The History and Development of the Sunbeam Car

1899-1924



THE SUNBEAM SILVER JUBILEE

1899-1924

Kens INSTITUTE ®



FROM A PHOTOGRAPH BY WALDEN HAMMOND.

THE SUPREME SUNBEAM.

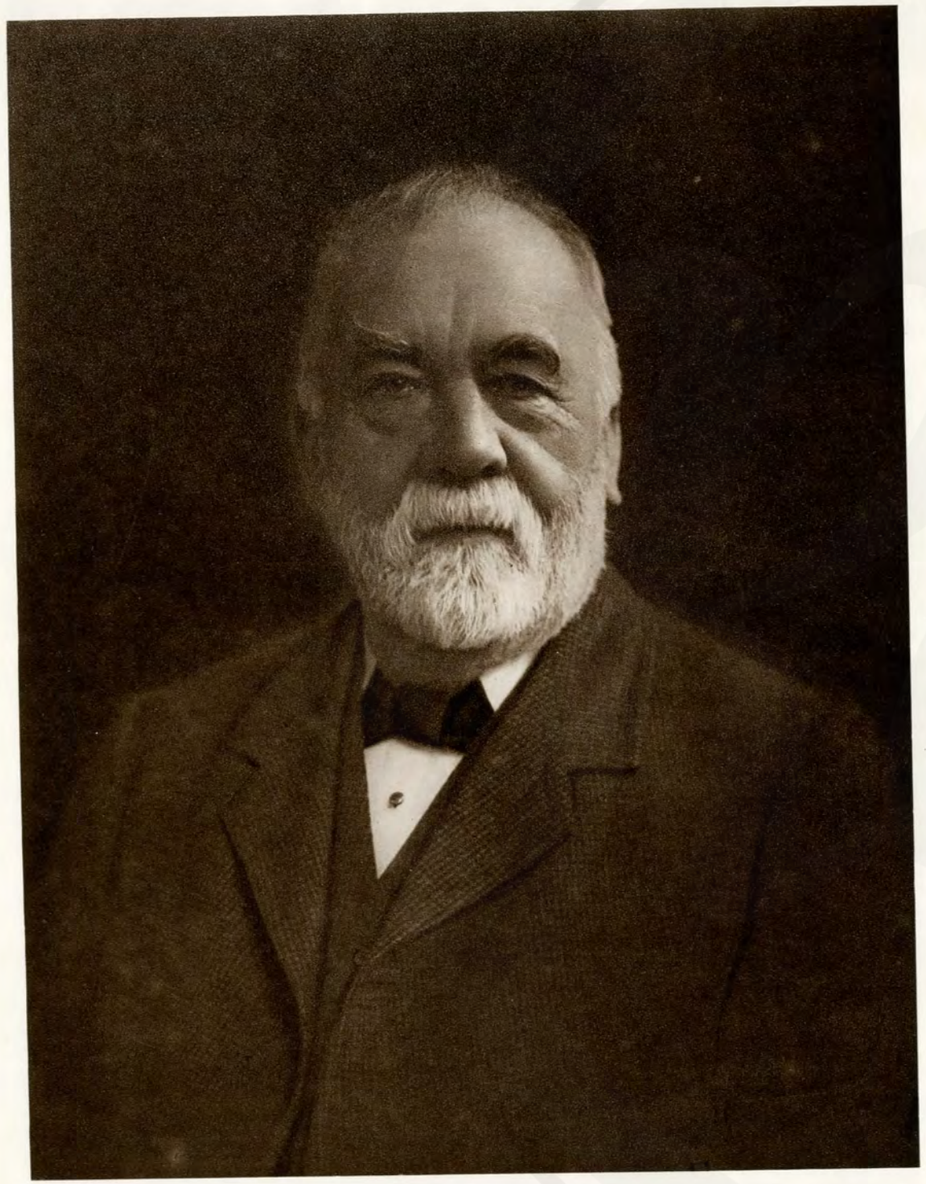
The HISTORY and DEVELOPMENT of THE SUNBEAM CAR

1899-1924

A Souvenir of a Quarter of a Century of Sunbeam Success and Service

ROYAL AUTOMOBILE CLUB
LIBRARY
NOT TO BE TAKEN AWAY

Produced and Published by
THE SUNBEAM MOTOR CAR COMPANY LIMITED
Moorfield Works, Wolverhampton
AND AT
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ALDERMAN JOHN MARSTON, J.P.,
1836-1918.

INTRODUCTION

In the course of a recent conversation on automobile development with an old friend who is a widely known publicist on motoring, I chanced to remark that 1924 is the 25th anniversary year of the manufacture of the first Sunbeam car. This casual reference led naturally to reminiscences touching early Sunbeam history and he suggested that, as the story of the development of the Sunbeam car teems with interest, it should be placed permanently on record in some form before the facts escape memory.

As one of the few surviving men who have been associated with the Sunbeam car almost from its inception, I thought the suggestion apt. The founder of our enterprise, Alderman John Marston, and Mr. Thomas Cureton, who was for so many years his right-hand man, have both passed away ; and, although the incidents associated with our early days are still fresh in my own memory, there must be many who have known the car and its history only during late years and to whom a record of our pioneer period—for such we regard the first quarter of a century of effort—will not be without interest. Therefore, when the aforesaid literary friend proffered his services as chronicler of these events I gladly accepted them. What he is pleased to describe as a tribute to " a magnificent car " appears in the following pages which I, personally, feel to constitute a very generous gift of time on his part.

Save for data which I have furnished, supplemented by extracts from records in the Company's possession, this volume has been written entirely by him, and every care has been taken to check dates and matters of fact.

W. M. Iliffe

December, 1924

ACKNOWLEDGMENTS

℄ We are indebted to the Editors of "The Autocar," "Motor" and "Country Life" for their permission to reproduce several of the photographs which appear in this volume.

TWENTY-FIVE YEARS
of unbroken
SUNBEAM SUCCESS AND SERVICE
1899-1924

BEING *a souvenir of a quarter of a century's ceaseless enterprise and somewhat romantic growth of a strenuous pioneer all-British motor manufacturing company and survival from the humblest beginnings to the attainment of world-wide fame alike in war, when from* 1914-1919 *it rendered the allied nations signal service by land, sea and air, and in Peace, from* 1899 *to* 1914, *and from* 1920 *to the present day, by placing year by year new style, better and cheaper motoring at the disposal of private car owners the world over, and giving to skilled British labour ever-increasing employment.*

This narrative embraces various personal recollections revealing difficulties met and overcome, the gradual conquest of motoring ignorance by the hard winning of knowledge, the attainment of victory in the greatest competition in the motor world, the Blue Ribbon International Coupe de l'Auto and Grand Prix race of the Automobile Club de France in 1912 *and, again, in* 1923 *; the designing and building of engines in* 1919 *for the historic R.*34 *that alone among aircraft of any type has passed by air from England to the United States and back, the zest of human nature and the thread of humour welding all the elements of a varied narrative.*

There are herein illustrated, incidentally, the bearings of the scientific pursuit of experiment, and of first-class international car racing, on the seemingly endless task of evolving the standard car rendered available to the public at the most economical price—quality, accommodation, taxation, performance and wearing life considered—showing how the advanced products of the most rapidly developing of all branches of our highly specialised engineering industries are designed and manufactured with increasing appreciation of the needs of users at home and overseas.

THE STORY OF A QUARTER OF A CENTURY'S SUCCESS and SERVICE. 1899-1924.

From Small and Unlikely Beginnings to—

CAN there be any more striking illustration of the aphorism that big things spring from small and even unlikely beginnings, than is furnished by the story of the few surviving pioneers of the British motor industry? There were very few enterprises making believe to build motor cars in this country when the first Sunbeam car was built in 1899. Of those concerns fewer still survive to-day, and all of them together have not done as much to make motoring history as has The Sunbeam Motor Car Company. Nor is that to their discredit. The plain fact is, motoring history has been made at a rate utterly unprecedented in the story of engineering, one development having followed another with such bewildering rapidity that, in review, it seems impossible to imagine any one organisation keeping pace withal, far less leading all the time.

—World-wide Repute

It has been the unique record of the Sunbeam Company that, beginning more modestly than any, each year has witnessed a consistent increase in its prestige and scale of enterprise together with the swelling of the ranks of its personnel, by the recruiting of more and more unique talents, so that to-day each of its hundred odd departments is equipped with brains second to none in the automobile manufacturing world.

Despite the fact that, always, the founder of the Company and his chief lieutenant were loath to part with any employee, nevertheless there is not employed by the Sunbeam Company to-day one man who was a member of the original staff. But more than one founder-director retains office in a corporation that did not start in the way then so prevalent and vastly prejudicial to the nascent movement in this country—by sheer and mere company promotion—but in the guise of a financial risk undertaken almost solely by the original Board, several of whose

members, alas ! have been removed by death. Happily, all the surviving members are directing the destinies of the Company to-day with quite unprecedented success.

Blue Ribbon Victories Spell Pedigree Cars

The start of The Sunbeam Motor Car Company Ltd. was relatively so obscure, and on so small a scale, as to contain no hint of the historic *rôle* it was destined to play in the story of a branch of engineering that has changed the fundamental conditions of life the world over. Who would have risked his reputation by foretelling, five-and-twenty years ago, that a mere local effort would eventually achieve the proud record of being the only British concern to win the Blue Ribbon long distance road racing post-war event, the Grand Prix of the Automobile Club de France ? Nevertheless it did in no unmistakable fashion last year by securing first, second and fourth places. But Sunbeam has done the biggest things always in unprecedented ways. Thus, it sounded the death knell of the monster-engined car as long ago as 1912 when in the severest road race that has ever been held in France, the 957 miles combined Grand Prix and Coupe de l'Auto event on the Dieppe circuit, it secured the first three places in the latter event for cars with engines limited each to 3,000 c.c., or 183 cubic inches cylinder content, and third, fourth and fifth places in the former event for vehicles with engines of unlimited volume, wherein the British team was beaten only by one machine with an engine five times as large, and by another with power plant three and a half times as large, so that the engine of either of those machines was equal to the volume of all three Sunbeam engines together ; and neither machine outpaced the Wolverhampton built cars by more than 4 miles an hour ! As every motorist knows, Sunbeam cars have, besides, established world's time and distance records wellnigh without number, including the capturing of the flying kilometre record this autumn at a speed of 146·16 m.p.h.

Making History during the Battle of Jutland, 1916

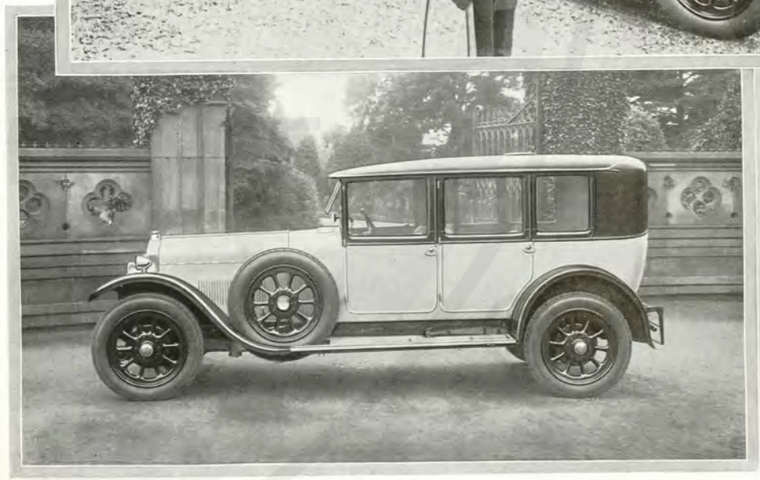
Moreover, this is the only British motor-manufacturing enterprise which had evolved and standardised in readiness when war broke out in 1914, aero engines of sufficient power to lift our seaplanes; which were used with historic effect to give Admiral-issimo Jellicoe's Grand Fleet the dispositions of the German High Seas Fleet during the Battle of Jutland, in May, 1916 ; which rendered signal service in the Battle of the Falkland



Royalty and Sunbeam Cars

The photograph reproduced in the centre of the page shows H.M. The King leaving a six-cylinder Sunbeam Limousine, on the occasion of his visit to Cirencester in 1922.
The top illustration shows H.R.H. The Prince of Wales during his visit to the Midlands in June, 1923. The car is a six-cylinder Sunbeam. The lower picture shows H.R.H. Prince Henry's 20/60 h.p. six-cylinder Sunbeam.







Islands, and in many another engagement; and which were used also for the French seaplanes to the war's end. And thereafter, between July 2nd and July 13th, 1919, Sunbeam engines drove the huge British airship, R.34, on the only aerial voyage that has been made from this country to the United States and back. The outward voyage was made from East Fortune, near Edinburgh, to Long Island, New York, in adverse and stormy weather, in 108 hours 12 minutes, as compared with the 1924 German-built Zeppelin Z.R.3 flown in favourable weather from Friederichshafen to Lakehurst, New Jersey, from October 12th to 15th this year, a distance of 5060 miles in 81 hours 17 minutes, but which has not done the double journey, nor has any airship except the British-built R.34 with its 1918 built Sunbeam-Coatalen aircraft engines, which flew eastward from Long Island on July 9th, 1919, to Pulham, Norfolk, in 75 hours 3 minutes.

—And over the Atlantic, 1919

Is it surprising that the Sunbeam Company has a factory as modern as any in these islands, employing nearly 4,000 hands even in the great post-war slump, during which it never could build enough cars to meet current demand; and that Sunbeam motor carriages lead the way in the matter of revealing to the public, season by season, new possibilities in motoring? Besides, they are cheaper, wearing life for wearing life, accommodation for accommodation, and performance for performance, than any machines of quality on the market, having set many a fashion in the motoring world. The story of Sunbeam's rapid rise to supremacy from beginnings so humble is sufficiently amazing to give heart of grace to all who hope to achieve big things from conditions of starting that constitute a seemingly impossible handicap.

Wolverhampton's G.O.M.

The Grand Old Man of Wolverhampton, Alderman John Marston, J.P., who passed away at the ripe age of 82 in the last year of the world war, began life in a local factory. By the time he was twenty-three he had started as a manufacturer himself, producing tin plate and japanned ware for the proletariat of the period. He was one of those staunch mid-Victorian types who grew to large and robust stature despite the fact that he kept as long office hours, and attended so much to detail in the " fuggy " atmosphere of a last century Black Country

Mr. John Marston's able Lieutenant

factory, that the medical men of to-day would assure us it was impossible for a human being to develop in such conditions, under which no operative of the Sunbeam Motor Car Company would consent to work to-day. The necessarily monotonous and circumscribed range of his mental occupation did not prevent his astute commercial mind appreciating the possibilities of the pedal bicycle soon after its evolution. The firm of John Marston, Ltd., was early in the field with the Sunbeam bicycle, which has been manufactured by that Company ever since. From the inception of the enterprise, the late Mr. Marston had as his right-hand man one Thomas Cureton whose business experience had begun when he went to his employer as an apprentice, and who survived that master by a few years only, during some of which he succeeded him in the Chairmanship of The Sunbeam Motor Car Company, Ltd.

Looking at the entrance to the present works in Upper Villiers Street, Wolverhampton, which fronted his office, the late Mr. Cureton observed one day after he had been elected unanimously Chairman of the Company : " If the coping stone of that archway is ever to be decorated with a figure head, I suppose it ought to be a counterfeit presentment of myself." He was not a vain man, and it never entered his head that such a work would be undertaken. Nor has it been. But the historian recalls the remark for the sufficient reason that Thomas Cureton was responsible for the inception of the Sunbeam car. From the outset he had proved himself so able an assistant that his master trusted him implicitly in everything and valued his judgment second to none, as may be gathered from the fact that, when in 1899 he had caused an experimental car to be built and even drawn up specifications before making a formal report, which was brought before the Directors of John Marston, Ltd., his chief supported him wholeheartedly throughout. Nevertheless, the work had to be undertaken despite opposition from friends, who thought that for that redoubtable worthy to embark on this utterly fresh venture on reaching old age would be merely to waste the handsome fortune he had made in the cycle industry.

The First Sunbeam Car

Therefore many of the preliminaries to the launching of the Sunbeam motor car were conducted on Sunday mornings

on Mr. Marston's lawn and the drive of Mr. Cureton's residence where, doubtless, the clear skies above, and the sunshine warming all beneath, were more conducive to the favourable conception of new ideas than the atmosphere of an office. Be that as may be, the belief that motoring would become a great industry in Britain was strengthened in Mr. Marston, as in Mr. Cureton. That they were not wild dreamers, nor impractical financiers, may be judged from the fact that the works' hands engaged on building the first car consisted of one man and a boy.

One Man and a—Boy

But the men behind the fresh enterprise did bold things in a sane way. In effect, they backed their ideas with their hard-earned money, hence there was no temptation to wild-cat finance. Like all motor cars made since by firms imbued with any progressive instinct, the earliest Sunbeam examples were regarded as essentially experimental. The first Sunbeam car that was built a quarter of a century ago, in 1899, was never sold to the public in its original form. Nevertheless, even as far back as that some of the modifications introduced were rather due to a decision to conform with fashion than to any mechanical need for alteration. Prejudicial home legislation had given the foreign industry a long start ; and, despite the fact that for years past it has set motoring fashion season by season, the Sunbeam enterprise has never been run on the swollen-headed principle, and there was never any intention to embark on unconventional design for originality's sake. At the same time it is worthy of record that the spirit of independence combined with sound judgment, of boldness tempered with caution, and of originality without freakishness, which are characteristic of the policy of the Company to-day, were manifest even at the moment of the inception of the enterprise.

Thus from the outset the new firm depended on its own enterprise and resources to a greater extent than any of the most completely equipped motor manufacturers do to-day. Though there was a period when foreign engines were bought and used, it is gratifying to recall that the power plant of the first Sunbeam car was built throughout by John Marston, Ltd., in 1899. The parts were cast locally and bored by that parent enterprise, which also built the radiator. Even the sparking plugs

Manufacturing Sunbeam Sparking Plugs !

used were made by the firm. Which car-builder in the world to-day makes his own sparking plugs?

When Experiment WAS Experimental

One Dimsdale was engaged as the firm's practical and technical man by reason of the fact that, given a hammer and a chisel, he had the reputation of being able to make a kettle go on wheels. In other words, he was what people would call an expert. But, unlike most persons so-styled, he was a man well worthy of his hire, as he proved by producing promptly the design and superintending the building of the pioneer Sunbeam car. He is the stalwart central figure in the reproduction facing page 11, from a photograph taken at the time, and lives now at Colwyn Bay; and his assistant, Harry Wood, then a boy, after many years with the Sunbeam Company, went to Plymouth, where he is now with the firm of Humms. The office staff consisted solely of the then youthful Edward Genna, who became in later years sales manager to the Company, and also won much repute for the make by his successes, notably in the Royal Scottish Automobile Club's hill-climbs and like events. Happily, a photograph exists, and is reproduced here, of the first car built, the parts for which were made at the Paul Street works of John Marston, Ltd., and the erection of which took place on the actual site of the first Sunbeam building in Upper Villiers Street, Wolverhampton, where the factory is situate to-day. The late James Morgan, who was with the firm of John Marston, Ltd., for many years, is seen at the wheel.

Evolution of the First Sunbeam Car

The first Sunbeam car was equipped with an engine which followed the present universal style in having the cylinder vertical, although at that period there was quite a vogue for engines with horizontal cylinders. The second Sunbeam car was designed on this principle, being of 6 nominal and seldom of any more actual horse-power. At the time this horizontal prime mover was installed the chassis was fitted with an extra belt and a reverse gear. As showing how early in the automobile field the Sunbeam was, it should be added that the crankshaft was exposed like that of a gas engine. The first car was wholly British built, even as are the latest cars of this world-famous make. With the sole exception of the accumulators—for, contrary to the then generally widespread fashion of having tube ignition, this car had electrical ignition—the pioneer machine was built



The First Sunbeam Car

This illustration shows the first Sunbeam car ever built. It was constructed in 1899 in a building which was the nucleus of the present Works. A comparison of this early photograph with the two modern Sunbeam cars illustrated below conveys some idea of the development which has taken place in automobile design during the past twenty-five years.



A modern Sunbeam Car. The 14/40 H.P. Saloon Model.



A 20/60 H.P. six-cylinder Sunbeam.

The Second Sunbeam Car
1900

This illustration shows the second Sunbeam car, which was built in 1900. Below is reproduced the first catalogue of Sunbeam Cars, issued in the same year. The contrast between the 1900 car and the modern six-cylinder Sunbeam in the lower picture hardly needs comment.







A 1924 Six cylinder Sunbeam at Stoneleigh Abbey

entirely at the parent firm's two works. Like several of its successors, the brake shoes acted on the peripheries of the wheels which were, of course, shod with solid rubber tyres. Later on a flap was fitted in front to prevent over-inquisitive folk running into the sparking plug as they gazed at the approaching vehicle !

Raptures Recaptured from the First Catalogue

Meantime, the first catalogue concerning Sunbeam cars was being produced. That a sense of romance mingled with Mr. Cureton's keen business foresight, is suggested by the citation in that document of the following stanza :

> *Not in vain the distant beacons, forward, forward, let us range,*
> *Let the old world speak for ever down the ringing groves of change,*
> *Thro' the shadows of the past we sweep into the day,*
> *Better fifty years of Europe than a cycle of Cathay.*

Mr. Cureton has passed from among us lately. Yet already the verse he quoted has been fulfilled in more than abundant measure. In half fifty years locomotion has been developed so amazingly in every corner of the globe by means of the motor vehicle—in which work this company has played an historic and leading part—that to-day one almost hesitates to attempt to imagine what the world of transportation will be like on the Jubilee of The Sunbeam Motor Car Company, Ltd.

Sunbeams among the Birds, despite Dr. Johnson

Even man's invasion of the regions hitherto reserved to birds and insects—the air—has been assisted in notable degree by Sunbeam contributions. It was Doctor Johnson who expressed himself characteristically to the effect : " Travel at twenty miles an hour, Sir ? Impossible ! Man could not breathe." Several young men seem to have breathed quite freely, however, when, at different times on Sunbeam cars with engines ranging up to 350 nominal horse-power, they have set up speeds of 146 and more miles an hour ; also when, piloting aeroplanes with Sunbeam engines, they have passed through space at nine times the speed which the great poser of Georgian times declared to be impossible for men to endure.

Happily, Mr. Thomas Cureton was a man of deeds, not words. This you shall judge from the fact that one Sunbeam car was made in 1899, before he presented the aforementioned report to Mr. John Marston, and while he was drawing up that first catalogue. It was " T.C.'s " method to know as much as

it was humanly possible to discover concerning anything before he committed himself definitely. Later, 8 h.p. Forman engines were used, so that even in those days the notion of furnishing more and yet more effective power plant as season succeeded season was exploited.

Introduction of the Sunbeam-Mabley

During 1900 quite another type of car was considered seriously by Mr. Cureton. Eventually it was decided that a vehicle of that kind could be made in the Sunbeam Works, and it was placed on the market in quantity in 1901, under the name of the Sunbeam Mabley car, of which more anon.

"Slow but sure" being deemed the best policy to adopt when striving to lay the foundations of a permanent and important British industry, the firm had built a few cars with horizontal engines by 1901. It is a far cry from those early 6 h.p. single cylinder Sunbeam cars to the 12 and the 18-cylinder 320, 475, 800 and more horse-power aero engines that were standardised by the firm during the world war, and to the still later "miniature power packets," the nominal 12-16 h.p., actual 137 h.p., supercharged engines of the racing cars used in the Grand Prix d' Europe this year at Lyons for experimental and test purposes; also to the present 20-60 h.p. Sunbeam standard model, which assuredly represents the high-water mark of British automobile engineering achievement, performance, accommodation, price, taxation rating and running costs considered. Incidentally, it is a remarkable illustration of entirely successful adaptation of the invaluable lessons learnt from aircraft engine practice, and from classic international car racing, to the service of the extraordinarily refined and astonishingly efficient private motor-carriage.

What Nobody Knew Thenadays

The mere possibilities of automobilism were as utterly unknown in 1900 as to-day they are widely familiar. What the public did not know about motoring may be illustrated by quoting from the first Sunbeam catalogue issued.

"The Sunbeam motor car described in the succeeding pages can be prepared for a journey of one or two hundred miles in a few minutes. It can go out in all weathers, it can wait around in all weathers, it never gets tired, and it never gets restless. Its speed is anything the driver likes consistent with safety.

So much for its utility; now for its cost. Our American cousins are rapidly teaching us the lesson that money is cheap but labour is dear. In other words, the initial outlay is of less importance than the weekly wages bill. The Sunbeam car at a low estimate can do the work of two horses, yet these with carriage and harness often cost as much. The wages bill, however, is where the saving is so pronounced. At a low estimate two horses cost to keep, £2 15s. per week, made up thus:

When Man Power was Cheaper than H.P.

Coachman	£1 5s.	
Food and Straw	£1 10s.	£2 15s.

The Sunbeam car, however, works out at:

Lad	15s.	
Petrol, Oil, etc.	10s.	£1 5s.

and, whereas the coachman would have little time for ought else but his horses and carriage, the motor driver would have plenty of time for garden work and the like. This saving of 30s. per week means £78 per annum, to say nothing of the saving of time (and time is money) by the superior speed of the car.

We have not exaggerated nor magnified the advantages of the motor car. Nay, experience will show many more points in its favour which have not been touched upon in this brief introduction." Experience has proved this to be true!

Alas! in the interval, the world war has outdated all those calculations, for neither motormen nor coachmen, nor even lads, are procurable at the wages that are the basis of those calculations. But that is more than offset by the fact that at least 80 per cent. of the cars in service in this country to-day are cared for by their satisfied owners, and that vehicle evolution has been such that vastly greater use is made of burning a pint of petrol, which is a pint of power, to-day than ever before. Never have tyre costs been so low by reason of the great lessons learnt by that industry during and since the war, commencing with the growing and marketing of graded rubber and leading to the latest development, the corded cover, large section, relatively low pressure so-called comfort tyre. As for the power plant, both pioneer water-cooled horizontal engines used turned at about 700 crankshaft revolutions a minute, which was really fast in those days, whereas the supercharged engines of the 1924

The Evolution of the Car

Grand Prix d'Europe Sunbeam cars, designed by Mr. Louis Coatalen, turn at a maximum speed of 5,500 r.p.m.

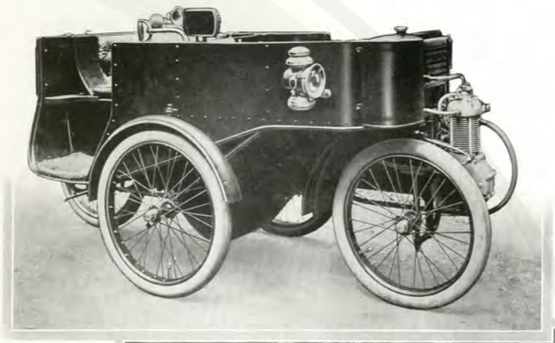
Gear Problems of Yesterday, To-day and To-morrow

Twenty-five years ago one changed speed by means of pulleys acting on a second shaft, and connected with the live axle of the driving wheel by two gearwheels enclosed in a differential gearbox, two speeds being furnished forward and a reverse. Will history repeat itself *a propos* the super-chargers used experimentally in this year's Sunbeam racing cars—and which add 35 per cent. to the power developed, proportionately the best results being obtained at comparatively slow crankshaft revolutions—by enabling standard cars which will suffice for every class of service to be built presently with similar super-chargers and equipped with two forward speeds only? Maybe we can forecast even further, for it scarcely needs a daring prophet to foretell that, before this company shall celebrate its Jubilee, the present day spur and sliding pinion type of gearbox will not constitute a feature of any vehicle that will be marketed.

Early Motor Journalism

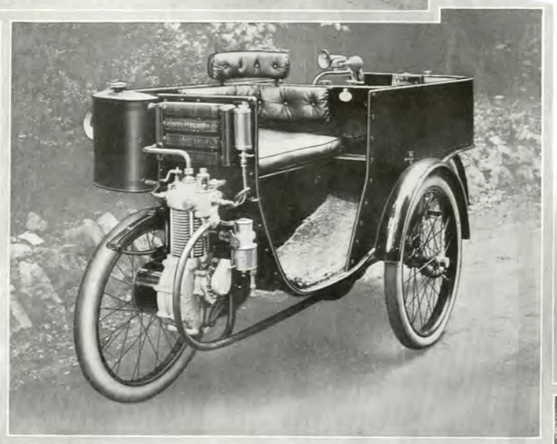
In the days when the first Sunbeam cars were produced, technical journalism occupied the same station in relation to automobilism that to-day it does to the current products of our factories; in other words, motor journalism was also in its infancy. Witness the following quotation from the issue of the *Autocar* of September 22nd, 1900:

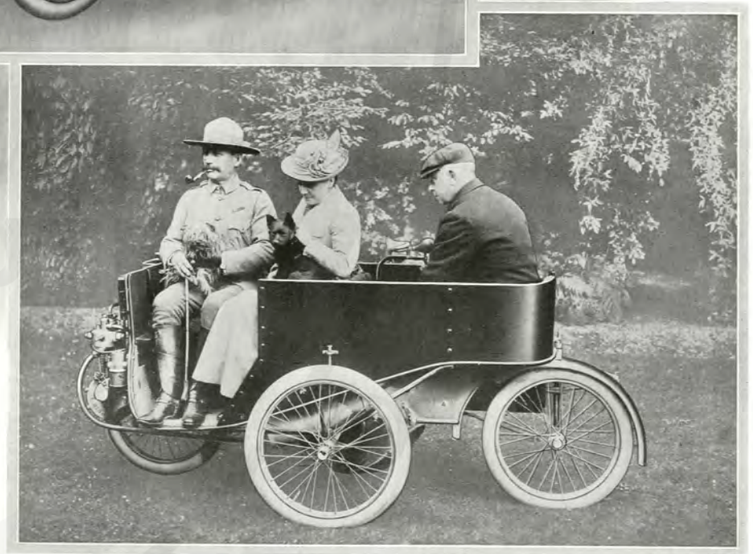
"The latest accession to the ranks of autocar manufacturers are Messrs. John Marston Ltd., of Wolverhampton. This firm has been long and honourably known in the cycle trade as manufacturers of the Sunbeam, which is one of the best finished and best made bicycles on the British market. The autocar will also be known as the Sunbeam, and will take the form of a light victoria, and be driven by a 4 h.p. water-cooled engine, which will be placed in front of the car, and natural circulation of the water will be depended upon, no pump being used. Electric ignition, lubrication from a central station, belt transmission giving two speeds forward (and reverse), may be mentioned among the features of the car. Although straps connect the engine shaft with the counter shaft, toothed gearing is used to communicate the motion of the latter to



The Sunbeam-Mabley
1901

The Sunbeam-Mabley, with its curious design, was introduced in 1901. It was fitted with a 2¾ h.p. engine and steered from the rear seat. The Mabley was a most reliable vehicle, judged by the standards of that period.





The 8 h.p. Sunbeam
1902

Below is a reproduction of the first award obtained by a Sunbeam, the Gold Medal awarded as First Prize in the 100 miles Liverpool Reliability Competition in February, 1902.
In November of the same year a Sunbeam made a non-stop run and secured the diploma in the London-Oxford Anniversary run.







the balance geared live axle by means of pinion and spur. Good powerful brakes will be found on the new machine, and, as far as we can gather, it appears likely to be a very promising car."

"Good" Brakes—As they were and are

The reference to the brakes was justified. Yet what should we think of those brake shoes that acted on the peripheries of the wheels (which were, of course, shod with solid rubber tyres " guaranteed not to come off ") by comparison with the enclosed expanding shoes that operate on the large radiated drums furnished to all four wheels of the present day Sunbeam cars ? By a margin of a season, this Company was the first in this country to standardise and actually to issue to the public a four-wheel braking system which had been tried for years and developed through many stages by means of the firm's unique racing and other experimental enterprise.

To-day, when there is so much talk of light cars, it is interesting to note that the first Sunbeam weighed approximately 10 cwt., the coachwork following the conventional lines of horse-drawn vehicles of that time. The accessories were mainly adapted to their purpose, instance the use of two large bicycle lamps for headlights.

When Machine Tools were first used in building Cars

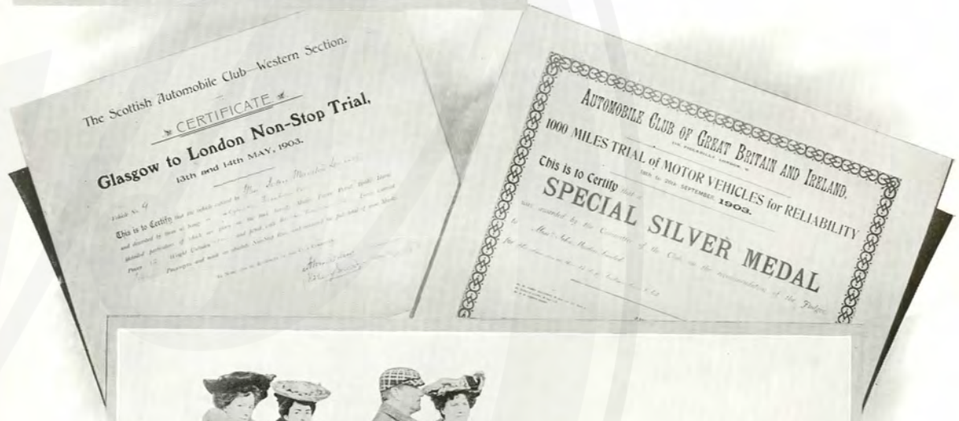
This attempt at producing British built motor cars in the disused coach-house at Wolverhampton was so successful that the next stage—admittedly not in the nature of that vaulting ambition which o'erleaps itself and falls on t'other side, but rather of a humble and a cautious type—resulted in the honourable commercial acquisition of an adjoining garden in Upper Villiers Street, Wolverhampton, at the back of a private house which stood on the site of the present main offices of the Company. The enlargement of the accommodation began in 1901, to the end that there might be installed in the shed machine tools driven by shafting passed through the walls into the premises of the Villiers Engineering Company, which supplied the power needed. Would that it could have supplied also the power needed to create pioneer purchasers of motor cars ! The earliest Sunbeam cars were made either as two- or four-seaters, albeit, in practice, they carried rarely more than two persons apiece because it was found that the full complement of passengers resulted presently in the venturesome folk having to

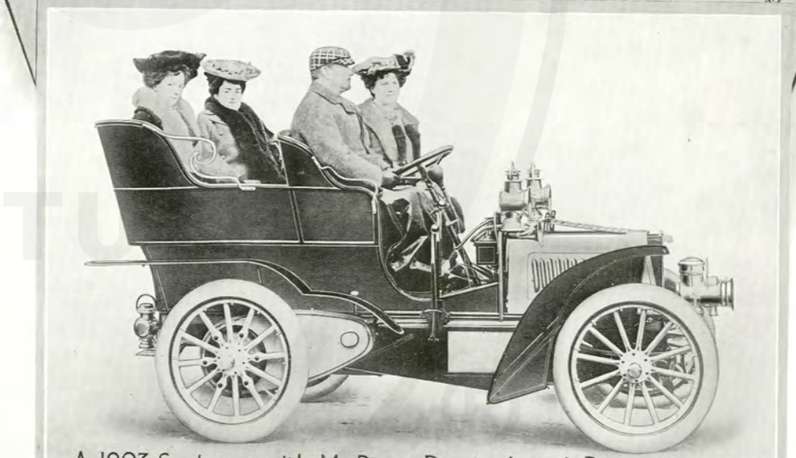
do overmuch pushing! Yet progress in motor manufacturing is so rapid that the brick building, which only dates back some twenty years, had become known as the Old Machine Shop before the world was plunged into war. Long before the world's peace was broken there had arisen on the opposite side of the road from that where the first works was put up—and where are now stationed part of the stores and some of the administrative offices of the present enterprise—a new factory which, with the adjoining land, covers nearly sixty acres.



The 12 h.p. Sunbeam
1903

This illustration is interesting from the fact that it shows an early type of Capecart hood. Neither hood nor windscreen formed part of the standard equipment in those days, and all accessories, as lamps, horn, etc., were extra to the catalogue price of the car.

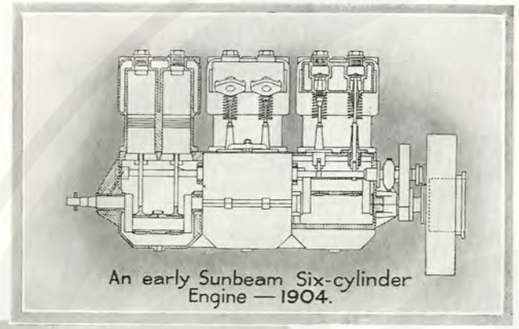




A 1903 Sunbeam with Mr. Percy Percival and Prima Donnas of the Royal Carl Rosa Opera Company.

A Sunbeam Six-cylinder Engine of 1904

This year marks not only the 25th anniversary of the inception of the Sunbeam Car, but also the 21st anniversary of the first Sunbeam six-cylinder engine. An early advertisement dealing with the six-cylinder Sunbeam, with special reference to its oilbath chain cases, is reproduced below.



An early Sunbeam Six-cylinder Engine — 1904.



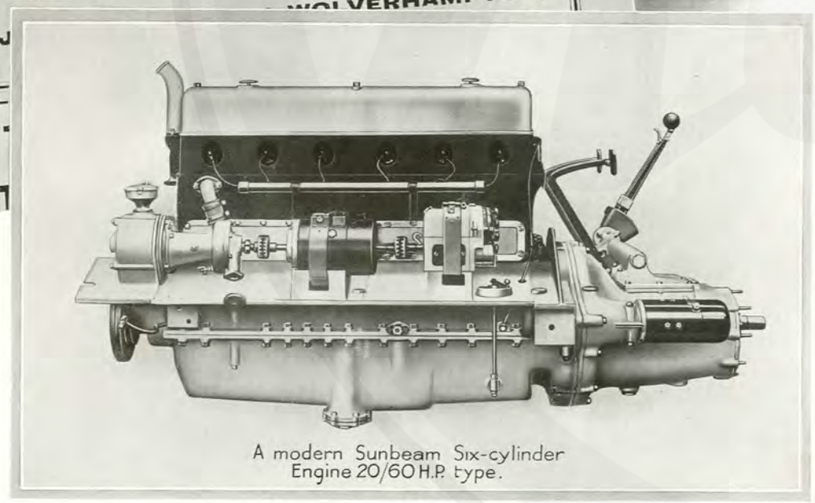
xxx. THE AUTOCAR. ADVERTISEMENTS.—SUPPLEMENT. FEB. 27TH, 1904.

SUNBEAMS LEAD.

The new SIX-CYLINDER SUNBEAM embodies every feature which experience demands. It is as flexible as a steamer, and as silent as an electric car, and it is "Sunbeam quality" and finish.

LOOK OUT FOR THE OILBATH CHAIN CASES.

WOLVERHAMPTON.



A modern Sunbeam Six-cylinder Engine 20/60 H.P. type.

CHAPTER II.

The First Sunbeam at a Motor Show

TO-DAY, when the *clou* of many a motor show the world over is constituted by Sunbeam exhibits, it is interesting to recall that the first car of the make to be displayed at any automobile salon was introduced at the Edinburgh Show, and afterwards at the National Show at the Crystal Palace in 1901. It was a 6 h.p. twin-cylinder engined machine of what was then styled the modified Panhard type, the body being built by the local firm of Forders. The exhibit was supplemented by the ingenious Sunbeam-Mabley machine that made quite a sensation at the time, resulting in one of the first enterprises in the way of series, or what we should call standardised, production in the story of the British motor industry.

That first 6 h.p. twin-cylinder engined Sunbeam car had three speeds forward (doubtless as a result of experiences with earlier versions), the control being by a spring lever at the driver's right hand. Wheel steering was actually furnished instead of the then common tiller type. The steering standard was "sloped," albeit not quite at the dashing angle of your latter-day sports car. By this time, too, the band type of brake had been exploited, one being provided on the countershaft and one on the drum attached to each of the driving wheels, these brakes being of what the *Autocar* of November 30th, 1901, called "a powerful character." The tonneau body had been evolved and the excellent finish of Sunbeam coachwork began to attract favourable notice.

The Teething Stage

"My earliest recollection of the Company dates back to the very early months of 1902," says Mr. W. M. Iliff, the present Managing Director. "Mr. Cureton and I spent many an anxious and busy hour at Paul Street after the staff had cleared off for the day, discussing how to make the motor business go, drawing up advertisements and generally doing the hundred and one things that had to be done to look after a business in the limited time at our disposal after 6 o'clock at night. The shops themselves were mostly galvanised iron buildings, the entrance to the works being up the side of the Villiers Company's establishment in the same position as in the building of to-day, save that one

drove down a passage which was really part of a garden—the employees were wont to pick lettuces for tea—then into the so-called works. The site of the present offices was then the garden of a house that belonged formerly to the late Mr. Edward Bullivant, a well-known japanner, whose factory is now known as the Villiers Works. I recollect vividly the anxious times we had trying to show a profit, however small, on the motor car business to justify us extending the works. Alderman Marston and Mr. Cureton duly took their courage in their hands, and it was decided in 1904 that this Company should be floated, and the modern works built forthwith. We thought we were aiming pretty high when, ultimately, we built an establishment which would turn out two cars a week—one hundred vehicles in a year seemed a large number. When I first knew the Company, there were about fifteen to twenty men and boys, all told, on the motor side. No matter how the design changed, one thing was always maintained; the good workmanship characteristic of the Sunbeam bicycle and of everything that the firm of John Marston Ltd., built."

A Weekly Output of Two Cars!

The Sunbeam-Mabley was a bold production of the period. It sold for £130 complete with a 2¾ h.p. engine and was styled a three-seater. As is revealed in the illustrations facing page 10, the design was a mid-Victorian "S" sofa. One Mabley was entered for "The 100 Miles Liverpool Reliability Competition, including a hill-climbing trial," and was awarded the Gold Medal, the highest honour obtainable. A royalty on each car was paid to Mr. Mabley Smith for his design. "I think it is probable that he did better out of the job than we did," says Mr. Iliff, "though it was a great venture for us at the time. Undoubtedly, the type helped some of our friends to acquire a taste for motor cars of a better description, many who bought the Mabley later becoming purchasers of our higher powered vehicles. In 1902 Mr. Thomas Pullinger, later Manager of Humber's Beeston Works, and subsequently, and still, Managing Director of Arrol-Johnston Ltd., joined us. Thereupon we made great strides in the then small motoring world. Undoubtedly, he put new life into the firm by making a different type of car."

British Talent Fresh from France

In the London-Oxford anniversary run on November 8th, 1902, a 12 h.p. four-cylinder engined Sunbeam car, driven by

Mr. Pullinger, made a non-stop run, and secured the Automobile Club of Great Britain and Ireland's Diploma, that body being now known as the Royal Automobile Club, and having incorporated the Liverpool Self-Propelled Traffic Association. The first of these ambitious 12 h.p. machines was mainly French built, in order that the Wolverhampton firm might gain some initial experience of how an up-to-date car from the point of view of the French—then the undisputed leaders of the industry—should be built.

This year marks not only the 25th anniversary in the story of the Sunbeam car but also the 21st anniversary of the firm's first experiments with the six-cylinder type of engine. In 1903 it had been decided to build two of these machines for introduction at the 1904 Motor Car Show. In the earlier year experiments had been conducted for some months with a six-cylinder model, which was tried on the road. Historically, the first reference to a six-cylinder engined car of British manufacture was as early as January 3rd, 1903, when Brooke, the Lowestoft marine engineers and boat builders, and Maudslay, of Coventry, were said to be engaged on similar experimental work. On October 24th of that year, Mr. S. F. Edge announced at a dinner given by him the forthcoming appearance of a six-cylinder engined Napier car. Thus there were ambitious stirrings in the world of automobile engineering at this time: and it is not a little gratifying to realise that, of those pioneers, to-day at least two firms are associated notably in the minds of the motoring public the world over with the production of six-cylinder engined vehicles, albeit their current models are scarcely recognisable in their prototypes.

Coming of Age of the Six-Cylinder Engined Sunbeam Car

Meantime, there was the proposition of finding the wages for the Sunbeam workers every Saturday morning. It was the four-cylinder 12 h.p. Sunbeam car that enabled the firm in Wolverhampton to do this by its success in the Glasgow to London Non-stop Trials of May, 1903. Then two cars of the make, each carrying its complement of four passengers, made absolutely non-stop runs, and obtained the full total of 1,000 marks. A Sunbeam car also secured a silver medal awarded in respect of its oil bath chain cases in the 1,000 miles trial of that year. In those days the chain drive was universal. Dust and especially stones could make trouble with unprotected sprockets,

A Silver Medal for the Oil Bath Chain Case

Chain Drive versus Cardan Shaft

a problem which was solved by the celebrated Sunbeam chain case-cum-oil bath. It is interesting to recall incidentally that the chain drive lingered on the Continent and here a few years longer because then it was so much more reliable than the cardan shaft principle—and so very much more noisy, too—and various makers preferred to adhere to the method; therefore, they sought to provide the public with quieter running motor carriages by adopting the Sunbeam system of encasing the chains, because by that means no noise was audible and neither dust nor stone trouble occurred, and adequate protection was afforded.

Despite the fact that two periods of slump in the motor industry throughout the world have proved so severe that more pioneer firms have been eliminated than have remained in it, it is interesting to note that every year since the inception of The Sunbeam Motor Car Company has witnessed an increase in its business. It is amusing to recall at this interval an interlude in the quest for experience consequent on the arrival of Mr. Thomas Pullinger to take up the position of Works Manager on coming from France, where he had been trained. He began by initiating the policy of buying some French-built chassis that the Wolverhampton firm might discover how such things were made in the acknowledged leading country in the industry of that period. Thereafter, the firm continued to buy engines and gearboxes (without a direct drive on the top speed) from a famous firm at Lyons; but built these details into chassis of Sunbeam manufacture, whereby invaluable works experience under various heads was acquired gradually with the limited staff and finance at its disposal.

Leading to the Luxury of Establishing a Drawing Office

Thus by 1904 the firm was in a position to adopt what was then deemed a bold step by providing itself with a drawing office, which some quite successful motor manufacturers of the period considered almost in the nature of an entirely superfluous luxury! Dealing with the Motor Show then in progress, and referring to the exhibit of John Marston, Ltd., we read in the *Autocar* of February 13th, 1904:

"In addition to the two-seater Mabley and the 12-16 four-cylinder Sunbeam will be found a new six-cylinder car; cylinders



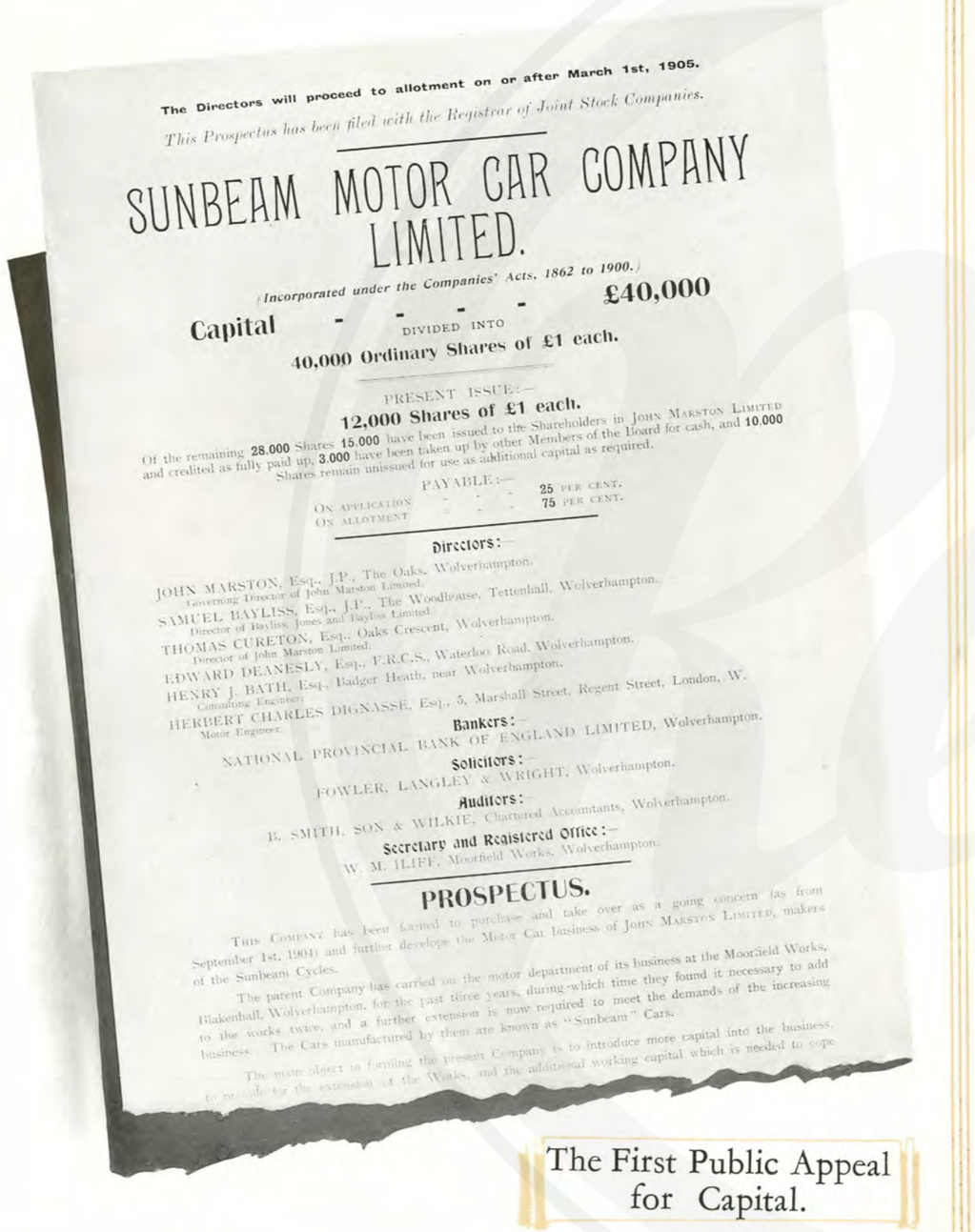
The 12/16 h.p. Sunbeam
1904

The 12/16 h.p. four-cylinder model of 1904 was regarded as one of the most reliable cars of its time. The illustration below shows one of these cars, still in regular use, after twenty years of service. This photograph was taken as recently as October, 1924.





The 1904 Sunbeam at the end of its John O'Groats to Lands End run.



The Directors will proceed to allotment on or after March 1st, 1905.

This Prospectus has been filed with the Registrar of Joint Stock Companies.

SUNBEAM MOTOR CAR COMPANY LIMITED.

(Incorporated under the Companies' Acts, 1862 to 1900.)

Capital - - - - £40,000

DIVIDED INTO

40,000 Ordinary Shares of £1 each.

PRESENT ISSUE:—

12,000 Shares of £1 each.

Of the remaining 28,000 Shares 15,000 have been issued to the Shareholders in JOHN MARSTON LIMITED and credited as fully paid up, 3,000 have been taken up by other Members of the Board for cash, and 10,000 Shares remain unissued for use as additional capital as required.

PAYABLE:—

ON APPLICATION - - - 25 PER CENT.
ON ALLOTMENT - - - 75 PER CENT.

Directors:

JOHN MARSTON, Esq., J.P., The Oaks, Wolverhampton,
Governing Director of John Marston Limited.
SAMUEL BAYLISS, Esq., J.P., The Woodhouse, Tettenhall, Wolverhampton.
Director of Bayliss, Jones and Bayliss Limited.
THOMAS CURETON, Esq., Oaks Crescent, Wolverhampton.
Director of John Marston Limited.
EDWARD DEANESLY, Esq., F.R.C.S., Waterloo Road, Wolverhampton.
HENRY J. BATH, Esq., Badger Heath, near Wolverhampton.
Consulting Engineers.
HERBERT CHARLES DIGNASSE, Esq., 5, Marshall Street, Regent Street, London, W.
Motor Engineer.

Bankers:

NATIONAL PROVINCIAL BANK OF ENGLAND LIMITED, Wolverhampton.

Solicitors:

FOWLER, LANGLEY & WRIGHT, Wolverhampton.

Auditors:

B. SMITH, SON & WILKIE, Chartered Accountants, Wolverhampton.

Secretary and Registered Office:

W. M. ILIFF, Moorfield Works, Wolverhampton.

PROSPECTUS.

THIS COMPANY has been formed to purchase and take over as a going concern (as from September 1st, 1904) and further develope the Motor Car business of JOHN MARSTON LIMITED, makers of the Sunbeam Cycles.

The parent Company has carried on the motor department of its business at the Moorfield Works, Blakenhall, Wolverhampton, for the past three years, during which time they found it necessary to add to the works twice, and a further extension is now required to meet the demands of the increasing business. The Cars manufactured by them are known as "Sunbeam" Cars.

The main object in forming the present Company is to introduce more capital into the business, to provide for the extension of the Works, and the additional working capital which is needed to cope

The First Public Appeal for Capital.

cast in three rows; mechanically operated valves with variable inlet, the cams being tapered so that variation is obtained by sliding valve shaft; new metal to metal clutch running in oil, the side brakes covered in by the Sunbeam chain case; complete under protection of the engine and gear, with the back so formed to keep down dust."

There were three other six-cylinder cars mentioned in the Guide to that Show, in addition to the Sunbeam. A sectional drawing of the Sunbeam engine and clutch appeared on page 303, in the *Autocar* of February 27th, 1904, and is reproduced here by courtesy of the proprietors.

Early Inducements to Driving in the Dark

Nevertheless the Sunbeam catalogue of this year is concerned chiefly with the 80 by 120 mm. four-cylinder 12 h.p. model, the engine of which is referred to always in these early volumes as "the motor." In this particular catalogue we read that the "governing of the motor is automatic, and by a small lever on the steering column, the motor can be set to give anything from 200 revolutions per minute to upwards of 1,000 (the normal revolutions being 800)." A special point is made of the fact that with the Sunbeam system of gear changing it is impossible to "miss a change" *even when driving at night!* One of these vehicles secured full marks in the Glasgow to London non-stop run of that year.

Reliability when that Quality was Rare

In October, 1904, the first Sunbeam car fitted with a dynamo for charging the accumulators was listed. Other work undertaken that year included designing, building and experimenting with the first of the 12-14 h.p. four-cylinder T-engined cars that subsequently became known as the standard model for 1905. It made motoring history, one example of the type being driven by Mr. Frederic Eastmead under official observation from John o' Groats to Land's End in 1904, in which year the firm also built the two cars with six-cylinder engines, each chassis having a gearbox providing two speeds forward only, referred to on a previous page. The history of that endeavour can be traced through the Spare Parts Department which, comparatively a short time ago, was requested by a purchaser, residing in the neighbourhood of Bristol, of one of these two examples of a pioneer six-cylinder engined car to supply him with certain parts. Assuredly Sunbeam was among the firms that builded better

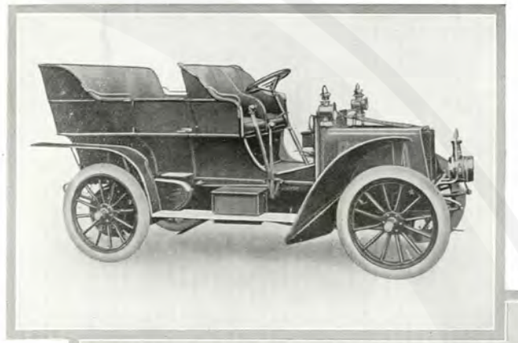
than they knew. If most manufacturers undertook to market a relatively low powered six-cylinder engined car to-day with two speeds only, that machine would not be expected to be giving its owner satisfaction nineteen years thereafter.

Financing a Proved Pioneer Proposition

By 1904 the foresight and enterprise of the late Alderman John Marston and of Mr. Thomas Cureton in starting to build motor cars at Wolverhampton had been justified so abundantly that it was deemed desirable to register a public company to develop the venture, which had been pioneered by men of business integrity no less rare than was their prevision and capacity. This was demonstrated sufficiently by the fact that, so long as the future of motoring remained problematical, and the issue of car building in doubt, they themselves had ventured all the money needful; whereas, once such an enterprise was proved to be strictly a commercial undertaking, they felt justified in launching a public company under the style of The Sunbeam Motor Car Company, Ltd., which is the name by which the firm is known the world over to-day. Nineteen years ago, however, the Company had an authorised capital of £40,000 only, whereas to-day its issued capital is £530,000. Even so, of the £40,000 original capital something less than £30,000 was subscribed. That came practically from the pockets of the original founders, and the circle of their immediate acquaintance.

New works were commenced in 1904, and the Company was registered early in the following year. Mr. Angus Shaw, chief of the newly established drawing office, got to work so quickly that by the end of the year he had designed what became the famous 95 mm. bore by 120 mm. stroke side valve 16-20 h.p. engined Sunbeam car of that period, wherein each of the four cylinders was cast singly. The gearbox provided four speeds forward, the top one being a direct drive. The final transmission was still by chains enclosed in the celebrated Sunbeam cases. This was the type of car which Mr. Frederic Eastmead and Mr. Angus Shaw drove, in June of 1906, from John o' Groats to Land's End and back again, *without once stopping the engine,* a remarkable feat for those days. The total distance was 1,756¾ miles and the whole journey was accomplished on 77 gallons of petrol, equal to 22·8 miles per gallon. The trial was carried out under the supervision of the Scottish Automobile Club, and the

Non-Stop Drives that made Motoring History

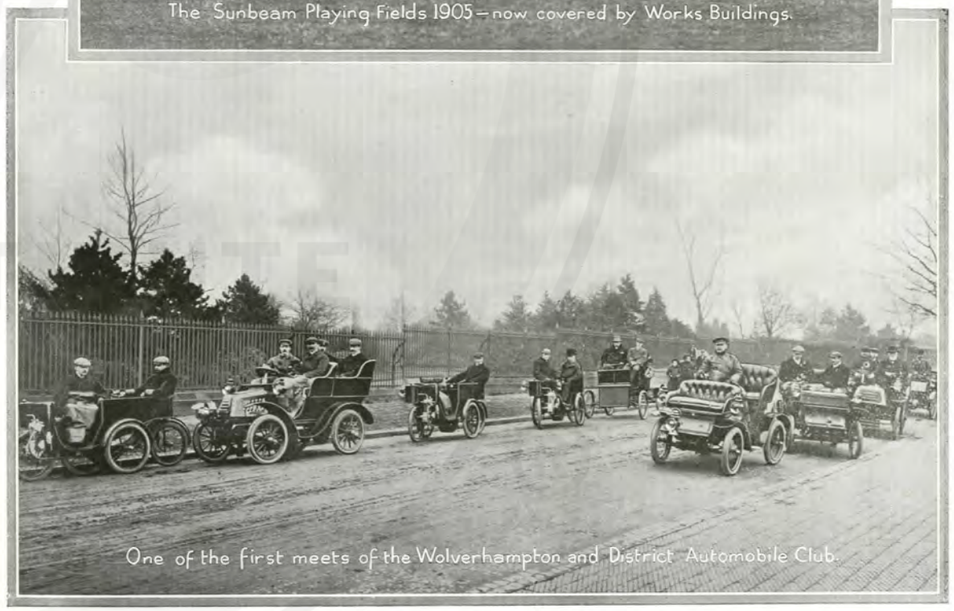


The 12 h.p. Sunbeam
1905

The success of this model necessitated considerable factory extensions to meet the demand which was experienced during the year, and additional land was acquired for this purpose.



The Sunbeam Playing Fields 1905—now covered by Works Buildings.



One of the first meets of the Wolverhampton and District Automobile Club.

The 16/20 h.p. Sunbeam
1906

Antiquated as it appears nowadays, the 16/20 h.p. car made a considerable reputation. Below is shown a group of employees at this period, and the reproduction of a photograph taken during the remarkable Sunbeam non-stop engine run from John o' Groats to Land's End and back again, in 1906.







The Sunbeam which accomplished the remarkable non-stop engine run, John O'Groats to Land's End and back again, in 1906.

observers reported that the engine ran perfectly throughout and required no attention, that it was most easily controlled, and that the change of gears on the inclines was done without effort or noise.

So great was the impression made by this performance, and so satisfactory was the service given by cars of this type as standardised and issued to the public, that the works was engaged on its production throughout 1906. This was one of the relatively early, albeit not the earliest, cars to be standardised with magneto ignition. It is interesting to note that a point of appeal was made in the catalogue of this year to the effect that the radiator was a genuine honeycomb type made in England. The water pump incorporated in previous models, also in post-war ones, was dispensed with, reliance being placed on the natural circulation of the water.

What Cars Cost Formerly

At the time this was considered quite a big scale car in its particular class, therefore it is interesting to note that the chassis price was £480, the car being standardised with four-seater body for £530. Of course, the specification was nothing like as complete as that of a standardised car to-day; also the sums specified possessed all the wonderful purchasing power of the pre-war pound that materialised in the purse in the ever grateful and now well-nigh forgotten form of a golden coin. Even so, one had to pay £18 extra for what was called a Capecart hood; £8 extra for a screen and certain accessories; and such details as side curtains, doors to the front seats, speedometers, and so forth, which are included in the accessories supplied with the cheapest of cars to-day, were all either unknown or extras. Lighting was by oil or acetylene lamps, as distinct from electricity, the application of which to the starting of the engine had not been glimpsed in imagination.

Establishing the Present Works

At this period, 1906, Mr. H. J. Bath, who is still a director of the Company, was acting as consulting engineer. All the time the firm was progressing rapidly, as may be judged from the fact that a large area of land on the opposite side of the road, and which now constitutes the Sunbeam factory proper, was acquired in this year, it being plain to the Board that the rate of extension of factory buildings was quite inadequate to the assured demand for Sunbeam cars.

Plans for Increasing Output

Plant was laid down for the manufacture of ten cars a week, which was looked on by the Board as about the limit the Company was ever likely to achieve. Indeed, 500 machines a year was a big output when it is borne in mind that, up to this period, the motor industry had not known anything in the nature either of a boom or slump—possibly in part because it had been scarcely an industry that industrialists engaged in other spheres of activity could recognise as such. For one thing, discovery was so rapid in the motor world in general that car types had to be changed continually.

Though in both hemispheres 1907 was the year of the first slump in the story of the movement, for the Sunbeam Company it was the year in which it marketed successfully an improved version of the previous year's 16-20 h.p. four-cylinder model, and built six-cylinder cars in series for the first time. Hitherto a few examples only had been produced. Nowadays, when the six-cylinder principle is being employed for smaller and yet smaller engines by reason of the extraordinary power of acceleration and the smooth running attainable by that means, it is interesting to recall, by glancing at the 1907 Sunbeam catalogue, that the purchaser of the nominal 25-30 h.p. 95 by 120 mm. car—the engine of which again had each cylinder cast separately and the final drive of which was by chains in oil cases—had the choice of either magneto or coil ignition. The petrol consumption was set down as 16 miles to the gallon. The weight of the standard model was 26 cwt.; the track—in those days referred to invariably as the "gauge"—was 4 ft. 4 in., the wheelbase being 10 ft. 4 in., and length of the vehicle overall 14½ ft. The normal engine speed was 1,000 crankshaft revolutions a minute and, of course, the side valve system was exploited. The car frame was made of ash reinforced with girder plates, the chassis price being £750, and the standard touring type £800 complete, which figure is particularly interesting at this period of high wages in the coachbuilding industry. Admitting that bodies were not furnished in comparably as complete a form as is common to-day, nevertheless £50 on to a chassis price for the provision of a touring type of coachwork ready for the road is an extraordinarily small proportion on the initial cost, and one which it would be impossible to repeat to-day. Probably at that

Magneto or Coil Ignition

time Sunbeams were not anxious to sell their products other than as complete cars. Yet that 1907 Sunbeam is a high-priced car compared, for instance, with the current 20-60 h.p. overhead valve, monobloc engined, cardan shaft driven, four-wheel braked, electrically lit, five-seater touring car, standardised with electric engine starter and electric horn, adjustable windscreen, adjustable front seat, one-man hood and side curtain equipment, spare wheel and tyre, tyres capable of 12,000 or more miles reliable service, and so on, for £950, with unprecedented qualities of acceleration, surprising hill climbing capacity and low taxation rating and fuel consumption.

When the Chain Drive had Served its Spell of Usefulness

True, in the catalogue of 1907, a point is made that the price mentioned includes side doors to the front seats, and a pair of headlight brackets! But no mention is made of the system of illumination, because that had to be selected and fitted as an extra. Moreover, the "side doors" to the front seats—Why side doors? Could they have supplied "front" doors to the back seats, or "back doors" to the front seats?—would not be recognised as such by the latter-day motorist, being about one-third of the depth of a door as now standardised. During this year, too, the Company issued a pamphlet dealing with the respective merits of the live axle and of the chain drive, because the former was beginning to be taken up by some of the leading automobile engineers. Some of the manufacturers on the Continent, in particular, had begun to discover how to make such a transmission scheme reliable. Nevertheless, it was possible to quote in the Sunbeam pamphlet the opinions of many experts of this period in favour of the chain drive, particularly when enclosed properly. In August of this year a chain-driven Sunbeam car made a record non-stop run from end-to-end of Ireland, and back; also, one had obtained full marks for reliability and the lowest petrol consumption in the Irish reliability trial in May, and full marks in the Scottish reliability trial in June.

What Motoring Cost Formerly

The 1907 six-cylinder type did not have a very long vogue. In the following year the 20 h.p. four-cylinder type was still marketed, being supplemented by a new four-cylinder model rated at 35 h.p., and sold for £620 the chassis, or with limousine body, including electric light and special inside fittings, also speaking tube, for

£843 19s. 6d., which sum was arrived at as follows : price of car with limousine body, £825, side and tail lamps £3 13s. 6d., bulb signal horn and extension £1 16s. od., and two headlights £13 10s. od. These prices are interesting from the point of view of the industry to-day ; there is something so seeming topsy-turvy about them. A large limousine body at £225 complete would be deemed incredibly cheap to-day, especially having regard to the then relatively small scale of production in question. A mere bulb horn was furnished ; but a deal of flex was in favour in those days, making a nice, bright, limp line reaching, generally, from conveniently near the driver's hand, well forward as near as possible to the radiator or headlamp line. Again, nowadays you do not have to pay £13 10s. od. for a brace of headlamps. Incidentally, as illustrating the evolution of standardised coachwork in this country, it may be mentioned that this catalogue is the first of the Sunbeam series in which mention is made of the price of a closed body. Old-established coachmakers about the country enjoyed practically a monopoly of the building of covered bodies for cars. The catalogue contains an illustration of a landaulette. Moreover, that there were satisfied users in those days who could imagine no finer motoring than was available to them is plain from the number of testimonials the Sunbeam Company received. A typical one is that of Mr. George Rudd Thompson, F.I.C., S.T.S., of Newport, Monmouthshire, who on April 24th, 1908, wrote :

What Sunbeam Owners Thought

" Just a line to tell you of the performance of ' Phantom ' over Easter. We left with four up, and a load of luggage for Buxton, by way of Derby, had a few runs while there, and came back the same way, the mileage being 373. The amount of carburene used was 16.5 gallons, which equals 22.6 miles per gallon. I have already refused £650 for her as she stands, and would not sell for any consideration, as she is simply perfect and suits me down to the ground, and can climb anything."

As George Graves used to say in one war-time Drury Lane Pantomime : " Happy days, ah ! happy days ! "



A 16/20 h.p. Sunbeam
1907

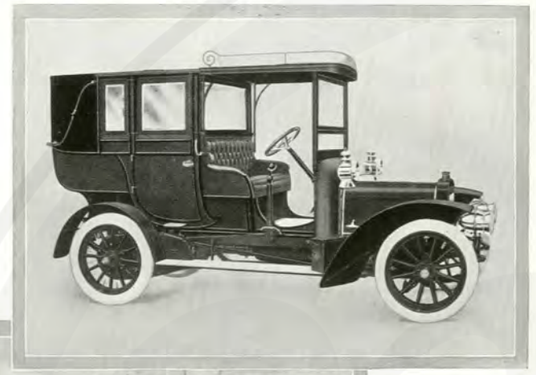
Although many mechanical improvements had been introduced by 1907, coachwork was still more ornate than elegant.
The illustration at the foot of the page shows an early Sunbeam car fitted with a closed body. This car was supplied to His Supreme Highness The Naizamuddin of Meerut. The coachwork was supplied by Cockshutt & Son, Manchester.





A Landaulette Model
1908

This was the first year in which Sunbeam models were catalogued with closed bodies. Improvements were also made in the coachwork of the open cars, low side doors being fitted as shown in the illustration below—a car owned by the Hon. Maurice Gifford, who is seen at the wheel, one of the most enthusiastic Sunbeam owners of that period.







Chassis erecting in 1908.

CHAPTER III.

The Company's Most Memorable Month

THE year 1909 opened uneventfully enough with the continued production of the 14-18 h.p. type. But February, fifteen years ago, proved in a sense the most memorable month in the Company's career, for it was then that the late Mr. Thomas Cureton's business acumen achieved its most brilliant stroke by securing the services, as chief engineer, of Mr. Louis Hervé Coatalen, with whose name the enterprise became associated inseparably thenceforth in the minds of the captains of the industry in both hemispheres. What the Sunbeam Motor Car Company has achieved in the last fifteen years is mainly the fruit of Mr. Coatalen's manifold genius. Yet, like the inception of the Sunbeam car, his introduction to British automobilism was sufficiently modest. Born at Concarneau, Department Finisterre, in 1880, he was trained as an engineer at the "Gadzarts"—the Ecole des Arts et Metiers—where the three-year course was from early dawn to dewy eve, seven days a week, with a half day off on Sunday, plenty of preparation work to do, and a fortnight's holiday in the year. This was a good initiation to the seriousness of life, although it has been noticed that the system turns out more spiritless engineers, amazingly well grounded in mathematics, than it does men of bold measures and genius. Be that as may be, however, the process was powerless in any degree to dwarf the endurance and virility of the youthful scholar. Nor was the subsequent term of military training through which he passed before going successively into the drawing offices of the Panhard, Clement and De Dion-Bouton firms, wherein he had an invaluable experience in three of the French motor enterprises which, together with one German concern, were at that period leading the world in automobile engineering design and building.

The Young Engineer

Even at that early stage the instinct for values, which quality he possesses almost singularly among the designers whose vehicles have made motoring history, was active, for he realised clearly that he was born a decade too late to stand a chance of scoring a personal success in the French automobile industry sufficiently early in life to be worth his while. Therefore, in 1901—when he was only of age, albeit probably as well versed in mathematics and

A Maker of Motor Fortunes

science as a Britisher would be who is turned out as a finished specialist from either of our leading Universities at the age of four or five and twenty—he came to this country, commencing at a modest salary with the Humber Company, which made the investment of its career over the transaction in that he proved to be the chief instrument in restoring its fortune, which had vanished with the passing of the bicycle boom, and which remained in a sorry case during its initial attempt to enter the motor industry. The nominal 10-12 h.p. Coventry Humber car, which he designed, restored the company to prosperity, for it was the first four-cylinder, live axle, British made, middle size vehicle to be sold at about £300, the demand for it being so great that the machine had to be assembled in the streets of Coventry, it being impossible to expand the factory sufficiently promptly, a procedure which probably has not its double in the story of the automobile industry of this country.

Building up an Unrivalled Staff

On the completion of his term of office with the Humber Company, Mr. Coatalen joined the late Mr. Hillman for a time in the production of the Hillman-Coatalen car, as it was called originally, and which is known now by the former name only. It was on this showing that Mr. Cureton decided that Mr. Coatalen's talent should be put to profitable use by the Wolverhampton firm. Its founder's business foresight was never justified more completely than in this conclusion, for, relatively great as was Mr. Coatalen's first achievement on behalf of British motor industry, it was a mere foretaste of the employment and prosperity he was destined to create through his association with the Sunbeam Company. Never has this country secured a more loyal recruit, for within a few years of his coming here he became a naturalised British citizen, and he has never ceased to study automobile developments and possibilities in all parts of the world, and from time to time to enlist all the talent he can from any quarter to swell the ranks of the Sunbeam Company's staff, for his mind has been cast always on big lines. In him there is nothing of the small man whose sole aim is to impress a Board of Directors with the idea of his own talent on the principle of consistently barring others from a protected territory. On the contrary, wherever Mr. Coatalen sees a special talent, forthwith he endeavours to engage it because in his opinion it is impossible

to have any department too well manned. He realises that an intelligent directorate will appreciate always that a big man's job is to get the best men procurable for every phase of its company's work, and that an organiser proves his ability in measure as he surrounds himself with strong and big men, as distinct from insignificant sycophants.

Even so, however, years passed during which he could get only the nucleus of the sort of staff he needed, for, of course, in the beginning the sinews of finance were lacking for the establishment of a British motor factory on the inevitably but necessarily expensive scientific lines, the value of which industrialists first began to realise when the war broke out. To Mr. Coatalen's credit be it recorded that he constituted himself a jack-of-all-trades during the first years of his association with the Company. Probably it is not realised that, in effect, he ran the works as well as the designing staff, for which task he was qualifying himself incidentally even when with the Humber Company. The late Mr. Edward Powell, then Chairman of that Company, and who captained it during its return to prosperity, once said he was delighted to have secured "the services of that young French boy," as he styled him. "But," he would add, "we cannot keep him at his desk in the drawing office ; he will get out on the road and drive a car." It is precisely because the youthful engineer tried those vehicles in every way practicable that in due course he made them the first really suitable and cheap owner-driven cars built in Britain. Mr. Coatalen has as great a passion for sportsmanship as is the world-renowned attribute of the Britisher born. There is nothing he likes so much as engaging in competition, and nobody can take a beating in better part. In this connection one would add that Mr. Coatalen learns even more from the defeats he sustains occasionally than by his astonishing succession of successes, a point well worth bearing in mind when one studies the standard products of the works with which he is associated in the minds of car owners throughout the world.

How Character makes Outstanding Cars

Joining the firm in February, 1909, he designed the 16-20 h.p. car ; and the spirit of sportsmanship manifested itself from the outset of his policy in that an example of this type of vehicle was run by him in all the principal hill-climbing tests and reliability trials throughout that year, when it scored a

particularly notable success in the Royal Scottish Automobile Club's 1,000 mile series, completely beating the 20 h.p. pre-Coatalen Sunbeam car with a bore measurement of 105 mm., and a piston travel of 130 mm. which, during that one season also, ran in the aforesaid Scottish trials with results that have been recorded amusingly by one of the original staff in the following words :

What made the Scottish Observer Furious

"I handled one example of this first Coatalen model, and remember an incident with Mr. Frederic Eastmead driving one of our pre-Coatalen type cars. He arrived at Cairn-o'-Mount next car in front of me. I watched him start. After he had gone I mentioned to the time-keeper that he had better let Mr. Eastmead get well away before he started me. But after two minutes the official gave me the signal to go. Before I got to the half distance I had overtaken Eastmead and 'walked behind' him thereafter, for I could not pass. My observer was furious. He yelled with all his might to try and let Eastmead know we wanted to pass, but without avail. When the timed portion was passed, Mr. Eastmead handed round a box of cigars he had aboard. My observer would not help himself, and reported to Mr. Robert J. Smith, the Trials Secretary, that Mr. Eastmead had obstructed us and then tried to bribe him ! We all roared with laughter about it, and have done so many times since."

How the Public Received the 12-16 h.p. model

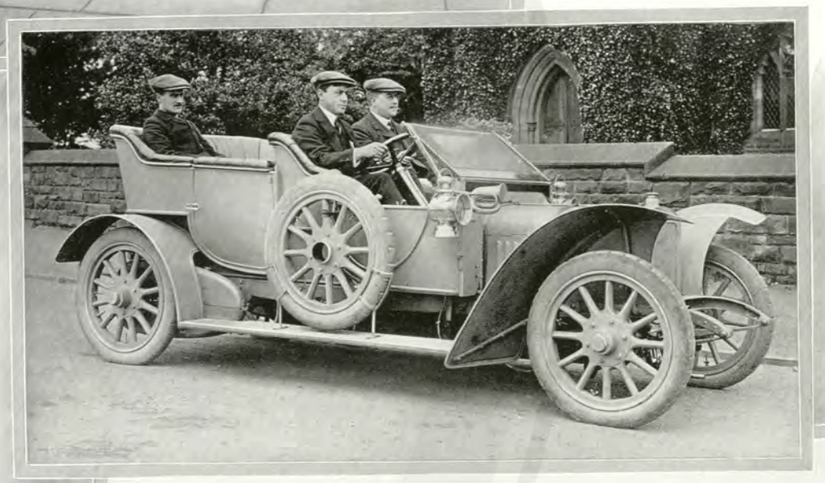
That year, perchance, affords the only instance furnished by a firm of British motor manufacturers in which one of their products was competing in the same category against one of another type and "wiping the floor with it." Everybody was surprised at the performance of the 16-20 h.p. Coatalen-designed Sunbeam car, which was thought so big that it would be as well to have a smaller model. Whereupon Mr. Coatalen designed the first version of the world-famous 12-16 h.p. four-cylinder Sunbeam engine, which had a bore and stroke of 80 by 120 mm., the cylinders being cast in pairs. How the public received it may be gathered from the fact that in the year 1910 such an output was reached as necessitated the immediate expansion of manufacturing facilities and led to the setting up of more shops in the fields on the opposite side of the road. In short, already Mr. Coatalen's policy of competition was proving a very valuable business asset to the Company, whose sales of

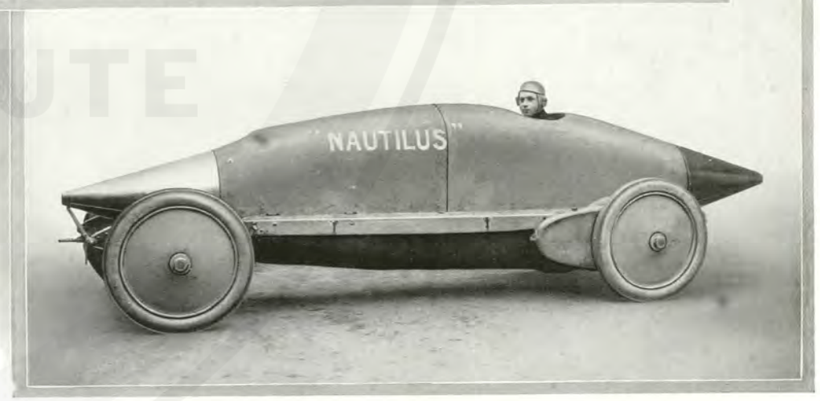


The 16/20 h.p. Sunbeam of 1909

The car shown in the centre picture is the famous 16/20 h.p. Sunbeam, the first model designed by Mr. Coatalen after joining the Company. It was fitted with chain drive, but this did not long survive, the cardan shaft superseding it soon afterwards.

The other photographs show the earliest types of Sunbeam racing cars designed by Mr. Coatalen, the "Nautilus" being one of the first attempts at efficient streamlining.



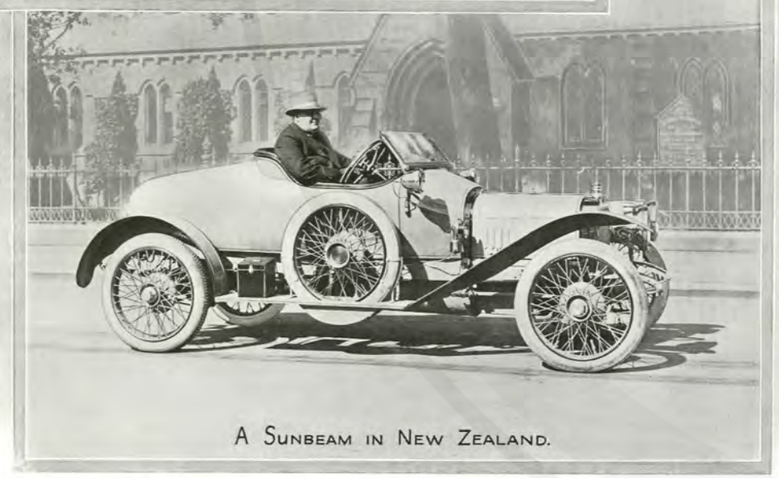


A 16/20 h.p. Sunbeam
1910

The success of the 16/20 h.p. four-cylinder car designed by Mr. Coatalen, together with the 12/16 h.p. model, proved so great that immediate expansion of manufacturing facilities was necessary and the Works were further enlarged. The illustration below shows the late Mr. T. Cureton at the wheel of one of the 16/20 h.p. models.







A Sunbeam in New Zealand.

cars hitherto had been on the modest side. But still the firm's new engineer was merely beginning to exploit the lines he had mapped out for himself, as those realised who were in touch with him while he employed some "hotted up" standard cars which he drove at Brooklands, and elsewhere, in races until the Board of Directors, growing more and more amazed as one talent after another of their "Admirable Crichton" was revealed to them, bethought themselves one day: "But what should we do if suddenly we lost our chief engineer in an accident in a racing car?"

The only Restraint put on Sunbeam's "Admirable Crichton"

It was in this year, 1909, that the Company built from Mr. Coatalen's design, and he drove at Brooklands with success, the four-cylinder 92 × 160 mm. overhead valve engined "Nautilus" Sunbeam car, wherein the valve operation was by lever and push rods as in the latest standard practice of the firm, the cylinder head being detachable. The designer was so far ahead of his time that he actually used an air compressor for achieving forced induction. The connecting rods were nickel chrome steel forgings machined all over. This usual 1924 practice was anticipated by no less than half a generation.

At last the Board succeeded in impressing on Mr. Coatalen the fact that, though he might design the cars, organise the works, select the raw materials, prepare cars for competitions, discover fresh talent of all sorts, and so on, *ad infinitum*, still somebody else had better drive Sunbeam cars in competitions. He was very reluctant to give up the sport which was particularly dear to him. Indeed, one doubts if he would have done so but for a very narrow escape from serious accident in one race at Brooklands. That gave the Directorate their chance to restrain him, which they did in this one particular, since they had never had occasion to differ with him on any other matter. Incidentally, Mr. Coatalen has designed and superintended the building of cars for three firms for racing in the Isle of Man—Humber, Hillman and Sunbeam—and though he has never driven a Sunbeam car in the Tourist Trophy races, he organised the last-named Company's teams for two of those races, which they won in 1914, and again in 1922. The 1914 race was won with a four-cylinder 81·5 by 156 mm. engine, and experimentally with

overhead instead of side valves, whereby he prepared for standard engine practice, of which more anon.

A Works equipped to do Justice to Distinguished Design

Considering the unambitious beginnings of the Sunbeam project in 1899, its growth in the first decade of its existence was phenomenal. But, by comparison, the expansion during the second decade, when Mr. Coatalen was recruited to it, was even more amazing. Every year witnessed growth, so that the shops—as the different departments of the Works are technically called—never presented the same appearance, nor were they equipped with the same machinery, from one year to another. Indeed, there was a time when Mr. Coatalen introduced the Potter-Johnson automatic machines—of which the Sunbeam Company, then with a relatively insignificant capital, had a greater number than any manufacturer outside America with the sole exception of Louis Renault—which one mentions by way of indicating what an astute judge of machinery Mr. Coatalen is.

It is amusing to recall that in 1909 the purchaser was given the option of having a Sunbeam car either with live axle or with chain drive, the price of the 12-16 h.p. chassis being £455 and the vehicle, complete with five-seater body, only £30 more, a proposition which for various reasons has never been possible since.

Making Motor History with adapted Standard Cars

By 1911, however, the live axle drive was demanded by all customers, and that was the last of the oil-bath chain drive with which Sunbeam had pioneered the movement of quiet transmission on a motor car, the 12-16 h.p. and the 16-20 h.p. four-cylinder models being continued in 1911. But in the following year three types were listed, the two former being supplemented by a 25-30 h.p. six-cylinder model. Each chassis was available in two lengths of wheelbase. But that sales policy was not the thing that made 1912 stand out as a red letter year in the story of British automobilism. On the contrary, great as had been the success of the 12-16 h.p. Sunbeam car designed by Mr. Coatalen, which in its original form had the cylinders cast in pairs and a worm drive, the 1912 version had a greater vogue, possessing a monobloc engine the dimensions of which were 80 by 150 mm. There were still insufficient funds to build special cars for racing, but by "hotting up" and otherwise adapting the standard

12-16 h.p. type some remarkable things were achieved by the make on the Brooklands Automobile Racing Club's track at Weybridge, where, incidentally, Mr. Coatalen was making a very careful note of a number of discoveries in regard to weight distribution, all of which were invaluable not merely for increasing the firm's chances of winning races, but also as a means of enabling one to know how to achieve the most efficient performance from the points of view of economy and alertness in conjunction with riding comfort in standardised cars. Among the things which he discovered was that, as his cars were then designed, he could not race at over 80 miles an hour with safety unless he had all the wheels balanced. That used to be done by inserting little slabs of lead, washer style, under the security bolts of the tyres.

From Local to Universal Repute in two days

The valuable work which Mr. Coatalen had achieved for the Company was recognised in generous measure, and in January, 1912, he was appointed to a seat on the Board of Directors.

Cumulative experience bore historic fruit on the Dieppe circuit in June, 1912, when there was organised a combined Grand Prix of the Automobile Club de France and Coupe de l'Auto race for two days over a distance of no less than 957 miles, as distinct from the 500 miles course used for the Blue Ribbon events of the automobile racing world in the post-war days alike in Europe and in America. That was a remarkable race in that cars entered for the Grand Prix only might have engines of unlimited size, whereas those entered for the Coupe de l'Auto were limited to 3,000 c.c. cylinder content, which was the voiturette, or small car, category of those days despite the fact that in this year of grace, 2,000 c.c. is the limit for the two-miles-a-minute, so-called "large" car races, such being the amazing progress made in relatively a brief interval of time. The cars running in the limited engine category for the Coupe de l'Auto in 1912, were also entered for the larger event. But everybody thought they would stand poor chances against the monster engined ones, as witness the fact that Italy was represented by chain driven machines having engines of five times the size of those fitted to the Sunbeam cars; while France was running cars with engines $3\frac{1}{3}$ times as large as those in the Coupe de l'Auto category. Between the two events a couple of score of competitors were sent off the starting line on the first day, most

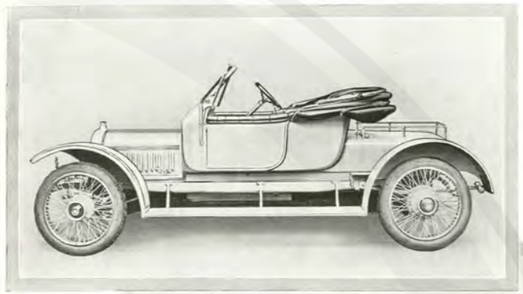
A Victory Unprecedented in its kind and which left its Mark on Motor Design

firms running teams. One maker only among them all succeeded in getting three cars past the post, the Sunbeam Company's vehicles coming in first, second and third in the Coupe de l'Auto, and third, fourth and fifth in the unlimited category for the Grand Prix of the Automobile Club de France, being beaten in that event only by the winning Peugeot by a margin of three miles an hour in the unlimited engine class over a distance of over 957 miles, and by one Fiat with an engine five times as large as those of the British vehicles, and which did not succeed in travelling quite three miles an hour faster than the leading Sunbeam despite the fact that both the French and Italian vehicles were designed and built irrespective of cost specially for the event, whereas the Sunbeam cars had to be built up of standard parts altered slightly as to valve diameters, chassis length, gear box position, and such like details. Nor is that all, in that throughout the race the British drivers were able to save themselves an extraordinary amount of fatigue, and to take their cars along with one hand only on the steering wheel because the control was as easy as with a touring carriage; whereas, of course, in those days most people driving a racing car at a mile a minute, or more, kept the roaring machine bounding along the road more or less as though they were endeavouring to traverse a tightrope.

Sunbeams supersede the Monster Racing Cars

Among the notable points in connection with that race was the fact that no other manufacturer got more than one car past the post in either event. Britain thus became the instrument in sounding the death knell of the monster racing car of unlimited engine size which had become useless as a means of developing standard car design whereas, by contrast, the small engines used by Sunbeam, and the principal features of the design employed, were akin to touring car practice, but represented always a certain element of experiment which was the main object of engaging in racing as a means of testing a car first and winning renown, if possible, afterwards, that being the fixed policy of the Wolverhampton manufacturers.

As regards Britain's part in automobile sport by engaging in the Blue Ribbon automobile races, the Sunbeam victory was an historic achievement of the first order, in that, with the exception of the winning of the Gordon-Bennett race by Mr. S. F. Edge on



12/16 h.p. Sunbeam 2-Seater
1911

By 1911 the popularity of Sunbeams had enormously increased, and the Works were taxed to the utmost capacity to cope with the demand. Numerous records were set up at Brooklands, and in many important trials Sunbeams made remarkable performances.



A scene at Brooklands during a record-breaking attempt.



A Sunbeam in Ceylon in 1911.

1912 - The Coupe de l'Auto Year.

The Sunbeam performance in the 1912 Grand Prix and Coupe de l'Auto, which is described on pages 29 and 30, still ranks as one of the most remarkable performances ever accomplished in international car racing.









The first of the three Sunbeams in the Coupe de l'Auto.

Doing the "Hat Trick" twice—in 1912 and 1923

a Napier car ten years earlier, 1902—when one British vehicle only finished as distinct from the three Sunbeams in 1912—up to the later date, the Sunbeam success was the only other instance in which the classic international race of the motoring year had been won by a British machine. Moreover, at that date the victory stood out as the most absolute triumph of standardisation of high efficiency, as then understood, in combination with unprecedented endurance achieved in the annals of motoring. In the story of motor racing of this class, it is not usual even at this date for a firm to score with more than one car. To get two cars past the post is uncommon. Sunbeam, however, has proved that its victories are not flukes because, as a team proposition, that historic 957 miles Grand Prix and Coupe de l'Auto race of 1912, won at a mean speed exceeding a mile a minute, has been followed up since the war by the firm winning last year (1923) the Grand Prix of the Automobile Club de France over a distance of 500 miles on the Tours circuit at a mean speed of 75¼ m.p.h., when the 1989 c.c. six-cylinder engined Sunbeam cars secured first, second and fourth places, there being an element of doubt as to whether the last of the three vehicles did not actually run into third place. Be that as may be, these two performances of 1912 and 1923 stand out as the only two instances in the story of classic motor races wherein team achievements have been scored in that fashion.

In a sense the sensation created last year was not comparable with that created in 1912, because, in the interval following the earlier lessons, the motor car manufacturers of the world had realised that an entirely fresh series of possibilities were opened to them by the earlier Sunbeam achievement when, by contrast with the roar, the noise, the ill-balance, the extravagance of fuel and tyres, and so forth, the running of the 80 by 149 mm. 3-litre Sunbeam cars in 1912 showed onlookers for the first time the spectacle of racing vehicles driven as conveniently as touring carriages, their pilots sitting perfectly at ease in their seats. What this meant, incidentally, in the matter of tyre economy is interesting to recall in that, by the proper distribution of weight, the front wheels were kept in continual contact with the contour of the road, with the result that the tyres used went through without incident of any sort, save that, after the first

day's racing, as a purely precautionary measure, the wheels were changed ; whereas on the monster racing cars of that period two and three tyres were often used per lap, the rubber being practically ground off the canvas.

Setting Up New Records

In September of the same year came a whole batch of successes at Brooklands. The 15.9 h.p. Sunbeam which had been driven into second place in the Coupe de l'Auto was used in an attempt on the twelve hours world's record of 907 miles 1,535 yards, set up by the 30 h.p. six-cylinder Sunbeam in September, 1911, and the thirteen hours and 1,000 miles records standing to the credit of Mr. S. F. Edge and his 60 h.p. Napier. Despite several stoppages to rectify minor troubles, the record was broken, the Sunbeam covering 910 miles 1,738 yards in the twelve hours, and then going on to capture both the thirteen hours and 1,000 miles world's records, the latter having remained unbeaten for over five years. This eventful performance also placed the Sunbeam in the position of holding all Class E records up to twelve hours.

CHAPTER IV.

Making the Workman keen on his Job

HAVE you any conception of what it means to the personnel of a motor factory, from the Chief Engineer and the Works Manager down to the apprentices and the office boys, suddenly to find the enterprise which employs them translated from one of local importance and countrywide repute into one of the classic car building houses of the world, whose products make motor history ? Many who have no experience of the matter have written, or spoken, against the policy of engaging in first-class motor competition. But it is curious that none of those critics seems to have made a first hand study of the proposition and to realise that, if victory never came the way of the given company, nevertheless the effect in the Works is such a spur in itself as to result in enormously improving the standardised products. When, by contrast, victory comes not once but often, in the hardest fought battles of the automobile world, then the effect for good is inestimable. The Sunbeam Company has not been without its difficulties, to which it has been subject in common with similar enterprises throughout the country, but during all troubles the men employed at Moorfield Works, no matter what their personal views may be, inevitably find themselves infected with a certain indefinable enthusiasm which makes each individual take a definite pride in his job. Really, there is nothing strange in this. Sunbeam owners are proud to possess their cars ; so are Sunbeam operatives to build them.

And Giving the Sunbeam Car Owner Value for Money

That is one of the great gains to the individual car buyer patronising the products of a firm which has risked all, time and again, that it may never carry on its enterprise in a condition of fond delusion that all is well with it. Instead, it has put the matter to the proof in competition against the best the world can produce from time to time and therefore knows for a fact whether it is leading or merely imagining that it is doing so. As to cost, throughout its career the Sunbeam Company can point to its prices with confidence, whether they have been raised or lowered, because they have been always in strict competition and generally, performance for performance, quality for

quality, equipment for equipment, lower in cost than other cars, particularly of home origin; yet none has a prouder pedigree than attaches now to the products of the Wolverhampton works. So much for the story that, if a firm goes racing, the bill is charged to the individual car buyer; there need be no surcharge, but there can be an actual reduction of costs as a result of some lessons learnt. Sunbeam prices are rather lower than higher than rival products from firms that seldom, if ever, participate in first-class competition for the purposes of experiment. Incidentally, that is why the Sunbeam Company has continued this policy with the full realisation that, though it cannot win the chief prize every year, because the element of luck has much to do in that connection, it can gain a vast amount of invaluable experience.

Incorporating the Fruits of Experience

Reverting to types, the three models—the 12-16 h.p. four-cylinder, 16-20 h.p. four-cylinder and 25-30 h.p. six-cylinder chassis, with two lengths of wheelbase each—were continued in 1913 and in 1914; but all the time improvements were incorporated in these standard products as features of design were discovered and better metals became available. Thus in 1914 the wheelbase of the open touring models was increased; the springs were made from specially selected nickel chrome steel; the gearbox was set further back to enable a longer shaft to be fitted between the clutch and the box; brakes of larger diameter were incorporated; a sliding front seat was provided to the open touring models, together with a special one-man hood, and grooved instead of plain tyres were standardised. Again, Sunbeam's devotion to the improvement of details is apparent, for they were the first firm to fit sliding front seats. These features are cited merely from among several to indicate how progress was being made consistently, and how, on the other hand, sight was not lost of the development of those features, including accessories and so forth, which could be gained only from enterprise in many directions. In this same year Mr. Thomas Cureton retired from the position of Managing Director, and Mr. W. M. Iliff—who had been elected to the Board some months earlier—and Mr. Coatalen were appointed Joint Managing Directors.

The 1914 cars had side valve engines. Nevertheless, that



Sunbeam Racing Car
1913

The top illustration shows one of the Sunbeam cars built for the 1913 Grand Prix de France. Below is a 1913 model with special coachwork which, although appearing very antiquated in the light of modern body design, was regarded in those days as an unusually fine example of the closed motor carriage.



A 1913 Sunbeam, with special Coach-work.



A Hill Climb - a lady competitor on a Sunbeam.

The 12/16 h.p. Sunbeam
1914

Although Sunbeam cars achieved many successes in 1914, the biggest victory was in the Isle of Man Tourist Trophy Race, where Mr. K. Lee Guinness proved the winner. The lower illustration shows Lee Guinness passing the Bungalow, and the smaller picture was taken at the conclusion of the race, when Lord Raglan, Lieutenant-Governor of the Island, congratulated the winner on his performance. The Tourist Trophy Race was again won by a Sunbeam in 1922.







Evolving Dependable and Efficient Overhead Valve Engines

June, again in quest of fresh experience, the Sunbeam Company ran three 3-litre engined four-cylinder cars with overhead valves in the Blue Ribbon British long distance road event, the Tourist Trophy Race, in the Isle of Man, which was won by a handsome margin and confirmed the correctness of Mr. Coatalen's experiments at Brooklands, and elsewhere, of several years previously, wherein he had attempted to use overhead valves to obtain greater efficiency. In the earlier days, however, suitable metals were not available for the springs, nor for the valves themselves, with the result that the system suffered, from a standard car point of view, from the fact that, if a valve broke, the piston and other details went as well. But Sunbeam had got past that stage before the World War broke out.

Part of this progress, which has given us the notable post-war series of overhead valve-engined standardised Sunbeam cars of rare refinement, economy and efficiency, was assisted by another branch of the firm's enterprise. Not content with successes on road and track, and in marine craft, Mr. Coatalen himself bought a Henry Farman aeroplane some twelve months before the campaign commenced, and began to experiment by using Sunbeam engines on it. That aeroplane was piloted by a man destined to make history as the first pilot successfully to cross the Atlantic in a heavier than air machine—the late Sir John Alcock. Such remarkable progress was made that, by August, 1914, the Sunbeam Motor Car Company was one of the only two firms in the world which had standardised aero engines, designed and built by a firm of any experience in building engines on a large scale, and of sufficient power to lift British seaplanes. These engines were available before war broke out, particulars being issued the year before. Other British firms have since done notable things in aircraft engine construction, but none had attempted and accomplished anything equally ambitious and successful before the outbreak of war. Moreover, our Allies, the French, had to come to the Sunbeam Company and were using to the war's end aero engines built by the Wolverhampton enterprise.

The First Sunbeam Aero Engines

This aero engine enterprise meant very much more than prosperity for the Sunbeam Company during the war, when the demand for its power plant was so great that shop after

shop, comprising acres of floor space, had to be built. Even so, it was quite impossible to produce at the same works the cars for which there was a very great demand, particularly as regards the 12-16 h.p. type for light transport work. Therefore, that was made later under licence by another firm.

Side Valve Aero Engines

Actually, the designing staff of the Company produced a greater variety of types of aero engines at Moorfield Works during the four and a half years of war than any other firm. The list is too numerous to reproduce in detail here. Suffice it that the first series of Sunbeam aero engines had side valves. But, by means of its racing car practice, soon it was possible to employ successfully the overhead valve.

Sunbeam has achieved many things for which, in a sense, it has got neither cash nor credit; neither has it sought either in some cases. For instance, most practical motorists will be able to appreciate to-day the value of the dry sump system of lubrication. In point of fact, that was invented by Mr. Louis Coatalen and it was only a technical point in connection with patent laws that prevented the company having the credit and profit attaching to that development. Instead of taking out a patent for that system as such, what had been done, in effect, was merely to incorporate it as a matter of course in a design which embraced other features; therefore it was not technically possible to apply for a master patent for the dry sump system of lubrication which has revolutionised engine performance. It is so in regard to a number of other features.

From 12 to 900 H.P.

Meantime, more and yet more power was bein constantly demanded by the authorities as the possibilities of aerial warfare were realised. Everything came on the unfortunate engine maker. If he was asked to provide a 350 h.p. engine he rarely found it installed in a machine that did not need the power plant to develop 375 h.p. before it could leave Mother Earth. Moreover, if it succeeded in doing so, that merely encouraged the provision of still heavier equipment on the fighting, scouting or bombing machine. It was all inevitable because the new Arm was required to do more ambitious things in the air as the war progressed. Of course every motorist knows that was, and is, the most uneconomical, unscientific and unsafe way of using an engine. The only way to achieve reliability is to provide a

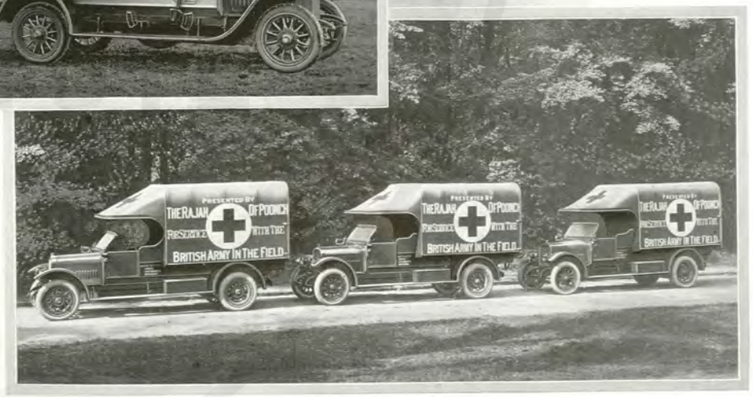


War-time Activities
1914-1918

Although from 1915 onwards the Works were almost entirely engaged on the production of Sunbeam-Coatalen aircraft engines, in the early months of the war a very large number of 16-20 h.p. cars were supplied for staff use and for ambulance purposes.

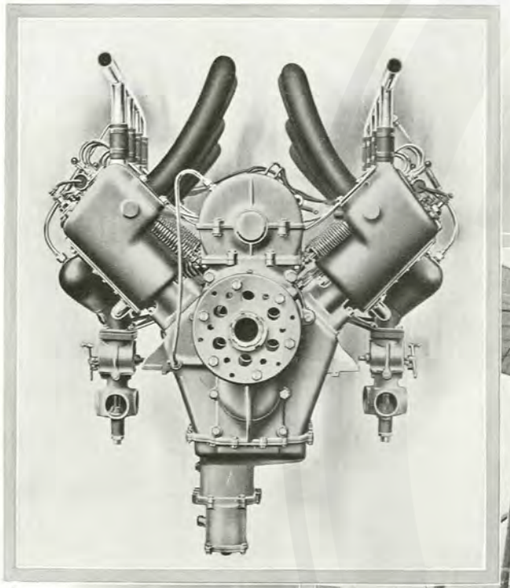






The first Sunbeam-Engined Aeroplane

As early as 1913 the first Sunbeam aero engines, of 150 h.p., were built and used in the Farman Biplane illustrated below. This machine was piloted in its early flights by Mr. John (afterwards Sir John) Alcock, who in 1919 achieved the distinction of being the first airman to cross the Atlantic in a heavier-than-air machine.





The late Sir John Alcock K.B.E.



350 h.p. engine and never require it to develop more than 250 h.p. save for four or five minutes at a spell in emergency ; then you will have both economy, reliability and long wearing life. That is the ideal towards which we are striving to work in regard to providing aircraft power plant, in the evolution of which the Sunbeam Company has played an historic part. Nor is its work in this field concluded.

Meantime we have to recognise the peculiar feature which distinguished the Sunbeam Company's enterprise. To evolve a new style car, or engine, is one highly specialised business; to standardise it is quite a distinct undertaking, no less highly specialised. The rare combination of those two requisites has brought the Sunbeam Company the outstanding and amazingly varied success it has achieved among the automobile manufacturers of the world.

In universal Demand

During the war, licences were taken out to build Sunbeam aircraft engines on the Continent and in America. The types designed and standardised ranged from 150 h.p. provided by eight water-cooled cylinders with side valves, to 800-900 h.p. developed by the twelve-cylinder overhead valve " Sikh." The middle ranges included the 170 h.p. overhead valve six-cylinder " Amazon," the 275 h.p. overhead valve twelve-cylinder " Maori II," the 450 h.p. overhead valve eighteen-cylinder " Viking," the 400 h.p. overhead valve twelve-cylinder " Matabele," the 100 h.p. six-cylinder " Dyak " and the 275 h.p. twelve-cylinder " Maori IV.," airship type, fitted to H.M.A. R33 and R34. Of course, one type was no sooner produced and proved satisfactory than the experimental department was engaged in evolving another, there being nothing like war to outdate achievement rapidly ; for the rivalry between one country and another to produce effective aircraft was ceaseless up to the very moment of the Armistice.

Sunbeam's Unprecedented Service in the Battle of Jutland

How many people realise that the pre-war Sunbeam-Coatalen aircraft engines—the 225 h.p. twelve-cylinder side valve Sunbeam-Coatalen " Mohawk " type—were fitted to the seaplanes which flew between the British and German Fleets throughout the Battle of Jutland, rendering invaluable service, as recorded in Lord Jellicoe's official dispatches, furnishing the British Admiralissimo with information concerning

the dispositions of Admiral von Scheer's German High Seas Fleet? That is the greatest naval battle there has ever been, and the first occasion on which British aeroplanes flew under fire continuously between two opposing fleets, an achievement to be associated with which is legitimate subject matter for pride. It would make notable the enterprise of any motor manufacturer.

Moreover, however brief, no review of the firm's accomplishment would be complete if one omitted the fact that, apart from providing facilities for its 12-16 h.p. car to be built by rival British makers, the Sunbeam Company also sent its aero engines to rival manufacturers' works for study.

Sunbeam-Coatalen aircraft engines were not in evidence merely over the North Sea. On the contrary, the same types were on seaplanes used by the Royal Naval Air Force on Lake Tanganyika in association with the Belgian Expedition—a very severe test of improvised service in connection with which the engines gave no trouble. Perhaps an even more picturesque occasion was when these engine types were used on the seaplanes which dropped bags of flour on the late General Townshend's besieged garrison in Kut. Had there been six times as many seaplanes so equipped as were available, it is computed, by the members of that garrison, as well as by officers of the Air Service, that General Townshend's gallant force need never have surrendered. As it was, the seaplanes enabled him to hold out much longer than would have been possible without such aid. The method of conveyance is interesting to recall. A 300 lb. bag of flour in double sacking was placed between the floats of each seaplane. The high temperature involved propeller difficulties owing to the hot, "thin" atmosphere wherein the screw ran too fast with consequent excessive strain on the engine through "over-revving." Therefore our brilliant Naval Air Service officers operating 8,000 miles away from their base secured some palm tree wood. With it they fashioned successfully some four-bladed propellers to replace the standard two-bladed variety, and thus overcame the difficulty. Incidentally, this introduced to the aircraft industry an entirely new wood for fashioning propellers. That it was worth further consideration was manifest from the fact that all the four-bladed propellers

Feeding the late General Townshend's Beleaguered Garrison at Kut.





Sunbeam-Coatalen Engined Aircraft

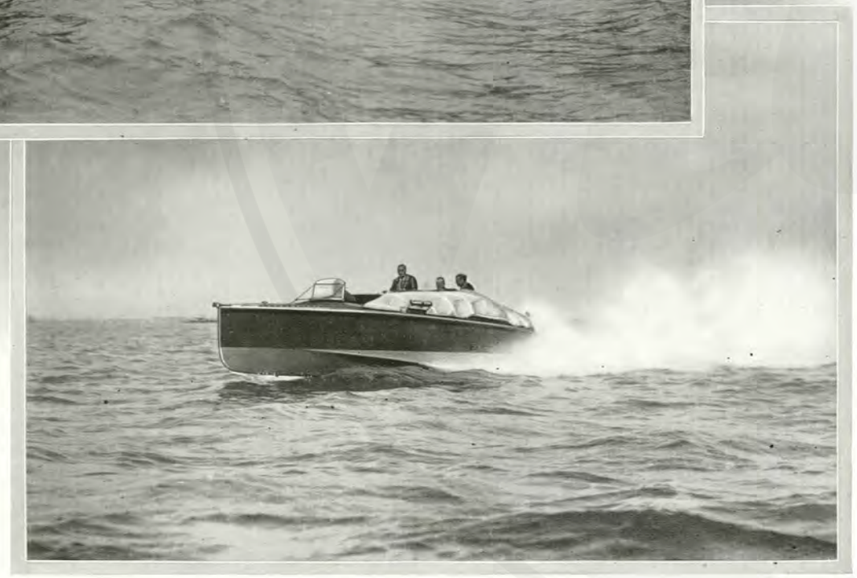


Sunbeam Marine Motors

A large number of coastal motor boats employed during the War were fitted with Sunbeam Marine motors. Sunbeam engined motor boats have won many important races, including the Championship of the Sea at Monaco in 1920.







One of the famous "Maple Leaf" boats.

used in Mesopotamia, whether home-built or improvised on the spot, had to be kept in sack coverings to protect them against the heat! The river thereabouts was most unsuitable as regards space for manœuvring a seaplane. The presence of bags of flour presented great obstruction to launching the aircraft in flight. The public has by now some idea of the conditions that prevailed in those regions and may understand something of the merits of engineering achievement when it is stated that, sometimes, those engines would have to be raced "all out" for ten minutes or a quarter of an hour as the aircraft "taxied" over the mud, the men shoving it away from the floats and the flour sacks before the seaplane could be launched in flight. Yet overheating was not a problem experienced with these Sunbeam engines.

Difficulties in Mesopotamia

At the time these 225 h.p. twelve-cylinder Sunbeam aircraft engines were evolved and standardised after very lengthy and costly tests (*i.e.*, prior to August 1914) the prospect of there being any air service market for them was so remote from the point of view of a big manufacturing concern that the type was presently considered for car service, which explains how it was that this style of power plant made a dramatic appearance in the 1913 racing season on a Sunbeam racing car which put up all world's records at Brooklands and, later, in America. In other words, then, as now, the Sunbeam Company was working ahead of requirements so that no occurrence should find it unprepared. The Company's Directorate, staff and works were, however, justified in that their pioneer engine enterprise enabled this nation daily to patrol in the North Sea with seaplanes and small airships, year after year, to the war's triumphal end. As indicating engineering merit, it may be recalled that, whereas the aircraft engines used by the enemy throughout the campaign—they were brilliant productions in many respects—scaled 3½ lbs. per horsepower "dry," Sunbeam-Coatalen engines standardised during the war weighed 2½ lbs. per h.p. only. Some of the Company's types were even lighter.

The First Twelve-Cylinder Motor Car

Incidentally, it should be mentioned that, had there been no war, the Company would have standardised the first twelve-cylinder car to be marketed in the world. As it was, the first vehicle of that kind was sent by the Sunbeam Company to

America, where it made such an impression that it was bought by a famous motor car manufacturing firm and even raced by them.

In March, 1918, Alderman John Marston, the founder and for so long the Chairman of the Company, passed away at the ripe age of 82, after a remarkable career in which the highest integrity and sound business acumen had characterised all his dealings. Upon Mr. Thomas Cureton then devolved the Chairmanship of the vast concern, a post he ably filled until September, 1920, when he was succeeded by Mr. James Todd. From 1899 Mr. Cureton had laboured incessantly in building up the business which had such a humble origin. His death, which occurred in July, 1921, removed a figure which had commanded the respect of the whole personnel of the Company, and the spirit inculcated by his assiduous devotion to duty lives on to-day.

CHAPTER V.

The only Airship Voyage to America and Back

THE Company's aerial enterprise did not cease with the declaration of the Armistice on November 11th, 1918, for in the following year it provided the power plant for the most remarkable flight in the story of aerial navigation to date, the performance remaining unchallenged to this day—the flight of the R.34 from this country to America and back, a total distance of about 7,000 miles, accomplished in 183 flying hours under extremely severe weather conditions, particularly on the outward tack, this being the first occasion on which a lighter-than-air craft had made the journey between the two countries. Moreover, no heavier-than-air craft has ever flown across the Atlantic Ocean in both directions. The Sunbeam Company supplied the engines, gearing, transmission, and even the propellers, for the R.34, and for its sister ship the R.33.

As the year 1919 opened, the work of what was called turning-over from war-time to peace-time activities was handicapped by many disturbing factors. Yet the Sunbeam Company had got into production the famous 16 h.p., side valve, four-cylinder engined, and the 24 h.p. side valve, six-cylinder engined cars, apart from which it gave attention to standard overhead valve engine production for marine craft, particularly of the racing type, with such success that in the following year, 1920, it won the " Championship of the Sea " at the Monaco Motor Boat Meeting. That proved to be the first of a lengthy post-war series of motor boat engine successes, thus renewing the pre-war successes of Sunbeam-engined boats.

The Championship of the Sea

The firm proceeded to apply the lessons of its very various and extensive war-time experiences to the improvement of its standard cars in exactly the way in which it incorporates knowledge gained by means of its long distance road racing, world's record track racing and other competition work of the experimental sort. Thus a newer type of the 24 h.p. six-cylinder car was introduced in 1922 with a light weight, monobloc, overhead valve six-cylinder engine that was able to do all its work at relatively slow crankshaft speeds. It was a big advance in regard to balance, the relatively small

bulk of the power plant, its lightness, economy of fuel consumption, cleanness of engine head and acceleration.

Standard Sunbeam Cars in Service throughout the War

The 16 h.p. type of chassis was also improved considerably, this version having been developed from the original 12-16 h.p. pre-war type, albeit there was no increase in engine size but merely in efficiency. Apart from Staff work, these machines had rendered invaluable ambulance service during the war, being prominent in nearly every theatre in which arms were engaged. The conditions under which they worked led to the discovery of a deal of valuable information concerning what happens to a chassis when it is used, day in, day out, in places where roads were mere tracks, also where roads, as we understand them, have never been. The Sunbeam Company is in the uncommon position of having made entirely original contributions alike in aircraft, marine and road vehicle design and production, therefore it has amazingly wide first-hand experience alike as to how its products stand up and as to how they can be developed in efficiency and built even more durably. A point of its war-time service which is worthy of note is that it supplied power plants for the coastal motor boats which made not unimportant contributions to naval history.

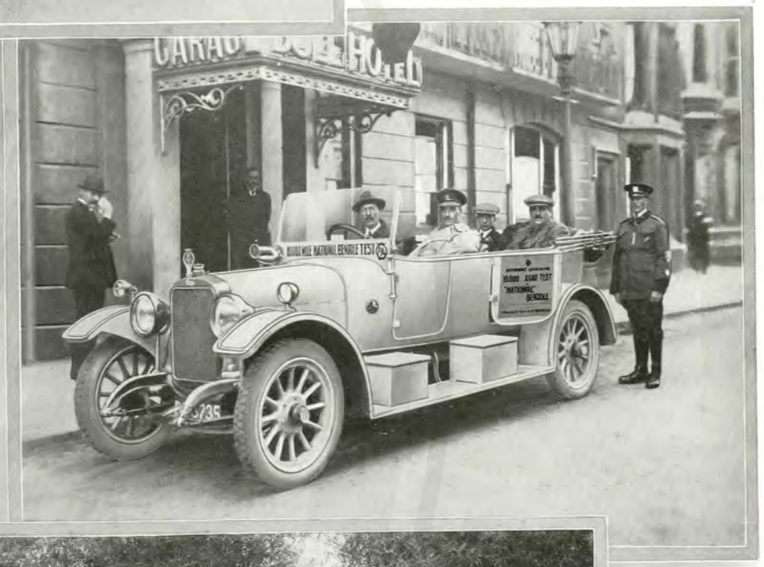
The very coachwork of Sunbeam cars was developed indirectly by its war work of building seaplanes and aeroplanes. That became a means of discovering ways and means of building lighter, yet stronger, structures than were known in coachmaking practice before the campaign. The benefit of all that hard won knowledge is incorporated in the current body work on Sunbeam cars.

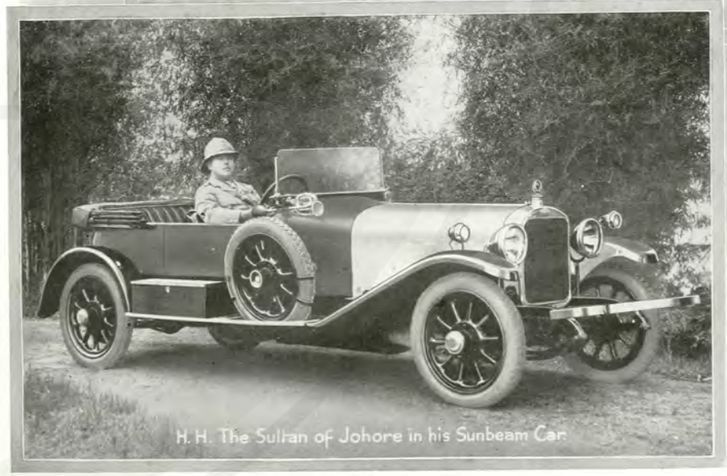
During the autumn of 1919 an important test over 10,000 miles was conducted by the Automobile Association to determine the relative merits of benzol as a motor fuel. A 16 h.p. Sunbeam was chosen as the car for the purpose, and the 10,000 miles were covered in 62 days, the consumption of fuel over the whole distance averaging 24.57 m.p.g., whilst for one portion of the trip the average reached 27.71 m.p.g. No mechanical trouble was experienced during the test, and when the engine was dismantled the parts showed no appreciable signs of wear or damage. This particular car was afterwards sold, and it is



The 16/40 h.p. Sunbeam
1919

This illustration of a 16/40 h.p. model shows the first Sunbeam car built after the cessation of hostilities in November, 1918.
Below is the Sunbeam car which was used throughout the 10,000 miles National Benzole test in 1919. At the bottom of the page is a reproduction of a photograph of H.H. the Sultan of Johore in his six-cylinder Sunbeam car.





H. H. The Sultan of Johore in his Sunbeam Car

H.M. Airship R.34

The Sunbeam Company supplied the engines, gearing, transmission and propellers for the R.34, and its sister ship R.33. The R.34 accomplished the only aerial voyage that has been made from this country to the United States of America and back.

C.Sec.S. 12093/19

8th August 1919.

Gentlemen,

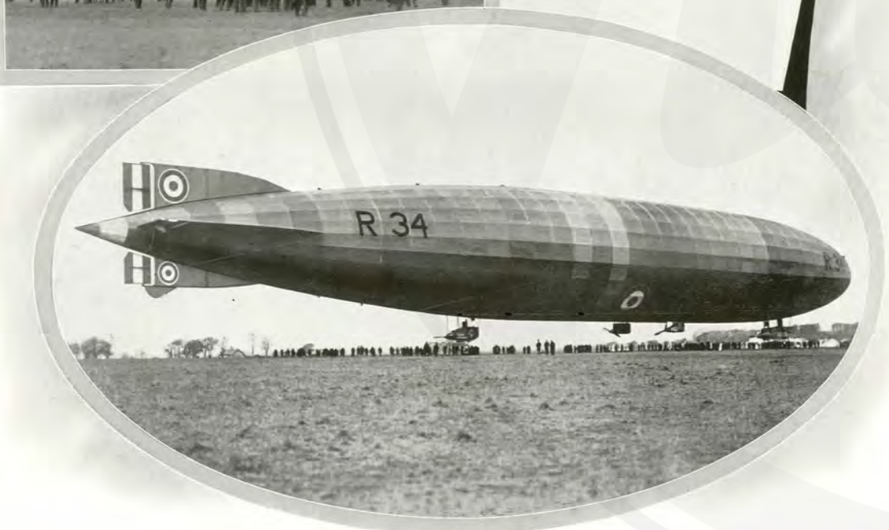
I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey their sincere congratulations to all concerned.

I am, Gentlemen,

Your obedient Servant,





interesting to relate that as recently as December 12th, 1924, the purchaser, a Wiltshire gentleman, wrote to the Company to say how satisfactory the car had been, and that, during 100,000 miles running, although it had received scarcely any attention, it had never let him down.

The more recent enterprise of the Company will be sufficiently fresh in the mind of the motoring public for a summary to suffice. Therefore let it be recorded that the pre-war three-litre size engine that was wont to figure in the 12-16 h.p. type was re-rated at 16-20 h.p. after the campaign, and continued to be developed and improved in detail in 1919 and in 1920. To-day, three litres is the largest engine volume on the list of cars built by the Company, but this type is now an overhead valve six-cylinder engine rated at 20-60 h.p. In 1919, the Company began to take up the interrupted tale of its successes on the track at Weybridge at the earliest opportunity, while on the Continent a Sunbeam car created a new record at the famous annual international hill-climbing trial at Gaillon, covering the 1 in 9 course at a mean speed of 109 miles an hour. Meantime, it was unnecessary for the firm to attempt to tackle its pre-war twelve hour and other world's records, which still stood at this period and for some years thereafter.

Making Faster and More Flexible Standard Cars with Smaller and More Economical Engines

In 1921, the four-cylinder nominal 16 h.p. and the six-cylinder nominal 24 h.p. standard models were not only further improved in detail ; preparations were made also for the introduction of a new nominal 14 h.p., two-litre, overhead valve engined, flexible, economical, three-speed Sunbeam car, which was actually in production at the close of 1921. Its success was immediate in that a new standard was set up by its combination of performance, quality and price. Consistent improvement had rendered the 16 h.p. type so efficient as to constitute it in effect a large car, therefore there had arisen an urgent demand, which had to be satisfied, for a middle size car. Sunbeam was able to meet it with 60 per cent. only of the pre-war engine volume necessary, so greatly had engine efficiency been increased. In 1922, also, the 16 h.p. four-cylinder and the 24 h.p. six-cylinder types were supplied with overhead valve engines. Therefore, the fruits of the firm's racing and aircraft engine experience were now applied fully to car practice in that the Company

abandoned the side valve system entirely this year. It is worth noting incidentally what a number of years a first-class engineering house working on conscientious lines takes before it translates some of the phases of its standardised aircraft practice, and of its experimental discoveries, into standardised car engine practice.

The Second Tourist Trophy Victory

But there was more to learn. 1922 proved a very successful year for the Company as regards its experimental enterprise in the way of racing in that in May of that year Mr. Kenelm Lee Guinness secured no fewer than ten world's records at Brooklands, including the half-mile, the kilometre, the mile and the five miles, alike from standing and from flying starts, at speeds which were phenomenal at that period, albeit they have been eclipsed since because we are not near finality in motor car designing and building. In the following month, using three-litre eight-cylinder engined chassis, Sunbeam took part in the first post-war International Tourist Trophy Car Race promoted by the Royal Automobile Club in the Isle of Man, and won it by a handsome margin in wet weather with Mr. Jean Chassagne at the wheel. This was but one of the numerous successes achieved that year, others embracing the 2,000 c.c. and the 5,000 c.c. classes, also of the unlimited engine class British Motor Speed Championships at Brooklands in September, thanks to the prowess of Mr. Kenelm Lee Guinness and Mr. H. O. D. Segrave.

And the Second Grand Prix Sensation

But all this was preliminary experimental work in connection with some of which the Company was testing front wheel brakes because it recognised that engine efficiency was increasing at such a rate that braking efficiency had to be developed far beyond anything that could be considered adequate by pre-war standards. It is not safe to fit four-wheel brakes unless one has very great experience of the problem. This work of original investigation bore notable fruit on July 2nd, 1923, when Sunbeam achieved the previously mentioned unique feat of winning first, second and fourth places in the Blue Ribbon long distance road race, the Grand Prix de France on the Tours circuit, this being the only occasion on which that event, run entirely independent of any other class of road race, has been won by a British car. The nature of the Sunbeam victory stands out in motoring history as did its success in the



The 24 h.p. Sunbeam
1920

This illustration shows the six-cylinder Sunbeam supplied to His Highness the Maharajah of Patiala. Sunbeam cars have been supplied to many of the Indian Native Rulers.
The pictures below were taken in Southern France. The lower one shows a Sunbeam on the Col de la Porte, with the Chamechaude (6,300 ft.) in the background.





MOORFIELD WORKS 1924



Works, land, etc. over 60 acres.

Floor space nearly 30 acres.





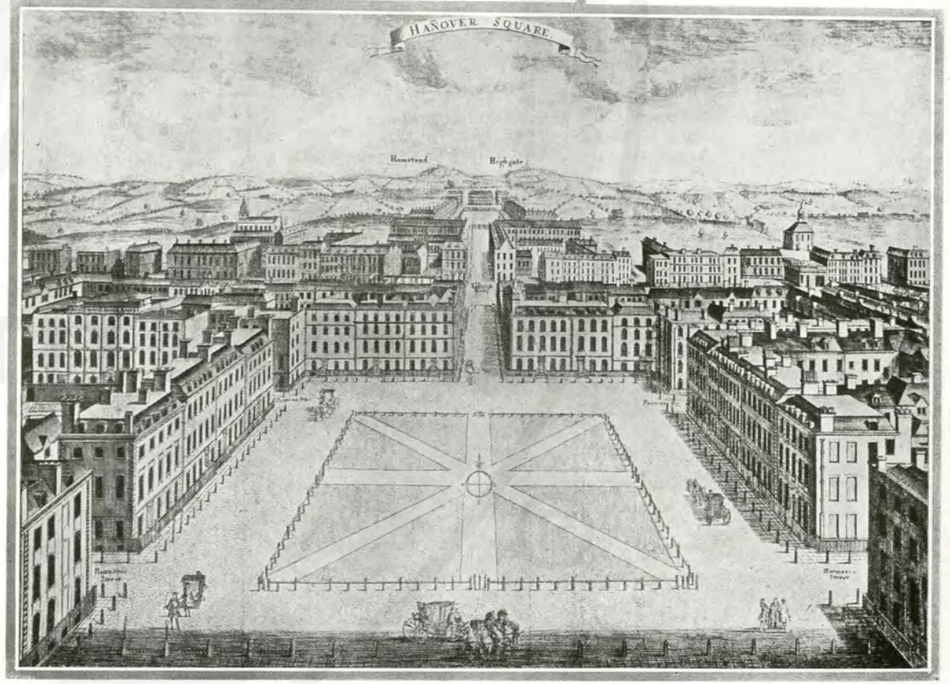




Sunbeam London Showrooms

The London Showrooms and Export Department are situated at 12, Princes Street, Hanover Square, W. The Company also has Showrooms at 106, Deansgate, Manchester, and Service Depots at 177, The Vale, Acton, W., and 288-294, Eccles New Road, Weaste, Manchester.

The lower illustration is a reproduction of a print produced in 1754 showing Hanover Square as it appeared in the middle of the eighteenth century. The original building where the Company's showrooms now stand can be seen in the top right hand corner.





Sports and Social Activities at Moorfield Works









1. The Sunbeam Orchestra; 2. One of the Cricket Teams; 3. The Military Band; 4. The Football Team; 5. The Male Voice Choir.

combined Grand Prix and Coupe de l'Auto events of 1912, because the placings on both occasions proved that there was no element of chance about the matter. Incidentally, apparently it is not realised that the Grand Prix de France is a mere title, not a trophy. One engages in these Blue Ribbon events purely for the renown and honour of winning.

Pioneering Scientifically Designed Front Wheel Brakes in Britain

By a margin of more than a year the Sunbeam Company was the first British concern to standardise high-grade and powerfully engined cars with brakes to all four wheels, designed in detail in full recognition of the multifarious problems that have to be solved before they can be applied safely. The success achieved was fully equal to the high expectations entertained. Naturally, the public had looked to the Company to lead the British industry in this important development in face of its extensive and long continued experimental work in connection with racing. The development did not cause insurance companies in this country to put up their rates for Sunbeam cars so equipped, as did corresponding institutions on the other side of the Atlantic in respect of certain American cars standardised with front wheel brakes.

Towards the close of 1923 the firm introduced a still smaller engined touring car type because of the widespread public demand for a yet more popular size chassis, hence it built the 12-30 h.p., overhead valve, four-cylinder model. With the exception of this type, all the others marketed by the firm were then available equipped with brakes designed in detail in accordance with the firm's discoveries concerning the application of braking effort to all four wheels, as instance the designing of the front axles specially to take the twist resulting from braking action.

The Sunbeam Company has now supplied the public for two years with cars standardised with front wheel brakes, the current system supplying six brakes to each chassis, thus conforming with a regulation embodied in our motor laws more than a score of years before such a proposition as front wheel brakes was even dreamt of by the authorities. The letter of the law requires that it shall be possible to hold a motor car at a stand on a hill with either of two quite independent

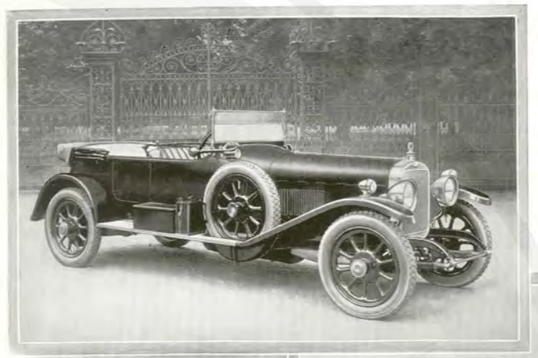
sets of brakes. Probably no latter day chassis development has been equal in importance to the evolution of this accessory, which it may be predicted will become universal practice for motor vehicles for all purposes in a few years' time.

On June 23rd, 1923, Captain Malcolm Campbell traversed a half mile in both directions at Fanoe Island, Denmark, at a mean speed of 146 m.p.h., on his 350 h.p. Sunbeam ; and this autumn he established a new world's flying kilometre record on Pendine Sands at 146.16 m.p.h. on the same Sunbeam car. In October, 1923, the firm won the long distance Spanish Grand Prix race, the first competition of the kind held on the new track at Sitges, Barcelona, a victory which was repeated at San Sebastian twelve months later.

From 350 H.P. to the Queen's Doll's House

The Silver Jubilee of the Sunbeam Company coincided with the holding of the greatest exhibition ever organised, the British Empire Exhibition at Wembley, which will become historic and of as much interest to our children's grandchildren as the Great Exhibition of 1851 was to us from our childhood. Of course, Sunbeam cars were represented there prominently in the motor section, and one figures in miniature in the Queen's Doll's House, a really beautiful reproduction made to a scale of one inch to a foot, and contrasting strangely with the huge 350 h.p. car referred to above, showing what Sunbeam workers can accomplish in fine craftsmanship.

On the high-road and the by-road Sunbeam products have never been more widely in evidence than they are to-day. The present standard types include the aforementioned 14-40 h.p. four-cylinder and the 20-60 h.p. six-cylinder type, a notable feature being the prices at which these models are marketed. The value represented by present-day prices is not wholly apparent to the casual observer because, properly to measure the matter, one must have in mind that the performance, the accommodation, the refinement of finish and the durability of the types marketed to-day marks in each case a vast advance in standardised achievement, an incidental result of which is that the nominal ratings of the cars give no accurate idea of the actual horsepower of their engines. The following table may illustrate, in a measure, twenty years' progress in car evolution by the Sunbeam Motor Car Company.



A 24 h.p. six-cylinder Light Four-Seater, 1921

Unquestionably the most efficient car in its class at that time, the 24 h.p. Sunbeam achieved a very high reputation.
Below is reproduced a photograph of Sir Herbert Samuel, High Commissioner for Palestine, with his 24 h.p. Sunbeam.



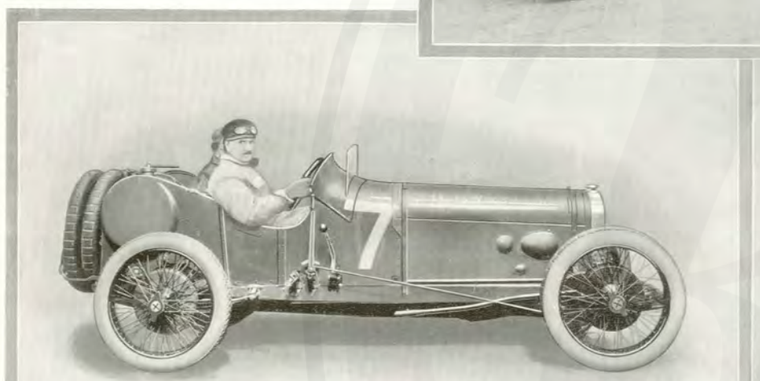


The record breaker—The 350 H.P. Twelve-cylinder Sunbeam.

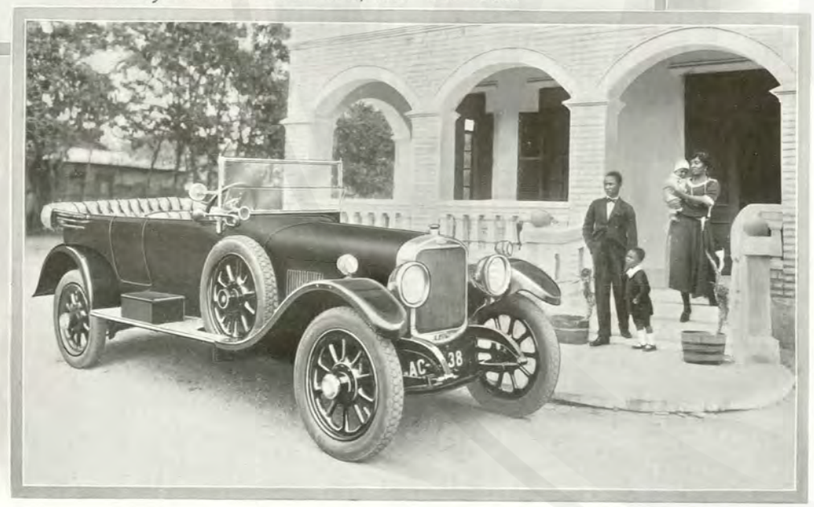
A 16/40 h.p. Sunbeam Landaulette, 1922

Many remarkable Sunbeam performances were accomplished at Brooklands during 1922; and in the Isle of Man Tourist Trophy race, where another Sunbeam victory was scored, the T.T. race having been previously won on a Sunbeam in 1914.
The lower illustration shows one of the first 24 h.p. six-cylinder Sunbeam models standardised with overhead valve engine. This particular car was supplied to a West African resident.





The winning Sunbeam – 1922 Isle of Man T. T. Race.



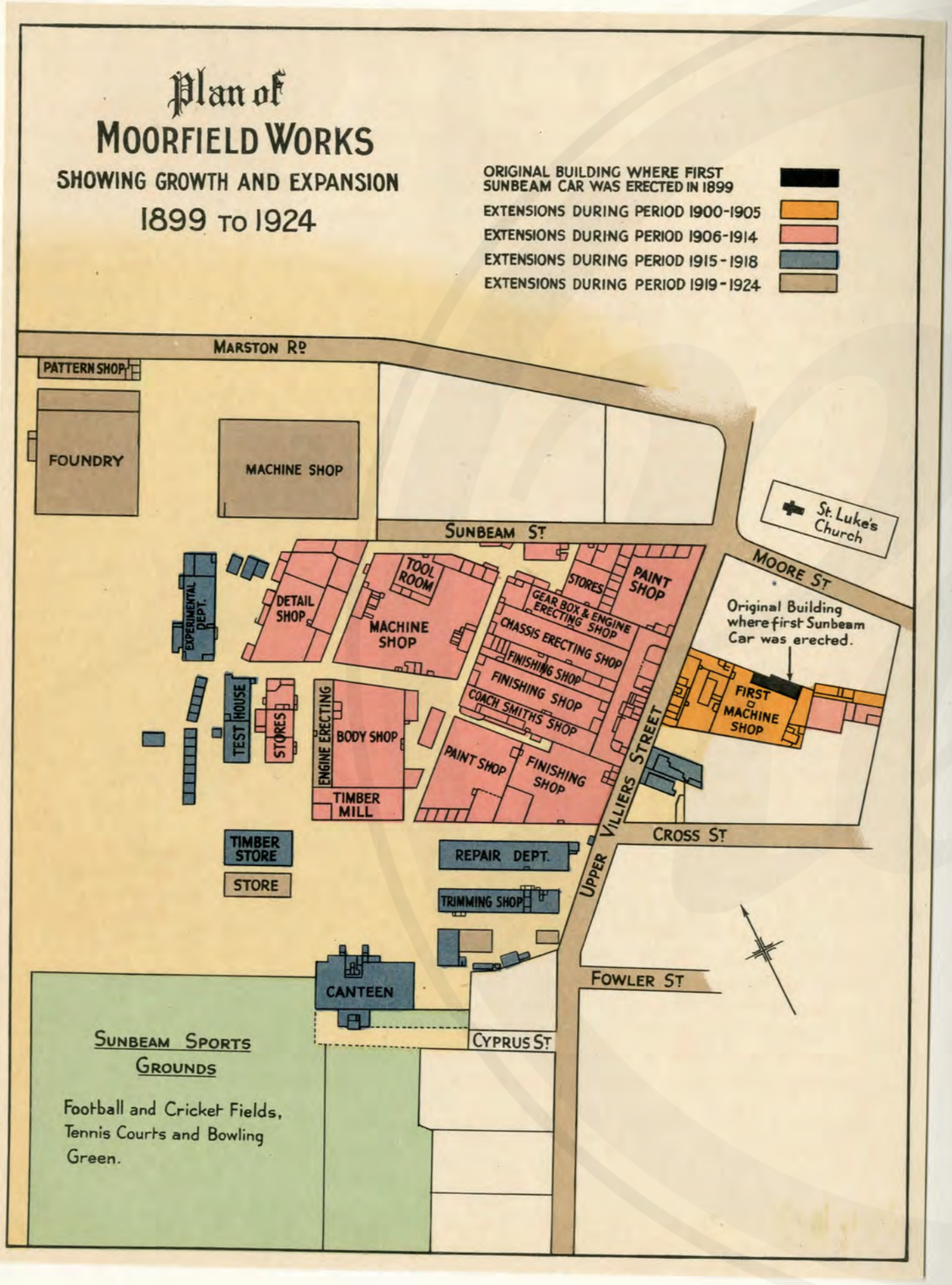
	1904	1914	1924-25
Nominal H.P.	12	12	14
Brake H.P.	12	16	40
Cylinders	4	4	4
Bore and stroke mm.	80×120	80×150	75×120
Cylinder volume c.c.	2,412·72	3,115·9	2,120·5
Valves	Side	Side	Overhead
Maximum speed, m.p.h.	30	42	60
Engine starter	None	None	Standard
Electric lighting (5 lamps)	None	Yes (£15 10s. extra)	Standard
Front wheel brakes	None	None	Standard
Chassis price	Supplied only as a complete car	£350	£535
*Open car	£451 10s.	£390	£685
Petrol consumption (m.p.g.)	25	21	25

*The present-day types are standardised complete with electrical car lighting (five lamps) electrical engine starting mechanism, etc. The others did not include this equipment, or hood and windscreen.

In considering the above prices the purchasing value of the pre- and post-war £ should be had in mind.

Distinguished Visitors at Moorfield Works

From beginnings that seemed remote enough from scientific engineering, and almost impossible as regards the slender financial resources available, the Company now has works, offices, etc. covering nearly 30 acres of floor space and employing regularly nearly 4,000 workers, whose efforts are, of course, supplemented by a vast amount of employment given to ancillary industries throughout the country. Moorfield Works are of the most modern kind, alike as regards all equipment and machinery, and in respect of the design of the buildings from the point of view of hygiene. Many notable visitors have paid tribute to the lay-out and equipment of Moorfield Works. Amongst these may be mentioned the Right Hon. W. F. Massey, Prime Minister of New Zealand, who made a visit in December, 1923, and received a most cordial welcome from the employees. On the grounds there is still room for expansion because the site owned covers an area of over 60 acres, and embraces, among other things, extensive playing fields and grounds for the workers, and large and commodious messrooms.



Welfare of the Workers

Recreation and athletics have played a great part in binding together all ranks of the personnel. A spirit of general good fellowship always prevails in the Works, thanks in no mean measure to the unique personality of Mr. Clement B. Kay, M.I.A.E., the genial and indefatigable General Works' Manager, whose unfailing tact has done much to assist in promoting the general unity of purpose which prevails. In fact, he is an inspiration to all under him, standing out as an example in his own person of the firm's policy of promoting their own men to the highest positions possible when alike their talents and their temperaments mark them out as suitable for such offices.

The Sunbeam Football Club has enjoyed a most successful career, its victories in the field including the winning of all manner of Cups in the Midlands against rival Clubs having very strong teams. Cricket has its votaries, and for several seasons past there have been three separate Sunbeam teams in the field each week. Moreover, the artistic talents of the workers have found an outlet in the Musical Society, which comprises a full orchestra of some fifty performers. There is, besides, a Male Voice Choir famed far beyond the confines of the Midlands and which has won many prizes; and a Military Band. General athletics and the promotion of dances and whist drives in the winter months are among other activities. In fact, everything is done that is calculated to make good workers realise that their employers regard them as individuals, not as a mere aggregation of "hands," and have every desire for each to develop talent to its full bent alike in his or her "job" in the factory during working hours, and on playing fields or in recreation rooms, or elsewhere, in hours of leisure.

The Founder's Policy Remains the Keynote of all Future Sunbeam Enterprise

It is this spirit, together with the determination never to depart from the founder's policy of making the quest of quality the prime aim in all the cars it builds, that accounts for the rapid rise and the amazingly sustained progress of the Sunbeam Motor Car Company, which was never more active, nor on the verge of achieving bigger things, than it is to-day. Though, as was inevitable, during a quarter of a century it has lost some of its valuable men, alike on the Board and in various departments, nevertheless it has been fortunate in recruiting always precisely the class of talent needed to fill each position as

Showrooms and Depôts

it has fallen vacant, and also to fill the new positions which the continuous growth of the Company has created.

Consistent and continual expansion of Sunbeam enterprise beyond the Wolverhampton establishment has also been a cardinal feature of the Board's policy from the early stages of the Company's story. Instance the opening of permanent Showrooms at Deansgate, Manchester, in 1912; of the Southern Service and Repair Depôt at Cricklewood in 1919, which was removed later to more commodious premises at Acton; the opening in January, 1921, of modern West End Showrooms on the site of an 18th century building in Hanover Square; and the opening in March, 1922, of a Northern Service and Repair Depôt at Weaste, Manchester, among many other activities of the Company.

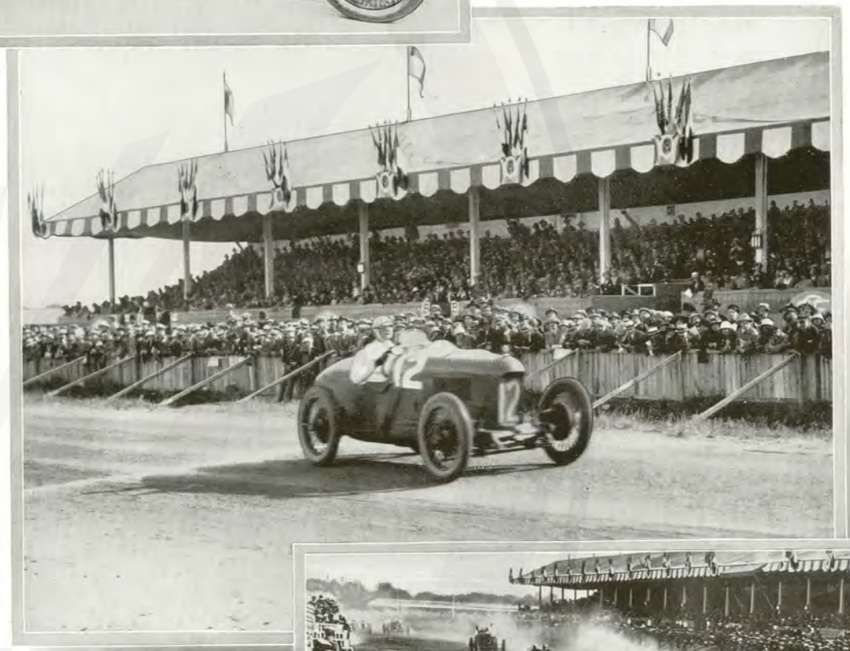
For many years past, and particularly since Mr. Louis Coatalen's connection with the Sunbeam Company until the hour at which this volume goes to press, it has never been possible for the Works to meet fully the demand for Sunbeam cars. That is the chief explanation of the fact that there is marketed at present, as illustrated at the Society of Motor Manufacturers and Traders 18th Annual International Exhibition at Olympia last October, a three-model programme only, in that it is impossible at one works to build economically a greater variety of types. But the three models cover an uncommonly wide range of requirements. Moreover, such are the improvements embodied in the present chassis that the £21 tax, nominal 20-60 h.p. overhead valve, six-cylinder engined type, for instance, is more powerful, more efficient, more economical and so forth than the higher rated 24-70 h.p. type previously made. Beyond doubt the 20-60 h.p. carriage is Sunbeam's *chef d'oeuvre*. One of these models has recently been supplied to H.R.H. Prince Henry, a keen and experienced motorist. As for the 14-40 h.p. type, developments in connection with it include the lowering of the frame, the provision of a wider body, a change in the design of the bonnet and the radiator to render the car available for service under a greater variety of conditions overseas, the development of the four-wheel braking system, and so forth, greatly improving comfort and performance while the economy and durability of this type remains as amazing as ever.

Sunbeam's "Chef d'oeuvre"



Sunbeam - Winner of the 1923 Grand Prix de France.

The Sunbeam enjoys the proud distinction of being the only British car which has ever won the Grand Prix de France. The three Sunbeams competing in this race in 1923 finished first, second and fourth, a remarkable demonstration of consistent running.

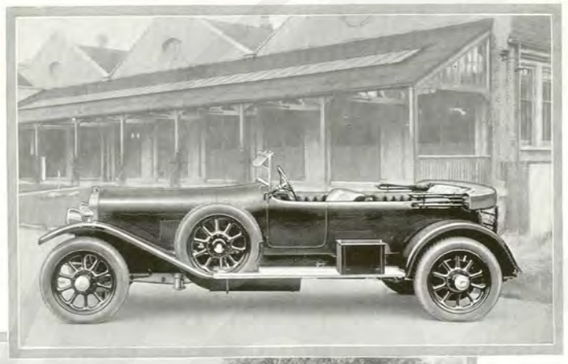




The 24/60 h.p. Sunbeam
1923

The illustration below shows a fleet of Sunbeam cars supplied for the use of Colonel Sir Leslie Wilson, Governor of Bombay, and his staff.

The lower illustration shows Capt. Bruce Bairnsfather—creator of the immortal "Old Bill"—and Mrs. Bairnsfather, with their Sunbeam.







Looking Forward

As showing that preparation for the future development of motoring continues with unabated vigour, it should be recalled that this summer the chief Sunbeam experimental work has been directed to the equipment of two-litre engined cars for the Grand Prix d'Europe car race, with super-chargers development which the firm makes no claim to have initiated, albeit it had produced experimental designs in this connection for aircraft engines years ago. Up to this year super-charging has been of no special interest to the private motorist, though needed urgently for aircraft engine service to do what pilots call "raise the ceiling" and, of course, it could be of assistance in winning a race. It was first used on other makes in an important road race, the Grand Prix de France, last year. That event, however, proved an unqualified Sunbeam victory without the use of this accessory. Nevertheless, the Company's Engineer-in-Chief recognised the power that could be added to an engine by the use of a supercharger; also that one stood little chance in a competition of this sort if other rivals were using what it denied itself.

Therefore the Company devoted experimental enterprise to discover how to take advantage of the supercharger along practical lines. In the issue, its 1924 Grand Prix d'Europe cars proved the fastest on the Lyons circuit, Mr. H. O. D. Segrave making the fastest circuit in the race and Mr. Kenelm Lee Guinness the highest speed over the measured mile—again showing that Sunbeam achieves uniformity of progress in efficiency, as distinct from attaining it by a fluke or otherwise. Instead of driving the blowers at 20,000 revolutions a minute, as was done in the case of certain Continental cars, the Sunbeam super-chargers turned at crankshaft speed only. That is a practical proposition for car engine service. No trouble has been experienced with those devices, which the firm still consider to be, nevertheless, in the experimental stage, though certainly it has achieved quite unlooked-for results, as instance the fact that while the mean increase of power over the whole range of engine revolutions is 35 per cent., as much as 50 per cent. increase in power has been got on some Sunbeam engines at slow crankshaft speed. This point is of the utmost significance in regard to the possibilities of applying the

Pioneering Practical Supercharging

device to standardised engine practice because it is at slow crankshaft speeds, when a car is required to be accelerated either from a stand or after having been slowed on account of traffic, that one needs proportionately much greater power to save the driver the bother of changing gear. On some of the experimental engines designed by Mr. Coatalen and his staff this year the super-charging device itself does not weigh more than 35 lbs., showing that under the heading of weight alone this need not necessarily be an impracticable development.

The first supercharged Sunbeam racing cars won the Spanish Grand Prix at San Sebastian this autumn—a Sunbeam victory in this race for the second year in succession—beating super-charged German cars, one of which had an engine half as large again.

Will History Repeat Itself in Gearbox Practice?

This point is touched on merely because there is much talk already about supercharging engines, and, inevitably, there will be more as the years go by. The topic illustrates, in a manner that can be understood perhaps more clearly by the lay motorist than any other feature of the many that are at present the subject of experiment, a possible line of motor car development of the widest conceivable service to the public. It may do more than anything else towards eliminating the use of the gearbox or, in any case, to reduce the number of speeds needed, so that the Sunbeam two-speed, six-cylinder car of 1904 may become of historic motoring interest as anticipating universal gearbox practice by a mighty long interval. Though the firm has only given attention to this particular phase of the proposition this year, already it has caused to be recast all previously entertained ideas as to the supercharger which, hitherto, had given its best power at high crankshaft speeds and was, therefore, of relatively remote potential use to standard car practice.

Would one be overbold to foretell that in two or three years' time the Company will be pioneering the standardisation of cars with satisfactorily supercharged engines, even as it led by a margin of more than a year the standardisation of really efficient, scientifically designed four-wheel brakes among British manufacturers, and many other features, including repeatedly setting



A Distinguished Visitor at Moorfield Works

The Right Hon. W. F. Massey, Prime Minister of New Zealand, visited Moorfield Works during his industrial tour in England in 1923, and expressed cordial appreciation of the modern manufacturing methods in vogue there. The illustration below shows Mr. Massey and members of his party.

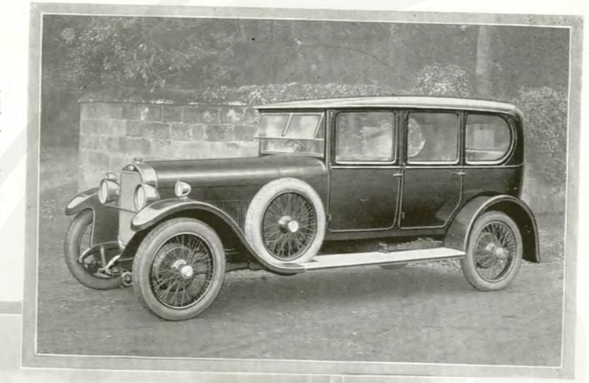




Loaded up for a hunting trip. A thirteen year old Sunbeam in New Zealand.

A 20/60 h.p. six-cylinder Sunbeam---1924

This handsome example of a 20/60 h.p. six-cylinder Sunbeam Saloon was supplied to General Sir Charles C. Munro, Governor of Gibraltar.
Below is shown the famous 12-cylinder Sunbeam on which Capt. Malcolm Campbell set up a new world's record for the flying kilometre at Pendine, South Wales, on September 24th, 1924.





The 350 H.P. Sunbeam – on which Capt. Malcolm Campbell has reached 168 miles per hour.



"The Old Order Changeth"– A 14/40 H.P. Sunbeam in Buckinghamshire.

new standards of efficiency for standard engine volumes without sacrifice of durability or refinement, and so on year by year? To-day none can conjecture.

The First Twenty-Five Years— And the Next?

Such, briefly, is an outline of some of the outstanding features in the story of the Sunbeam Motor Car Company during the first quarter of a century of its existence. What tale will be unfolded by its enterprise during the next five-and-twenty years?

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