster than that registered by the Earl of March in the Double-Twelve over the same course the year before. Both cars had been "unblown," and the greater speed could not be attributed solely to the fact that Black ran with a machine more or less in

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racing trim. The improvement lay in the car itself.

Of the twenty-seven entries, only seven cars finished, but eleven others were still running at the end, so that eighteen cars were actually on the track when the flag fell, and six of these were machines from Abingdon.

Black was robbed of a chance of victory by his leaking tank, and it was believed that close upon two hundred and fifty gallons of fuel had been poured into it. It was calculated that of every ten gallons of fuel that he took aboard, only one and a half were employed for propelling the car, the remainder being distributed along the track. It was natural that he gained a measure of grim pleasure in replacing the defective tank after the race—but the shadow of the same trouble was destined to hang over him when he drove again.

THE FIFTEENTH CHAPTER

MISFORTUNE

§ I

THE thoughts of many drivers who had run in the Thousand Miles race now turned to the tenth Grand Prix d'Endurance at Le Mans, due in two weeks' time. There was a great difference between the dull skies and patched concrete, stringent regulations and railed-in spectators at Brooklands and the French road-race with its swarming, colourful crowds, its shady pine trees, its fluttering flags and general atmosphere of quickening excitement.

M.G. mechanics hurried back to Abingdon, to begin work on Captain Samuelson's car, which he had again entered for Le Mans. Jacko and his companions had expected to work on three cars for the French race, because Mrs. Chetwynd had announced her intention of running her machine again, but domestic affairs prevented her racing. Stan Barnes had put in the car which he had just handled in the long Brooklands race, but he also cancelled his arrangement.

This left only Samuelson to run amongst the M.G. entries, and by this time he was so well known at Le Mans that his appearance was regarded almost as a matter of course. Misfortune had visited him in so many different ways on the Sarthe circuit that it seemed impossible that he should not, at last, have a clear run, and he tried to strengthen his chance of this by careful

consideration of the question of his co-driver, since Kindell was not available.

There were plenty of men who would have leapt at the chance of running at Le Mans, but Samuelson had discovered that racing an M.G. on the Sarthe circuit needed rather special qualities. He had to have a partner who would handle the car reasonably, and not push the revolutions up to seven thousand in second merely in order to show another driver what he could do through a corner. In other words, a man who would drive with his head was essential, and not some young fellow whose idea of a motor-race was a glorious "blind," until the engine gave out.

Samuelson discussed this with Cecil Kimber, who suggested approaching Norman Black; he had shown that he could drive very hard if the need arose, but he could also be obedient to pit signals—except that he had proved himself sometimes reluctant to obey a "Slower!" order, and his pit-staff had to show that they were really serious before he would give any sign of acting on it. Black looked like an ideal man since he was very keen, and certainly would not nullify his invariably careful practice work by unwise driving during the race itself.

Samuelson found Black very enthusiastic, and all details were arranged speedily enough, after which the car received the usual complete overhaul, in addition to which the valves were changed. It had been found that, under the greater power of a supercharger, there was a possibility that the valve-stems might be overstressed in the engines of "blown" cars. The stems were recessed to accommodate the spring cotters, and this recess formed a possible weakness. A new stem had been designed in which the niche was made much smaller,

while circlips were substituted for cotters. In time all "blown" M.G.s were given the improved valve.

Former races had provided so much trouble over fuel that Samuelson had the engine tuned on French benzol, specially obtained for the purpose. He thus overcame all chance of carburation uncertainties, and the machine left England ready to run on the fuel it would use during the race. As usual, Samuelson handled the car on the run from the Channel ports down to Le Mans, while Jacko drove the old Talbot as tender, and they reached the course at the beginning of what promised to be another spell of almost tropic heat. Black arrived on the first day of practice, and this was devoted to the fitting of a new-type gasket with which Jacko had provided himself, in view of the difficulties which had beset the cars in the Thousand Miles race. It was an improvement on the steel, copper and paper arrangement used at Brooklands, and was made from copper throughout; it proved perfectly satisfactory.

When the car was ready, Black began to study the circuit, employing the same thorough measures as he had used before his victory at Belfast—walking the corners and examining the road surface, presently taking out the racing job itself. Everything in Samuelson's camp ran with that smoothness which, to a racing driver, is ominous. But the days before his former appearances at Le Mans had always been filled with difficulties, while the race itself had invariably brought more; it was possible that trouble-free preparations might be a good augury instead of a bad one.

During the active but comparatively uneventful days of practice, the M.G. met on the course the machines against which it would run. A peculiar feature of the race was the number of purely amateur drivers who had

entered Bugattis and Alfa-Romeos. Now that the Bentleys no longer dominated the event, they had a better opportunity of making a good show, and in the entry list appeared the names of many who were comparatively unknown. Amongst these was an amateur named Trevoux, who had secured the supercharged 4½-litre Bentley which Birkin had driven in the same race two years before, and the young French driver was bent upon sustaining the great reputation which the car had earned.

For 1932 Birkin was sharing the wheel of an Alfa-Romeo with Earl Howe and almost the first thing they did when the car arrived from Italy was to change the windscreen, which was so shaped that it drew dust into the cockpit. The official Alfa-Romeo team made no alteration, and the result was an uncomfortable run for the drivers.

Amongst the British machines was a team of Aston-Martins, which had entered for the Brooklands Thousand Miles race, but had been withdrawn and reserved for Le Mans. A new British car—an Alta—was making its first appearance in a road race, while Brian Lewis and Rose-Richards were partners on a Talbot.

The crack drivers included Minoia, Sommer and Marinoni—all handling Alfa-Romeos—with Bouriat, Chiron and Count Czaykowski driving Bugattis. The remainder of the entrants were mostly private owners, and amongst them was Madame Siko, who this year was using an Alfa-Romeo.

The circuit had again been shortened and a new road, with banked curves, had been cut just beyond the pits, completely abolishing the Pontlieu turn and clipping down the length of the course until it measured only 8.38 miles. At first sight it seemed as if the new road

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would make the course faster, but it included an S-bend through which machines could not travel at much above 50 m.p.h. In addition, cars had to ease their speed as they passed the stands, in order safely to take the bend on to the new section, losing the all-out dash which had formerly carried them to the Rue de Circuit at Pontlieu. The new road rejoined the old course at a point which now robbed cars of the rush they had formerly enjoyed from the crest of the rise outside Pontlieu, down the straightaway towards Mulsanne.

The difference in the possible speed of the old circuit and that of the shortened course was not great, but it was definite. Although the new arrangement was certain to increase the interest for spectators, since the machines would pass more frequently, it removed all chance of definite comparison with the events of former years. A circuit must lose something of its value if it is constantly altered, and there are many racing men ready to suggest that, once employed, a circuit should never be changed, and that even the road-surface should not be improved.

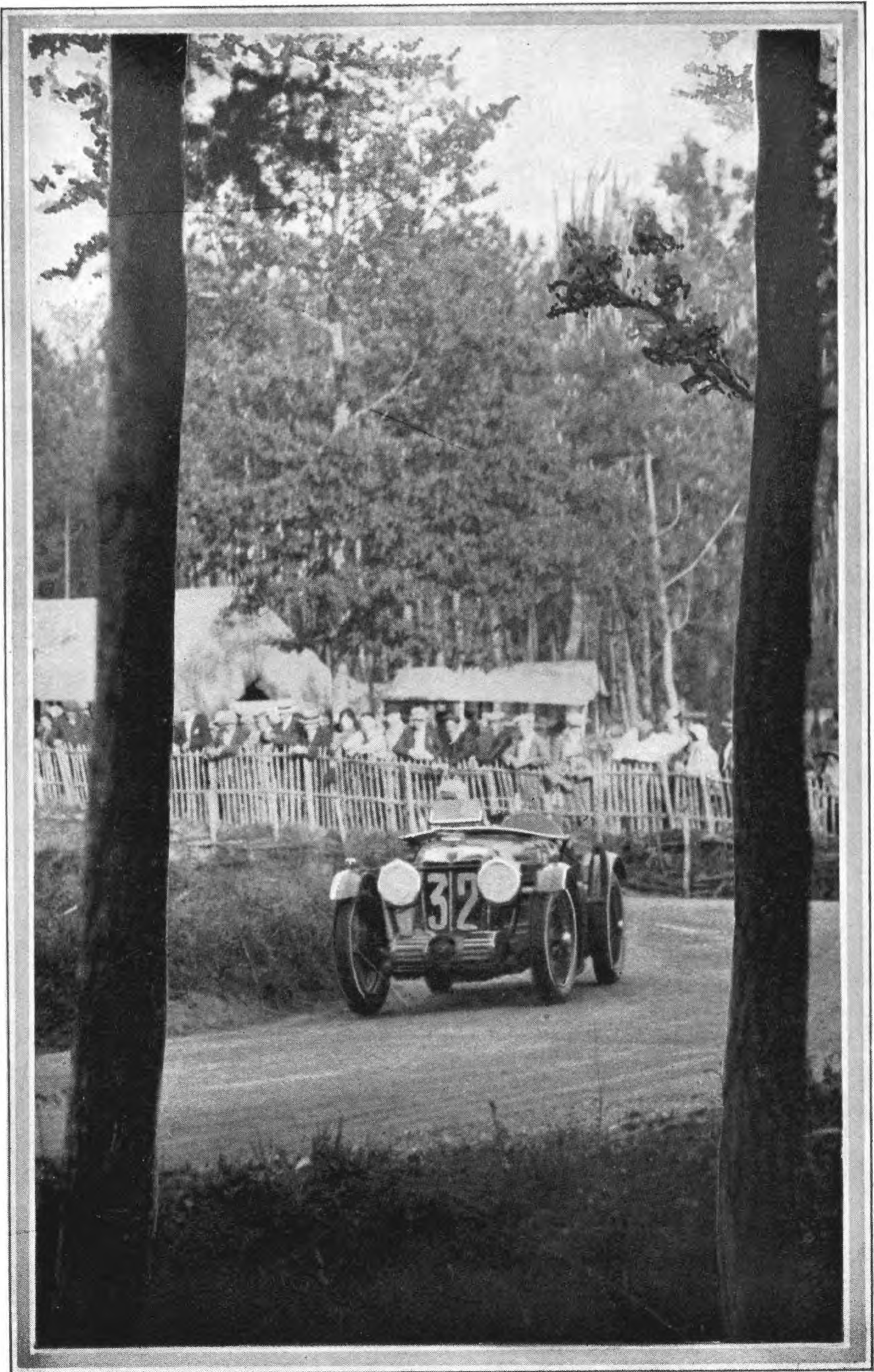
Practising on the clipped course suggested that the race would be exceedingly fast, and the amateur drivers were assiduous in their road-work. It was evident that strong rivalry existed amongst themselves, and that all would do their best against the more experienced men. In view of this, the probability was that the machines which made the pace at the outset would not be in the running at the finish.

In actual fact there were twenty-six starters, and only nine of these were on the road when the tricolour brought to an end the most sensational of all Grands Prix d'Endurance.

Just before the start on Saturday afternoon, June 18th, 1932, the Le Mans drivers stood by their cars in the burning sunshine, paying tribute with a minute of silence to Andre Boillot, a famous racing driver who had died a week earlier. When the minute had passed, the starter lifted his flag and the keenness of the waiting drivers was shown by the way in which some began to edge forward, trying to shorten the distance between themselves and their cars, as if even split seconds counted for much at the beginning of a race which was twenty-four hours long.

The yellow flag dropped, and the hot tar on the road gave under the feet of the drivers as they leapt to their cars. The only Mercédès in the race—driven by brothers named Foucret—shot away first, with Lewis's Talbot close behind, and Sommer's Alfa-Romeo howling in pursuit. For the fraction of a second these three cars showed clearly, then all the machines were moving, with Sommer surging past the Talbot and the Mercédès, taking the lead as he shot into the new turn just past the pits.

The ground rose beyond the curve, and the Italian car streaked away under full throttle, with Minoia and Cortese bringing their Alfa-Romeo to its tail. The Mercédès fell behind them and Birkin roared level with the white German car, the rest spreading out over the road behind, their colours flashing through the faint dust and the hazing smoke, exhausts howling and gears screaming as if in this moment all the pent energy built up during practice was released. In the thick of the pack came Samuelson, pushing his green machine forward in an impromptu duel



Le Mans, 1932

Samuelson rounding the corner at Arnage, on his opening lap

with a Rally, a Caban, and a B.N.C. and the Alta.

Although they strung out along the new road, the leading cars bunched in the turn on to the Tours highway that ran past the Café de l'Hippodrome. Here Cortese opened wide, streaking past Sommer, with Minoia following him, so that the great Mercédès was trapped in the heart of a group of hustling Alfa-Romeos as they rushed down the straight to Mulsanne. Beyond this turn Birkin passed and took fourth place, while Sommer, after his first fierce dash, allowed his Alfa-Romeo to drop back. The leading cars went through the Arnage bends as though the race was a short-distance event already nearing its end, and behind the cracks came the amateur drivers on the Alfa-Romeos and the Bugattis, amongst whom was Trevoux on the Bentley.

The machines cleared Arnage, and the crowd by the tribunes hearing their approaching roar craned to watch them come through the White House turn. Cortese appeared first on his red Alfa-Romeo, with Minoia close behind; Birkin followed, then came the Mercédès. These were bunched and Marinoni's Alfa-Romeo led another group, only a few yards behind. In all there were eight machines, riding one another's tails, forming a spectacle rarely to be seen. As they cleared the turn the Bentley came into the bend and, trying to hold the pace of the Italian machines, entered the curve too fast. The driver struggled desperately for control, but the car slithered, rocking as it rammed a bank at the side of the road. Its tail lifted and the great machine turned over, end on end, in a cloud of spuming dust, smashing its radiator into the ground and pitching completely upside-down.

Spectators and officials saw the driver flung out while the car was in the air. He fractured his wrist and

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sprained his shoulder, but that was all, and he was being pulled clear while following machines came through the turn, their tyres screeching as they swung out to miss the smoking wreck that jutted into the road.

The ruthless pace of the first lap had lured one car to disaster, and it brought trouble to others. The Talbot limped into its pit and the Caban, which had been pursuing Samuelson, fell out with ignition trouble. The Alta also stopped; it had been fitted with a new radiator since its arrival at the course, and soon retired troubled by over-heating. After that the Aston-Martins pulled in, one following the other, all misfiring.

On the second lap Marinoni and Dreyfus shot their Alfa-Romeos past the Mercédès, so that five Italian cars of the same *marque* were now duelling for the lead, the drivers engaged in a dog-fight the like of which Le Mans had not often known. Marinoni put his foot hard down and challenged the cars in front with a lap at just under 85 m.p.h. At that the others opened wide, and it was not long before the flying Alfa-Romeos began to lap the smaller machines. Samuelson—riding the only British entry that was running well—pulled his green machine so closely to the side of the narrow road to Arnage that his wheels clipped the grass verge as the bigger cars went by, kicking a hail of dust and grit back at him.

Birkin was in the midst of them and he was holding his car in, knowing that the fiery Italian drivers could not last at such pace. For all that he travelled fast, his calculated cornering contrasting with the fury of the rest. He let Marinoni go ahead, and on the next round the fast-driving Italian set up a lap at 86.4 m.p.h. and ripped past Minoia, chasing the dashing Cortese, who had been in front from the start. Moving at enormous

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speed, Marinoni took the lead from him along the straight past the Hippodrome, and he flashed on to take the Mulsanne corner with his tyres screeching against the road-surface, then, pulling out as he passed another car on the brick-lined bend at Arnage, he skidded violently, shooting straight off the road into a sandbank—with Cortese and Minoia barely missing his tail as they came through the curve at speed from behind. Marinoni clambered out and immediately began to dig furiously in an effort to free the car.

Two of the fastest cars had crashed before the race had run half a dozen laps. Sight of Marinoni's frantically digging form might have been a warning to the rest, but they paid no heed. Cortese and Minoia began to struggle for the lead, first one and then the other going ahead, while Birkin remained close to them and watched their battle. He formed a dashing, coolly driving figure between two dog-fights because, behind him, Bouriati—on a Bugatti—was striving against Sommer's Alfa-Romeo, while the Mercédès challenged both of them.

Every car appeared to be running at full bore, except the Talbot and the Aston-Martins, which were, however, overcoming their difficulties and soon began to shift at speed, making up time. Samuelson caught something of the keenness of other drivers, so that he gave his machine more throttle opening, shaking off pursuing cars as he roared down the straight. He flashed through the bends by Arnage at a pace which equalled even the Alfa-Romeos when they caught him there, forcing the Italians to wait for a straight stretch before they could use their greater power and roar past. The speed of the green machine intrigued the French crowd, as it had always done, and Samuelson could see stop-

watches flashing behind the palisades on the turns as some of the spectators clocked his lap times.

At White House turn an official with a flag warned drivers against the wreckage of the Bentley, which protruded to the road; the overturned machine became gradually plastered with dust as the cars skimmed past it. Down at Arnage, Marinoni worked for more than an hour, close-lipped and savage, digging with anything that he could find on the car to use as a spade, wrenching again and again at his machine until finally he worked it clear and got into the race again. He was now far behind everything else, and he travelled with his throttle-pedal stamped flat, trying to catch up.

When the event had been running for two hours, Cortese established himself in the lead and pushed his lap speed up almost to 87 m.p.h. as he tried to shake Minoia from his tail. He gained very little, and the other Alfa-Romeo responded to each fresh burst of speed, while those immediately behind were hardly less fast. It seemed impossible that such a desperate pace could be maintained without something happening—and something did happen.

Minoia came under full throttle to the White House turn, and on the rush to the curve he pulled over to pass Brisson, who was driving a Stutz. In getting by the American machine, Minoia held his speed too long and entered the turn so fast that he found himself travelling headlong at the wrecked Bentley. He tried to pull his machine over and miss it, only to spin completely round, and the Alfa-Romeo was describing a second circle when Brisson roared through the bend.

He saw Minoia sliding wildly not twenty yards ahead, full in his track. Brisson used the full power of his brakes to prevent charging into the machine and, with locked

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wheels, the Stutz skated sideways and slashed half into a ditch, pitching the driver out as Minoia's car slammed into a bank at the other side of the road.

The double crash brought spectators rushing to the assistance of the drivers, while officials on the corner flagged wildly to approaching cars. It was found that Minoia had facial injuries, but was not seriously hurt; Brisson had fallen softly and was only bruised. They received attention while passing cars roared between the smoking machines, as spectators worked to move them from the road. Minoia's car was man-handled into a field, then men tried to shift the heavy Bentley and the Stutz.

They were still struggling with the machines as Samuelson approached the turn. The M.G. was deceptively fast; the way in which it held the road enabled the driver to go through the sweeping bend at all but unchecked speed, and this may have helped to deceive Marinoni as he came up behind. The Alfa-Romeo driver was travelling all out, trying to make up for his long stop at Arnage, and he hurtled past Samuelson at such speed that centrifugal force sent the car over to the road's edge as he entered the curve. His wheels touched the grass and he began to slide, then, striving to straighten his machine, he hit the capsized Bentley. The contact swung the Alfa-Romeo broadside across the road, and it struck the opposite bank with an impact which sounded like an explosion, and which marked the end of the race for the driver.

The scattered spectators swarmed over the road to help Maronini, dodging the following M.G. The driver of the Italian car was not hurt, and when he had been aided from the cockpit, men dragged his machine towards the field where the other Alfa-Romeo had been

hauled. After that, the Stutz was heaved out of the ditch and the Bentley was hauled well clear of the road—still upside-down and moved by sheer man-power. All the time officials with flags gave warning of the approach of cars, so that every few moments the volunteers abandoned their work and crowded back as machines came racing past. Eventually the course was cleared, when it was found that the Stutz engine could be started, and the machine was presently driven slowly and haltingly to the dead-car park.

Four cars had crashed within a space of fifty yards—the Bentley, the Stutz and the two Alfa-Romeos—and the debris was still being removed when another Alfa-Romeo wrecked itself by the Arnage bend, where Marinoni had first crashed. This machine cornered too fast, and an attempt to use the brakes flung it broadside on the road. It hit a grass-grown bank and rolled over, flinging out the driver, then came back to its broken wheels, hesitated, and lurched completely over a second time, finally to land on its side, battered and out of the race. The driver was as little hurt as anyone else had been.

There were now five abandoned wrecks alongside the course. Miraculously no one had been seriously injured, but the smashes made a great difference to the race. Of the drivers who had engaged in the fight for leadership during the opening laps, three had crashed; amongst the other fast machines, Bouriât had split the petrol tank on his Bugatti, while the Mercédès had also dropped out of the race. The pace now began to grow a little more steady, but the impetus lent by the furious start tended to keep every machine travelling fast.

§ 3

After driving for three hours, Samuelson handed his car over to Norman Black. Through all the excitement around the course, its driver had crept up in race position until it was seen that a little more fast work would find the machine figuring amongst the leaders.

Black had been impatient to get into the race, and it was with a certain lightheartedness that he put his foot down as he took the car along the straightway past the Hippodrome. He went through the Mulsanne corner with a rushing roar, but on one of the Arnage bends he struck a slippery patch and skidded twice round before he brought the machine straight and drove on, to become as steadily fast as his partner had been.

Amongst the Alfa-Romeos Cortese led, with the machine handled by Howe and Birkin only a little distance behind. By this time eleven cars were out of the running and, for a while, it seemed almost as if the Talbot's retirement would be forced, but the crew made a resolute effort to overcome its troubles and it was running healthily when night closed down. The lights had hardly been switched on at the pits and the grandstand when Cortese pulled up with a shattered windscreen, and Birkin took the lead for which he had worked so long. He made the most of his advantage, and he had drawn well away from Cortese when he pulled in after another hour and Howe took over. He and Birkin had won the year before, and the crowd cheered them away; it appeared as if their controlled driving in the opening of the race might give them victory again.

Howe vanished into the darkness, to appear a lap later with his engine misfiring. He stopped and another driver

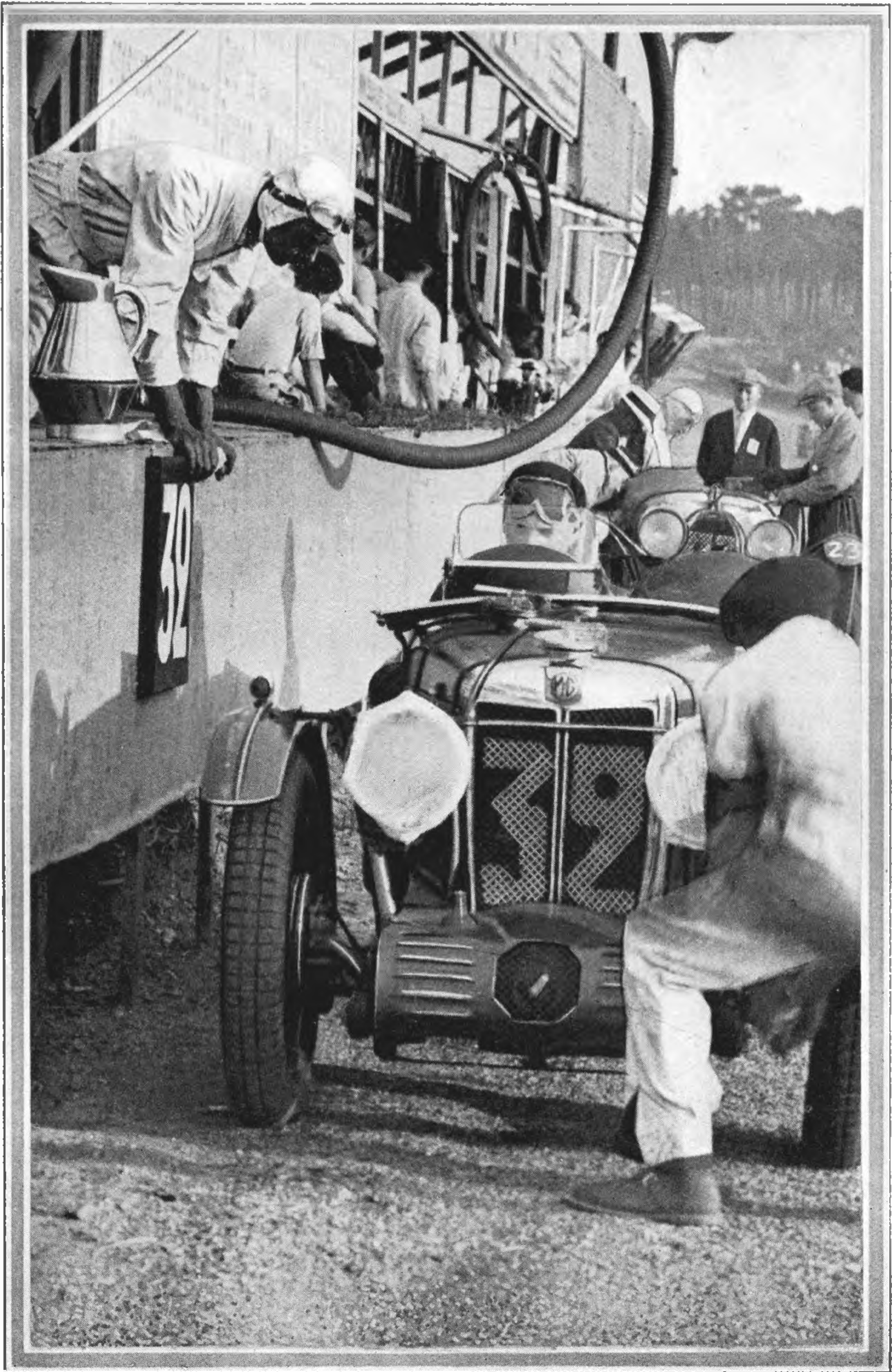
who had been playing a waiting game judged it time to open out; this was Sommer, who pushed his Alfa-Romeo past Cortese. When Howe slipped into the race again, he found himself riding second to Sommer, pursuing him hard and with Cortese storming behind.

For another hour the race went on. Cars rushed out of the night into the glare of the tribunes, their paintwork glistening briefly in the lights before they disappeared with their red tail-lights winking along the banked bends of the new road.

While the Alfa-Romeos continued their long-drawn struggle, Black was pushing the M.G. nearer and nearer the leaders, and he held seventh place in the entire race when he pulled in at the pits and Samuelson took over. Everything was running splendidly; the machine was in a fine position and, if it maintained its speed, must inevitably climb still higher. Samuelson sent it away, leaving those in the pit to listen for his approach again.

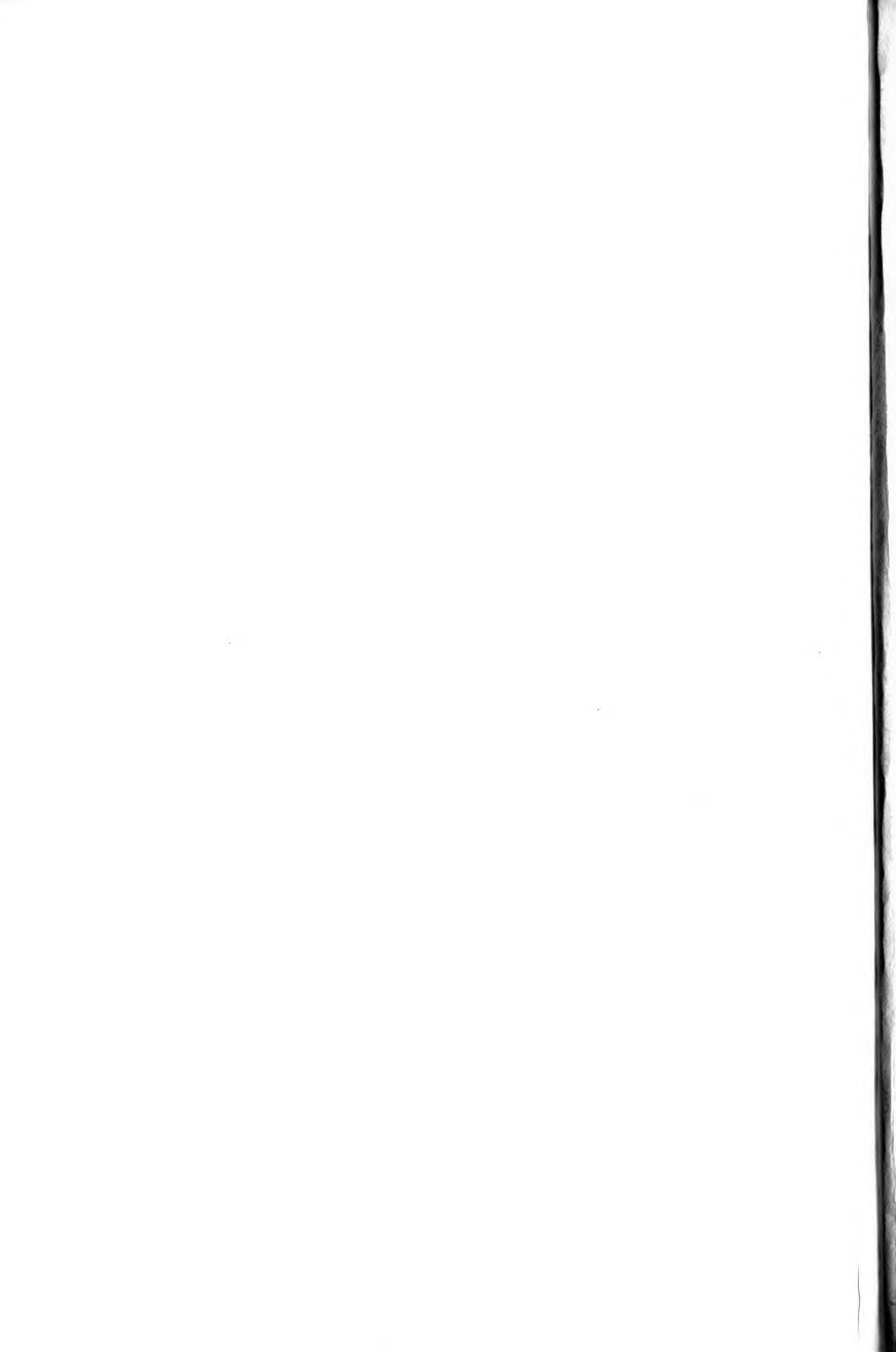
Right on time he appeared, signalling that all was O.K. as he passed, while Black and the others at the pits suddenly found that the M.G. was actually leading the race on handicap. The previous year, Samuelson had all but taken third place; now he was leading, setting a pace which made eventual victory certain, if nothing occurred to delay the car. For nine laps after he had taken over Samuelson continued steadily, then, approaching White House turn, his engine began missing.

This was the spot in which he had been visited by trouble during previous races, and as he cleared the bend his engine petered completely out. He coasted on to the brilliantly lighted pits and pulled up, when investigation disclosed a fuel shortage and he discovered a completely empty tank. He found the cause to be the same as that which had stopped Hailwood in the



Le Mans, 1932

Norman Black, about to leave the pits after taking over from Samuelson, who is kneeling on the pit counter. "Jacko" is tightening a shock absorber



MISFORTUNE

Thousand Miles event, when Enever had plugged the leaking tank with a wooden peg.

The container was held by three mounted studs, the heads being inside the tank itself. All of these had wrenched out, releasing the petrol. Nothing could be done, because of the regulations of the race; even if the leak were plugged, no petrol could be taken on, since replenishment was not permitted at intervals of less than twenty laps, and the car had covered only nine since the last refuelling.

The M.G. was out of the race. It was bad luck for Samuelson and, for the second time, Norman Black was robbed of his chances by a leaking tank. But their misfortune was a gain to Cecil Kimber, because it revealed a defect in the design, and this he swiftly remedied by mounting all tanks—including production models—on rubber pads, securing them in position by broad metal strips completely encircling the tank itself.

The green car was out of it, and just before dawn Howe's Alfa-Romeo blew a gasket and was withdrawn. When daylight came only half the starters were running, and of all the Alfa-Romeos which had started only three were left on the course.

Cortese passed Sommer and took the lead, and now Count Czaykowski opened up on his Bugatti. The early-morning crowds cheered the French car on and, as the sun rose, the other Bugattis sped up, only for one of them to slide through the fence at Mulsanne, narrowly missing a tree.

Excitement amongst the spectators grew when Cortese—bothered by wings shaken loose under his speed—stopped to adjust them. This was the moment for Czaykowski to lead the French cars on, and he pursued Sommer, who had taken his Alfa-Romeo into the place

COMBAT

that Cortese had vacated, so that an Italian machine still held the lead. The French car crept up all through the Sunday morning, with Czaykowski driving as fast as he knew how, handling his machine magnificently on the turns until at midday he smashed a piston and fell out.

Before this the Talbot had broken a valve and was running on only five cylinders, yet so fast was the car that it took third place when the Bugatti retired, and kept this position as the last hours slid by. Immediately behind ran Mme. Siko's Alfa-Romeo, and she still held her place when four o'clock came on the Sunday afternoon and Sommer took his Alfa-Romeo across the line as winner, having covered 1,835 miles in the twenty-four hours.

He had held the lead in the first minute of the race, and held it again in the last. Second place was taken by Cortese—the victor in the fight between the Alfa-Romeos, although he finished a full fifteen miles behind the man who at first he had made to appear as a very remote challenger.

The Talbot took third position and Mme. Siko was fourth, while the two cars left in the Aston-Martin team ran into fifth and seventh places. Only nine machines finished a race in which the opening stages had been as desperately contested as Le Mans had yet known.

§ 4

Rarely had Samuelson experienced such hard luck as had befallen him at Le Mans. He had a machine in perfect condition, positioned to win on formula. He and Black were put out simply by a hole in their petrol tank.

MISFORTUNE

As they saw it the whole thing was just one of the chances which all racing men have to face; all that could be done was to make certain that it would not occur again, and attention was given to that.

This was the second time that, placed to finish well in a Continental event, an M.G. had been robbed of the honour. The nearest that one of the machines had yet come to victory was when Samuelson had finished fifth in his class at the Nurburg Ring.

It was a fine thing to win in England, yet there was something in a Continental victory—some subtle glamour—which made it attractive. Now compensation was due, and it came within a very little while.

THE SIXTEENTH CHAPTER

CONTINENTAL LAURELS

§ 1

IN a batch of cars completed at the same time there is often one machine which stands out from the rest, having something quite indefinable which lends the car an added willingness and a greater speed that no amount of investigation will ascribe to any particular cause. Conversely, and for no apparent reason, a machine may prove recalcitrant from the start, beset by troubles and constantly providing new difficulties.

This happens even with models which come off the assembly line in a mass-production factory, and it occasionally occurs with cars built for racing, although one rarely expects two such machines to be exactly alike. Twin cars may have the same feel and the same speed, but subtle differences always exist which enable a man who knows them both to tell one from another. Sometimes, too, a machine comes into existence which gradually gains for itself an odd reputation—not so much for ill-luck, as for possessing an intangible perverseness. Just such a car was that which had been driven by Urban-Emmrich in the German Grand Prix.

It was now a year since he had skidded off the road, and the Grosser Preis von Deutschland for 1932 was drawing near. He intended to drive again and arranged to handle the same car, which had since been through a surprisingly varied career.

CONTINENTAL LAURELS

On its return to England it had been reconstructed to form the single-seater which Kindell had driven at Brooklands in the Five Hundred Miles race, where it had kept running to the end, but had shirked its initial promise of real speed. Following this the car had attempted records and had shown itself as just fast enough to be encouraging, but not quick enough to attain honours.

When it returned to the factory the machine was employed for experimental work. At times it was supercharged, then the blower would be stripped off, only to be replaced at a later date when someone wanted to know how a newly-conceived mechanical detail fared in actual practice. This period ended when the car was sent over to the Isle of Man for official use on the motorcycle T.T. circuit, after which it made an appearance at Shelsley Walsh; then, following this hill-climbing effort, it was reconditioned for Urban-Emmrich to drive again.

Men who had worked on the machine knew that it was fast, but some of them had come to feel that it might have an unnatural blight on it. However, the car had been greatly developed, and it was possible that it could make a good showing in the German race if luck attended it instead of subtle misfortune.

While this machine was being made ready, another M.G. was prepared for the Nurburg Ring. The driver was H. C. Hamilton, who had handled M.G.s in the Double-Twelve and the T.T.—amongst other events—while this particular car had appeared in various short Brooklands races. It was tuned at Thompson and Taylor's works at the track, in shops which had seen the production of many record-breakers. During the process of readying the machine, it was found that the induction pipe from the carburettor could be shortened if the

supercharger were turned round; this was done and, later, became standardised on all "blown" models. No other alteration was made to the car, but it was treated with the very thorough preparation which T. & T.'s invariably give a machine.

Hamilton sent it by boat to Ostend, then by railway to the Ring. He followed it by road, using an ordinary M.G., and his first impression of the Nurburg circuit was much the same as Samuelson's a year earlier. He had never previously seen the course, and it appeared the more formidable because he was absolutely alone in this venture, except for the assistance of Captain Noakes the actual owner and entrant. Jacko and Kindell were coming over with Urban-Emmrich's machine and they would, of course, help him if they could; but events kept them fully occupied with the other car.

Hamilton had reasons of his own for wanting to run at Nurburg. His racing experience had been varied; he had driven single-handed through the Double-Twelve in 1931, and had partnered Major Gardner in the recent Thousand Miles race, but his experience in the T.T. race at Belfast the previous year had shown him that road work was very different from track driving. He had entered the T.T. again and felt that he might gain road-racing experience, which would be invaluable when he raced at Belfast once more, if he drove first over the Nurburg Ring.

Hamilton arrived on the German course a fortnight before the race, and he immediately began to familiarise himself with the circuit. He used the car on which he had driven over from England, covering some thirty laps of the 14.5 miles course. After this he tried out the racing machine—to come very near disaster on the first bend of his first lap. He suddenly found himself fighting

CONTINENTAL LAURELS

a series of vicious skids which pitched him on to the grass before he mastered the car. He slithered back to the road and carried on, deciding that the front shock absorbers were slack. He had not had an opportunity of looking the machine over since it had been detrained, and had put it straight on the course. At the end of the lap and with the shockers tightened, he put his foot down in an effort to find out what he could do. He covered his next lap at an extremely satisfactory pace and, taking a flying start for his third round, unofficially broke the 750 c.c. lap record with 61 m.p.h.

After that practice went smoothly for Hamilton, but matters were otherwise with Urban-Emmrich. Although his car was fast, he reported misfiring at the completion of almost every practice lap. Jacko himself took the car around the course, but on those occasions everything appeared to be functioning perfectly. Towards the end of practice, however, the machine seemed to overcome its troubles and appeared faultless on the eve of the race, which was run on Sunday, July 17th, 1932.

The German Grand Prix for 1932 had been split into three categories, one of which was limited to cars of 800 c.c. This meant that the M.G.s would be competing on level terms with their class and, in view of Samuelson's performance the year before, might do well. Their chief opponents were two B.M.W.s—Austin cars produced in Germany—one of which was piloted by a very skilful driver named Kohlrausch. A Tourist Trophy Austin had Walter Baumer at the wheel, and a similar machine was being handled by the Marquis de Belleruche.

Fourteen cars were entered in the 1,500 c.c. class; Earl Howe was driving his straight-eight Delage—an old Grand Prix model—two Frazer-Nashes were running, and Scaron came to the line with the fast Amilcar on which

he had all but won in his class the previous year. Another entrant was Ernesto Maserati with a 1,100 c.c. car bearing his own name; he was driving it himself, and the car was so built that he had to straddle the gear-box with the lever rising between his legs.

In the unlimited class Caracciola had forsaken his Mercédès to lead an Alfa-Romeo team, the drivers of the other two Italian machines being Nuvolari and Borzacchini. Chiron, Rene Dreyfus and Marcel Lehoux were handling Bugattis and against them was a larger Maserati with Ruggeri behind the wheel; he had been driving these machines for some time, and no one could guess that the German event would be almost his last race.

§ 2

Under a sky that was grey with lowering clouds twenty-nine machines came to the start. The big cars headed the line-up, with the 1,500 c.c. class between themselves and the smaller machines. The two M.G.s crackled heartily, and Urban-Emmrich kept his engine revving, fearful of oiling a plug. As in the previous year's race he again appeared in immaculate all-white kit, contrasting strongly with the black bodywork of his car.

At the fall of the flag both M.G.s leaped away, with a gap widening between them and their rivals. In front the three Alfa-Romeos streaked at once into the lead, charging the loop at the end of the brief straight, the Bugattis clinging to them. Caracciola pushed his car ahead as they swung through the turn, the other Italian cars fell in at his tail, and all drivers opened up while they rocked down the return straight,

CONTINENTAL LAURELS

beyond which the course tumbled towards Adenau.

Earl Howe led his class, riding almost side by side with Tauber, on a smaller Alfa-Romeo. Behind these two came bunched machines with Hamilton just ahead of Urban-Emmrich, who had the Austins and Kohlrausch on the B.M.W. struggling at his rear wheels.

Spreading out, the cars pitched into the first bend and went scuttling down the slope beyond. As they dropped through the turns Caracciola increased his lead, while Howe brought his battle-worn Delage down the gradients at such speed that he was able to draw away from the 1,500 c.c. machines and to ride within range of the grit kicked from the wheels of Lehoux's big Bugatti; all the time Howe travelled with Tauber on the Alfa-Romeo, who was trying again and again to find enough speed to pass.

Hamilton was showing similar superiority, leaving Kohlrausch, who was vainly trying to hold him; further back, Urban-Emmrich duelled with the Austins for almost a lap, then slowed as his engine began perversely to misfire again. While the Czechoslovakian driver coaxed the car on, Caracciola completed his first lap, thundering past the stand, holding the lead with Nuvolari and Borzacchini behind. Chiron and the other two big Bugattis followed, then Earl Howe appeared, travelling wheel to wheel with Tauber, who tried to pass as they went by the pits. Together they shot through the loop and they were still duelling when they disappeared around the first corner, to continue their fight over another lap of the circuit.

Hamilton appeared and Kohlrausch had fallen far behind him now. The M.G. streaked through a steam-cloud given off by a white German-driven Bugatti, which had pulled in at the pits with clouds of vapour

COMBAT

gushing from its radiator. The rest of Hamilton's rivals passed and Urban-Emmrich followed, nursing his car. When they vanished the crowd was left to watch work on the halted Bugatti, until mechanics rolled it to the grassy space between the parallel roads which at Nurburg does duty as a cemetery for retired cars.

Those who had watched Chiron go by guessed that he meant to challenge the Alfa-Romeos on the second lap. On the winding rush up to the *Karussel* he pulled ahead of Borzacchini, gaining ground along the switchback straight towards the pits, arriving with his foot hard down as his snarling machine closed upon Nuvolari, then in second place. Lehoux was following his lead, coming up to Borzacchini, and hardly had the raucous exhaust notes of the cars died when Earl Howe appeared. He was still fighting for position with Tauber, and there was barely a car's length between them.

Hamilton now came into sight, and he had gained so much ground that he was travelling amongst the 1,500 c.c. machines. He was lapping at 60 m.p.h., and he pushed his M.G. on until he was in front of all cars in the 1,500 c.c. class except Howe, Tauber, and two others.

When Hamilton had gone Ruggeri stopped his big Maserati; he was still examining his car when Urban-Emmrich drew up to change his plugs. He got away as men pushed Ruggeri's car alongside the still steaming Bugatti which had retired. At the same time one of the Frazer-Nashes stopped for adjustments; it went on, but Hamilton presently passed it just beyond the bridge by Adenau, drawn forlornly to the side of the road out of the race.

Chiron was hounding Nuvolari, but he did not pass him. When Caracciola appeared again Nuvolari was

very close upon the Mercédès' tail, then Chiron came in sight with his brake-shoes shrilling as he slowed and ran to his pit. The Bugatti driver worked on his ignition for ten minutes before he sent his car away and, on his next lap, a flying stone smashed his goggles hurting one eye. He was travelling faster than before, desperately making up time, and he would not stop; but only a little later transmission trouble brought his blue Bugatti to a halt, and he walked on to the pits, only then seeking attention for his injury.

Hamilton had now established so great a lead that he had to be slowed by orders from his pit. He was exceedingly fast for all that and, with nothing to fight, he kept careful watch for Caracciola and the big cars. When they did come up behind he held his machine well over to give them room, and the single-seater Alfa-Romeos went by him in a series of red flashes, slinging road-grit back in a stinging hail. The course twisted so much that it was always possible to glance back while going through a curve and, perhaps, see the big machines coming up a slope below, or hurtling down some hillside. It was vital to keep clear of them; they were lapping at 76 m.p.h., coming through the corners like wheeled projectiles, with every chance of hitting a car which might balk them on a turn.

After half a dozen laps, Howe's fight with Tauber came to an end, and the Alfa-Romeo slid ahead when the Delage drew in at the pits, troubled with its fuel pump. Howe lost time in adjusting this, and was forced to stop once more before he got the machine running smoothly. He was at the pits when Urban-Emmrich made another call, and soon after that stopped again. His third halt had the effect of restoring the M.G.'s lost power and the car roared healthily into the loop.

COMBAT

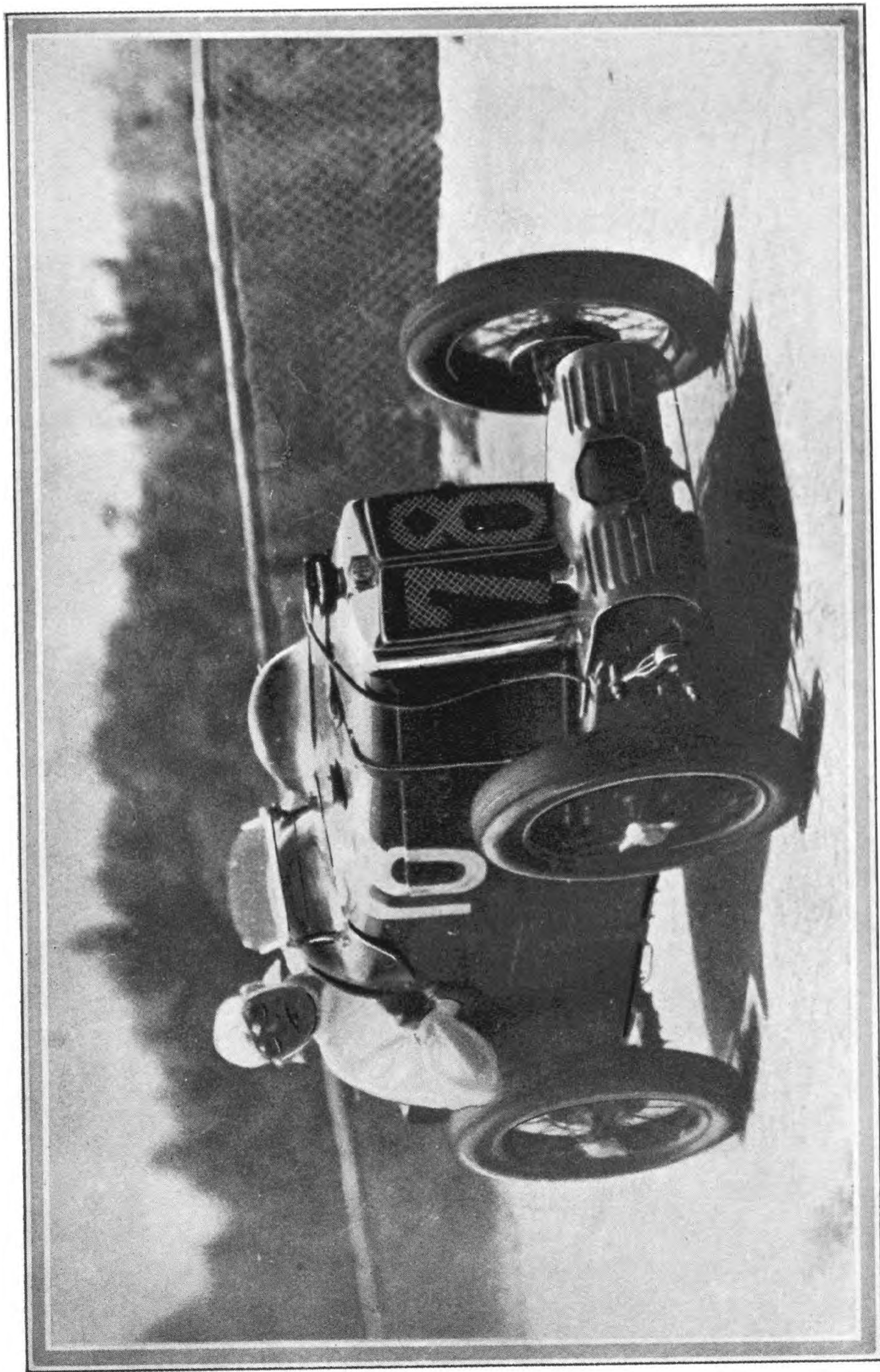
Just why the machine should suddenly do all that was asked of it was a little obscure, but Urban-Emmrich took the chance to put his foot hard down—only for the bad luck which dogged the machine to inflict one final blow. The car went fast into a turn, skidded viciously and, for the second time, the German Grand Prix ended for Urban-Emmrich with the same machine off the road, poised on the edge of an ugly slope.

Now Nuvolari, who had been closing upon Caracciola by a few yards on every round, suddenly opened right up. He lapped the Ring at 77.5 m.p.h., streaking past the German driver, but he remained in front for only a little time. He was flagged in to replenish and change his tyres, losing two and a half minutes, so that Caracciola slid ahead again only to stop in turn on the next lap; his replenishment occupied only a minute and a half, so that he had a full sixty seconds lead when he went away.

Further back Howe was driving hard, gradually gaining ground in the hope of continuing his fight with Tauber. He passed Scaron's Amilcar and set out to chase the Maserati, which had now been turned over to Ruggeri, since his own car had retired.

Under orders, Hamilton had eased up still more, but the pace which he set was more than enough to crack machines in his own class. The Marquis de Belleruche fell out and a second B.M.W. vanished from the race, but Kohlrausch kept going, although he was now nearly a lap behind.

From this point the race developed into a procession. Caracciola held an unassailable lead from Nuvolari, with Borzacchini seven minutes behind him. The delays which Howe had experienced made it impossible for him to do more than draw a little closer to Ruggeri, while nothing could touch Hamilton, and the last lap of the



Grosser Preis von Deutschland, 1932

Hugo Urban-Emmrich during practice. The photograph was taken as he climbed the bleak *Adenauer-Forst*, the coldest and most exposed section of the Nurburg Ring



CONTINENTAL LAURELS

event ran out with Hamilton—who had less distance to travel than the big machines—finally racing towards the pits as the finishing flag was unfurled for him.

He won his class in the German Grand Prix with an average speed of 59.08 m.p.h., which was faster than the pace at which Dudley Froy had secured victory amongst the 1,100 c.c. machines the year before. Kohlrausch finished in second place, nearly fifteen minutes behind.

Hamilton's win was the very first Continental success ever registered by the M.G.s in an event of any importance. It was an almost single-handed effort on the driver's part, and it had been run off against the fastest 750 c.c. cars available, over the most arduous circuit that Europe could offer, with the exception of the Targa Florio course in Sicily. The car had shown its mettle by the steady way in which it had lapped the difficult Nurburg Ring at an even 60 m.p.h., and its victory was the more striking because Hamilton had had no experience of the circuit, and had finished with his nearest rival over a lap in rear.

The band in the enclosure greeted him with the British national anthem, and not long after the strains had died away Caracciola arrived with an average speed of 74.24 m.p.h., seven miles an hour faster than when he had won the previous Grosser Preis von Deutschland with a Mercédès. Nuvolari finished just half a minute behind him, and Borzacchini brought the other car of the Italian team into third place. Tauber won the 1,500 c.c. class and, in spite of his delays, Earl Howe achieved fourth position, immediately behind Ruggeri on the Maserati.

§ 3

Hamilton had gained the experience he wanted, and this was demonstrated when he reached the T.T. course with the same machine a month later. First, however, he sent the car back to England to be reconditioned, while Urban-Emmrich's machine was hauled on to the road and conveyed to Abingdon for repairs.

It was then made ready for use as a practice car at Belfast, and subsequent events suggest that it certainly was the subject of some sort of blight. Not only was the car itself unlucky, but it appeared to cast some misfortune over any other machine with which it came into contact.

It had now been ditched twice at Nurburg; it had fallen short in the Five Hundred Miles race and, after showing promise as a record breaker, had petered out. Additionally, Samuelson—driving at Le Mans for the first time since his car had run against Urban-Emmrich's machine in Germany—had encountered the worst possible luck, and Hamilton—running at Belfast under conditions which gave him every chance of making history—was destined to meet with ill fortune greater than that which had befallen Samuelson.

Whether these things actually had anything to do with the spell that Urban-Emmrich's car cast, it is impossible to guess, but the machine did show an extraordinary and quite unnatural perverseness at all times.

After being made ready for use on the T.T. circuit, tests proved the car so promising that Cecil Kimber decided to run it at the Craigtantlet Hill-climb, which was held just before practising opened on the Belfast course. He drove it himself and, under his hands, the

CONTINENTAL LAURELS

car gave one brief, illuminating flash of its true capabilities. It secured second fastest time of the day, with three first and four second awards—not, however, without coming very close to a crash. On the final run Kim made an effort to clip something off the previous times he had set up, to find trouble on the last bend of the hill. The machine pitched into a series of wicked skids on the wet road, and went within an ace of turning over as it scoured lumps of earth from the bank. Kim mastered the machine and straightened it out, racing on safely to the finish.

As a result of this hill-climb success, the car was covered with some measure of glory by the time it rolled on to the road in readiness for work preliminary to the T.T. The machine had not, of course, been entered for the race yet. By virtue of the very misfortune which overcame Hamilton, the car actually did run—only to be ditched for the third time, doing its utmost to take another car off the course as well.

THE SEVENTEENTH CHAPTER

BATTLE

§ 1

EARLIER in the year the Thousand Miles race at Brooklands had been substituted for the Double-Twelve, and the competing cars had run in stripped trim. Regulations for the 1932 Tourist Trophy were changed to the same effect and it was obvious that, without equipment, the machines would be faster; handicaps were revised to cope with this—and with the development of the M.G.s.

Supercharged 750 c.c. models received four minutes less start than the year before, but “unblown” cars were given six minutes extra. This, however, had no effect on the race so far as rivalry amongst the smaller cars was concerned; no Austins were entered and only one M.G. ran without a supercharger.

Most of the cars were tuned at the works as usual, and E. R. Hall—who had taken third place in the Five Hundred Miles—made use of his previous T.T. experience during the reconditioning of his car. He was at the works almost every day; not because he doubted the ability of the mechanics, but because he continually remembered points about which he wanted to satisfy himself, or had suggestions to make which resulted in the mechanical efficiency of the car being backed by those details which exactly suit its particular driver, helping to make man and machine an effective whole.

BATTLE

Norman Black was racing; his car had now been given a standard petrol tank, and he arranged for Frank Tayler to ride with him again. Major Gardner was using the same machine as that which he had been driving since the 1931 Double-Twelve, and Cyril Paul was handling the car which had formerly appeared with Jeffress at the wheel, and Hamilton formed the remaining unit in Gardner's team. Hailwood was appearing with his Thousand Miles machine, and his mount was specially tuned for him by C. W. G. Lacey, a record-breaking motor-cyclist who combined daring in the saddle with an uncanny knack of getting the best out of an engine. Crabtree was down to run again, while J. D. Barnes had entered with his brother, Stan, as reserve driver.

By the Sunday before the race most of the cars had arrived on the circuit and Cecil Kimber had returned from Craigantlet with Urban-Emmrich's machine. There was very little work required to put the cars on the course, and everyone waited impatiently for practice to open on the Wednesday. When that day did arrive it brought an immediate indication of the ruthless pace at which the race would be fought out.

Sir Henry Birkin took his Alfa-Romeo round on a practice lap in 10 minutes, 2 seconds, smashing by three seconds the record which Borzacchini had set up the year before, and achieving a speed of 81.6 m.p.h.

F. W. Dixon—an ex-racing motor-cyclist, who was making his first appearance in a big event with a car—brought an all-black Riley on to the circuit and completely shattered the 1,000 c.c. record. His spectacular driving outclassed even that of Victor Gillow, and his best lap was covered at 74.2 m.p.h.

This was more than enough to suggest that the 1932

T.T. would be run off at unusual speed, but Hamilton took out his machine and broke the 750 c.c. lap record with 71.2 m.p.h., carrying as mechanic the Marquis de Belleruche, who had driven an Austin against him at Nurburg. It had been expected that speeds in the race would be a little higher than before, but no one had anticipated that cars in three different classes would set up new records on the first morning of practice, and there were rumours that Hamilton had not yet shown his machine's full capabilities.

After practising finished, attention was drawn to his supercharger, which had been turned round for the German race. According to the T.T. regulations, all machines had to be standard in design, and Hamilton was advised that the scrutineers would not pass his car unless the blower was replaced in its original position. It was the official scrutineer himself who unofficially pointed this out and obviously the alteration had to be made; but there was a difficulty, because the new-type induction pipe had been taken through a hole in the radiator, so that the work involved rather more than merely turning the supercharger round.

It was decided that the quickest way to effect a change was to take the blower, radiator and induction pipe from the practice car and instal it on Hamilton's. This was done, and mechanics worked all night in Number Nine lock-up of a garage behind the Bangor Hotel, where Gardner's team was staying.

This particular lock-up was rumoured to be unlucky, because it had housed Stan Barnes' car before the previous T.T. and his machine had turned over at Ballystockart during the race. Hamilton was now using the same lock-up, and would take the course with parts of Urban-Emmrich's machine functioning on his own

BATTLE

car—all of which might be regarded as asking for trouble, if one were superstitious.

Another driver who had difficulties during the first day of practice was E. R. Hall, who found that he was burning out his plugs. He had recently raced his car in the Shelsley Walsh hill-climb and had used a special coil designed to give a hot spark up to 7,000 r.p.m. This proved too much for the Belfast circuit, where there was no need to touch such high revolutions, but changing the coil settled his difficulties.

Norman Black discovered that his steering lacked the hair-line accuracy essential for fast work, although he managed to lap quickly despite this. After practice on the first day, everything was checked and the front axle was examined. No defect was discovered but, as a precaution, the entire steering was stripped down and reassembled.

When the cars turned out for the second day's practice, Hamilton's opening lap showed that the machine was just as fast as it had been before the blower was changed, and on his second practice lap he smashed the record that he had set up the previous day. He covered the course at over 74 m.p.h.—actually beating the speed achieved by Freddie Dixon with his 1,100 c.c. Riley. On his third lap Hamilton travelled yet faster, breaking his new record with 74.5 m.p.h., and all but equalling the lap times which had been set up by the fastest cars in the race two years earlier.

It was evident that his driving experience on the Nurburg Ring had been very much worth while, and he brought his car in to the pits with the intention of finishing practice for the day. It was then discovered that his plugs showed signs of burning, and might not stand up to the work of the race. Hamilton decided to

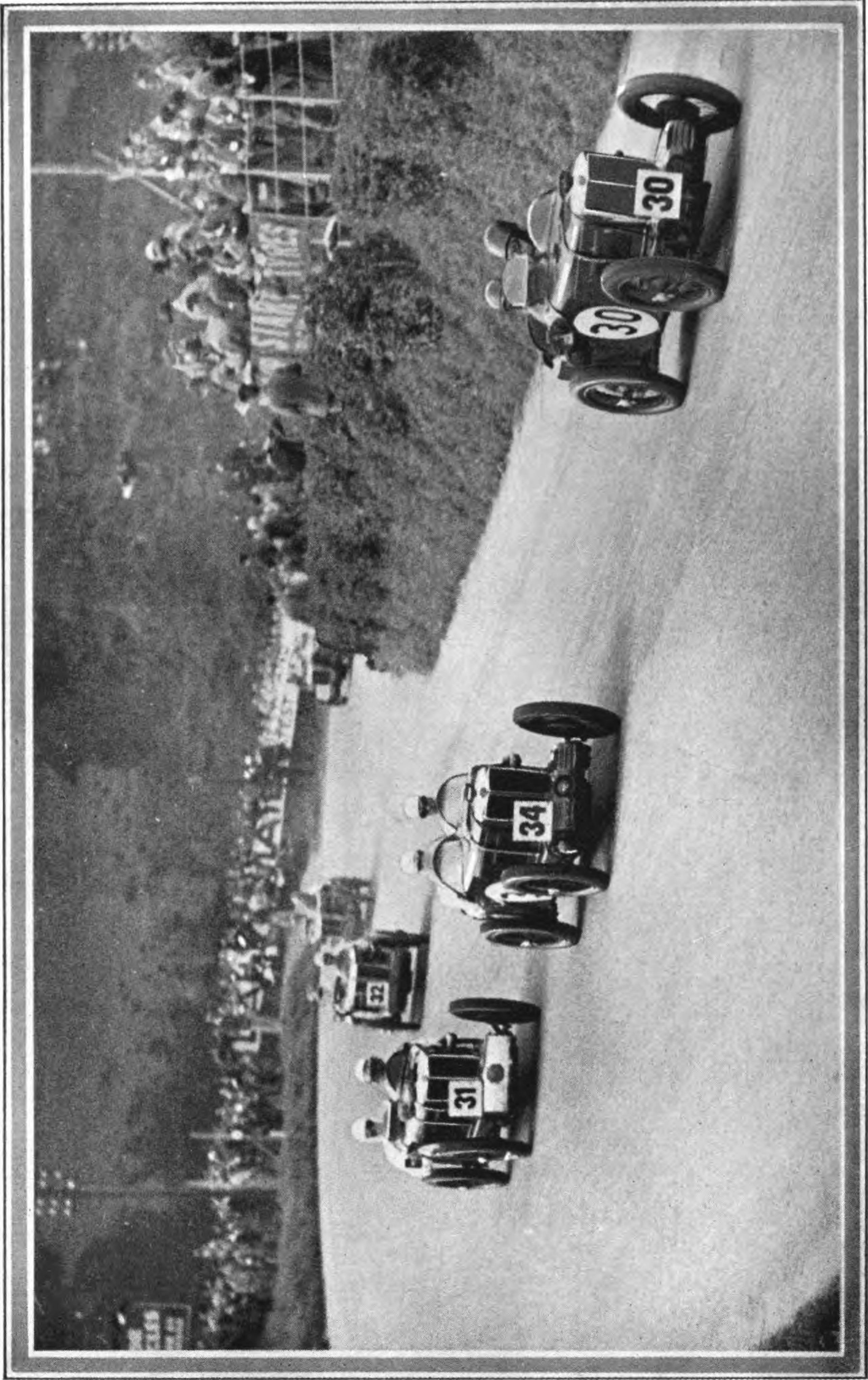
try another set and, with the idea of giving them a thorough test, went away with his foot hard down. He touched well above 100 m.p.h. on the straight to Comber and, outside the town, he pulled over to pass Victor Gillow's Riley just beyond Ballystockart. He roared by, only to find himself badly placed for a bend.

He tried to bring the car on to its true course, when its shrieking tyres began to slide and the machine whipped completely around, charging off the road and smashing through a hedge into a cottage garden. Standing on a chair behind the hedge, watching the practising machines, was an insurance agent; he flung himself backwards an instant before the car hit and shattered his chair. The machine then lurched up a bank at the far side of the garden, and flung out Hamilton and Belleruche before it turned upside-down.

Gillow, flashing through the bend, saw the M.G. crashing. He stood on his brakes, skidded a complete circle and brought his car to a stop, after which he rushed through the gap in the hedge, finding Hamilton with two broken ribs and minor facial injuries, while muscles were badly wrenched in Belleruche's back. Neither were hurt so much as they might have been, and the startled insurance agent had had the escape of his life.

The spot in which Hamilton came to grief was not very far from the place where Barnes had crashed twelve months earlier; also both machines had been housed in Number Nine lock-up, while Hamilton had carried parts from Urban-Emmrich's car. The circumstances are odd, and they may have no significance—but the matter did not end there.

As Hamilton's car was now out of the race, Major Gardner's team became incomplete, since the entries



Ulster Tourist Trophy Race, 1932

The dash through Mill Corner after the fall of the flag. Stan Barnes has snatched the lead with Urban-Emmrich's car; behind him is E. R. Hall, then Major Gardner and S. A. Crabtree

BATTLE

had comprised Hamilton, Cyril Paul and the Major himself. The one feasible way to fill the gap was to use the practice car as a replacement for the wrecked machine, and Stan Barnes agreed to drive it. Work was begun immediately, because all cars had to be passed by the scrutineers the following day, although the race officials very considerately gave permission for the machine to arrive late for their inspection. The blower, radiator and induction pipe were stripped from the wreck and returned to the car from which they had originally been taken, since they proved to be undamaged by the smash. Once again, Number Nine lock-up saw all-night work, this time on Urban-Emmrich's old mount.

While the car was being prepared, Norman Black strove to put his steering right; he had found it no better on the second day of practice. The front axle was changed, everything was checked once again and, early in the evening, Black took the machine out, testing it over twisting lanes and hills near the city. The car appeared to be satisfactory, and only when the race began did he discover that no improvement had actually been made. All through the event, Black found that his steering lacked that precision essential for high speed; the difference between its actual performance and true perfection was slight, but quite perceptible to him. The cause was obscure and although nothing whatever was done to it, the steering mysteriously rectified itself after the event. The circumstance formed a minor enigma, and is one of the happenings which suggest that racing machines are temperamental.

On the Friday all cars went to the scrutineers, with Stan Barnes' machine last; it was passed, and so came to the line in a race for which it had not been entered.

COMBAT

Following this, the cars were subjected to the final examination which every racing machine receives on the evening before an event and, on the morning of August 29th, 1932, the M.G.s formed a colourful group amongst the thirty-two cars which arrived at the start.

§ 2

No one reviewing the machines in the line-up could guess how the race would run, because practice had seen the lap record broken again and again. The fastest cars were the Alfa-Romeos that Earl Howe and Birkin were handling, but there were four "unblown" Talbots which, in their silent, smooth way, might now find that extra fraction of speed which they had needed again and again to give them victory.

The Rileys were very fast and their entries formed two distinct factions, which might produce unexpected results. Four of the cars were sponsored by the firm, and were driven by Eyston, Whitcroft, Staniland and A. B. van der Becke. Definitely ranged against these machines were Victor Gillow's car and Freddie Dixon's all-black Riley—which, incidentally, was one of Gillow's old mounts. These two drivers had a very dashing style, and they would certainly do their best against the official team, while Dixon had entered road-racing with a zest which promised considerable excitement before the checkered flag dropped.

The M.G. entry formed another unknown element. Although it was plain that these 750 c.c. machines must be approaching the limit of their development, if the practice times indicated anything of the speeds they could achieve in the race, the Rileys and the

Alfa-Romeos would be forced to travel all out.

The event could be only a fight to a finish, and the drivers knew this as well as anybody. The general idea was that most schemes for team-work would go by the board, once the flag dropped, and everyone would simply travel as fast as he knew how—which is quite a satisfactory way of running a race, both from the viewpoint of the crowd and of the man in the cockpit.

The start was arranged as before, cars being sent off in batches, according to handicaps in which credit laps were coupled with time. The first group to leave were the Rileys, a team of Crossleys and the Alta which had run at Le Mans. The Rileys shot off with one full-throated bellow, Dixon's black machine streaking forward, with Eyston and Whitcroft on either side and Gillow placing his radiator between their tails, while the rest spread out across the road in the dash to Mill Corner.

Two of the Crossleys were left at the start, with engines that would not function until they had received some attention. They were moving when, sixteen seconds later an Alvis, a Frazer-Nash and a Lea-Francis slid into the thin smoke which still hung on the air and, one minute after that, Lieutenant J. G. C. Low took an "unblown" M.G. off the line in a steady, deliberate style which suggested that he would put up a fast run.

The long-drawn minutes passed, then the flag dropped and the supercharged M.G.s went away in a tumult of crackling sound which rose like a high-pitched challenge to the bellowing that the Rileys had made. E. R. Hall took off with a magnificent start, pushing his green machine ahead and holding the lead to the corner, only for Stan Barnes to push Urban-Emmrich's old car in front during the rush up Quarry Hill.

COMBAT

Already the Rileys had begun to fight it out. Eyston had taken the lead at Newtownards, with Whitcroft's radiator almost level with his tail, Dixon and Gillow close behind. On the straight to Comber, Whitcroft went ahead of Eyston, and he was holding the lead in the moment that the flag sent the two Alfa-Romeos away. The low-built, trim machines snarled on a vicious note as Birkin ripped in front, smoke from his screeching exhaust fanning Howe's radiator as they disappeared through the corner, beginning their pursuit of the Rileys and the M.G.s. They could still be heard, pitching into Bradshaw's Brae, when the Talbots left thirty seconds later, sliding quietly off, deceptively fast.

Although the sunbathed road was left empty, things were happening around the circuit. Eyston was now riding Whitcroft's tail, and Dixon was clinging to them, holding their pace and waiting for the right moment to open up. Hall again led the M.G.s, but Cyril Paul was close behind him and Black was not far away, despite the fact that his steering was actually no better than it had been during practice.

Soon the Rileys finished their first lap, and the crowd in the stands rose as Whitcroft's blue machine appeared, not a length in front of Eyston; Dixon was taking the dust from their back wheels, and Gillow hovered behind him. The other Rileys ripped by, followed by spaced-out cars, then appeared Hall's green M.G., with Paul and Black and the rest scuttling eagerly behind, soon to be followed by the two Alfa-Romeos.

The Italian machines came up with their exhaust notes lifting to a snarling crescendo, which was sustained as they raced up Quarry Hill and faded only when they ran down the Brae. The two overtook Hall on the straight outside Newtownards; they were then moving at

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130 m.p.h. and the slip-stream from Howe's car all but put the M.G. off the road. The furious rush of disturbed air seemed to lift the front of the smaller machine, so that Hall's steering became unnaturally light, and not until the Alfa-Romeo was well ahead did he regain complete control.

Speeds increased on the second circuit, and brought trouble. In Newtownards, Hamilton and Belleruche had been wheeled out to the square in hospital cots that they might see the race; from their beds they watched a Frazer-Nash skid furiously and shave the sandbags guarding the town hall. Soon afterwards, on the exit from the town, T. H. Wisdom slid his Riley into a barricade; he drove on, but his steering was awry, and the car lurched curiously from side to side of the road. His machine was pushed off the course when he reached the pits, because repairs were not practicable. By that time, too, one of the Crossleys was in difficulties and another had stopped for good.

On the second lap, Eyston put his foot down and went ahead of Whitcroft, taking leadership in the race. Dixon, still riding Eyston's tail, also passed Whitcroft, then waited his opportunity and, on the third round, he shot past Eyston to lead the race at an average of 75 m.p.h.—faster than the record lap that he had made during practice.

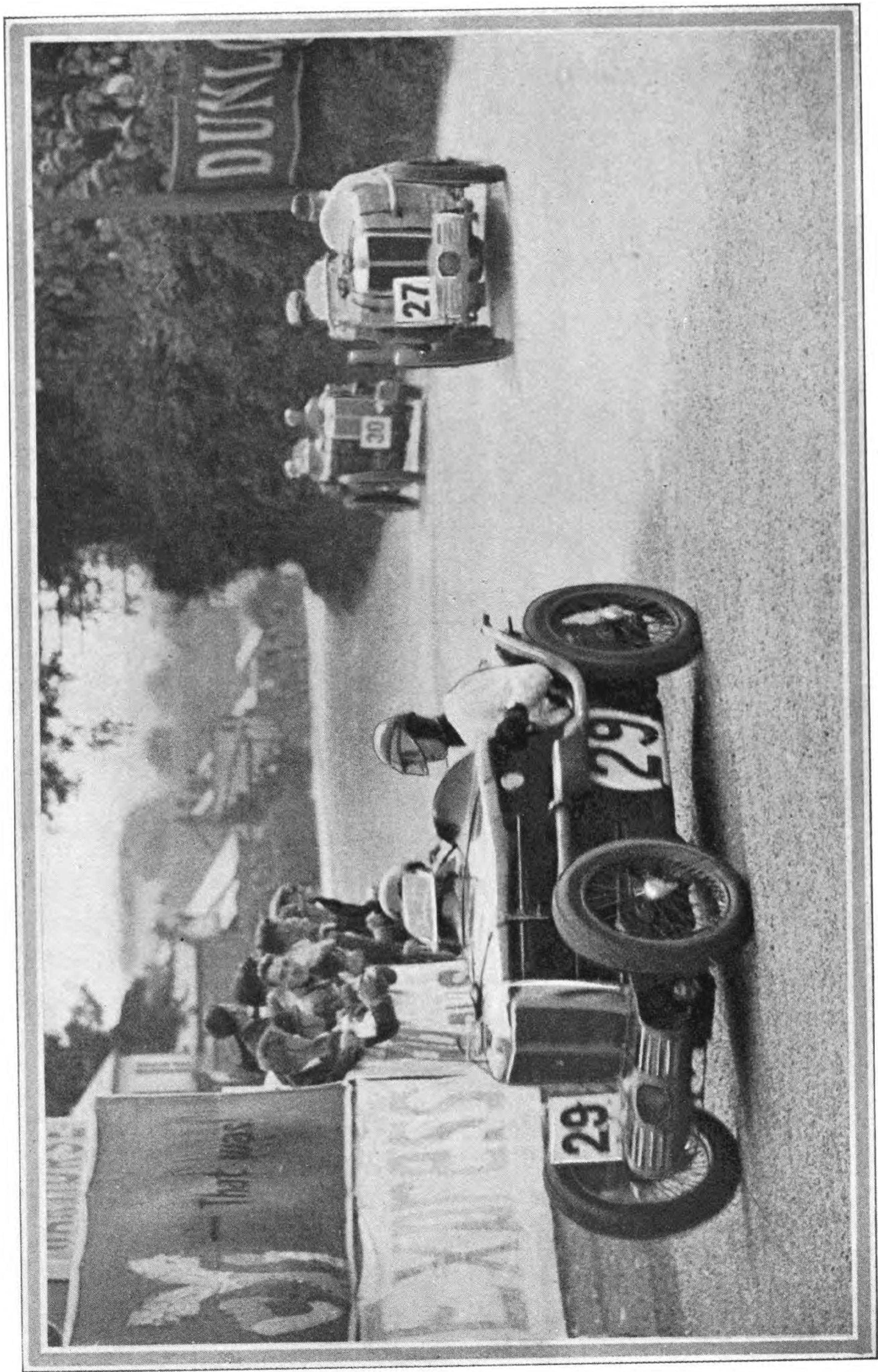
Pit signals warned every driver to prevent Dixon from getting too far ahead. Throttle pedals went down, and Birkin's lap speed touched 81 m.p.h., while amongst the M.G.s Cyril Paul opened up and passed Hall, who let him go. Hall knew that they had a long way to travel and there was plenty of time for things to happen to the fast machines ahead.

§ 3

Almost from the start Stan Barnes had been dog-fighting with Norman Black. He managed to slip ahead of the former T.T. winner, and for half a lap Black struggled to regain the ground he had lost. The two came past the pits wheel to wheel, with Black sliding in front as they approached Mill Corner. He drew ahead up the hill and his mechanic, looking back when they reached the crest, saw Barnes some fifty yards behind, followed by Lewis on a Talbot, which was storming the gradient at tremendous speed.

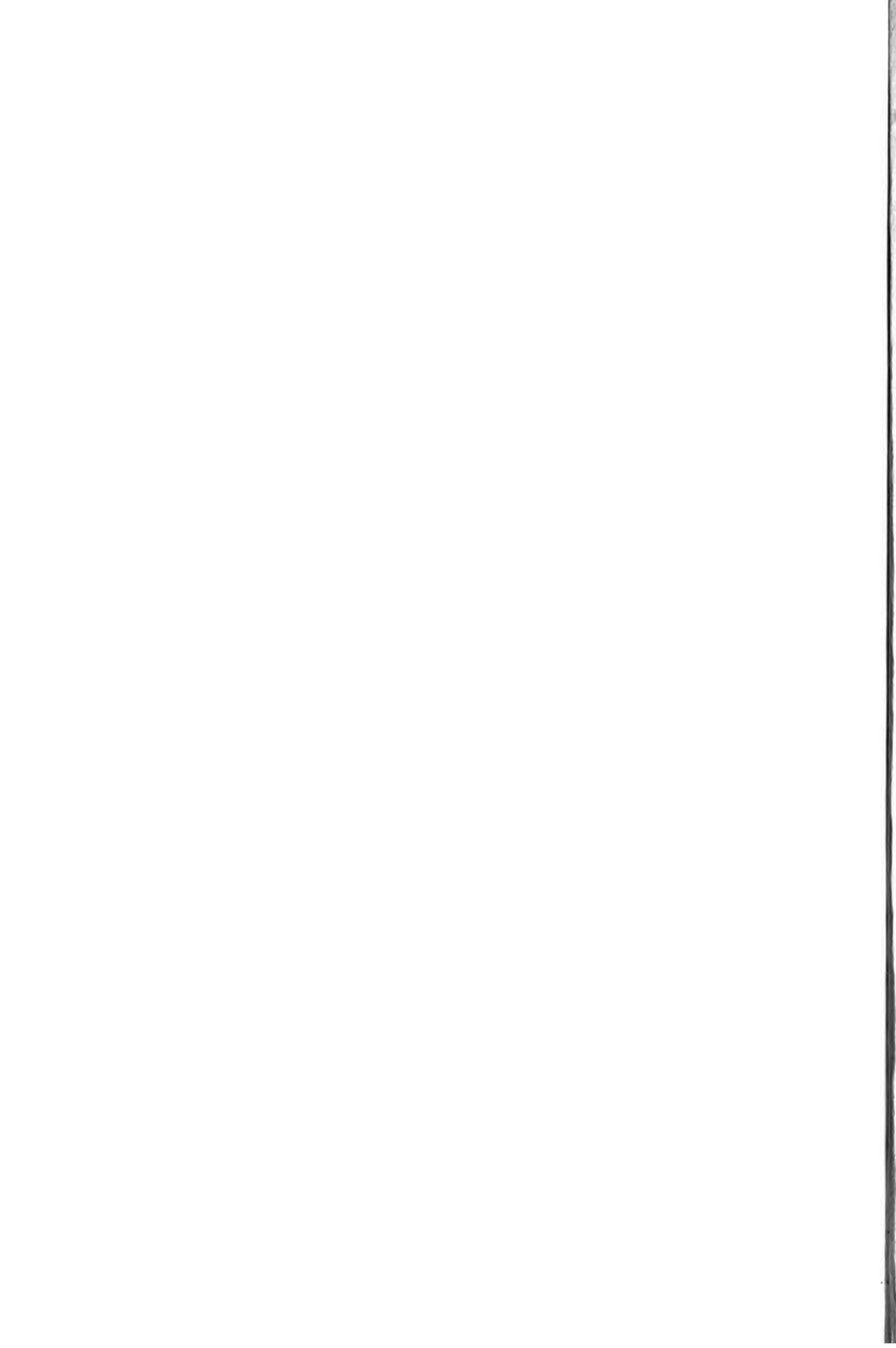
Black took the bend beyond the summit of the hill, and Barnes was travelling all-out as he followed—only to skid and slide broadside in the moment that the Talbot roared into the curve from behind. Lewis saw the M.G. turning athwart the road, and he stood on his brakes. At such speed he could not swerve enough to avoid ramming the sliding machine head-on. There was a terrific crash in which Urban-Emmrich's old mount seemed to lift from the road, then the locked cars slithered towards the grass and stopped. By what looked like the nearest thing to a miracle, the big Talbot had done no more than bend a shock-absorber arm, and suffered no further damage; the lighter machine was, however, put completely out of action, although neither the driver nor the mechanic were hurt.

The crews jumped out and the cars were backed clear of one another, when the Talbot raced on, leaving the battered machine on the grassy verge. It was the third car to come out of unlucky Number Nine lock-up and meet disaster, and it was the third time that this particular machine had been ditched in a race. Barnes could do



Ulster Tourist Trophy Race, 1932

At Dundonald hairpin, with Don Barnes leading from Norman Black. In the rear is Stan Barnes. He passed No. 27 on the next lap, and crashed with the unlucky car immediately afterwards



BATTLE

nothing more than abandon it where it stood, and cars hurtling past slashed it with dust and grit.

Lewis continued for a couple of laps, then pulled into the pits and repaired the shocker, after which he continued, travelling very fast but, like the other Talbots, finding it hard to hold the pace which Dixon was setting. The black Riley had drawn away from Eyston, who was now fighting to shake Gillow off his tail, both close behind Dixon's machine. The race leader was taking every corner with his tyres scrowling, sometimes starting skids which he killed instantly, or controlled so deftly that the crowds applauded spontaneously as they saw him master the machine and fling it on.

All the time the battered shape of the car that Barnes had driven remained at the top of the hill, and it seemed almost as if it beckoned another M.G. to disaster a lap later. In nearly the same spot as that where the wrecked machine had begun to skid, Major Gardner pulled out to pass a group of slower cars—only to slide towards the road's edge and, an instant later, he was on the grass. He fought for control, and he had the car in hand when the front wheels hit a gully. The machine bucked, skidding wildly before it lurched up a bank, rearing upright and somersaulting twice as it fell back again in a smother of dust and torn earth.

The mechanic was pitched out, and Gardner followed him, to be struck by the car itself as it crashed down. The mechanic was not hurt, but Gardner received a fracture of the right leg near scars that he still carried as a result of a wound during the Great War. The car, curiously enough, landed upright; it was dragged clear of the course, while an ambulance rushed its crew to hospital.

Two cars were wrecked, two of the Crossleys had

COMBAT

fallen out, and two other machines had retired when Birkin shot through the dust spreading out from Gardner's machine, breaking his practice record with 82.5 m.p.h. This gave him sixth place in the race at a time when the cars had been running for an hour. Dixon still held the lead, but now Victor Gillow gave up trying to catch Eyston, and pulled in to change his sparking plugs. On the next lap he stopped again and spent nearly eleven minutes, crowded with swift action, as he changed his magneto. The delay dropped him right back and, as if to make things harder for him, Dixon travelled even faster than before, setting up a new 1,100 c.c. record with a lap speed of 76.36 m.p.h.

Knowing that speeds were still increasing, Gillow tried to make up time. He came down the straight from Newtownards at an astounding pace, whirled through Comber, then, just outside the town, he took a corner too fast. He slithered, and smashed a wheel against the edge of the footway. Lurching, as the wheel collapsed, the machine charged back across the road, to wreck two more wheels against a bank before it came to a stop.

Barely had the excitement of Gillow's crash died, when the Frazer-Nash which had previously skidded at Newtownards went off the road in the same place as Hamilton had done two days earlier, sliding sideways through the already damaged hedge into the garden beyond.

Thus two more cars were out of the race, and now the last of the Crossley team retired. Then, almost at once, Hailwood found trouble with his M.G.; a petrol pipe worked loose in its nipple, and the leak starved his engine. The result was a thin mixture which, in turn, led to overheating and caused the burning of a valve, which forced the car out of the race.

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Three M.G.s were now out of the running, but the rest were fighting hard. Paul, Hall and Black were as fast as any other machine through the corners, coming up to them under full throttle, braking at the last moment and flinging their cars on. Black had to calculate his course in split inches as he hurled his machine through the turns, mastering his steering, but soon after Hailwood's retirement he almost met disaster.

He was coming down the straight to where the little bridge at Moate forms a faint hump in the road; this could be taken under full throttle, although it always pitched the car into the air. Looking back, as they took the bridge, his mechanic saw Birkin coming up; he thundered past while they were landing from the jump, entering a bend immediately beyond. The close passing of the howling Alfa-Romeo, and the uneasiness of his own steering sent Black towards a bank at the road's edge. For the fraction of a second it seemed as if he would charge it and turn over, but he managed to straighten the car, clipping the bank with one wheel and breaking four spokes. The machine bounced back to the road, when Black stamped the throttle open and carried on.

§ 4

Cars now began to pull in at the pits for replenishment, and the men who were struggling to oust Dixon from the lead worked with a rapidity forced on them by the knowledge that every second they lost was a gain to the black Riley ahead.

Birkin changed his rear wheels and took on oil and fuel in two and a half minutes. Eyston arrived, to fill up

and get away in thirty-two seconds, while Whitcroft—riding now in third place—followed him in and occupied only three seconds longer. After that Dixon stopped, and the race leader's mechanic was out of his seat long before the car halted, its tyres screeching and its tail wagging. In one action-filled minute they took on oil and fuel and replenished the radiator—but in spite of this quick fill-up, Dixon had lost almost thirty seconds to Eyston and he knew it.

The fastest replenishment of all was accomplished by E. R. Hall, who still lay behind Cyril Paul. Hall took only twenty-five seconds, but Paul needed longer, which reduced his lead. He stepped on the throttle pedal as he tried to make up for the time that he had lost and, for half a lap, he travelled fast, then ran a big-end bearing; Hall overtook and passed him as he limped round to the pits.

Hall increased his pace, and now the scoreboard showed that he had taken fourth place in the race, with Birkin immediately behind him. By this time the T.T. was half run, and Dixon still held the lead; until his pit-stop, he had averaged above 75 m.p.h., but his halt had enabled Eyston to close upon him, and Whitcroft suddenly opened up from third place, coming after them both.

He had been playing a waiting game, and judged this moment to strike home. In hardly more than another lap there was only a matter of yards between the black Riley, Eyston's machine and the blue car with Whitcroft at the wheel. The three were shaping now for a fight in which only one could be the victor.

While this battle was brewing, Birkin dashed to the pits, stopping under the full power of his brakes. No oil-pressure showed on his gauge; the spare tank was filled,

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and the engine was restarted, but still the needle stayed at zero. While Birkin remained halted, Howe raced past on the other Alfa-Romeo, putting his foot down and taking Birkin's place in pursuit of Hall and the Rileys. For three minutes Birkin remained at his depot, then the relief valve was screwed hard down, the gauge needle lifted on its dial and the machine went away. The stop had cost him so much ground that it seemed he could not challenge the leaders again, but he drove on with a dash that even he had not shown before, time and again all but breaking his lap record.

The check to the fast Alfa-Romeo made no difference to Hall, save that he had less to fear from behind. He was being controlled by signals from his pit, but they asked him for a speed which necessitated keeping his foot hard down, flying along the straight out of Newtownards at 100 m.p.h., taking the curves beyond in a series of swooping dives, his exhaust crackling, his blower droning, everything about the machine standing up to what he now demanded from it as he battled to keep within striking distance of the Rileys—and, while he held his place, misfortune was overtaking other M.G.s.

Crabtree went out of the race through an exasperatingly minor trouble: a punctured carburettor float. Don Barnes cracked an oil-feed pipe and seized his supercharger. These retirements left only Hall and Norman Black to represent the M.G.s, with the exception of Low's "unblown" machine, which had been running very steadily without a stop.

Black was then lying in seventh place, just behind Howe and Birkin when, coming out of Comber, his mechanic thought he saw sparks flying from under the car's tail. By the time they reached Ballystockart, the sparks had changed to flame, and the blue M.G. stopped

by the railway bridge a little short of Dundonald hairpin. They discovered that the filler-cap was missing from the back axle and it had released the oil; what little remained had been fired by sparks from the clashing pinions before they seized. Black and his companion could only abandon their machine and trudge across country to the pits, pausing to watch the Rileys pass.

Eyston was now on Dixon's tail, with Whitcroft close behind. Whitcroft spurred and passed Eyston, catching Dixon with one furious rush and sliding in front of the all-black Riley. As he streaked ahead of the machine which had led the race for more than four hours, the real fight started and Dixon stamped the throttle flat, cutting inches off the turns in his effort to save the fractions of a second which meant a gain on the car in front. The two rounded the Dundonald turn, and came all-out past the pits. At tremendous speed, Dixon charged Mill Corner, cutting it—and cutting it too closely.

He hit the kerb on the inside, and the car shot across the road, brake-shoes screaming in their drums as the machine hurtled to the opposite bank. It plunged up it, smashing through a low hedge and leaping high into the air before it landed upright on the soft earth beyond.

The mechanic cut his chin badly, and Dixon was bruised, but they climbed out and began to walk to the pits, neither looking back at the rising dust which slowly settled, fading just as Dixon's hopes of victory had vanished.

The crash left Whitcroft in the lead, with Eyston a close second and Hall a dashing third, while Birkin made a desperate effort to close in on them. He broke his lap record with 83.21 m.p.h., but this served only to lessen the distance between himself and Howe, who was barely

two minutes behind Hall and was doing his utmost to catch him. But the green M.G. in third place was travelling as fast as ever, holding off the Alfa-Romeo assault while, in front, Eyston made a final effort to catch Whitcroft. Eyston crept up, but his car had lost a little of its tune; he had hounded Dixon for four hours, and had taken much out of his machine.

The race was almost run, and the positions remained the same, when Whitcroft passed the pits for the last time, entering his final lap. Eyston appeared, his throttle pedal rammed flat. Hall came by, his green car scuttling purposefully over the road. Then Howe passed, and soon Birkin followed him, both Alfa-Romeos still trying to pull back the cars ahead.

The machines roared around the course—past Dixon's wreck and the battered car from the Nurburg Ring, past the débris of Gardner's machine, past Gillow's Riley with its broken wheels and the Frazer-Nash in the cottage garden near Ballystockart. Triumphantly they swooped by cars which had dropped out of the race and stood derelict at the roadside, for Whitcroft's blue Riley at last to appear on the straight from Dundonald with the checkered flag falling for him.

He had secured victory at an average speed of 74.23 m.p.h.—the fastest speed at which the race had been won. Eyston was second, just one-third of a mile an hour slower. Hall's green M.G. came into third place, and Earl Howe's Alfa-Romeo was fourth, with Birkin finishing three minutes behind him—just the time taken by his unlucky pit-stop.

§ 5

Twenty-two machines failed to complete the T.T. Of the thirty-two entries, five had crashed and four were still running when the course was closed; the rest had been beset with troubles engendered by the fast pace.

Hall had driven a splendid race and, all through it, he had responded to signals from his pit, which had kept him just far enough ahead of the Alfa-Romeos to be safe. His wise driving, and the attention that he had given the detail work on his machine, had helped to lend the car that stamina needed to finish fast. The event had been fought out almost to destruction, and Hall had covered the course at speed greater than that with which Norman Black had won the year before.

While Hall was being congratulated, Lieutenant Low brought his "unblown" M.G. across the line. He had not stopped all through the race, and he had averaged over 60 m.p.h.; three years earlier, that speed might have given him victory, but in this event it was enough only to secure tenth place.

The 1932 T.T. was generally regarded as the finest that had yet been run but, now that it was over, attention turned to the last big event of the year. The Five Hundred Miles race. The crowds were still dispersing when breakdown vans began to collect the wrecks from around the course, and disabled machines were hauled in.

The differential was taken from Gardner's back axle and used to replace the one on Black's car, which—in turn—was employed to tow Paul's machine home, once all were the other side of the Irish Sea. Soon the battle-worn cars were back at Abingdon, there to be

BATTLE

rebuilt or reconditioned, and with them came Urban-Emmrich's old machine.

Three times it had raced, and three times it had crashed. If there was anything in the blight which the machine cast, then it had three times been responsible for misfortune to other machines.

All chance of a repetition of this was removed. Its blower was stripped off and a normal body was substituted for the racing shell, after which the machine served a turn as a demonstration model, eventually to leave the factory altogether.

THE EIGHTEENTH CHAPTER

RACE TACTICS

§ 1

WHEN the official announcements were made for the last really big race of the season—the Five Hundred Miles—it was discovered that all handicaps had been increased, with the exception of that for “unblown” 750 c.c. cars. This suggested that such machines had a real chance for victory, since they had to do only the same speed as a year before, while everyone else had to travel faster.

Norman Black and Hailwood promptly removed their blowers and announced that they would run un-supercharged, and their lead was followed by three other M.G. entrants. The rest decided to tune their machines to the limit, and indulge in one last dash before winter put an end to racing and gave opportunity for leisurely attention to any repairs which might be needed.

No other race has quite the same atmosphere as the Five Hundred. Every really enthusiastic driver tries to get the wheel of the fastest machine in sight, and Eyston turned his attention to the single-seater record-breaker which, during the whole summer, had been lying at Abingdon. Eyston had found no time to try again for 120 m.p.h., nor had there been any real opportunity to work on the car, and—although the machine was designed originally for short-distance records—it was decided to see how it shaped in the Five Hundred.

Somehow it seemed that the car had a right to run.

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It was the fastest of its type ever built, and it would be an appropriate gesture to put it on the concrete in a race which, judged by handicap times alone, fully justified its claim to being the world's fastest long-distance event. So the reconditioning of the machine was begun, and the car was worked on side by side with other M.G.s which had come to Abingdon to be made ready.

Norman Black did not send his machine to the works; instead, Ron Gibson tuned it for him and acted as his co-driver in the race. Hailwood had his machine again prepared by Lacey, and R. T. Horton—who had driven at Belfast the year before—also worked privately on his car. Earlier in the year, he had taken it around the track during a B.A.R.C. meeting and had broken the 750 c.c. lap record with the altogether astonishing speed of 115.29 m.p.h.—which, incidentally, was faster than the existing 1,100 c.c. figure.

At the same meeting, Hamilton had also put up a magnificent performance on his M.G. by beating the Mountain course record with a lap speed of 69.28 m.p.h. In one of the Mountain races during the afternoon Sir Malcolm Campbell won with a speed of 68.6 m.p.h., using a specially-prepared 4½-litre machine, the engine of which had been used in achieving world's land-speed records. Despite the fact that the car had a special gear-box and equally special brakes, Hamilton had—with an engine one-sixth the size—gone round the Mountain more than half a mile an hour faster, capping the fine show that Horton had put up.

Horton's was quite a solo effort, because the works had hardly seen the car since it had run on the Ards circuit over a year before. He had the machine tuned at T. & T.'s, while a firm of coach-builders near his Birmingham home designed a racing shell for him. The

effect of their work was to cut the car's body in half, lengthwise; they made it just wide enough to cover the propeller shaft, from which a fairing ran out to the frame. In other words, they designed an extraordinarily narrow body with only sufficient width to contain the driver's seat and the engine. They set it on the off side of the car, and gave a flat, stream-lined effect to the remainder of the frame.

The tail was long and sleek, with a fairing for the driver's head, and the engine cover dipped down behind the radiator, so that the power unit itself was stream-lined, in much the same way as on Campbell's record-breaking "Blue-Bird." The car was painted red, and practice work proved that it was almost as fast on the track as Eyston's own single-seater.

Both Horton and Eyston needed all the speed they could get, in view of the opposition. A six-cylinder, 8-litre Bentley was to be handled by the brothers Jack and Clive Dunfee, and it had been set a handicap speed of 120.01 m.p.h. Eight Rileys in the race were handicapped at over 100 m.p.h., while all the "blown" M.G.s were set 95.78 m.p.h. The majority of the cars were receiving special tuning, and one Riley was even more unusual than Horton's M.G.

This was A. F. Ashby's machine, the power-unit of which he had treated as if each cylinder was a separate motor-cycle engine, and he had raised the compression to fifteen-to-one. He had four carburettors with twin float chambers to each, four exhaust pipes and a duplicated ignition system which made the space under the bonnet a marvel of compact congestion. In spite of this, he lowered the engine two inches and reduced the height of the machine until the whole of the bodywork was below the tops of the wheels, with the exception of the

stream-lined fairing behind the cockpit. In practice he lapped the track at 115 m.p.h.—some fifteen miles an hour above his handicap speed.

Earl Howe had entered a straight-eight Bugatti—scheduled for 118.5 m.p.h.—and the only other Bugatti in the race was to be driven by Count Stanislaus Czaykowski, who had run at Le Mans earlier in the year and who had built up a reputation on the Continent for fast and skilful driving. Four Talbots were in the race, and these were handicapped at 113.19 m.p.h.

For the first time during the season, Austin entries were ranged against the M.G.s. George Duller and Dr. J. D. Benjafield—who had been partners in the same team with Bentleys at Le Mans—were driving two of the three works-entered cars, and a third was to be handled by Driscoll, who had played a part in trying to retain Class H records against the M.G.s. The entries looked like an effort by the Austins to retrieve some of the ground that they had lost, because victory in the Five Hundred would count for a very great deal.

§ 2

On the chill, hazy Saturday morning of September 24th, 1932, the flag fell at eleven o'clock and released one "unblown" Austin and five M.G.s. The Austin took the lead in the rush behind the Members' Hill, and the bunched M.G.s behind included Lieutenant Low's T.T. machine, Norman Black's car and Hailwood's entry. The Austin did not hold the lead for long; before it reached the Railway straight Black had gone ahead.

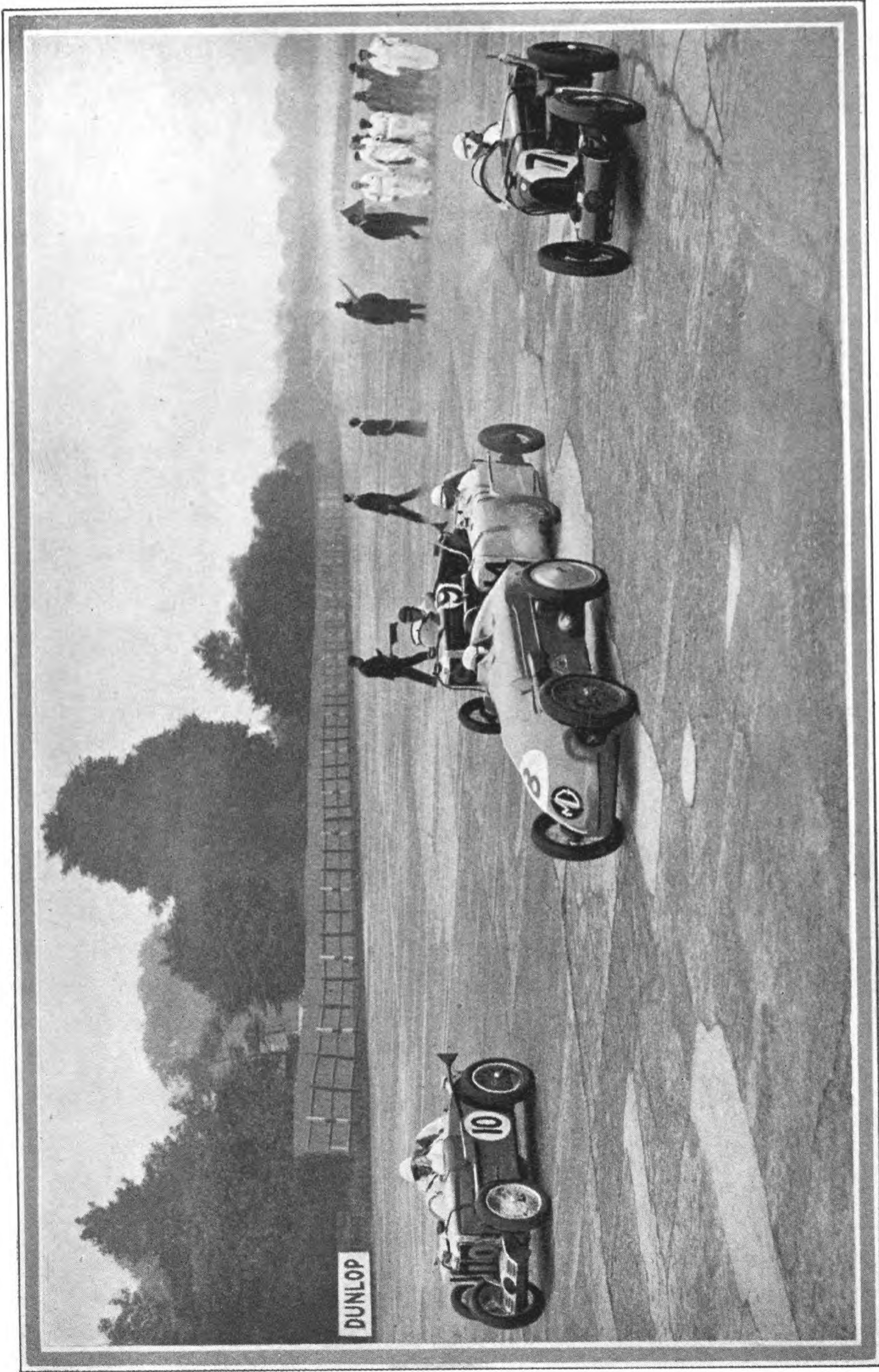
For half an hour he and the others had the track to

themselves, then the flag fell again and released the single-seater, with Horton's machine, the rest of the "blown" M.G.s and the works team of Austins. They went away as if strained leashes had suddenly been slipped, and the merged blare of their exhausts was like the yelling of metallic voices as cars surged momentarily into leadership, fell back and were replaced by others on the rush to the banking. It was easy to see that they were on the track to fight and, on the run round to the straight, Eyston and Horton drew away.

For a couple of laps Horton's red machine lay in front of Eyston's low, green car, but neither driver really opened up, knowing too well the danger of giving full throttle to highly-tuned engines which had not yet warmed to their work. Pit signals were flown for Eyston from the start, keeping him in check until, suddenly, the signals were withdrawn and he put his foot down, raced level with Horton, passed him, and then began lapping at 103 m.p.h., settling down just as the Rileys were released.

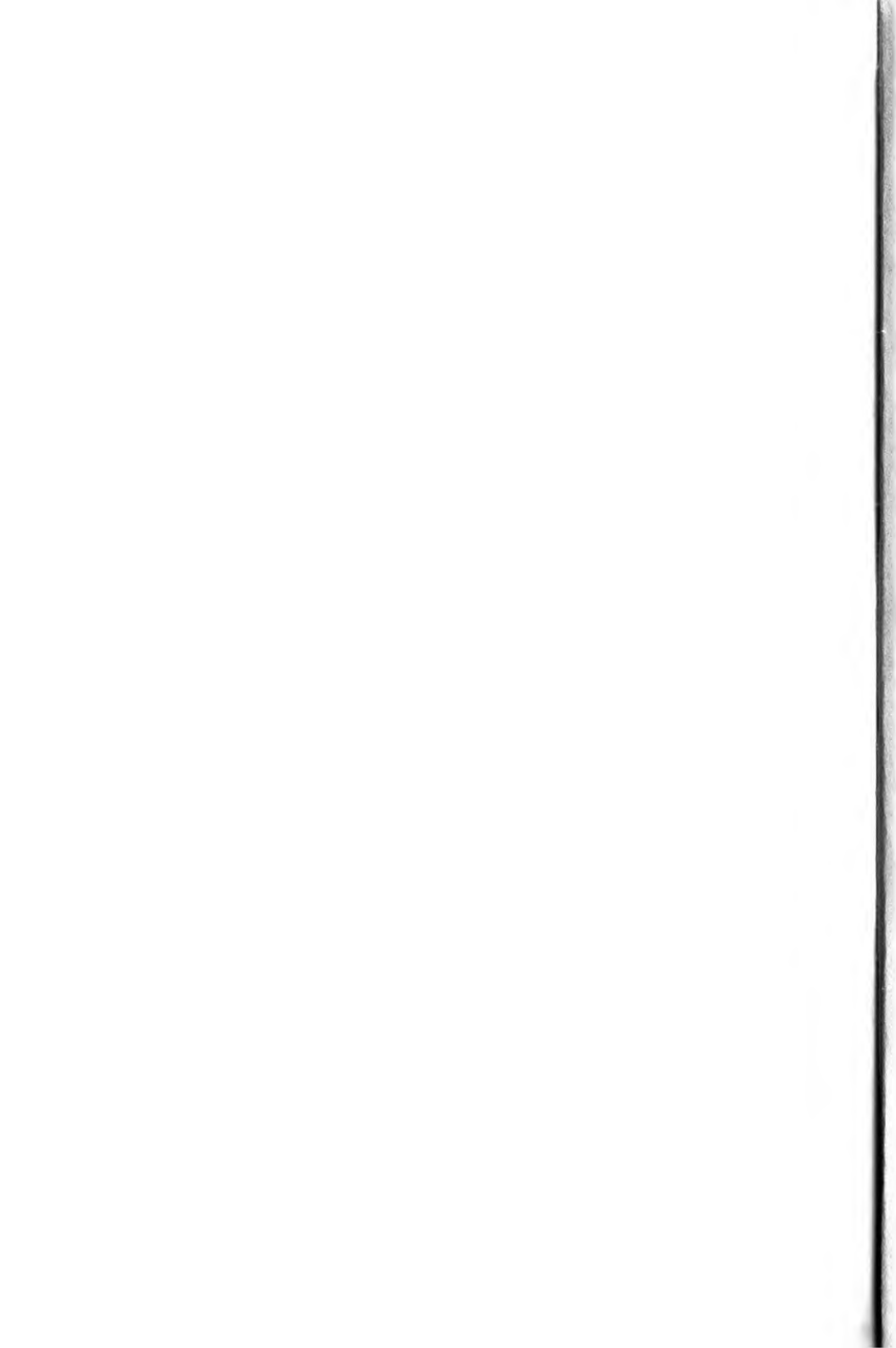
They left in a roaring bunch. Freddie Dixon's black car was amongst them, fitted with as unusual a steering-wheel as Brooklands had ever seen; it consisted of a single spoke, to which a segment of the original wheel was attached, and Dixon steered by holding the two ends of the arc.

The track began to look busy as another group of machines left, then, rather more than half an hour after the "blown" M.G.s had gone, Count Czaykowski took his Bugatti off the line. Just before the race he had fitted the biggest tyres that he could get; he knew that this Brooklands event was one of the few in the world in which a driver could keep the throttle open from start to finish. He schemed that, with larger



B.R.D.C. 500 Miles Race, 1932

Immediately after the fall of the flag. Eyston's single-seater leads from a group of machines; Horton has already taken his red car well ahead



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tyres, he could attain the speed he had set himself and still keep his engine revolutions down.

Within a few minutes, the Talbots and Howe's Bugatti went in pursuit, and finally the big Bentley thundered into the race. By this time Czaykowski was lapping at 117 m.p.h., and Eyston had taken the lead at an average of 101 m.p.h., with Horton a mile an hour slower behind him. In third place was another "blown" M.G. driven by Denis Evans; farther back, Ashby had warmed up what everyone knew was the fastest Riley in the race, and he now began to show its speed.

Although the first laps of the race were fast, drivers did not really open out until Count Czaykowski and Howe got going on the Bugattis. Spurred by these flashing shapes as they stormed by, and presently feeling the lash of the Bentley's slip-stream, the drivers of the smaller machines got down to real work although, by then, trouble had already overtaken Hall's M.G.

He pulled in to the pits with his radiator boiling, and part of the cowling was cut away. He tried this effect for two more laps, then came in again. Still more of the radiator cowling was hacked off while the driver tinkered with his carburettor, then slid into the race once more and commenced lapping at a useful 99 m.p.h. as he made up the distance he had lost.

As Hall got into his stride again, Dixon had trouble with his Riley. He had broken his rear shockers, and on the jump off the Byfleet banking, his rear axle casing met the bottom of the petrol tank, battering it so that he was obliged to pull in. He ripped off the tail of his machine and tried to effect repairs, but half an hour's desperate work failed to put the car into condition to continue and he retired, his car joining an Aston-Martin which Manby-Colegrave had been driving.

Eyston, still in the lead with the "Magic Midget," was fighting the big Bentley. Dunfee was coming grimly after him and, as he steadily increased his speed from 124 m.p.h. to 125 and then 126 m.p.h., Eyston responded. His pace went up from 104 m.p.h. to 105 and then 107 m.p.h. as he held the big car off, travelling around the concrete with Horton's red single-seater coming doggedly behind, ready to slip in if anything happened to the leader.

Presently a Talbot stopped with a fractured frame and a dragging tail. It looked as if the car must be withdrawn, but the tail and its tank were removed; the broken end of the frame was sawn off and the car continued, drawing its fuel from the small reserve tank, to travel at 90 m.p.h. and pull in every fifteen laps or so for more fuel. This speed was nothing like enough to enable the car to hold its own, but it kept the Talbots in the race as a team.

This machine had restarted when Count Czaykowski came fast off the Byfleet banking, then slowed with smoke gushing from the louvres of his engine-cover. It rolled in a long trail behind as he pulled to the side of the track, stopping just beyond the pits, to find a broken connecting rod and a hole in the crank-case.

By this time Dunfee had eased his pace a little, dropping to 124 m.p.h. Eyston gave his machine less throttle opening in response, and at that Horton judged it time to challenge him. He opened right up, lapping again and again at 105 m.p.h., forcing Eyston to go faster, and Horton had his reward when the green machine slowed off the Byfleet banking and drew in at its depot for a change of plugs.

Immediately Horton lifted his speed still higher, touching 106 m.p.h. as he shot into the lead, and made

the most of the fifty-second delay which the single-seater experienced until "Giant" Denly took the car over, to press Horton hard.

The two machines ripped by, Horton travelling all out and Denly lapping at a hundred and six—then seven—then 108 m.p.h. as he chased him, until in turn Horton lost speed, misfiring and dropping back so that Denly rocketed past, slowing once he had taken the lead again, knowing that he was doing more than enough to hold his position if he lapped at 102 m.p.h.

To those who watched it seemed as if nothing could touch the two M.G.s, and while they were duelling one against the other, with the rest of the cars howling behind them, Norman Black found trouble from an unexpected quarter. He ran over a fragment of metal which lay on the track, bursting a rear tyre; his machine made three complete circles before he regained control and toured on towards the pits to change the wheel. On the way he passed the "unblown" Austin, which was stranded on the Byfleet banking, then he overtook Whitcroft, whose Riley was limping along to the pits, there to retire. And as Black himself arrived, Ashby's low blue car was pushed to the dead-car park, put out of the race in an extraordinary way.

The car was running on methyl-alcohol, employing jets so large that no filters were used at all in the fuel supply, since the jets could pass anything except pieces of wood. Supplies of racing oil usually arrive in boxes, packed in sawdust, and a flurry of wind had blown some sawdust into the fuel while the car was being tanked up. Among the fragments was a sliver of wood, and this was carried down to a carburettor soon after the car started; it sometimes choked the jet and sometimes left it clear, finally jamming and starving one

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cylinder, so that the crown of the piston burnt through, stopping the car after it had given spasmodic evidence of its real pace.

Up in front Denly was streaking round on the green record-breaker, while Horton was slowly falling further behind, afflicted with an unusual trouble. On the bumpy patch by the Fork he had to ease his foot on the throttle pedal; when he did so the alcohol in his special fuel had a tendency to freeze over the carburettor jets, causing misfiring until it cleared. In spite of this, he did not drop a long way in rear of the "Magic Midget," and the two M.G.s were both fast enough to be unchallenged, even when Jack Dunfee turned the Bentley over to his brother, and Clive began lapping at 126 m.p.h.

The great car formed a magnificent spectacle, and Clive Dunfee handled it steadily, following a plotted course which carried the car near the edge of the home banking. But the single-seater appeared to be the steadiest machine in the race, and Denly could hardly be seen above the rim of the cockpit, save when bumps at the Fork bounced him in his seat and jerked his head against the fairing behind.

The sun had now come out, glinting on the dark red, narrow body of Horton's machine as it chased Denly. The pace was filling the dead-car park, and two Maseratis—which had never got going properly—added to the number of retirements. A dozen machines had withdrawn when Earl Howe lost the rubber buffers which checked the vertical movement of his back axle; he shared Freddie Dixon's fate when a hole was hammered in his tank, and his Bugatti was pushed away.

It was then that the whole race changed completely. Without the least warning, disaster overtook the fastest

car in the event. The big Bentley roared past the Fork, once again climbing high on the banking behind the Members' Hill. As he had done before, Clive Dunfee travelled with his offside wheels very close to the lip of the concrete. He was half-way round the banking when he appeared to pull higher in an attempt to pass a machine just ahead—and one wheel slipped over the banking's edge.

For a long moment he held the car, fighting to bring the wheel back to the concrete. Dust slashed outwards, and the small fir trees began to sway as the front of the car shaved them, then his outside wheel hit a larger trunk. The impact sent the machine into the air and it rolled half over, flinging out the driver before it plunged on over the banking into the trees, shearing through them and crashing to the road which lay below.

It was all over in a fraction of time. One moment the car had been running steadily, the next it had gone. All that was left was a broken tree slithering down the banking, and a little *débris* of leaves and metal from the machine. In the background showed the white stumps of shattered branches, with smoke curling up beyond them, thickening and growing darker.

The smash had occurred at almost 130 m.p.h., and there could be no hope for the driver.

Where it happened there is now a low-built wooden palisade, erected along the banking's edge. It is faced with sheet-iron, placed at such a height that the wheel-hubs of a car charging at the top of the banking would strike it, and the machine would be deflected back to the track.

§ 3

Denly had to slow the single-seater to avoid hitting the wreckage on the course as he came by immediately after the Bentley had disappeared. In slowing he oiled up a sparking plug, stopping when he came to his depot again and bringing the first news of the smash to the men in the pits, because it had occurred out of sight of the Fork.

While he was there Horton came in to change plugs, refill and secure a rattling exhaust pipe. The machines left, by which time the fallen tree had been dragged off the track and the débris cleared away. The single-seater began to race up towards its old speed, but it completed only one more lap before it slowed and came in again with oil-smoke streaming from under the bonnet. A hole had appeared in the crown of one piston, and later investigation showed that the tops of the pistons were too thin to withstand the heat and strain of long-distance work.

The machine had covered nearly three hundred and fifty miles, putting up the fastest and finest run ever made by a 750 c.c. car. Its retirement was unfortunate, but that was just motor-racing luck.

With Eyston out and Horton delayed, Lewis took his Talbot in the lead. But the red M.G. was in better fettle now, and Horton rammed the throttle pedal down. His lap speeds rose until they were higher than anything that he had yet done: 105.4—106—107.1 m.p.h., and still he increased his pace. He was fighting now, striving to take the place of the single-seater, while the leading Talbot endeavoured to find still more speed, lapping at 114—115—then 117 m.p.h.

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While Horton was battling to regain the leadership, E. R. Hall's machine, with its hacked radiator cowl, met misfortune. He stopped on the Byfleet banking, and began slowly to push his car on; his pit-crew saw him through field-glasses and a mechanic ran out to help him roll the car in. The crown wheel had stripped and the machine was pushed off the course, almost at the same moment as Saunders-Davies' Talbot was parked beside it—a hole showed in the sump where metal had been torn by a broken con rod.

By this time twenty machines had retired, and now the leading Talbot, stressed to its limit by the pursuing M.G., began to lose power. Its pace dropped to 105 m.p.h. and Horton took his chance, lapping at 107.2, then 107.4 m.p.h. When the Talbot stopped to change plugs, Horton's speed jumped to 108 m.p.h. He took the lead again, while the Talbot driver was discovering that the insulation of one of his plugs had cracked.

The faulty plug was replaced, the bonnet was strapped down, and the Talbot streaked away, not so silent as it had been at first, and with its exhaust booming on a war-like howl as the driver flung it on at full bore. He might yet catch Horton, and the M.G. driver knew it. His pit was flying the "All Out!" signal, and he stamped the throttle pedal flat.

During the Talbot's stop a Riley driven by Cyril Paul had slid between it and the M.G., and now the big Talbot picked up speed purposefully, closing on the Riley—but not for long. Again the big car slowed and ran in to its depot for another plug to be changed—while the leading red machine flew around the course at still greater pace. First at 108.4 m.p.h., again at the same speed, then at 108.6 m.p.h. By the time the Talbot restarted Horton had drawn so far ahead that,

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although the Talbot came howling and snarling on to the concrete under full bore again, it could not possibly catch the M.G. unless something happened to it.

Horton was taking no chances. His pit signalled him to go slower, and he obeyed—but only by a couple of miles an hour, and he covered his finishing laps at a speed of 107 m.p.h. The crowd watched the red machine flash around the grey concrete, until it ripped across the Fork for the last time as it entered its final lap. Round it went, steady and sure, leaping at last from the Byfleet banking to where the checkered flag was being raised.

Triumphantly the M.G. roared past, and the flag dipped to greet the victor in the world's fastest motor race.

§ 4

R. T. Horton had won the Five Hundred Miles race with an average speed of 96.29 m.p.h. Cyril Paul's Riley took second place, and Lewis' Talbot ran home third. Of the fourteen cars still on the track at the end of the event, five were M.G.s, amongst the drivers of which was Norman Black who gained sixth position.

Horton had driven a clever race. Not even the single-seater had been able to lure him into opening his throttle to its absolute limit, and his fastest laps were made at the finish of the fight, just when the car most needed real speed.

He collected the winner's trophy; his car headed the three M.G.s that gained the team prize, for which he received another trophy. He also took the cup for victory in the 750 c.c. class, in which M.G.s



B.R.D.C. 500 Miles Race, 1932

The final stage of the event.—R. T. Horton (No. 11), Cyril Paul (No. 19) and Brian Lewis (No. 33). This photograph, taken during the closing hour of the race, forecast the order in which these three cars finished

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finished first, second, third and fourth.

The actual awards served to accentuate the fact that M.G.s had found real fame in the motor-racing world. They had now won every big international event within reasonable reach of amateur drivers, with the exception of the Thousand Miles race—although even then Hall had secured third place.

The end of the racing season showed them supreme in their class, developed to a victorious situation in which there remained almost nothing for them now to win.

One thing only was there left to do, and that was to touch the 120 m.p.h. mark with the single-seater, and to round off the year with another attack on such Class H records as had so far proved elusive.

THE NINETEENTH CHAPTER

MASS FINALE

§ I

ACCORDING to the regulations governing short-distance records, a car has to be timed while travelling in either direction of a measured course, and the mean speed of the two runs is registered as that attained in the attempt. The idea of this is that the machine cannot take advantage of weather conditions; if it is backed by a following wind on one run, it must be facing it while travelling the opposite way.

The best track in Europe for record-breaking work is Montlhéry, and it is so constructed that a car covering a complete lap is obliged to face all points of the compass, actually fulfilling the regulations for records. For some time the R.A.C. had been trying to get the French track accepted as a setting for short-distance attempts, arguing that there was no need for a car to make a reverse run. Success finally attended their efforts. This meant that the single-seater could now be sent across and could attempt to raise the mile and kilometre figures over the course on which so many M.G. records had already been attained.

The circumstances were fortunate, because Brooklands was closing for the winter and Pendine had been proved unsuitable. It was decided to try and end the year by registering two miles a minute with the single-seater and, at the same time, to make an

attempt on all Class H records not held by an M.G. car.

The most difficult to achieve would be those which Driscoll and Cushman had set up on the special Austin just a year earlier. Certain other records, ending with the twenty-four hours at 65.59 m.p.h., were held with much lower speeds. There was no need to employ the single-seater for these, and a perfectly standard super-charged M.G. was made ready. A campaign was mapped out which would open with the Magic Midget making its attempt on 120 m.p.h. and other short-distance records up to ten miles. The standard machine would then attack lesser records up to twenty-four hours, after which the single-seater would run again and try for the faster records that ended with the twelve hours.

It was obvious that for this the "Magic Midget" would need preparation somewhat different from that which it had been given before. One piston having burnt out in the Five Hundred Miles was enough to show that the engine might not stand up to long-distance strain. But the power unit of the burnt-out Ex.120—the car which had achieved a hundred and one miles in the hour—was available, and this was rebuilt to give both speed and stamina.

In order to perfect the stream-lining, the experiment of completely enclosing the car was tried, and a cowling was built to clamp over the cockpit, merging with the fairing behind the driver's head. The front and the rounded top were made from celluloid, giving a clear view all around the machine.

There was no doubt that the cowl would make the car as beautifully stream-lined as any machine could be, but some way had to be found of protecting the driver from the effects of fumes which, blown back from the engine,

could not escape. Experiments were made with a gas-mask and, although these were satisfactory, Captain Eyston did not want to use it unless it were absolutely necessary.

Work on the two cars was rapidly completed, and the project gradually became revealed in all its daring. It involved trying for almost every record in Class H, with the exception of the standing-start mile and kilometre, which E. R. Hall had taken with his M.G. at Brooklands earlier in the year. Eyston would be trying for nearly twenty others, and nothing quite like it had been schemed before, because it amounted to one make of car attempting every record that it was possible for the machine to win.

Usually a driver has his car prepared for one record run, then re-conditions it and tries another, if his first attempt meets with success. Eyston meant to assault them all in his stride, and the whole adventure was schemed to employ three full days, separated only by such intervals as might be necessary for the recuperation of men and machines.

With its new conning-tower cowl and with its gas-mask packed carefully away, the "Magic Midget" travelled to Montlhéry, accompanied by a standard-type M.G.—destined to prove itself a worthy partner of the single-seater in place of the burnt record-breaker which had gone to France a year earlier.

§ 2

The French track was ice-bound when the cars arrived, and they could not be run until the frost had eased. Weather reports gave no signs of a break, but,

after waiting vainly for some days, Eyston made definite arrangements to begin his attempt on Tuesday, December 13th, 1932, trusting that the ice would have gone by then.

It was impossible to do much work with the cars until two days before the date he had named, when the weather eased and the frost disappeared, leaving the track very wet. Not until late in the afternoon was it possible to take the single-seater out, when Eyston first drove the machine without the new cockpit cowl and lapped at between 112 and 114 m.p.h. Satisfied that everything was as it should have been, he came in and the cover was dropped over his head; he adjusted the wing-nuts which secured it from inside, then he took the car around again, riding without the gas-mask.

The celluloid dome left a clearance of three inches above his linen helmet, and he used straps over his shoulders to hold himself down in his seat. In spite of this he found that, on some of the bumps, his head came into contact with the roof of the cockpit. He discovered that neither carbon-monoxide nor oil-fumes troubled him very greatly, but the atmosphere was anything but pleasant, and the experience of being cooped inside the narrow space of the cockpit without air was almost suffocating. When his run was ended he had the celluloid cut away above his head so that, when the car hit a bump, there would be no risk of contact with the dome itself. He also had two slots chiselled at the front of the cowling; these admitted air, while the hole over his head had an extractor effect.

His initial run had shown that the car needed very little final preparation, but he would have tried it again the following day had not the track been visited by a downpour. The morrow was that set for the start of the

record attempt, and people began to arrive at the course. The car had created a great deal of interest on the Continent, and it was felt that Eyston would now achieve the figures towards which he had been striving for so long. Those who came to watch realised that, if Eyston were successful, they would be witnessing a truly great performance, and one which would stand out more and more as the years drifted past. It was possible, too, that his 750 c.c. machine had been developed to so great a pitch that the two-miles-a-minute figure—if officially attained—might never be surpassed and would stand for all time.

The Tuesday morning was fairly clear and without frost. Jacko, Marney and the rest of the mechanics became busy at the first hint of daylight; the timekeepers arrived on schedule, and before nine o'clock the machine was on the track. Overnight rains had left a soaked surface, but there was no possible chance of the course drying, and Eyston made up his mind to start at once. Soon the machine was roaring round as it warmed up, spray flying from its wheels. With everything at the right temperature, Eyston came in, the plugs were changed, and everything was made finally ready for the attack on all flying-start records up to ten miles.

Conditions were not good, but were better than they had been at Pendine, when Eyston slid into the cockpit again. The cover was closed down and he secured it, while the timekeepers were warned that he was about to start. Soon the car shot off, to lap the track again and again as Eyston worked up towards maximum speed. The needle of his revolution counter climbed around the dial until at last he sped past the timekeepers under full throttle.

On the wet track the machine had a tendency to slip

down the banking, and he had to hold it to its true course, positioning it delicately because at high speed the steering was extremely sensitive. The long, sleek green machine roared round for half a dozen laps—hazed by spray on the straights, riding the rim of the banking on the curves—finally to ease its speed, slow and stop—when once again Eyston discovered he had been thwarted.

All his laps had not been recorded. The best figures taken showed 119 m.p.h. and, although this raised the kilometre and the mile speeds that he had set up at Pendine, he had not touched the 120 m.p.h. that was his objective. It was estimated that the wet state of the track made the car between two and three miles an hour slower than it should have been.

Now the sun went in and grey clouds sailed overhead, promising rain and further difficulties. Eyston, however, decided to make another effort, but first he had the rear wheels changed. While this was being done rain fell, and the moment that it had passed he took the car out again to see how it handled with the smaller-section tyres which had now been fitted with slightly smaller wheels.

He put his foot hard down, but almost immediately rain fell again, smothering the front of the dome and making it quite impossible for him to see; he was forced to pull in and wait until the rain passed. A breeze came up, the rain eased and the sky cleared, leaving the track soaked and the straights patched with thin sheets of water.

Eyston decided to try once more, and the checks served only to strengthen his determination to achieve success. He was pushed off and again the crackling bellow of the machine echoed about the track as he

worked up to speed, then rammed the throttle pedal down to its limit, intending to make three laps at absolutely full bore.

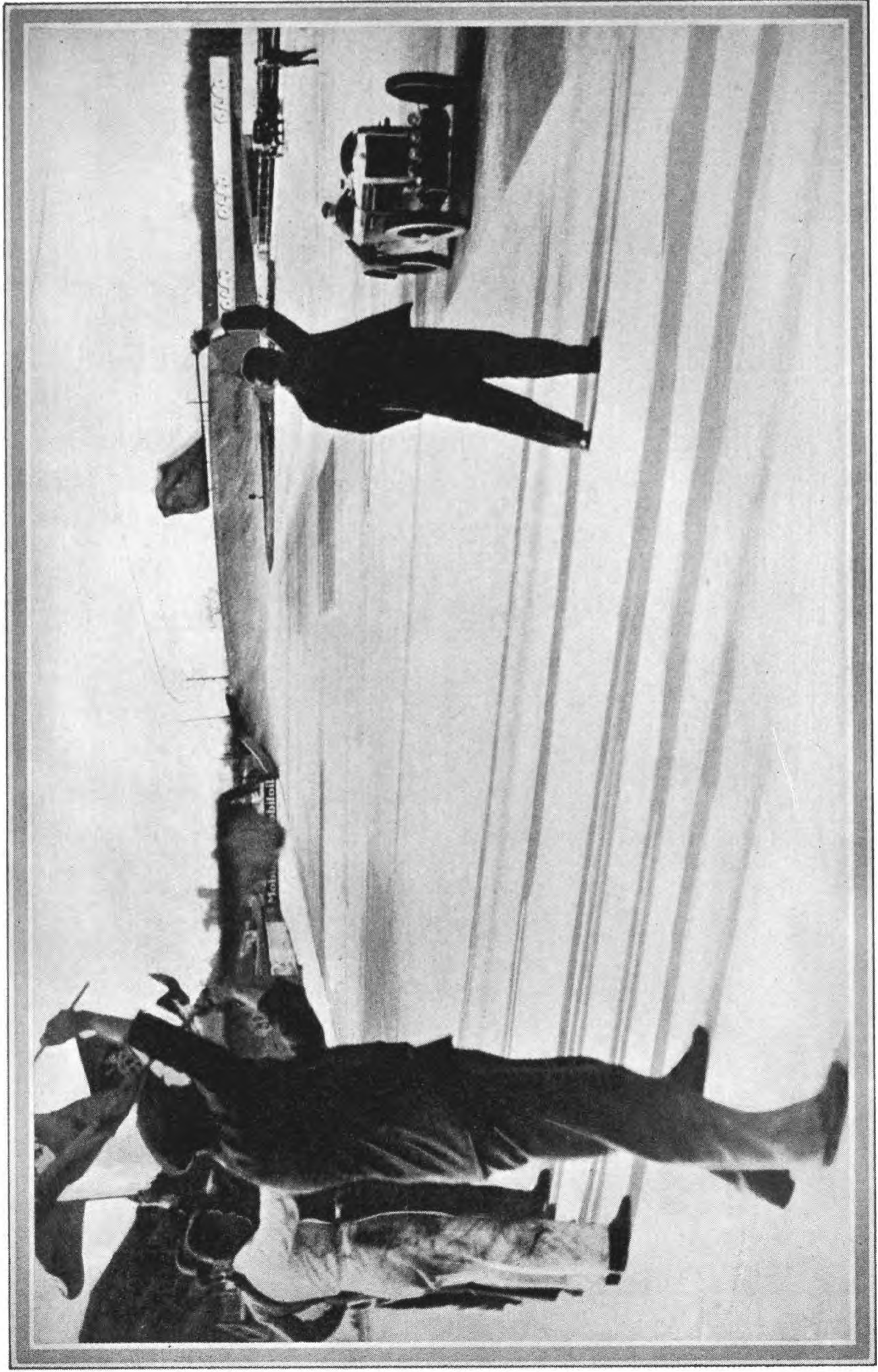
The car hurtled off the bankings, swooping down the brief straights with its exhaust chattering viciously on a machine-gun note, then swinging high on the bankings again—perfectly steady but phenomenally fast.

The cockpit was filled with the dulled roar of the engine, and the whole machine trembled under its power and its speed. Eyston had no chance to look at his dials after one glance at the revolution counter. His whole attention was concentrated on holding the machine and on counting the three laps that he intended to do. He completed them and slowed as he ran up to the crowd which had gathered near the timing box.

He climbed out when the cockpit cover was lifted and led a rush to the timing officials. For a long while they worked over their calculations, then made their announcements. Eyston had done it. He had taken the mile record with 120.56 m.p.h., and five other records besides. He had taken the kilometre at exactly the same figure as for the mile, while his speed through five kilometres had been 120.5 m.p.h. Thus he had broken three records at above two miles a minute. His pace for the five miles was 116.71 m.p.h. and for the ten kilometres 117.42 m.p.h. The only short record he had not touched had been the ten miles, and this was because, by some misunderstanding, his time had not been recorded; but he already held this distance with 114.46 m.p.h., attained the last time he had driven the car at Montlhéry.

He was the first man to register 120 m.p.h. with a 750 c.c. machine—and the single-seater M.G. was the first car to do it.

The time-keepers' figures were checked and rechecked,



Montlhéry, 1932

Eyston bringing his car in at the conclusion of its twenty-four-hour run, during his mass attack on Class H records

while Eyston wondered whether to go out again and essay an improvement on his performance. But the weather was unfavourable, and he did not want to press the machine too much, because he intended to use it later for records up to twelve hours.

As the car was pushed off the concrete, telephone and telegraph wires sent out the news of Eyston's success, while the crowd at the track stood discussing it, pointing to the tyre-marks which the machine had left. So accurately had Eyston followed his planned course that the tracks looked like twin lines, with hardly a sign to show that they had been made by more than one round of the circuit. They stood in a tribute to the scientific accuracy of Eyston's driving and to the splendid steadiness of the car.

Even Eyston had little idea of the impression that the machine had given as it had stormed round, with the exhaust crackling through a thin, shrieking sound made up of cleft air, supercharger whine and the engine's high-pitched screaming. That a seven horse-power machine could attain such terrific speed and, at the same time, travel with such precision, amazed those who had seen it, and the magic 120 m.p.h. figures could not but impress those who learned of the feat.

For Eyston and his companions there was other work to do. While news of the success was still being sent over Europe and half-way round the world, the shed under the track became active with preparations for the next assault.

§ 3

The second attack was upon the long records up to twenty-four hours, but Eyston could not drive single-

handed for so great a time. As his relief drivers he had "Giant" Denly and T. H. Wisdom, who had driven in many races and who had been pilot of the Mercédès which Eyston had used as a tender at Pendine.

The standard M.G. was prepared and tested, but fog over the track made a start impossible when the car was ready; twenty-four hours of reasonably good weather was essential. The days slipped past and everyone began to grow a little anxious; it was essential to take the records before the month ran out, in order that they might show in the official lists published up to the end of the year. If they were not broken until after January 1st, they would not appear in any list of records until the following year, and might be surpassed in the intervening period, thus not showing at all.

Almost a week of waiting went by, then Sunday came round again bringing a clear day, but no opportunity of securing the timing officials. The weather held overnight and on Monday, December 19th, Eyston made the last necessary arrangements. The car was put on the track and at three o'clock in the afternoon—when the sun was shining—Eyston sent the machine off, taking first trick at the wheel, and immediately striking an average of 75 m.p.h.

He drove until the evening when Wisdom took over, to find the car running faultlessly. The long attempt had fairly settled down as darkness fell, and Wisdom's spell was drawing near its end when those watching by the depot saw flame gush from the exhaust, then the engine's note died down and silence descended as the car halted at the far side of the track. There was a rush by officials and mechanics; the first to see that regulations governing record-breaking were not infringed, and the others anxious to discover the trouble. They found

Wisdom pushing the car, and it was learned that there was some failure in the fuel supply.

Preparations were made at the depot, while Wisdom pushed the machine slowly on. Minutes passed before the car reached its pit, when a broken petrol pipe was located. By the time this was repaired a full twenty minutes had been lost, but Denly slid down behind the wheel and the machine swept off into the dark, to begin lapping as steadily as before.

The check had spoiled the average which had been set at the start, and it was a temptation to signal Denly to open up, but Eyston would not stress the machine by trying to do too much and the car raced on through the night, only coming in for fuel according to schedule. There was just one more involuntary stop before dawn when ignition trouble cost the machine more than a quarter of an hour, before Eyston, taking it over, found the engine restored to its old healthy tune.

Faultlessly the car continued to lap at 75 m.p.h., reeling off the miles as the sun came up. Such speed, held for so long, was a stringent test of a perfectly normal machine, but it maintained its pace all through the morning, with the three drivers handling the car in turn. At noon Eyston took it over for the last spell, and the car sped on without a check until three o'clock brought the end of its twenty-four-hour run. It had averaged 70.61 m.p.h. over the whole distance, against the old record of 65.5 m.p.h., and on the way the car had collected the 2,000 kilometres record with a speed of 70.3 m.p.h.

The very length of the attempt presaged a run that must be uneventful. Any unexpected excitement was concomitant with delay, and delay meant that the effort would be ruined. The essentials were that the car should

be steady and consistent, and its performance added two more records to the M.G. list, making seven in all since the mass attack had started.

The remainder were to be attempted by the single-seater, and ranged from the two hundred kilometres to twelve hours, including the 1,000 miles. The weather was good, and Eyston wanted to make the final assault at the earliest possible moment. Most of his mechanics had been up all night and they were tired; but there was a chance that the weather might break if they waited, while in addition it needed but five days to Christmas.

Eyston announced that he wanted to start the twelve-hour run with the single-seater at half-past six the following morning—before daylight. Jacko and the rest of the mechanics assured him that everything would be ready, although it meant the loss of another night's sleep for all concerned. The time-keepers and the officials, who had been on duty for twenty-four hours, agreed to be present and such whole-hearted support augured well for the third run of the campaign.

Work on the single-seater was commenced long before the radiator had cooled on the car which had just come off the track.

§ 4

At six o'clock the following morning tired men stumbled through the darkness, carrying lanterns which they placed at various points on the Montlhéry track, designed to guide the car until daylight broke.

The "Magic Midget" rolled from its shed, and Eyston took the car round to warm it up. He had no light in the cockpit and none on the car; his only guidance was

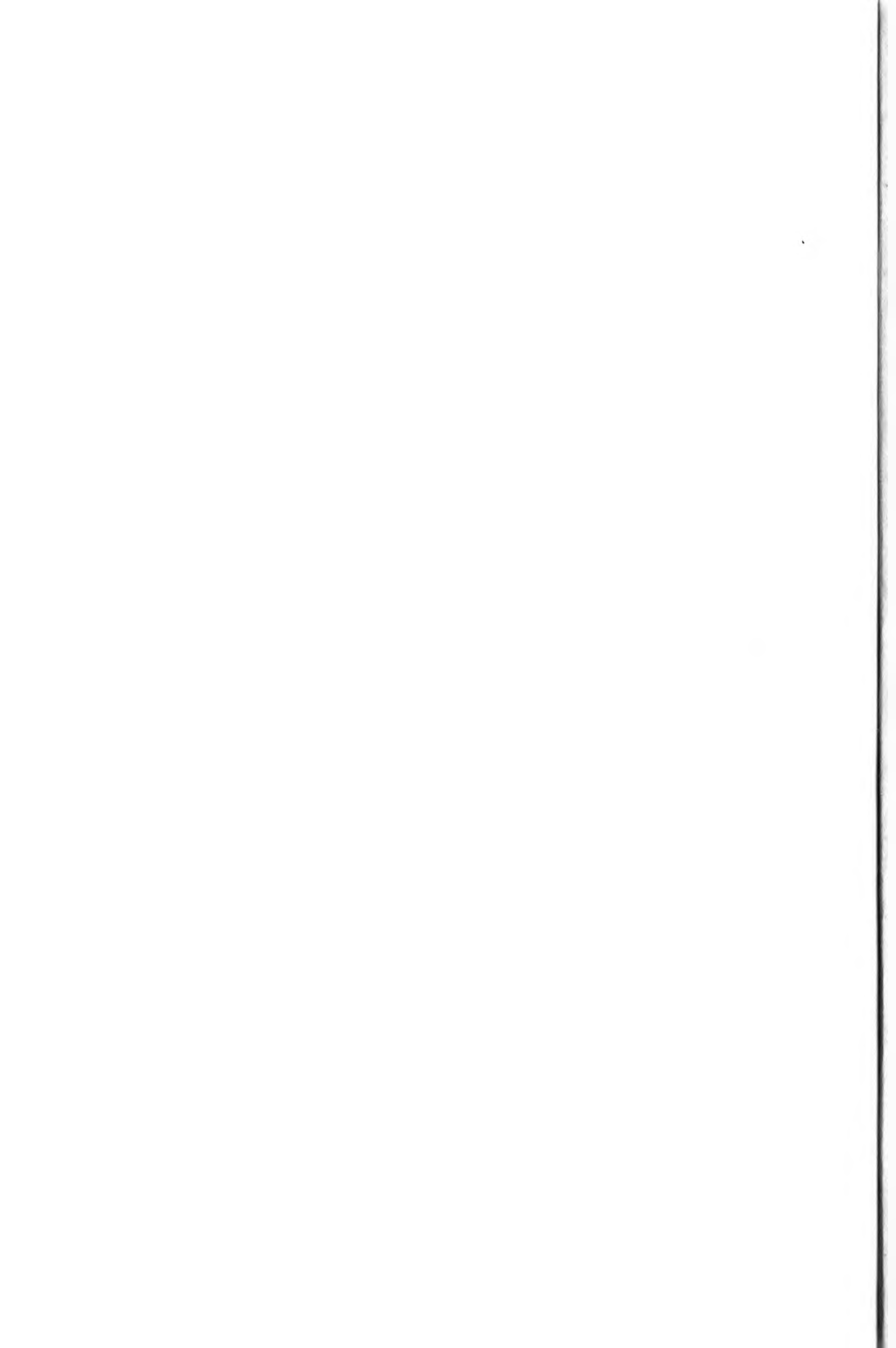
formed by the lanterns which had been placed for him, and he could see his instruments only momentarily when he passed the lights at the pits.

He stopped the machine and mechanics looked it over to make absolutely certain that everything was in trim; then, at 6.30 a.m. on Wednesday, December 21st, 1932, the single-seater began its assault on the records which Driscoll and Cushman had set up at Brooklands twelve months before. They had placed the figures high and Eyston lapped first at 95 m.p.h., then lifted the speed to 100 m.p.h., driving on until dawn broke an hour later. He then had a chance to look at his instruments, and found everything functioning perfectly.

With daylight a fine drizzle began to fall, but Eyston did not slow and soon he had taken the 200 kilometres with 95.52 m.p.h., after which he smashed the Austin's 200 miles record at 95.02 m.p.h. Record after record now fell to the machine, and when the three hours had been taken at 94.59 m.p.h., Eyston handed the car over to Denly. Presently the five hundred kilometres fell at 91.7 m.p.h., and after that the five hundred miles.

The car ran to schedule, its exhaust note crackling steadily, as the hours wore on and darkness closed down again, bringing the finish of the twelve-hour run very near. Towards the end an oil leak forced attention from the pit, but that was the only trouble, and the machine came roaring off the banking for the last time, claiming the twelve-hour record with 86.67 m.p.h.

The single-seater swooped past the depot to cover one more lap and then pull up in front of the pit. The lights there revealed the grimy, tired faces of the mechanics who had done so much to make the car's success possible. They cheered hoarsely, gathering about the lean green machine as it stood with silent engine, its work now done.



Preis von Deutschland and the Five Hundred Miles. Apart from this, the name of his *marque* filled the entire list of its international class records.

His cars had indeed shown the merit of the man who made them, and it seemed that there was nothing more that he could do—yet he had to go on. In the world of high speed there is no ending. Drivers come and go, and others take their places. Machines rise to fame and fall back to oblivion when the driving force of the man who created them has lapsed. Kim had reached the peak that he had set himself—and he could now see other peaks beyond.

His machines were supreme in their own sphere, with nothing left to give them battle. But there were other fields, and in these the struggle might be harder than anything he had yet known.

Since he could not stop he must continue his fight, planning a bigger car and a faster car, designed to carry his challenge higher in the lists of speed.

EPILOGUE

I would have read this book even if I had not been honoured by an invitation to write an epilogue, and my interest brought a comment before I was halfway through the proof pages. Now that I have reached the end, one thing is strikingly clear: the world of motor-racing has been shown as one of ceaseless change.

No man who builds cars can afford to rest on laurels that he may have won, and it was inevitable that Cecil Kimber should create a successor to the type of machine with which this book is mainly concerned. I have already had the pleasure of driving one of the bigger and faster cars which he was developing when the author penned the last words of his manuscript; even as I write this, one of the new machines still carries the dust that it gathered in scoring their first victory in a big International event.

The fascination of motor racing is that one must always go on. There are so many things to strive for, so much to learn and so much to do. Motor racing in England has passed through difficult times, although, happily, interest seems to be greater than ever before and I think that, in a large measure, the revival is due to the fact that Cecil Kimber provided amateur drivers with cars they could race and maintain. Invariably, amateurs are men eager to carry on the traditions of those who drove in the dangerous dawn of the sport, and the friendly assistance which Cecil Kimber has always tried to give them is in keeping with that chivalry which makes motor racing so fine a thing. Right from the beginning, he followed an ideal, and I think that he has done much—more, perhaps, than many of us appreciate—for those who like fast driving and fast cars.

I should like to pay tribute to the pioneers in this racing history—Cecil J. Randall, W. Edmondson and Captain

EPILOGUE

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F. H. B. Samuelson. I well remember congratulating the latter at the finish of the Le Mans race in 1931, when we all thought that he had been placed, only to discover that he had been disqualified in the last moment. It was an unhappy moment for him, but he simply went on to the Nurburg Ring and tried again—just as my friend, Captain G. E. T. Eyston, tried again and again to achieve two miles a minute on the record-breaker which Cecil Kimber had built for him.

That, of course, is the secret of success in motor racing, as in almost anything else—to keep on trying after one has been defeated. Even if one's objective remains unattained, it is satisfying to look back down the years, when the passing of time has brought real activity to an end, and books such as this help one to revive fading memories and to recapture the glory of long gone days.

Ken.



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