

Since the Sunbeam performance referred to in this booklet the world's speed record has been broken on several occasions, but it will always be regarded as one of the landmarks of motoring history as the first occasion on which a speed of 200 m.p.h. was accomplished on land.

The Supreme Sunbeam

The Greatest Motoring Achievement Ever Recorded

203 M.P.H.

*The story of Major H. O. D. Segrave's
epoch-making performance on the*

Supreme

SUNBEAM

MARCH 29th, 1927

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Produced and published by
THE SUNBEAM MOTOR CAR COMPANY LIMITED
Moorfield Works, Wolverhampton

and at
12, PRINCES STREET, HANOVER SQUARE, LONDON, W.1, and
106, DEANSGATE, MANCHESTER



203 M.P.H.

UNCLE SAM: "HUSTLER!"

From "PUNCH," April 6th, 1927.
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SPEED!

An Introductory Note

BY THE HON. SIR ARTHUR STANLEY, G.B.E., C.B., M.V.O.

FROM the very inception of the automobile industry speed has been inseparably associated with the progress and development of the motor car. In the early 'nineties the four miles per hour then permitted as the maximum speed at which road locomotives—as motor cars were then classified—could travel on the public roads proved a veritable stumbling block to the motoring movement. With the speed limit increased, as it was in 1896 to twelve miles per hour, and afterwards to twenty miles per hour, development proceeded apace, and the motor car really began its useful career.

Even then the desire for still greater speed was constantly in the ascendancy, and it found its natural and legitimate outlet in car racing. For testing design, material and methods under the most arduous conditions it is possible to conceive, high speed racing has been the most potent factor in the development of the car. What would take months to discover in ordinary every-day road travel has become patent within a few hours when subjected to the enormous stresses and strains endured by the racing car.

Coincidentally with the development of the standard types of motor cars through racing, so the knowledge gained over many years on road and track has enabled faster and more efficient racing cars to be designed. When a speed of 100 m.p.h. was attained for the first time, it was rightly regarded as a wonderful achievement. Then 120 m.p.h. became an accomplished fact. Later the figures crept up by degrees until 175 m.p.h. was recorded. And now from what is the most brilliant exploit of all, the world's record has been advanced to 203 m.p.h.

The history of speed is a never-ending chapter. So long as the fertile brains of automobile engineers evolve cars of still greater efficiency, and the courage and daring of great drivers continue to pilot these cars towards the unknown limit at which man and matter can travel, so will progress continue. The lure of speed is a definite characteristic of our present age; but with every mile gained, every achievement recorded, comes something more than a furtherance of the spirit of emulation. For speed and the lessons which it teaches are indissolubly associated with the progress of road travel and locomotion.

L. H. Stanley.

figure of distance, and for that reason it was impressive. Although 97 miles in 58 minutes would have represented actually a slightly higher speed, it would not have made the same appeal to our understanding. It would have lacked what may be called "roundness of figure." Thus it came about that when someone beat Mr. Lambert's record and squeezed 103 miles into the hour, little notice was taken of the achievement. It was great in itself, but it lacked the true magic. And there is magic in numbers. If you go to a county cricket ground you will not fail to mark an alteration in the atmosphere when a batsman is getting nearer to his coveted "century." Mathematically speaking one number is as good as another—they are merely formal designations of quantities. But psychologically speaking the case is very different. It is not that extra three m.p.h. that constitutes the glory of Major Segrave's achievement. It is the double century. The "next man" has a very solid nut to crack, for to provide an equivalent thrill he has got to do either 240 m.p.h., which is a simple multiple of a mile a minute, or 250 m.p.h., which is a simple multiple of 100 m.p.h., or 300 m.p.h., which is a simple multiple of both.

Now the third reason for the excitement that convulsed two continents was of a totally different kind from the others. It was simply that an engineering firm had quietly said that they were going to build a car which would attain a speed of 200 miles an hour. Upon which, with the least possible delay, they proceeded to redeem their promise. We still live in a world in which many of the swans turn out to be geese, in which men state that they will do all sorts of wonderful things. Newspaper readers are supposed to be rather fond of hearing scientific boasts. In all likelihood they never look seriously for their fulfilment. "A motor car capable of 200 miles an hour!" Such a thing sounded very problematic. "Major Segrave and his Sunbeam have done 203 miles an hour!" This cold statement, coming so shortly after the first announcement, was almost staggering in its force. Performance rarely follows so swiftly upon promise.

Here was a new kind of motor which, completely different from anything that had gone before, a radical departure in technique, an audacious experiment, proceeded to do exactly what it was expected to do by those who had conceived and built it. The public is not particularly impressed by the



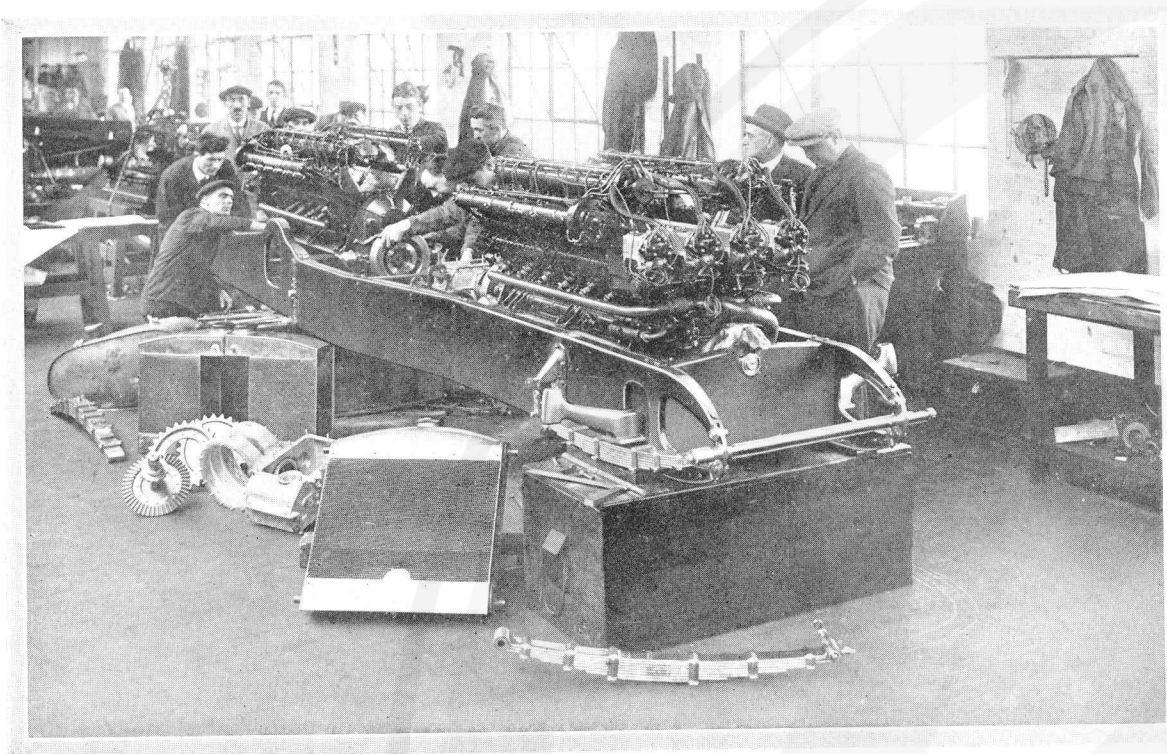
MR. LOUIS COATALEN.

Mr. Louis Coatalen, Director and Chief Engineer of the Sunbeam Motor Car Co., Ltd., whose genius produced the 1,000 h.p. Sunbeam car, on which the record speed of 203.7928 m.p.h. was attained.

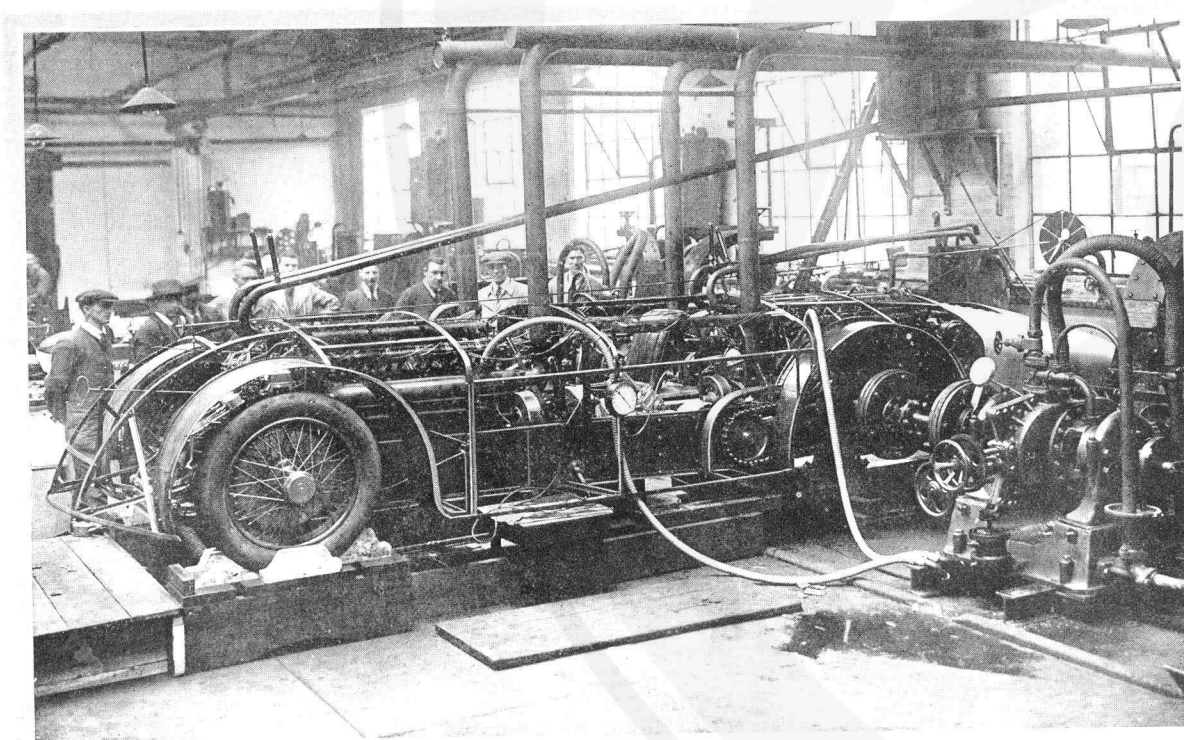
Major H. O. D. Segrave, who drove the 1,000 h.p. Sunbeam, and thus gained the distinction of being the first man to attain a speed on land of over 200 m.p.h.



MAJOR H. O. D. SEGRAVE.



The 1,000 h.p. Sunbeam in course of construction, showing the chassis in its early stage.



On the special test bed, coupled to Heenan & Froude dynamometers. As a result of these tests it was calculated that, allowing for wheel spin, a speed of 207 m.p.h. would be reached. The accuracy of these calculations was proved in practice, as a speed of 207.5 m.p.h. was reached on one run.

fact that a howitzer will drop a shell accurately within a very small area, and continue to do it every time, for the public knows that this is accomplished by "rule of thumb" methods, based upon the behaviour of thousands of discharges. But the public was immensely impressed when the Sunbeam Company's engineers went, as it were, out into unknown and incalculable regions and dropped their shell exactly where they said they would drop it. This was a startling reminder that a motor car, even an ordinary motor car, is not only a commercial commodity, but a highly specialised scientific instrument.

The next question arising in the average man's mind was "What benefit do we get from the fact that a Sunbeam car driven by Major Segrave has done 203 miles an hour?" Now the answer to this question cannot be given in a few direct words, for nobody wants 1,000 h.p. cars—there are no roads on which they could be driven, and if there were there are very few people who could drive them. But the point is that the present practical perfection of the modern motor car has been attained by virtue of a long series of carefully considered experiments. The creation of this world's record-breaking Sunbeam was the culmination—the logical culmination—of the sequence of experiments that had led up to it.

For many years the Sunbeam Company has been the only British manufacturing concern regularly taking part in international motor racing events promoted for the improvement of the breed of touring motor cars. In this strenuous sport it has had—as all others have had—its failures, but far more often it has had its triumphs, and it has adhered to the racing policy just so long as there was something useful and informative to be learnt from it.

For many years there have been several kinds of racing. There has been the kind in which competition has been limited to cars driven by engines with predetermined dimensions, and there has been that in which complete freedom was given to the designer. Unquestionably the Blue Riband of all these has been the attainment of the greatest recorded speed. Here it may be mentioned that just as the Sunbeam car has had an unrivalled success upon road, track and sand, in "class" races and in unlimited races, so Major H. O. D. Segrave and the Sunbeam occupy the unique position of having done equally well in all these varied events.

*Racing
Improves the
Breed*

How the Car was Conceived

Towards the end of 1925, Mr. Louis Coatalen, chief engineer and director of The Sunbeam Motor Car Co., Ltd., produced a racing car with pronounced class characteristics. Working to definite limitations of engine capacity, he constructed a four-litre vehicle with a rating of only 33 h.p.—a figure far less than that upon which many ordinary touring vehicles pay their tax—which demonstrated its ability by achieving 152.336 miles per hour upon Southport sands. This in itself was a magnificent performance, and it was justly heralded as such. It so far exceeded anything that had been done before in connection with “class” records that it made everything else look ridiculous by comparison. For this 33 h.p. car had beaten, not by fractions of yards or split decimals of seconds, but by miles and miles per hour, anything that had previously been done by machines of equivalent rating.

It was, in the circumstances, but natural that Mr. Coatalen and the Sunbeam Company should turn their attention to “fresh woods and pastures new.” Hitherto they had not concerned themselves very largely with “unlimited” work, but their minds were drawn in this direction by the fact that the 33 h.p. Sunbeam racer had been beaten—not by a machine of equivalent engine dimensions—but by a motor car equipped with a 500 h.p. aircraft engine. It was a case of the mouse being beaten by the lion, but the situation was challenging and provocative. The Sunbeam Company had won, one after the other, the highest prizes that international racing could offer. It was not to be expected that it would be satisfied until it had covered the whole field of this particular endeavour. There had been already set upon the tables some formidable figures, for speed is only a question of power—always providing that there is to be found a man of sufficient pluck and skill to control it—but these technicians were confident that they could far excel all previous performances. It was certainly Mr. Coatalen’s ambition to design and build the Fastest Car in the World. It was equally Major Segrave’s ambition to drive it.

But the whole conception was colossal, and it was both desirable and necessary to consider ways and means. The Sunbeam Company has obligations to the motoring public,

and in view of the very distant relationship as between an “unlimited” racing car and the normal touring car, it could not contemplate diverting a large fraction of its resources and energy to what, when reduced to its elements, must be purely a scientific experiment.

But it so chanced that there were available a pair of Sunbeam 500 h.p. “Matabele” aircraft engines, which had already been modified for non-aircraft purposes. The use of these—lying idle at the time, as they were—instantly suggested itself to the fertile mind of Mr. Coatalen, and it is characteristic of the man that within a few moments of this realisation his plans had already been shaped.

Two 500 h.p. engines in a single chassis! That might seem simple enough, it might even look simple enough on paper, but obviously some very abstruse technical problems were involved. Could they be solved? A few hours of calculation, of sketching possibilities, of considering practical points in detail—and they were solved.

Suffice it to say that the thing had never been done before. Double power plants had been used, but never on such a scale, never on a scale that demanded that one great engine should be at the front of the chassis and the other at the back, and this new thing introduced complications that called for extreme precision in calculations. A thousand and one questions cropped up. Would such a car be controllable? Could anyone make tyres that would stand up against the strain imposed upon them? Was it possible to produce a gearbox and a transmission that would accept the abnormal stress? Each time the alert engineer was able to answer in the affirmative.

The car was constructed without any unforeseen difficulty occurring. In no respect was it necessary to alter the original design. And what is a really extraordinary thing considering all the circumstances of the case, the whole of this historic Sunbeam’s record-breaking achievement was performed without a single serious modification of the chassis after its erection. During the test runs it was found advisable to alter one or two slight details connected with the streamline cooling, the air-scoops for the radiators, etc. But that was all. The 1,000 h.p. Sunbeam car beat all world’s records exactly according to plan.

*152 m.p.h. on
a 4-litre
Sunbeam*

*Mr. Coatalen's
ambition*

*Two Engines
in one
Chassis*

The 1,000-h.p. Sunbeam

The Design and Construction of the Record-Breaking Car

In every respect this car is unique, for it embodies principles of design never previously adopted in automobile practice.

The complete car is 23 feet 6 inches in length, and the massive side members of the chassis frame have a depth, in the centre, of 14 inches.

The actual power developed is over 1,000 h.p. The two 500 h.p. aircraft engines, mounted fore and aft, with the driver occupying part of the space between them, are of exactly similar type. Each has twelve cylinders, in two banks of six at an angle of 60 degrees. There are four overhead valves per cylinder, these being operated by two overhead camshafts for each line of cylinders.

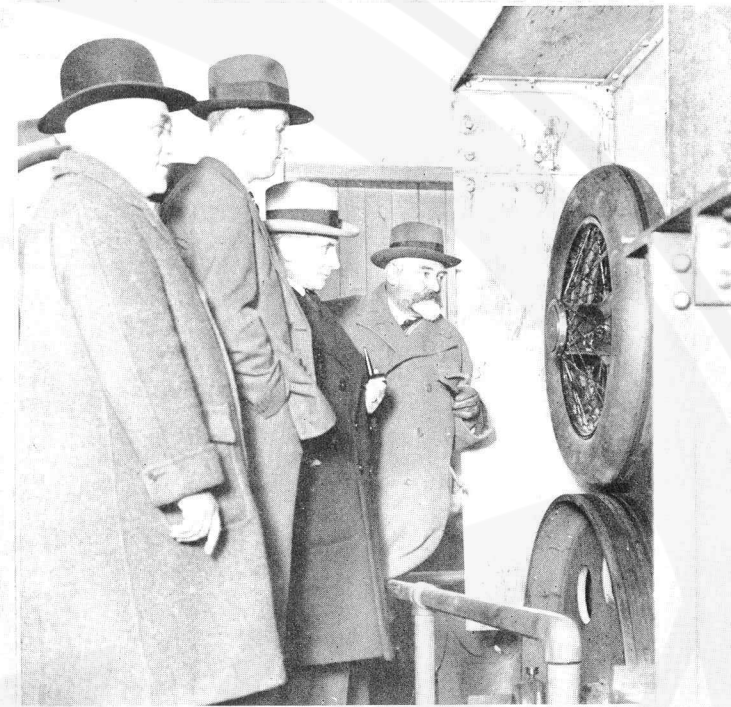
There are thus twenty-four cylinders in all, each having a bore of 122 mm. and a stroke of 160 mm.; the total cubic capacity is 45 litres. This is just fifteen times as great as that of the famous Three-litre Sunbeam, which is acknowledged to be one of the fastest standard touring cars ever produced.

The three-speed gearbox is situated between the two engines, and has ratios as follows:—Top, 1.017 to 1; second, 1.56 to 1; first, 2.968 to 1. With the engine running at 2,000 r.p.m., and without making any allowance for wheel slip, these gears give speeds of, respectively, 212 m.p.h., 138 m.p.h., and 73 m.p.h.

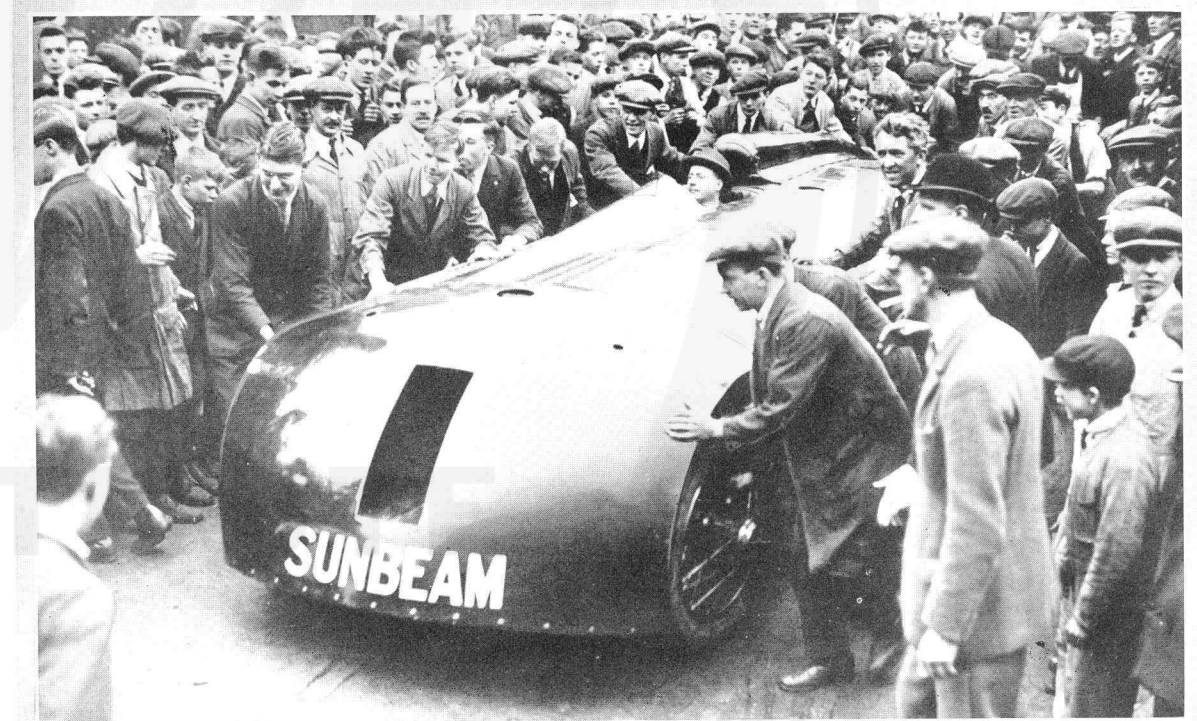
In order to enable a gearbox of reasonable dimensions to be used, the special feature of driving the main gear shaft at more than engine speed is adopted. It actually runs at two-and-a-half times the crankshaft speed. This gear is subsequently reduced by the bevel driving the cross-shaft. At the ends of this are the sprockets for the chains which carry the drive to the rear wheels. The total weight of the car is nearly four tons. Each engine weighs, approximately, ten hundredweight.

Since at very high speeds the overcoming of air resistance absorbs an immense amount of power, a most elaborate series of wind tunnel experiments were conducted in order to establish the best shape for the "bodywork" of the Sunbeam racer. Even so, however, it is calculated that well over 500 h.p. was

1,000 h.p.
from
Twenty-four
Cylinders



Testing the specially made tyres at Fort Dunlop. Included in the group watching the tests are Sir George Beharrell and Mr. W. H. Paull, of the Dunlop Rubber Co., Ltd., Mr. W. M. Illiff, and Major H. O. D. Segrave.



The car at Moorfield Works, prior to its despatch to America. It is interesting to note that owing to the lack of a suitable course in Great Britain on which the car could be tested at speed, it was driven only a few yards on its road wheels before being shipped to Daytona.



The 1,000 h.p. Sunbeam, with Major Segrave at the wheel, photographed on the sands at Daytona just before the wonderful performance when 200 m.p.h. was attained for the first time on land.

expended in overcoming wind resistance alone when the car broke all world's records.

The method of getting the power plant into motion is not without interest. The rear engine is started up by means of compressed air, a supply of which is admitted by a special valve and distributor gear into the cylinders. When the rear motor is running, the forward engine is started up from it through the medium of a friction clutch. When both engines are working at the same speed they are coupled together with a dog clutch, and thenceforward operate exactly as if they were one. Each engine has four magnetos, and there are two sparking plugs to each cylinder.

The engine lubrication is on the "dry sump" principle, originated by the Sunbeam Motor Car Co., Ltd. One pump delivers oil to all the principal working parts, a second pump withdraws it from the base chamber and returns it through a cooler to the tank. The forward engine is cooled by a single radiator, to which air is admitted through a rectangular hole in the nose of the cowl. The rear engine is cooled by two radiators, air reaching them through scoops on either side of the body. The springs are semi-elliptic front and rear, and are fitted with double shock absorbers.

Braking is applied to all four wheels, a Dewandre Vacuum servo mechanism being installed for their operation. The body is built in aluminium sections secured to a light steel framing. For the protection of the driver, stout steel "hoops" are fitted adjacent to the cock-pit, and to guard against ill results attending the bursting of a tyre, the bottom of the car is covered in with a steel plate running its entire length, so that it would slide rather than turn over. As a further measure of protection, guards of armour plate are fitted around the wheels and the chain sprockets.

*Starting
the Engines*

*Protecting
the Driver*

Testing the 1,000-h.p. Sunbeam

In view of the fact that no motor vehicle of a power and speed equivalent to those of the Sunbeam racer had ever been built before, it was hardly possible to predict with absolute certainty exactly what would happen when it was "fully opened out." Nor was it possible to have rehearsals of its attempt

Continued on page 14

THE ACCESSORIES AND COMPONENT PARTS

ALTHOUGH the 1,000 h.p. car was constructed in the Wolverhampton factory under the same conditions as apply to all Sunbeam cars, it nevertheless incorporates many components produced to Sunbeam requirements by contributory firms. It is only right that these should receive the credit which they deserve, particularly since in a highly stressed mechanism one part is just as important as another. All are interdependent. Each of the specialities mentioned below rendered a perfect account of itself, and thus directly contributed its share towards the greatest performance that has yet been recorded in motoring history.

The chassis frame was supplied by John Thompson Motor Pressings, Ltd.

The special steels and steel forgings were supplied by Vickers, Ltd.

The honeycomb radiators were manufactured by John Marston, Ltd.

The ball and roller bearings throughout the chassis were supplied by Ransome & Marles, Ltd.

The magnetos were manufactured by British Thomson-Houston, Ltd.

Claudell-Hobson carburetters, as fitted on all standard Sunbeam cars, were used.

The eight double Hartford shock absorbers, of special type, were manufactured expressly for the car by T. B. Andre & Sons, Ltd.

The special springs were supplied by Jonas Woodhead & Sons, Ltd.

USED IN THE 1,000 H.P. SUNBEAM

K.L.G. sparking plugs, manufactured by the Robinhood Engineering Co., Ltd., were used.

The Dewandre Vacuum Servo braking mechanism was supplied by Clayton Wagons, Ltd.

The chains and sprockets for the final drive supplied by the Coventry Chain Co., Ltd.

Dunlop wheels and tyres were used, these having been specially designed and submitted to the most strenuous tests at Fort Dunlop.

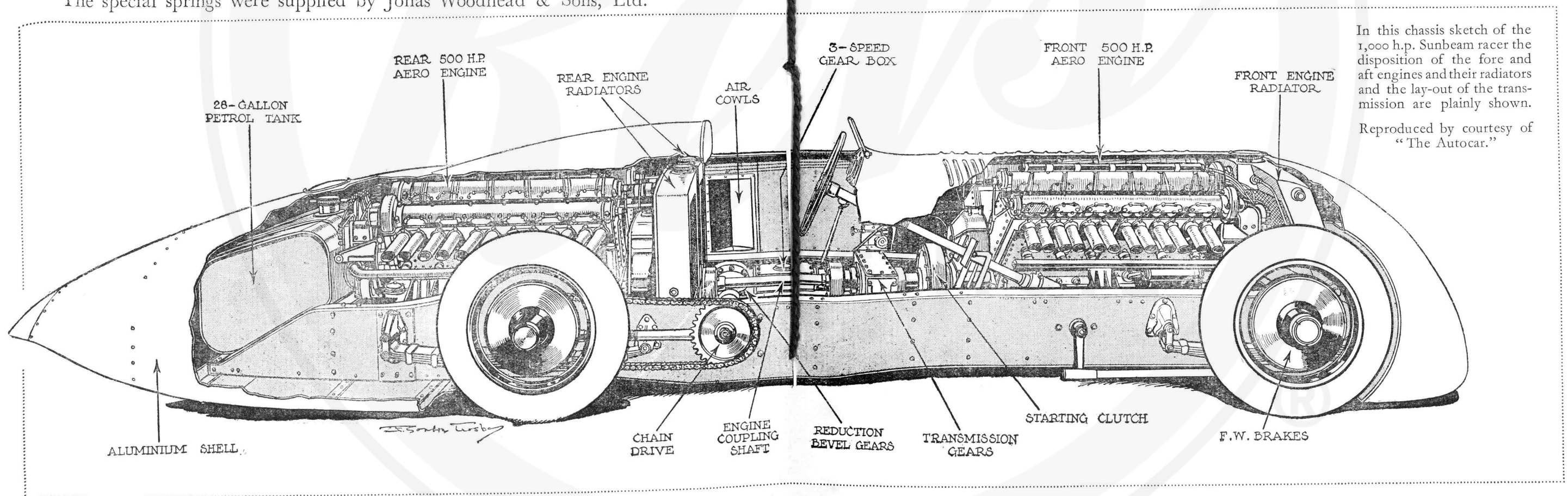
All four wheels were equipped with Ace discs, manufactured by Cornercroft, Ltd.

The driving seat and head rest were furnished with special pneumatic upholstery produced by David Moseley & Sons, Ltd.

The incidental equipment included one Jaeger revolution counter, three Coley radiator thermometers, one Lucas eight-way magneto switch, one Benton & Stone air pressure gauge.

In the trial runs, and in the actual record performance, Wakefield's "Castrol" lubricating oil was used, and B.P. spirit—with .03% of tetra-ethyl added—was the fuel used.

It will be seen from the above that the 1,000 h.p. Sunbeam car was an all-British production down to the smallest detail.



In this chassis sketch of the 1,000 h.p. Sunbeam racer the disposition of the fore and aft engines and their radiators and the lay-out of the transmission are plainly shown.

Reproduced by courtesy of "The Autocar."

*Testing
the Chassis*

upon the world's speed records for the simple reason that there is no track in Great Britain fast enough for this car.

It will easily be understood that owing to the effect of the unusual distribution of weight, and also to the influence of side windage, this car can at the higher range of speeds be driven only on a straight course.

In order to get the chassis as a whole adequately tested and "run in," the car was mounted on a special testing bed, arranged so that the hubs were connected up to a pair of Heenan & Froude dynamometers. In this apparatus the power is absorbed by the rotation of a specially shaped fan immersed in water, and the actual brake horse power developed is ascertained accurately and readily. The dynamometers formed a load, or resistance, exactly equivalent to that which the engines would overcome in driving the car in the ordinary manner, and at the same time enabled the efficiency of the transmission to be accurately gauged.

The record-breaking car ran for a considerable period on the test-bed, no trouble of any moment developed, and the whole mechanism behaved in such a way as to inspire those who had been responsible for its conception, design, and construction with absolute confidence in its ability to do what no motor car had ever done before.

The Dunlop Company's Important Contribution
The Tyres which made 203 m.p.h. an accomplished fact

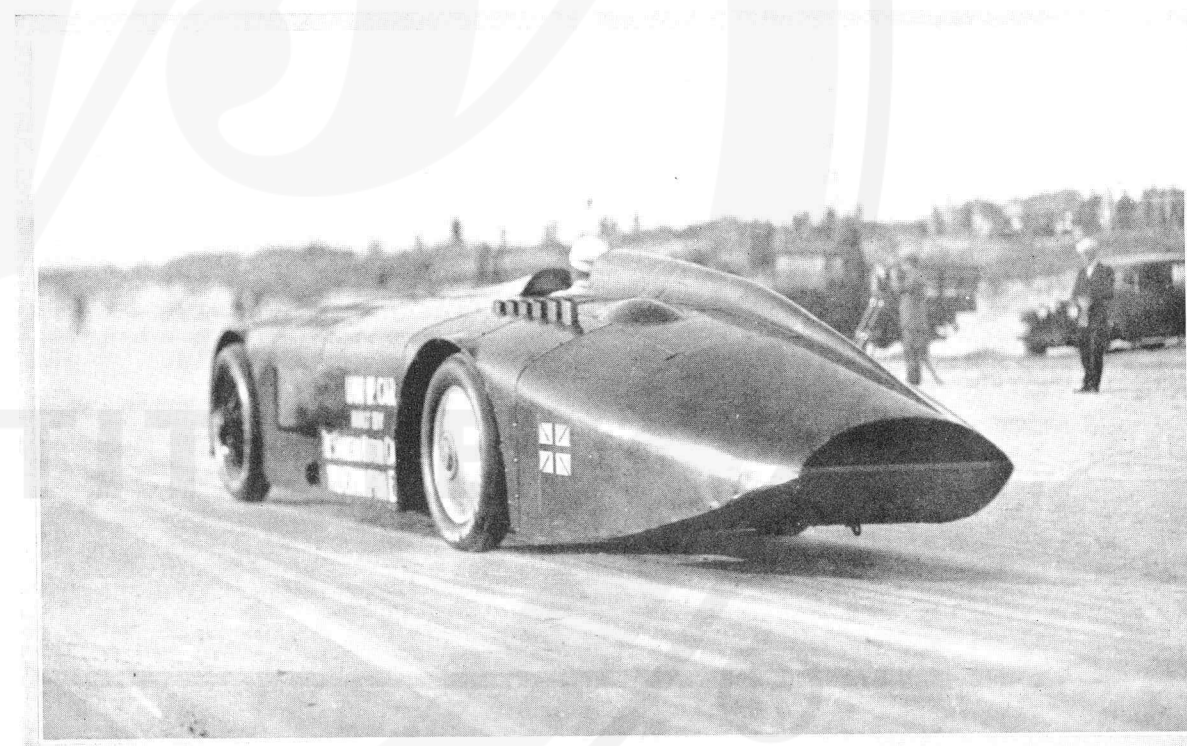
A special meed of praise is due to the Dunlop Company for the practical interest which they took in the record-breaking attempt from its inception, and for their successful construction of tyres capable of sustaining the hitherto unheard-of stresses involved in a speed of over 200 miles an hour.

*Making the
Tyres to Stand
the Strain*

It has all along been recognised that however great the power developed by the engine of a racing car might be, its speed is strictly limited to what its tyres will stand. When, therefore, the idea of exceeding 200 m.p.h. on land was first mooted, the opinion was commonly expressed that the strain upon the tyres would be excessive, and that they could not stand up to the task. In other words, that the feat would be rendered impossible. The Dunlop Company set about refuting



No British car has ever attracted such interest in America as the record-breaking Sunbeam. This photograph shows the car at Daytona, surrounded by a crowd of American admirers.



Commencing one of the record-breaking runs. A rear view of the 1,000 h.p. Sunbeam as it left the starting point.



203 m.p.h. On the record-breaking run. The Sunbeam travelling at speed.

any such arguments in an effective manner. They designed a special form of cover with a light tread, the underlying principle being to accomplish two different objects. Firstly, to afford the maximum degree of elasticity and shock-absorbing quality, and, secondly, to avoid the possibility of the tread, through violent impacts, through heat, and through the influence of centrifugal force, tending to detach itself from the tyre casing. These desiderata introduced numerous difficulties, but one by one they were triumphantly overcome by the Dunlop Company's technicians.

Before the tyres were used on the 1,000 h.p. car, similar covers and tubes had been submitted to the most rigorous and searching tests by the Dunlop Company, in which they were subjected to even heavier conditions of load and speed than they would be on the racer itself. For this purpose a testing machine was devised, in which the tyre, carrying a weight of over one ton, was placed on a roller gear and driven at a speed equivalent to 200 miles per hour. Meanwhile, by the use of suitable mechanism, the torque resistance of the roller was made to represent something rather greater than the power which the tyre would have to transmit when actually driving the car. The special Dunlop tyres came through this ordeal with flying colours, a result which was subsequently confirmed in a striking manner. Neither in the practice runs nor in the record-breaking attempt itself was there the smallest symptom of tyre trouble. Indeed it is not too much to say that after the performance was accomplished the tyres looked as though they had hardly been used at all.

*How the
Tyres were
Tested*

The First Run on Road Wheels

Driving the Car at 15 m.p.h.

It was but natural that a high degree of excitement prevailed at the Sunbeam works when, the test-bed experiments having been completed to the satisfaction of all concerned, the great 1,000 h.p. car was for the first time tried under its own power on the road.

With twenty-four huge cylinders, and the largest amount of power ever put into a motor vehicle available, it was expected by many that this Sunbeam car, designed as it was solely for

ultimate speed, would be rather a dangerous thing to handle, particularly since the lowest gear was good for over seventy miles per hour with the engines accelerated to their normal speed.

These expectations, however, proved to be quite unfounded. Thanks to the even and smooth working of the engine, due to good gas distribution and balance, it was found possible to bring the great car down to about fifteen miles an hour without any great difficulty, and at this modest speed it was driven by Major Segrave along the roads which separate the various bays and departments of the Sunbeam Works.

Even to those who were familiar with the design of every detail of the 1,000 h.p. car, and who realised its limitations no less than its possibilities, this was an amazing demonstration and one which had scarcely been expected.

Daytona Beach

Its choice for the Great Attempt

It was perhaps unfortunate that Great Britain afforded no place upon which the full speed of the monster Sunbeam racer could be developed with a reasonable degree of safety. And yet, in a sense, this state of affairs was not without its happy results. A long continued process of investigation revealed the fact that the sands at Daytona Beach, Florida, U.S.A.—already the scene of many speed records—was the only course suited to the achievement of over 200 miles an hour.

For this purpose it is necessary to have a track that is, first of all, straight; then, almost equally necessary, of considerable width (for it was realised that wind might play a most important part in influencing the control of the car), and, finally, smooth in surface. Also a great length of run is essential. In point of time the speed of 200 miles per hour is attained quite quickly, but the acceleration, although terrific, wears a very different aspect when judged from the standpoint of distance. Four to five miles at the least is required for getting up speed, then comes the measured distance—in this case five kilometres—and finally comes the distance required for safe pulling up. These

considerations rendered Pendine and Southport sands, the only likely places in Great Britain, entirely out of the question.

Meanwhile, there was something agreeably spectacular and convincing in the idea of an all-British car crossing the Atlantic to attempt fresh world's records in that land of Big Things. It at least afforded the American people an opportunity of showing the interest which they take in international sporting events, and of demonstrating their human hospitality in a most striking manner. It is no exaggeration to say that the bonds of amity between the English speaking peoples have been strengthened by the attainment of the new world's record. Everywhere that Major Segrave and the Sunbeam car went they were given as much generous assistance and as cordial a welcome as if they had been competing on behalf of America.

Daytona Beach, on the shores of the Atlantic, is almost dead straight for twenty-three miles on end, and it has a mean width at low tide of about 500 feet. It is as nearly as possible dead level all the way except when the wind is in an unfavourable direction, and the surface sets almost as hard as concrete.

Unleashing 1,000 Horse Power

Preliminary Trials at Daytona Beach

As a general rule serious attempts upon world's records are considerable in number, and preceded by a great volume of practice work.

In the case of the Sunbeam at Florida these conditions were conspicuous by their absence. In all probability, for the reason that will appear, further trials would have been made had it not been for the enthusiasm of the spectators. These had assembled to the number of about 10,000 for the first trial run alone. Thousands of cars were lined up on the beach, and although at the first trial Major Segrave had driven the huge car from its garage to the sands under its own power, a repetition of this performance, in view of the large crowd assembled, was regarded as out of the question.

In the first preliminary test, on March 21st, there was no attempt to go really fast. Just to satisfy himself that every-

*America's
Welcome*

*10,000
Spectators
watch the
Trial Runs*

*Driving at
15 m.p.h.*

*Why Daytona
was Chosen for
the Attempt*

thing was working smoothly, Major Segrave reached a speed of 100 to 110 miles per hour. Naturally he wished to accustom himself to the "feel" of the car, which, with its fully loaded weight of nearly four tons, was very different from that of any other racing car which he had previously handled. As a result of this first test the steering gear was slightly modified, giving a rather greater reduction, as also were the larger pair of air-scoops designed for use with the radiator of the rear engine.

Three days later another trial run was made, and in connection with this an almost Gilbertian situation arose. The Contest Board officials of the American Automobile Association had expressed the wish that Major Segrave should make a fast run over the course in order to enable them to check their electrical timing instruments. On this run Major Segrave opened the engines out almost fully, and reckoning that, according to his revolution counter, he should have exceeded 190 m.p.h., was amazed when he learnt that he had only done 166 m.p.h. It afterwards transpired that several spectators had fouled the timing wires, so that the accuracy of the result upon the timing strip in the electrical machine was completely upset. Even so, however, on this trial run Major Segrave handsomely beat the mile record of 156.04 m.p.h., which had been set up at Daytona in 1920, and for seven years regarded as the record speed attained by any American car.

The mistiming of this run would have been a matter for mere amusement had not Major Segrave been misled by the results. He conjectured, and with the best of reasons, that on this basis if he were to exceed 200 m.p.h. it would be necessary slightly to lower the gear ratio, so as to give the car a better chance of attaining its maximum speed on approaching the measured distance. An alternative pair of sprockets were accordingly fitted. These were calculated to give a maximum speed of 211 m.p.h., and they were used in the actual run in which all world's records were smashed, and 200 m.p.h. exceeded on land for the first time in history.

One is, however, left with the feeling that if those spectators had not unconsciously interfered with the timing wires an even greater record than 203.7928 m.p.h. might easily have been attained. As it was, on one of the runs a speed of 207.5076 m.p.h. was achieved.

*Beating the
American
Record*

*Greatest speed
attained,
207.5076 m.p.h.*



The hero of the hour! Major Segrave carried shoulder high. A photograph taken immediately after setting up the world's record speed of 203.7928 m.p.h.

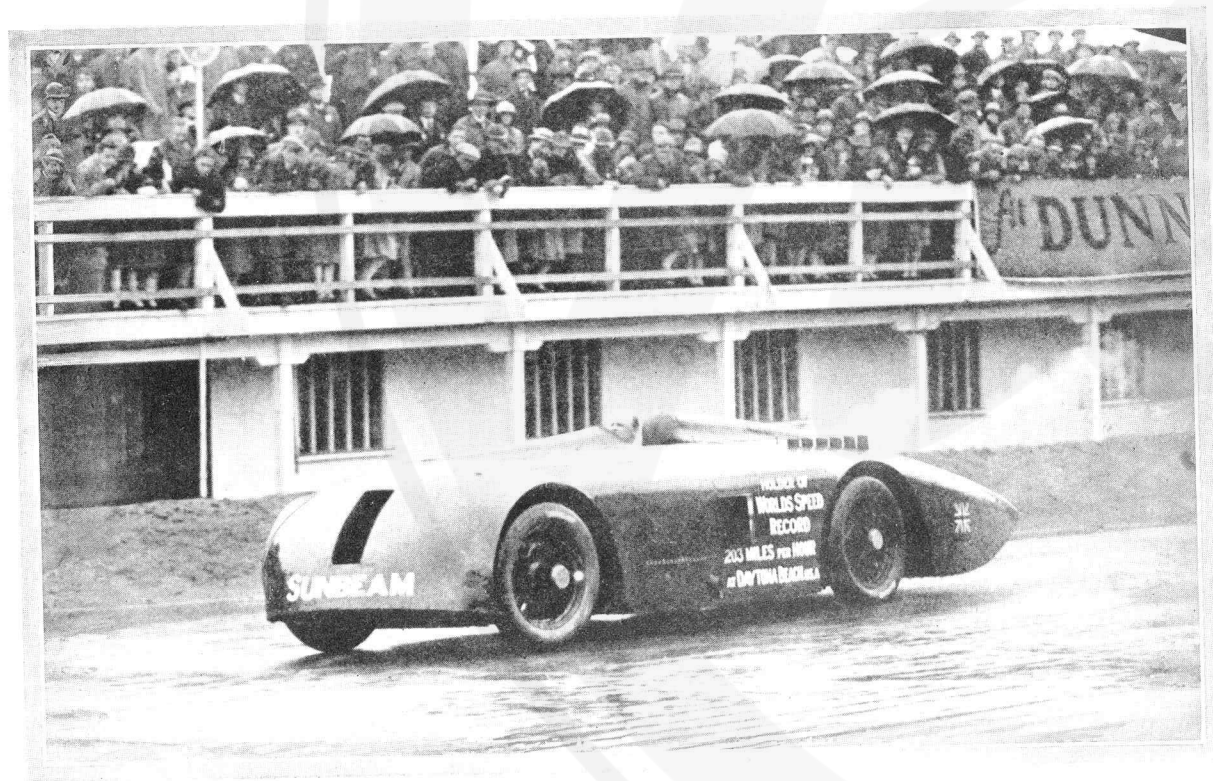


Leaving the scene of victory. The 1,000 h.p. Sunbeam, packed in its special case, ready for its journey back to England.



Major Segrave welcomed on his return by the Mayor of Southampton. A photograph taken on the deck of the s.s. "Berengaria."

Major Segrave, Mrs. Segrave, and the Mayor of Southampton (Alderman P. V. Bowyer).



The 1,000 h.p. Sunbeam at Brooklands, June 6th, 1927. Major Segrave gives the first speed demonstration on the 1,000 h.p. Sunbeam after its return from America.

The World's Record Broken !

203.7928 M.P.H.

On Tuesday, March 29th, 1927, Major Segrave made his first real attempt to attain the coveted speed of 200 m.p.h., the ultimate goal for which the Sunbeam had been built, and to which end all energies had been directed. The condition of the sands was excellent, and the interest taken in the great attempt was manifest from the presence of thousands of spectators. Many of these had travelled long distances to be present at Daytona on the historic day, and the enthusiasm of these American people was boundless. The arrangements carried out by the American Automobile Association were flawless. Police cleared the course, and marshalled the spectators at a safe distance. At intervals along the sands telephone boxes had been installed, and officials were able to keep constantly in touch with each other over the whole course. Perhaps the best description of the scene is that embodied in the official report of the Contest Board of the American Automobile Association. Shorn of all journalese, it tells in simple language of the scene, when 15,000 people looked down upon the long red car and its intrepid driver ; of the wonderful organisation and whole-hearted co-operation of the officials ; and of the actual record-breaking performance, which, though all over in the space of a few minutes, demonstrated beyond all question the skill of Major Segrave and the supremacy of the British-built Sunbeam. The following extracts are from an official copy of the report :—

The flawless arrangements of the A.A.A.

"The officials proceeded to the course at eight o'clock in the morning. Prior to that time the course had been closed to the public, and the various units, such as the surveying crew, the electrical crew, the telephone crew, and the police were all functioning smoothly and exactly to mark. The car arrived promptly on the course at 9.30 a.m. Both still and motion pictures were taken, each of the various officials reported to the writer that his part of the work was complete and that the run could take place, and word to Major Segrave was given. He proceeded to station 9 on the course, turned around under his own power, and was reported by the various telephone stations as flying back towards the official course. The car

*The Official
Report of
the Record*

swerved slightly on approaching the official course, at a distance of 1 to 1½ miles, due to wind, but was promptly corrected and went flying by.

"In attempting to decelerate upon completion of the record course, and in approaching station o, Segrave found his brakes ineffective, and ran off into the ocean for a slight distance, sending geysers of water spouting over the car. Just prior to this another gust of wind had caught and swerved the car into the line of flags, taking down several, but without any damage, either to himself or the car, or other incident. He rounded about the stake at station o, and was reported at once as returning over the course. A quartering wind had been blowing from N.E. to S.W., at a velocity of about 18 m.p.h. Running south, he had the advantage of this wind, giving a higher average, and upon decelerating again at station 9 he returned under his own power slowly to the official timing stand, where he dismounted and awaited the first computation of results.

"Upon hearing that he had broken all records by such astonishing margins, and after a conference with Mr. K. Lee Guinness and others of his staff, he determined to let well enough alone, and an announcement was made over the telephones and to the Press that the trials were concluded, as every goal sought had been attained.

"The judges and official timer immediately repaired to a private room where the results were recalculated and re-checked three times over, and then checked one against the other.

"The industry, the racing fraternity, the Press and public alike congratulate Major Segrave and the Sunbeam Motor Company in England on the fine display of engineering ability and dauntless courage underlying the records accomplished.

"An estimated crowd of 10,000 watched the first trial, run on March 21st. They were densely thronged around the garage where the car was being prepared, packed along the entire approach to the course that had been cleared, and almost solid on the sand dunes bordering the three-mile course. Even more remarkable was the attendance at the run at daybreak, March 24th. Many had apparently camped out all night. At any event, at daylight some thousands were already in the most advantageous positions, and they were still assembling at the time of the run at 6.30 a.m.

*Spectators
who camped
out over-night*

"Press announcement had been made as to the exact hour of the concluding run, and at least 15,000 people were in attendance. At this latter run, not one person or car was on the beach for nine miles, with the exception of 100 police, both mounted and foot, the telephone operators, the electricians, and the authorised officials. A remarkable demonstration of what can be accomplished by efficient co-operation. It was a marvellous sunshiny day, the beach was in excellent condition, and the whole trial was over, from the time the car first approached until it was towed away, in thirty minutes.

(Signed) V. HARENAPE,
Secretary of the Contest Board of the
American Automobile Association, Official
Representative in attendance."

A Marvellous Performance— Sunbeam Still Supreme

There is not the slightest doubt in the mind of anyone, whether he be experienced in automobile competition work or otherwise, that Major Segrave's feat upon the 1,000 h.p. Sunbeam constitutes the greatest motoring achievement ever known. The previous best world's record for the mile was beaten by the extraordinary margin of 28 m.p.h.

*The Previous
Record
Beaten
by 28 m.p.h.*

The following are the figures for the two runs in opposite directions:—

Distance.	Time in Secs.	North Run.	
		M.P.H.	K.P.H.
1 kilometre	11.2	199.7259	321.4825
1 mile	17.94	200.6688	322.9364
5 kilometres	56.47	198.0637	318.7533
South Run.			
1 kilometre	10.84	206.3590	332.1033
1 mile	17.39	207.0155	333.1500
5 kilometres	53.90	207.5076	333.9517
Average.			
1 kilometre	11.02	202.9883	326.6787
1 mile	17.665	203.7928	327.9637
5 kilometres	55.185	202.6757	326.1755

PERILS OF THE SANDS



1920.



1927.

From "PUNCH" Summer Number.
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With regard to the failure of the brakes, referred to in the official A.A.A. report, it may be pointed out that this was due to the aluminium shoes melting under the terrific heat generated when, at 200 m.p.h., the drums were brought into contact with the linings. It was anticipated that the car would be decelerated to a lesser speed than this before the brakes were applied, and they were designed accordingly. But that this is the only *contretemps* that arose is ample proof of the soundness with which the Sunbeam engineers had made their calculations, as well as to Major Segrave's masterly handling of the vehicle.

*Sound
Engineering
and Masterly
Driving*

The Sunbeam has been, both as an owner's car and as a racing machine, supreme on road and track for many years. This great triumph places the coping stone upon an edifice of enterprise and endeavour whereof the British people and British industry in particular have every right to be proud.

Public Appreciation of the Great Achievement

Public appreciation of Major Segrave's magnificent performance upon the 1,000 h.p. Sunbeam was instantly and widely expressed. Both in Britain and America the Press were most enthusiastic, and the allusions in the American papers were most generous in their praise of this all-British success. Upon Major Segrave's return to England, he was overwhelmed with invitations to attend as guest of honour an almost unprecedented number of banquets and similar functions. Among the celebrations which were especially organised in honour of Major Segrave and the Sunbeam car was a luncheon at the Royal Automobile Club on April 13th. Sir Arthur Stanley occupied the chair, and the gathering included many distinguished guests, amongst them the principal members of the British motor industry.

*Celebrations
at the
R.A.C.*

On the evening of the same day a dinner was held at the Piccadilly Hotel, with General Sir Ian Hamilton presiding, when the large company included, amongst others, Mrs. H. O. D. Segrave, Viscount Curzon, the Earl of Cottenham, the Earl of

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Brecknock, Sir T. Vansittart Bowater, M.P., Sir Kenneth Goadby, Sir Robert Donald, Sir N. Grattan Doyle, M.P., Sir Laurence Weaver, Sir Park Goff, Sir Theodore Piggott, Sir Frederick Rice, and Lieut.-Commander the Hon. J.M. Kenworthy. This function was almost identical with that which, six weeks earlier, had wished Major Segrave and his car "God speed" on the eve of his departure for America. The gathering was arranged by the leading makers of the accessories used on the Sunbeam car, viz., The Dunlop Rubber Co., Ltd., The British Petroleum Co., Ltd., C. C. Wakefield & Co., Ltd., The Robinhood Engineering Works, Ltd., T. B. Andre & Co., Ltd., and David Moseley & Sons, Ltd.

But it was most appropriate that one of the greatest of these gatherings in honour of the British achievement should take place at Wolverhampton, where the record-breaking car was designed and constructed. Here, on April 27th, a Civic Reception and Public Luncheon was held in the Town Hall, His Worship the Mayor of Wolverhampton presiding, and attended by the principal business men of the town and district.

From the time when the first announcement was made regarding the car and its object, Wolverhampton had taken the keenest interest in the project, and when it was known that success had attended the venture the enthusiasm was boundless. At the Reception it was felt that in publicly honouring Major Segrave's skill and daring they were also celebrating a success most intimately connected with the town. In the speeches that were made by the Mayor and other speakers tribute was paid to Mr. Coatalen's genius, and to the invaluable work of Capt. J. S. Irving, responsible under Mr. Coatalen for the design of the car, and to Mr. C. B. Kay, General Works Manager at Moorfield Works, under whose supervision the record-breaking Sunbeam was built.

Finally, Mr. Gordon Selfridge held a reception, on a characteristically gigantic scale, at his great London store, when the 1,000 h.p. Sunbeam was on view there, and where many notabilities, representative of every profession and interest, gathered to do honour to this great British exploit.