BROOKLANDS

The Complete Motor Racing History

ANOPEN

This book is dedicated to the memory of Mr H F Locke King and his wife,
Dame Ethel Locke King, who made Brooklands possible

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The Complete Motor Racing History

WILLIAM BODDY, MBE

Foreword by
the late LORD BRABAZON OF TARA

MRP PUBLISHING

FOREWORD

to original edition

It is given to few people to write a standard work that will for ever be referred to, but this is exactly what Mr Boddy has done in writing *The History of Brooklands Motor Course*. The research and industry pout into it is beyond praise. Factually it is remarkable, yet readable and enjoyable from cover to cover.

Brooklands as we knew it has passed, but it will never be forgotten, for it stood alone in the world, the first motor track and one of the most imaginative and bold projects of its time. It has left a word in the English language, and a gap in the hearts of all who loved it; and although there were many, Mr Boddy must stand supreme.

Strange that the despised and rejected aeroplane, that was hidden in shame from view at Brooklands in its early days, should eventually grow to such proportions as to engulf and destroy it. History does not recall a more poignant piece of fratricide. War claims many victims and it is curious that it should have destroyed a track that forged its strongest armaments.

Those who loved it can at least, due to Mr Boddy, live the great days again, as they read this enchanting book.

Brabazon of Tara

Lord Brabazon of Tara, MC, PC, was born in 1884 and educated at Harrow and Trinity College, Cambridge. A pioneer aviator, he held the Royal Aero Clubs No 1 Pilot's Certificate and won the Daily Mail £1,000 prize for his circular-mile flight in an all-English aeroplane in 1909. He drove a Minerva at the Opening Meeting at Brooklands in 1907 and won the Belgian Circuit of Ardennes race on this make of car at 59.5mph.

Lord Brabazon's political career embraced the position of Minister of Transport (1940-41) and Minister of Aircraft production (1941-42). He was a director of several important companies and his relaxations included golf and the Cresta Run; he was President of the England Golf Union in 1938 and won the Curzon Cup at St Moritz three times.

When Vickers-Armstrongs held their commemoration party for Brooklands Motor Course in 1957, Lord Brabazon was the guest invited to unveil the Brooklands Memorial, which he referred to in his speech as "that tombstone". Lord Brabazon died in 1974.

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In the preparation of this latest edition, the author records his thanks to publisher John Blunsden for his editorial care prior to the book's publication, and both the author and publisher are also most grateful for the support and encouragement of the Brooklands Society, in particular that of its industrious and enthusiastic archivist Tony Hutchings, for his painstaking assistance in picture selection and identification, also for the electronic support provided by Robert, Harry and Felix Titherley.

AUTHOR'S PREFACE

Now that Brooklands no longer exists as a Motor Course people are recalling it with nostalgia and paying tribute to Mr Locke Kings foresight in building, so many years ago, such an effective track. In recent years this has been encouraged by the enthusiastic members of the Brooklands Society and by the Brooklands Museum Trust.

I am glad that this is so, because Brooklands was for so many, many years the home of British motor racing and so many thousands of people and hundreds of cars spent an incalculable number of man-hours there racing, testing, breaking records, or just driving round, that the place deserves any recognition we can afford it.

Brooklands' racing was not road racing and some critics there are who decry it. Yet sustained high speed round a track devoid of any save banked corners is satisfying, and the effect of such driving taught our engineers some very useful lessons in the early days. It is, perhaps, significant that after Brooklands had opened there came Indianapolis, Montlhéry, Sitges, and subsequently the banked circuit was built at Monza, where speed where speed, unrestrained, could be enjoyed.

Many of the World's great drivers competed frequently at Brooklands and, indeed, men such as John Cobb, Whitney Straight, Woolf Barnato, Sammy Davis, Kaye Don, Sir Henry Birkin, Bt, Sir Henry Segrave and many others gained their early experience at the track, while Parry Thomas was Brooklands. Others paid less heed to fame and drove there because, like Water Rat with boats, they enjoyed "messing about in cars".

In this book I have tried to provide a comprehensive history of BARC activities from 1907 to the close of play in 1939, including the endeavours of those who were merely enthusiastic alongside the achievements of the celebrities, as well as a look at the Brooklands which exists today. Thus this history covers not only the well-known Brooklands cars, but also the less famous, yet to me equally fascinating, racing machinery which was part and parcel of the atmosphere of the old track. The result is certainly a large and I hope comprehensive book. It contains a great deal of detail dragged from obscure archives and relating to the dim past. I find a similar pursuit of history prevalent in railway circles, where the correct colour of some long-defunct locomotive or the exact depth of the brass band that once encircled its noble smoke stack is avidly sought by railway enthusiasts. Let it not be said that motoring enthusiasts are any less keen; I hope those who seek to gain a proper appreciation of motor racing by study of its past as well as enjoyment of the present will find this book a reasonably complete record of racing and record-breaking as it was conducted at Brooklands.

The inclusion of lap times is intentional, because they form a means whereby it is possible to assess the relative performances of the cars; they are taken from the hand-written entries of Messrs Ebblewhite and Dutton, the official timekeepers, in the contemporary BARC records, which seal their authenticity Where one speed only is quoted, without qualification, it is of the fastest lap in that race to which the reference applies. In references to record attempts, weights are quoted usually as cars were weighed before the attempt, with tyres but without fuel, water, lubricants, tools or spare parts, and these weights are also official.

I spent some of my happiest and most enthralling days at Brooklands and 1 hope that this book, the first edition of which was published on the 50th anniversary of the official opening of the famous Motor Course, may serve as a permanent tribute to the gentleman who had the foresight to build the first motor track in the World amongst the pines and rhododendrons at Weybridge, and to the carefree pioneers and enthusiasts who drove on it.

BILL BODDY

Nantmel, Radnorshire,
2001

1906
A gift from Mr H F Locke King

At the turn of the 19th century, Weybridge, in Surrey, was a peaceful country village. A series of somewhat swampy meadows lay alongside a winding, sluggish stream, pine-clad hills on one side, an embankment carrying the L&SW main line on the other. The occupants of this sleepy hamlet had little to distract them as they went about their tasks at small farms, mostly concerned with poultry, in a largely uncultivated area of rough fields and woodland invaded by the River Wey and bounded in the west by a sewage farm serving Byfleet and Addlestone. The place was infested by thousands of rabbits, which the villagers of Weybridge were wont to snare beneath the close-set pines, and the only suggestion of modernity was a branch office of the Fabbrica Automobili Itala, standing close to the site later occupied by Vickers' offices.

Farther away, on the open heathland by the station, stood a number of dignified country houses, in one of which lived the late Mr H F Locke King, wealthy landowner, owner of the Mena House Hotel in Cairo and the New Zealand golf course near Byfleet, and himself the owner of a large Itala car in which he went for extensive tours of the Continent. Mr Locke King, a descendent of Lord King's, whose hobby was jigsaw puzzles and breeding French poodles, had about a dozen on his estate in the 1920s, which were taken to shows by the head butler, Harper. Two of the dogs, Hector and John, were buried in the grounds of Brooklands House, now Brooklands College.

Most of the land hereabouts had been in the Locke King family for generations, and the locals could hardly have foreseen that in 1906 a great upheaval was to take place in their very midst. But by that September everyone in Weybridge was aware that Mr Hugh Fortescue Locke King had strong feelings about the need to provide the British motor industry with a track where it could test its products as France tested her automobiles along that country's long straight roads, and those of Italy were tested up the winding passes. Having experienced this ambition to give his country a motor track, Mr Locke King had called a small meeting of motoring experts at which Mr E de Rodakowski outlined the project and called for comments. The most appropriate size for such a track was the first point at issue. Charles Jarrott suggested a very large track so that high speeds could be safely attained, whereas S F Edge thought that to stimulate public interest cars should remain visible during the whole, or at least the major portion, of each lap. The outcome of this historic gathering was that the Brooklands estate seemed likely to become the motor course its owner visualized.

A lesser man than Locke King might well have withdrawn his proposals when told that no mere 20ft wide road would meet his requirements, but that long banked curves nearly 30ft high would be necessary where bends in the circuit occurred. Quite undeterred - indeed, if anything *more* determined -Locke King agreed that his estate should be converted into a 100ft wide concrete track, some *2.75* miles in circumference. His wife, Mrs (later Dame) Ethel Locke King, daughter of Sir Thomas Gore-Brown, KCGM, CB, then Governor of Tasmania, whom he married in 1884, was equally enthusiastic.

Before the meeting closed Edge caused a sensation by saying that if this track came into being he wished to be notified of the earliest possible date on which he could book the course for an attempt to drive a car unaided for 24 hours at a speed of 60 miles an hour. Some people thought Edge was joking, others that he was just talking nonsense. He assured them that he was perfectly serious, and it is now common knowledge that, just as Locke King was to spend more than £150,000 of his own money (in 1906 value) in creating the first motor course the world had ever seen, so was Edge to carry out his fantastic run thereon.

Mr Locke King not only intended to go ahead with his stupendous undertaking, but he decided that it must be completed with all possible speed. Colonel Holden, RE, drew up plans, and under Mr Donaldson, a skilled railway engineer, the construction of Brooklands Track commenced. Most of the area involved was uninhabited and unsuited to grain or roots, but two farmhouses - Hollick's and Wintersell's - had to be demolished. A piece of land had to be purchased where the Fork was subsequently laid, and here the track had to negotiate a reverse curve where the Itala works stood. When it was seen that the Byfleet end of the Railway Straight would cut the sewage farm, an equivalent strip of land was demanded by way of compensation.

A start was made towards the winter of 1906, when 300 men cleared a way over two miles long through the trees in Cairns Wood and levelled the ground beside the railway. By December 1906, travellers on the South-Western main line could see clearly the beginnings of the Railway Straight and the *World* observed: *"Every hour of the day tall trees fall crashing into the undergrowth, to be drawn and coaxed away by pertinacious little traction engines which, spider-like, seem to put forth filaments of steel wire from some part of their interior economy to enmesh the fallen trees. Huge steam navvies - there are a dozen of them at work in different parts of the track - peck away tirelessly to drive the cutting farther through the hill. Over 600 workmen are engaged on the track, and their number is always growing."* Chalk was brought daily from Reigate to build up the banking and workmen were brought from other estates of Mr Locke King, such as his farms in Sussex, to assist with the work.

Ultimately, 2,000 workmen, living at first in huts formed of corrugated iron and fir branches, and later, at the insistence of a medical officer of health, in a large communal wooden hut, cut down the trees and made a cutting 30ft deep and nearly 40 yards wide through the natural hill at the north-east corner of the estate. Earth from this cutting was used as a foundation for the shorter of the two bankings, itself some 700 yards long, while at the south end a mile of track was laid on a 20ft high bank. As the ground was at a low level, the kilometre-long Finishing Straight had to be laid on a belt of earth raised up 5ft, and about an acre of adjacent land needed for the Paddock and sheds raised a like amount. The short banking, over 28ft high, had to be carried over a wide portion of the Wey, and it was taken over the water on ferro-concrete piles sunk into the river bed.

It was about this time that J Edgar Lound, of the Beaufort Motor Co Ltd, wrote to *Motoring Illustrated* deprecating the scheme,

but subsequently, in published views, Mr E M C Instone of the Daimler Company, Mr W Geo Williams of the Deasy Motor Company, Mr Warwick Wright, Mr Moses of the Clement Motor Company, Mr Oscar Cupper, Mr Percy Lamb
and Mr Harvey du Cros Jnr were enthusiastic, although Mr Luff-Smith of Wolseleys, Mr Coleman, Mr Watson of Argylls, and Mr Sharp of Cadillac were either undecided or antagonistic.

Work, however, continued, the River Wey being diverted to flow under the seven-arch railway viaduct and the trees forming Big Hollick's Wood being cut down. Pictures of the progress being made in the construction of Brooklands were published in the *Illustrated Sporting and Dramatic* News, *Daily Graphic, Daily Chronicle, The Sketch, Country Gentleman and Land and Water Illustrated, Sphere, Rapid Review, Daily Mail* and many other papers, apart from the technical press. A series of pictures was also shown on the biograph at the London Empire.

To speed the work, Price and Reeves were called in, in mid-January 1907, and at first they proposed a surface of 'Taafalt'; later, however, a 6in layer of gravel and Portland concrete was decided on. A detailed account of the engineering construction of Brooklands appeared in *Engineering Review,* from which I learnt that Mr L G Mouchel, CE, of Westminster, designed the bridge which carried the Members' Banking over the Wey and that the contract for it was let to the Yorkshire Hennebique Co, of Leeds. Incidentally, the reason for adopting this still experimental form of construction was because steel was thought to be too 'springy' to carry the thin layer of banking and it would have required frequent maintenance, especially as piles had to be sunk in the river.

Work on this bridge occupied from December 1906 until about April 1907. It was struck at a radius of 1,000ft for 99ft and the remainder of the radius was of 2,000ft, the outer edge of the bridge being 178ft 4in long, the inner edge 165ft long. The foundations consisted of six rows of Hennebique piles, seven in each row All were 14in square except those in row 4, where the dimension increased to 16in. The decking consisted of 30 bays, each of seven panels, and the surface was a continuous slab of concrete-steel with a minimum thickness of 4.5in, upon which a lin layer of concrete and granite chippings was laid. As the Wey was unnavigable above the railway viaduct Mr Mouchel was allowed to drive one row of piles along the river bed to preserve the uniform spacing of piles and columns. Steel bars and main and secondary beams braced the columns, which were tied at the top by longitudinal arched beams 9in wide and 3 to 4ft deep at the haunches. The bridge had a fall at the front of 1 in 90 for three-fifths of its length and 1 in 200 for the remainder, the super-elevation at the back decreasing from 26ft to 15ft. I hope these details of a very wonderful engineering accomplishment will appease those who suffered at the hands of the 'big bump' when this bridge had settled, some quarter of a century later. Viewed from underneath the banking it looked alarmingly frail, but luckily the drivers saw it only as a seemingly solid continuation of the home banking! The other bridge, at the Cobham side, was of conventional form.

Steadily, Locke King's wonderful idea approached reality. Ten steam grabs and a steam navvy worked almost continuously, except on Saturday and Sunday nights, shifting soil, and 200 carpenters busied themselves erecting fences, stands and sheds. The Wey was actually deflected in two places, a loop being cut out of it, and about 30 acres of woodland
felled, while 350,000 cubic yards of earth were moved. Some 200,000 tons of concrete were used for the track surface, and 80 truck loads of gravel and cement arrived daily, hauled by six locomotives over seven miles of railway line within the track boundaries, which alone involved laying 25,000 sleepers. Incidentally, one of the locomotives was apparently named 'Brooklands'.

In the course of the excavations Roman coins and urns, dating back some 1,600 years, were uncovered by a navvy's pick. It is interesting to note that no attempt to lay the surface could be made until the winter frosts had finished, and for this reason the official opening of the track, scheduled for May 18, had to be postponed. This task was not started until the middle of March 1907, yet was completed before June - as *The Sketch* remarked:".. *.not a bad example of the rate at which work can be done in this country when required."*

And so this incredible new Motor Course came into being, a vast track 100ft wide and 2 miles 1,350 yards in circumference on the 50ft line. The total length, inclusive of the Finishing Straight, was 3.25 miles, of which 2 miles were level. The longer of the two bankings, called the Byfleet, was struck at a mean radius of 1,550ft and was 21ft l0in high, actually reaching over the roofs of a row of cottages below it. This long curve fell away before the track crossed the Wey at the Cobham side and opened out at the Fork. On the left was the Finishing Straight, and on the right the track climbed, after negotiating a slight reverse curve by the Itala works, at 1 in 30 to the Home, or Members' Banking behind the Hill, this curve being struck at a mean radius of 1,000ft and being 28ft 8in high. Thereafter, the track fell away at a slope of 1 in 25 where the banking emerged from behind the Hill, and from the end of the banking a half-mile straight under the lee of the railway embankment, and divided from it by a corrugated iron fence, ran the commencement of the Byfleet Banking. Seven pull-in bays were provided round the course.

The Byfleet Banking had a super-elevation of 17ft, giving a mean inclination of about 1 in 6 and a maximum of 1 in 2.125 at the top, while the Members' Banking had a 32ft superelevation, giving a maximum inclination of 1 in 2. The aforementioned Hennebique bridge was specified to carry a superload of lcwt per sq ft or a rolling load of 2 tons. The gradient of the Finishing Straight from Paddock to Members' Banking was about 1 in 12, which was confidently expected to assist cars to pull up after a race.

Seating for 5,000 and accommodation for *30,000* was provided (although in later years the tiers of seats all down the vast Hill became considerably reduced), standing room was estimated as adequate for 250,000 people, while safety arrangements comprised double railings spaced 15ft apart, with two rows of barbed wire topping the outer row. Sentry boxes were spaced at 300-yard intervals round the track and connected by electric bells and telephone. The area occupied amounted to 340 acres.

The Finishing Straight ran level for 991 yards across the north-east corner of the track, rejoining it where the Members' Banking emerged from the Hill, this junction being a nasty hazard in later years when cars attempted to turn at high speed after finishing a race opposite the Paddock. This Paddock

flanked the Byfleet side of the Finishing Straight, and in it, apart from 75 stalls for the competitors' cars, stood the palatial Clubhouse and offices. Entrance to the track was by a tunnel under the Members' Banking and a road leading to the Paddock, while foot passengers came in through a series of turnstiles, optimistically providing for 30,000, at the end of a private road near Weybridge Station.

From the Hill, on which lawns, seats, shelters and buildings were laid out, a view of practically the whole course was obtainable. The garages beside the first entrance road numbered 28, apart from the 75 shelters in the Paddock. The Members' enclosure in those days was located beside the Finishing Straight below the Paddock, and the road round to the Byfleet side had yet to be built. Double gates were provided in the corrugated iron fencing beside the Railway Straight so that carts had access to the sewage farm which the track divided. A local rifle range was obliterated as the track was built, but with their usual generosity the Locke Kings provided the locals with a replacement elsewhere on their estate.

That, then, was the new Motor Course, the presence of which had startled the inhabitants of Weybridge, Chertsey and Byfleet into discussion, argument and anticipation, not to mention wonderment, by the summer of 1907. It was called 'Brooklands' after that part of the Foxhill estate on which it was built, and it is pleasing that Mr Locke King lived to see the success of his great venture; he died in 1926.

One person, at least, was not at first amused. Of the new track, Lady Mary Monkswell, a Victorian diarist, wrote in her journal:

"13 July, 1907. Mr and Mrs Locke King came to dinner. They have been building this awful motor track and are so hated by their neighbours . . . that hardly anyone will speak to them. I was rather uncertain whether I had better go and see this horrid motor track, but as they offered to take me in the Fox Warren motor I thought it would be stupid of me not to go. . .

"The motor track is a perfect nightmare. It has cost more than £150,000 to construct: a great oval of cement, 60 to 100 feet wide and more than 2.5 miles round. It is for motor races. Within it stands a ruined farm and cut down trees, mere desolation. A more unenjoyable place to come to on a hot Sunday afternoon I cannot imagine. The beautiful Surrey landscape looks down into this purgatory of motor stables and everything that motors require, seats for thousands of spectators cut in the side of the hill. There were some 20 of these snorting beasts, and Mr and Mrs Locke King were there looking most depressed. But as she offered to drive me round in her motor I got boldly in and sat by her on the 'box. She put it to 43 *miles an hour - I felt my eyes pressed in by the air at that terrific speed and I could hardly breathe. I went round again in the Fox Warren motor, much slower. I find I don't care to 'go round' - what I like are the lanes and roads and views, and the getting to one's destination so quickly and easily. The enormous size of the arena, almost like a great Roman work, and the controlled strength of the motors, prevents this great horrid place from being vulgar. I might have felt differently last week when 20,000 spectators arrived and 1,200 motors."*

Mr Eric Parker wrote a poem which expressed his dislike of the intrusion of the track into the once-peaceful Surrey countryside; part of it will be found in his book on Surrey, the opening chapter of which is entitled 'Brooklands'. Mr Parker seems to have grown more tolerant in recent times because in later years he gave his consent freely when his son wanted to level hedges near his father's house to provide a landing ground for a public school flying club!

However, another contemporary writer was more in sympathy, describing a visit to the wonderful new course as follows:

"We drove in at the top gate, where one gets just a glimpse of the far end of the track, and then we ran round those wonderful cuttings in the hillside where the back of the colossal banking towers on one's left and the tunnels for foot passengers run under the roadway and under the Track itself from the right. After a series of corkscrew turns and blind corners, one plunges down a hill through a tunnel under the Track, and comes out suddenly in the arena of the vast amphitheatre formed by the banking and the hill on which the grandstands are. The whole panorama strikes one suddenly, and at first sight it is even a trifle overwhelming. Right in the front is the Paddock, with the clubhouse, car sheds, offices and so forth. Beyond, and extending the whole way round to the right, is the immense flat plain of the flying ground bounded by the motor track which shuts out all other view and forms the horizon, so that one feels as one imagines a fly might feel if he found himself set down on a green silk tablespread with a white border"

That nicely summed-up ones own sensations when emerging from the tunnel for the first time to encounter the breathtaking steepness of the banking behind one, and the Railway Straight spreading majestically away towards By fleet on the right. For, in essence, the track changed little down the years. As time went on, electric trains mingled with steam on the high embankment, the once white bankings became dull and chequered as the result of the weather and countless repairs, new bridges appeared at various vantage points and old buildings were pulled down to give rise to new. The cars themselves changed drastically, the thrill of sheer speed became a trifle less pronounced than in 1907, when motor cars were something of a rarity, and the Campbell Circuit eventually cut through the grounds. But in its purpose, its immensity, and the fascination it exerted for we enthusiasts, Brooklands remained unchanged. Now that the track is no longer used for motor racing, we at least can cherish its memories and remember the achievements that were accomplished there.

1907

Motor racing begins with a six-race programme

Racing at the new Motor Course was to be administered by the Brooklands Automobile Racing Club, the headquarters of which were established at Carlton House, Regent Street, London SW1. The first Committee meeting was called on December 12, 1906, and a second on March 9, 1907, the agenda being carefully inscribed in copper-plate in a vast book bound in green vellum.

The Committee meeting and officials elected comprised Lord Montagu of Beaulieu as Vice-President, Prince Francis of Teck, the Duke of Beaufort, Lord Dudley, Lord Churchill, Lord Essex, Sir Redvers Buller, Col Holden, Capt Greer, Capt Paycock, Lord Northcliffe, Mr Hugh Owen, Mr Julian Orde, Lord Sefton, the Hon Arthur Stanley, Mr C D Rose, the Duke of Westminster, Lord Tollemache and Mr E de Rodakowski. Lord Lonsdale added greatly to the prestige of the BARC by consenting to become its President. Mr Hugh Owen, ex-starter to the Jockey Club, was engaged to start the cars and Mr Kenneth L Skinner was appointed Secretary. Whereas Mr Ebblewhite soon replaced Mr Owen, Mr Skinner retained his office to the bitter end. Mr Rodakowski took on the onerous task of Clerk of the Course.

On December 6, 1906, the ACGBI had issued a special permit allowing racing to take place at Brooklands. Harrison & Sons, of St Martin's Lane, London,who became printers to the BARC, were asked to produce all manner of weird and ponderous tomes containing such mysterious page headings as 'driver', 'car', 'bore', 'stroke', 'engine number', 'chassis number', 'BARC number', etc. They also printed the official race cards, for the cover of which a striking painting was prepared of a line of racing cars rushing up the Finishing Straight. The original of this painting was hung in the Clubhouse and later hung in my house in Wales. It bears the name of L Vallet, the French racehorse painter, and depicts grotesque Daimler, de Dietrich, Napier, Mors and Renault cars, driven by fearsome demons, apparently in a glorious ail-abreast dead-heat under a Mediterranean sky against a sickly green background - until one catches sight of the rear wheels of two other cars vanishing off the extreme edge of the canvas. Yellow and black were chosen as the Club colours and a fine badge was evolved consisting of a scroll entwined in oak leaves which encircled the BARC monogram. Mr G J O Montague was the very first person to be issued with one of these badges, and here I may record that the only others to receive complimentary badges throughout the life of the Club were HRH the Prince of Wales, HRH the Duke of Kent, HRH the Duke of York, Dame Ethel Locke King, Col Gore Brown, Col Lindsay Lloyd, A Percy Bradley, Hugh P McConnell, Mrs R Russell, R Gore Brown, E J Anderson, Herr Bonngartz, M. A Letory of Montlhéry track, Mrs Letory, L F Dyer of the JCC, the AA, and racing drivers Prince von Leiningen, Frankl, Zanelli, Count Czaykowski, Taruffi, Rovere and the American, Cummings.

At the very first Committee meeting an aeroplane prize was agreed to, but a more important item on the agenda was the first car meeting. This was to take place on July 6, 1907, after the track had been formally declared open. Horse racing tactics were to be employed, and for purposes of identification drivers of competing cars would wear coloured jockey's smocks as numbering of the cars was not tolerated. Amongst the papers which came to light when Brooklands was sold in 1946 were laundry bills relating to smocks which the BARC lent to drivers who arrived at Weybridge without their official colours.

Cars were to lap the track in an anti-clockwise direction and turn into the Finishing Straight on their last lap, which was to be indicated to the driver by a semaphore signal at the Fork. After crossing the finishing line opposite the Paddock drivers were to continue up the straight and turn left on to the main circuit, where in a short distance they would be able to hairpin left on to a road leading to the Paddock entrance road.

Six separate races were to be contested at the initial meeting, as follows:

Marcel Renault Memorial Plate, over 11.5 miles, to be run off in two heats and a final. For cars of cylinder dimensions 85 to under 110mm to RAC Formula. Minimum weight limit 3,0001b.

Horsley Plate, over 3.28 miles. For cars of cylinder dimensions 60 to under 85mm to RAC Formula. Minimum weight 3,0001b.

Gottleib Daimler Memorial Plate, over 15.8 miles. For cars of cylinder dimensions 120 to under 155mm to RAC Formula. Minimum weight 3,0001b.

Byfleet Plate, over 10.3 miles. For cars of cylinder dimensions 110 to under 135mm to RAC Formula. Minimum weight limit 3,0001b.

First Montagu Cup, over 30.5 miles. For cars of cylinder dimensions 155 to under 235mm to RAC Formula. Minimum weight limit 2,5001b.

Stevenson Plate, over 6 miles. For cars costing not less than £600 or more than £700. Minimum weight limit 3,5001b.

All except the last event were restricted to internal combustion-engined cars.

The amount of prize money was truly fantastic and in later years far less was put up for Grand Prix road races - time certainly marches on! For entry fees ranging from 15 to 50 sovereigns (£), it was possible to win first prizes of 400, 250, 500, 450, 1,400 and a cup valued at 200, and 200sov's, respectively, in the six races. In all, nearly £5,000 prize money was put up, and I am sure the contemplation of winning £1,400 cash and a £200 cup in a race of just over 30 miles would do drivers of the present day a power of good! Not surprisingly, the BARC received entries of Napier, Darracq, Renault, de Dietrich, FIAT (which henceforth throughout this book, other than in quoted text, is spelt in the modern-style Fiat), Vinot, Iris, Itala, Junior, Berliet, Ariel, Straker-Squire, Thornycroft, Mass, Brasier, Brotherhood, Arrol-Johnston, Daimler, Minerva, Ariel-Simplex, White steamer and Mercedes cars from some of the best-known British drivers of the day.

Before this meeting took place the track had to be officially opened. For this purpose a lunch was given to motoring celebrities and the Press on Monday, June 17, 1907. Much interest was aroused, and Mr Melton Prior, the famous artist, had prepared

a drawing of Brooklands which was the first to give a true impression of what the new Motor Course was like; it had been published in *The Illustrated London News* and was reproduced in *The Autocar*. Everywhere people talked of this latest sensation, a vast motor track situated approximately 20 miles from the Automobile Club in Piccadilly.

The luncheon itself, in the BARC Pavilion, was a very informal affair, and the speech which Mr Locke King made after it was of the shortest for, as he said, there was no need to talk. There was the track; it was a great undertaking and whether it succeeded or failed remained with the automobile world. After expressing his appreciation of Col Holden's work and his indebtedness to Mr Hugh Owen, Mr Orde and the contractors, the creator of Brooklands sat down. The assembled company then moved to the Paddock and prepared to drive for the first time on the first motor racing track the world had seen. I cannot do better than quote the description of this historic ceremony from *The Autocar,* thereby capturing the spirit of the event as depicted by the journalism (and typographic style) of that time:

THE *CARS ON THE TRACK*

"In the enclosure and garage we found Mr. E. de Rodakowski, the racing manager of the Brooklands Automobile Racing Club, presiding over a varied collection of cars from 80-h.p. racers down to modest 10-h.p. touring cars. These were marshalled in a long line, and their drivers enjoined not to pass each other, but the Track proved to be too much temptation for them, and the line soon tailed out. As the cars stood in two rows before starting, from our point of vantage on the hill near the bridge, and looking down into the Finishing straight, the whole thing appeared almost unreal. The cars themselves looked mere toys, and only the best-known makes and drivers could be recognised. At the head of the line was Mrs. Locke Kings old Siddeley car. Then we saw Mr. Warwick J. Wright's 80-h.p. skeleton racer, Mr. Hutton's 80-h.p. Berliet, Mr. Weigel with his* two *eight-cylinder Grand Prix racers and Mr. Rawlinson with about the sportiest touring Darracq we have ever seen. It was one of the high-powered cars with a low four-seater body and a conning screen to match. Then there were a number of Daimlers, a Tourist Trophy Arrol-Johnston, and Rolls-Royce (last year's winner), driven by the Hon. C. S. Rolls, he having borrowed it specially for the occasion. Mr. Coleman stole along on his White, with Mr Claude Johnson on a near relative of the 'Silver Ghost' hard on his wheels. We saw, too, Mr. S. F. Edge on his six-cylinder Napier voiturette, Mr. Siddeley on a car of his own name, Mr. Okura on his huge F.I.A.T., which rivalled Mr. Jarrott's big de Dietrich for downright outspokenness of its exhaust. There they all stood, below the cliff, a double row of pigmies - some big and some small, some quiet, some noisy, some enveloped in a haze of oil, and one in a scarlet racing suit. Besides these notables were a large number of other cars down to quite small-powered machines. As we have said, from the bank sixty-odd feet above the course, these cars looked like toys. When they had moved off and the faster cars began to come away from the bunch, the procession appeared but a blur on the landscape. The racing Darracq could be seen far away high up on the banking, probably at the moment doing about sixty miles an hour. Mere pottering touring cars which were roaring along at forty to fifty miles an hour were lost on the vast Track. They appeared to be scarcely moving at all - much the same as one watches a crack express train which is doing its seventy miles an hour, apparently creeping across the landscape. After the general procession, the cars were called in, and two or three one-design laps indulged in. For instance, three or four Daimlers went out together, when Mr. Rendle's white car showed that it had the heels of the lot. Next came a trio of Rolls-Royces, which did not appear to race, but proceeded steadily at somewhere about forty miles an hour, and consequently gave one the impression that they were going about fifteen. After them came a batch of Ariels, and so on. Then the two eight-cylinder Weigels and the 80-h.p. flying Darracq were let loose. The Weigel cars went fast, but the Darracq simply flew. It made a lap at about ninety miles an hour and went high on the banking when running at its greatest speed. The sight as it came under the bridge was well worth seeing.*

A TRIAL OF THE *TRACK*

"Mr. E. M. *C. Instone, who had his 35-h.p. Daimler in the enclosure, invited us to take a trial trip. We had driven down to Brooklands, but as our car was not in speed form on Monday, we had decided not to go on the course. Mr. Instones invitation was therefore accepted with alacrity, and in less time than it takes to tell we were on the course. Upon it its vastness is even more realised than when taking a general view of it from the clubhouse or the high bridge. In a way it is more like being at sea than anything else. There is nothing but the interminable expanse of track in front; cars are overtaken as ship overtakes ship. The fact that they are proceeding at speeds from forty-five to sixty miles an hour is forgotten. Nothing but the rush of the wind and the bite of the concrete dust indicates speed at all. As the bends are negotiated one is conscious of them. The great curve was taken without the faintest sensation of any sort of deviation from the straight line. The smaller one under the bridge could just be felt. There was that indescribable sensation of flying from the centre of the circle which the car was describing, but we were proceeding at something over fifty miles an hour, and Mr. Instone was purposely holding the inside to see whether it required any effort to hold the car down. Having satisfied himself that it did not, he went high up the banking, and at once the sensation of being on a curve was lost. An even better proof of the correct way in which the Track had been laid out is in the way the banking begins and ends. As one strikes the curves or leaves them one does so almost unknowingly. There is no feeling of relief that the curve is done with, and the speed is not affected either way As one rounds the curves the great bank shuts off the rest of the world just as one is shut off in the trough of the sea. However, the most interesting part of the whole trial on the Track was when the Darracq passed us.*

A RACER ON THE CORNICE

"We were on the larger curve and running at about fifty-five miles an hour well inside, when there was a crack as of musketry in the air above, and, looking up, we saw the racer, and heard it too. There it was twenty feet above us on the cornice making its eighty miles an hour. For the moment we had an absolute plan view of the car as it went by and above us. At high speed the cement dust from the Track was particularly stinging, much more so than ordinary road dust. In fact, considering that the Track looked absolutely dustless, there was more dust than might have been expected, though, of course, a mere nothing to what it would have been on a dry road. So far as could be judged, there are one or two places which are rather rough, though really nothing compared with the average road inequalities. When coming round the great bend there seems a slight inclination to turn into the Finishing straight rather than to take the outer course. This, however, is an impression which might be entirely removed by a little practice. There seemed to be a very general opinion among the drivers of the fast cars that the pull-up was not sufficiently long. That

* Although this account refers to Mrs Locke Kings 1903 Siddeley, I believe on this historic occasion she drove a 40hp Itala. It is difficult to establish what car first ran on Brooklands track; some sources claim that honour as belonging to a 14hp Germain (see *Motoring Illustrated* dated June 8, 1907), others that the Siddeley was the first, probably taken on by Mrs Locke King before the course was completed. - WB

is to say, supposing the finish of a race was as it usually would be made in the long straight, the cars would have to slow down before passing the judges' box, otherwise at the very highest speeds of the racing cars it was feared they could not be pulled up, and that they would shoot right through the "pull-up" across the Track and over the ridge of its saucer sides. This, however, is not in the least likely, as the pull-up is somewhat sharply inclined. At the same time, it must be remembered that it would be necessary in many cases that the cars should pull up without going on the Track proper at all; otherwise they would come out at right angles to any machines which might still be running in the race. No doubt the defect, if it exists, can be remedied comparatively easily by widening the pull-up in such a way that the cars can rejoin the Track proper at even higher speeds than is now possible. As to the banking of the Track, there is no question that it is sufficient for the racing speeds of any cars at present made, and in this respect it is unquestionably a triumph for Colonel Holden and the accuracy of his calculations. In the struggle for speed supremacy someone will probably make a car which is too fast for the Track, or, at any rate, too fast for it unless it can have the whole Track to itself. So far as ordinary competitions are concerned between touring cars the course is absolutely safe. The only possible dangers are those of careless or bad driving, of which there were one or two examples on Monday, though luckily no harm resulted. Leaving out this element, the one danger is the failure of some vital part of a car at speed. This would probably spell disaster for the occupants of the car in any case, but if a spill were to occur close in front of another car or cars there would probably be a very bad smash indeed. With the exception of these two causes of danger the Track is unquestionably as safe as it can be made and we wish it the success it deserves. It is no small thing that private enterprise has conceived and executed a work which has been deemed worthy of copying by that most energetic of rulers, the Emperor of Germany. On the very day of the opening of Brooklands Track it was announced that the Kaiser had determined that Germany should have a motor track which would be suitable for the highest speeds and free from the dangers of courses such as the Taunus, the race which His Majesty had followed from start to finish."

Interest in Brooklands, at all events in motoring circles, continued unabated, and with commendable enterprise *The Autocar* interviewed Col Holden in his hide-out at Malvern to learn more about the new track. This interview, published in the issue dated June 22, 1907, reads:

THE BROOKLANDS MOTOR COURSE

An Interview with the designer, Colonel Holden, R.E.

"It would not be overstating matters to say that the majority of Mr. Locke Kings guests on Monday last were disappointed with the brevity of that gentleman's after-lunch speech. Admirable in its way, it left much to be desired from the point of view of those who, hungering after knowledge, desired to know something of the true inwardness of those scoopy curves. Now the world knows that when Mr. Locke King and his most particularly energetic and enthusiastic aide-de-camp were seized of the idea of motordrome construction, they realised that the keenest possible intelligence had to be focused upon the matter if the course were to be made safe for motor-racing speeds as they are going to be.

"In such case then, to whom could he turn with greater confidence than to that enthusiastic motorist and eminent scientist, Colonel Holden, RE, the man upon whom the empire depends for straight-shooting guns, and the ex-chairman of the Royal Automobile Club. The timely and apt reference to this gallant and accomplished officer has resulted in a track formation such as was noted on Monday last. Therefore it was to Colonel Holden we turned for light upon these matters, even as in 1897 we gathered from him the then remarkably novel method of firing a four-cylinder internal explosion engine by means of a high-tension distributor. The gallant Colonel was somewhat hard to come by, for after his labours of Monday he had taken refuge at Malvern.

"As usual, we found Colonel Holden not only pleased to see us, but ready to afford any information that might be of interest to our readers. Disregarding the 'pralimbaries', we plunged at once into the whole question by referring to the incurved banking, and asked Colonel Holden to give us the reason in as plain a manner as possible.

" 'Well,' continued Colonel Holden, 'the effect of the banking of the Brooklands racing surface on the sweeps is exactly the same as the super-elevation of the metals of a railway. The road is at right-angles to the degree of inward inclination of the car necessary to counteract the centrifugal force, and therefore the car, when running round those curves at any speed from thirty to one hundred miles will find a course where the centrifugal force presses her vertically down upon the course, and no more side stress is exerted on the wheels than is the case when running on a straight road. In other words, and for the purpose of illustration, if the surface of the course can be imagined to be of the smoothest glass, so far as transverse movement is concerned, but cement as it is, with regard to forward and propulsive movement, a car running at any speed from thirty to one hundred miles an hour round those curves would move to and find a segmental line where absolutely no side-slip of any kind would take place, by reason of the vertical pressure of the wheels upon the surface.'

" 'Then, Colonel,' we interposed, 'the cars should not require any steering round these bends?'

'Certainly not,' was the reply. 'The moment they require steering either way shows that they are removed left or right of their proper running line.'

" 'Of what nature are the connecting curves?' we asked.

" 'Oh,' returned Colonel Holden, 'they are circular; it would not have been wise to have made them of any other form. The curves of a circle are so much more easily treated, and so much more easily steered.'

" 'That is quite clear,' we replied, 'but, Colonel Holden, there were those on Monday afternoon who suggested that a car finishing up on the winning straight at, well, let's say one hundred miles per hour, would have something more than a little trouble to get round to the left into the whole course, and if another car were travelling from the back of he grandstand at something about the same time and pace, there might be trouble, eh?'

" 'Oh, no; the test has been made several times with very fast cars, and the bend to the left, thanks to the banking, can be taken close in and easily at fifty miles per hour. You see, the super-elevation increases so rapidly that it hugely assists the effort of the driver to swing his car to the left. Moreover, taking a car finishing at one hundred miles per hour, the speed is reduced to nearly fifty before the bend is reached by merely withdrawing the clutch, owing to the great stopping effect of the wind resistance, to say nothing of the assistance the driver must and would derive from his brakes.'

" 'What is the highest speed at which you think the Track is safe?' was our next query.

" 'Oh, quite safe, naturally safe, at 120 miles per hour,' replied the Colonel, 'and, of course, reasonably safe at higher speeds with the driver counteracting centrifugal force with his steering, as he does every day on the road when rounding bends. Considering the ease with which the skilled drivers of today negotiate sharp and sometimes also outwardly shelving curves at fifty to sixty miles per hour, a considerable excess on the theoretically correct speed on the Brooklands course will not be difficult to encompass.'

" 'Well, Mr. Warwick Wright travelled fairly fast on that flying Darracq; at what speed was he going?'

" 'Oh, 82.7 on his starting and 85.5 miles per hour on his completing round, and, if you remember, when not passing he was hardly halfway up the bank. He was then on his natural line, and, indeed, in conversation with me

afterwards he confessed that he exerted no pressure at all upon his steering wheel when taking the curves at this speed.'

" 'Now, Colonel Holden,' said we, feeling somewhat as though we had something of a poser for this learned and gallant officer, 'what will happen if a car is going all out on the top of the banking and, her engine stopping, her speed drops with great rapidity? Is she not likely to turn over sideways and roll down the Track?'

" 'Oh, no,' came the answer, 'a car can stand still longitudinally at the very top of the banking, and the angle at which she stands is not nearly enough to bring her centre of gravity outside her wheelbase. She is safe stationary, so she is always safe, and safer on the move, however slow she may be moving.'

" 'Great care has been taken to avoid the possibility of accidents,' we remarked.

" 'Oh, yes,' replied Colonel Holden, 'there are no less than six telephones in the triangular-shaped sentry-boxes round the Track, which all communicate with the timekeeper's office and judges' box at the post, and with each other, so that cars can be stopped at any moment and at any part of the course. The telephones are worked on what is known as the common battery system, one battery at headquarters doing the whole business. Alarm bells can be rung at any point and from any point. So soon as an alarm bell rings at a sentry-box, the man in charge turns out his arresting yellow flag, and any event is immediately arrested.'

" 'Now with regard to the measurement of the Track, Colonel Holden, we understand that it is to be, or has indeed already been, measured 10 ft. outside from the inner edge of the Track. Is that correct?'

" 'That is so,'replied Colonel Holden, 'but that is not yet final For instance, when Mr S. F. Edge makes his attempt to drive a Napier car for twenty-four hours non-stop at 60 m.p.h., the Track will be measured on the natural sixty miles per hour line on the bends.'

" 'Quite so,' we returned, 'that is only fair, as he will certainly have to travel considerably over that speed for a considerable portion of the time, and he will be during that time well outside that line, and consequently going a good deal farther.'

" 'That is so,' said Colonel Holden. And so, as the hour was late, we thanked him heartily on our own behalf and on behalf of our readers for the lambent light he had thrown on the matter of the moment, and took our leave."

It will be recalled that at the initial meeting called to discuss Brooklands, Edge asked to be allowed to book the track for a 24-hours drive. This he was told he could do on June 28-29, 11 days after the opening ceremony. He announced that, using a Napier car, he would endeavour to beat the distance of 1,096 miles which, as far as he could trace, two American drivers, Merz and Clemens, had accomplished in the same period in 1905, averaging 45.6mph. Edges proposal caused, perhaps, an even greater stir than the construction of Brooklands itself. Doctors said he would be unable to stand the strain, and it was even thought that he might become insane with monotony. Few expected the car to endure. In reply, Edge went into athletic training and had prepared an ordinary touring 60hp, 127 x 127mm, 7,724cc, 6-cylinder Napier car. He became the hero of all adventure-lovers and very much the man of the moment. He must have done Mr Locke King a power of good, for all eyes turned to the newly-laid concrete at Weybridge - still scarcely set, let it be said, and with railway lines still fringing it. Edge was photographed in all manner of guises and *The Car Illustrated* devoted a front cover to an illustration of one of his racing Napiers standing on the Brooklands banking. Even *Punch* devoted a joke to the forthcoming endurance test.

Edge had decided that, to relieve to some extent the boredom of his drive, two other cars might as well accompany him. These were also 60hp Napiers, one red, the other white, to be driven, respectively, for three-hour spells by the Napier testers, F Draper and F Newton, and H C Tryon with A F Browning. The crews wore garments of the same colour as their cars. Edge's own car, painted British green, had had its touring body removed. A very large, oval fuel tank was fitted behind the two bucket-type front seats and ahead of the driver's seat was rigged a curious screen, on outriggers, designed to offer as little resistance to the air as possible. The mudguards were removed front and back, but light canvas guards were fitted over the front wheels. After consultation with John Pugh of the Rudge-Whitworth Company, Edge decided to use the new-fangled detachable wire wheels, and the Dunlop Rubber Company was prevailed upon to supply a small mountain of such wheels as spares, shod with their tyres. Quick-lift jacks were devised, consisting of heavy beams of timber so hinged that they could be placed under the axle and a wheel levered clear of the ground. To accommodate this equipment and a vast number of petrol, oil and water cans, etc, an open-air depot was established on the Members' Banking end of the Finishing Straight, and two small wheeled cranes were provided in case of an accident. A tent was erected for the drivers and mechanics, and food supplies and medical assistance were laid on.

The other two cars were also stripped chassis, but with less elaborate windscreens, and all three carried acetylene headlamps. The chassis number of Edge's car was 804, which became quite a nickname for the car. A fan was fitted, but its belt was not in place, whereas on the other two cars the fans had been removed completely.

Two bad snags cropped up a few days before Edge's proposed attempt. When driving his Napier fast for a few laps its engine developed bad pre-ignition, while a further test at night revealed to Edge that on the newly-surfaced track his headlamps were next to useless and he could not see where to steer as he came off the Cobham Banking into the vast expanse of the Fork, an experience he referred to as being *"like the skipper of a ship at sea without a compass"*. The overheating was cured by returning all the cars to the works, where Montague Napier designed water-cooled valve caps for them. The other trouble was less easy of solution, but was eventually solved by sending out scouts to buy up every red lantern available. Edge decided that the track should be lined after dark with these lamps and calculated that to have one lamp every 10 yards on the 50ft line would require 352 lanterns, disregarding the odd number of yards. (In fact, the lamps were placed 4ft inside the 50ft line, as it was on this line that the timekeepers proposed to measure the record, the distance being declared as 2 miles, 61 chains, 16 feet, 2 inches to the lap.) Every road-surveying firm in London was approached and red lanterns began to pour into Brooklands. In the end enough came to hand to light Edge's way during the hours of darkness, and he made doubly sure by having screened Wells' flares set at intervals along the top of the banking. So effective was all this illumination that the lamps on the car were not required. A receptacle was provided on Edges car for food, but he decided not to take solid nourishment.

The start of the attempt was timed for 6pm on the 28th, a Friday, as then the drivers would be at their freshest as darkness fell. As the time approached the depot was assembled, Ebblewhite,

Glazebrook, Dutton, Burley and Fattorini, the RAC timekeepers, prepared their watches, Cecil Edge and Sidney Smith looked over the cars, and 'S F' came over from the White Lion at Cobham where he was staying, clad in thick clothes, for the night promised to be cold. The three big Napiers lined up almost beneath the Members' Bridge, Edge's outside, Newton's in the middle and Tryon's inside, and Blackburn, Edge's mechanic, climbed up beside 'S F', having insisted on covering the whole distance on the car. Ebblewhite signalled as clocks chimed 6pm and the attempt was on. In actual fact, the starting line was some way father on, as in those days a flying start was stipulated for all records. The timekeepers worked from the Paddock tower until they found they couldn't see the cars' rear lamps, after which they spent the night in a car close to the white lap-mark across the track. Each lap and every stop was timed separately, by watch and with the new Holden electrical apparatus.

Forty-two minutes and 46.4 seconds after starting, 50 miles had been covered, which was well above Edge's self-imposed schedule, being an average of 70.14mph. By 7pm, 70 miles, 130 yards had been disposed of, and after lhr 25min 13.4sec the 100-mile mark was reached. At 8.10pm, after a tendency for the car to boil had been noticed, Edge paused for water. Soon afterwards the long task of lighting the trackside lamps was begun, and those present had the experience of seeing the three cars lapping in the eerie light cast by the hundreds of lanterns, with smoky flares, suitably shielded from the drivers' line of vision, adding to the spectacle. The timekeepers lit their lamps and by 10pm the fir trees formed a dark fringe to the unusual scene. An official car circulated inside the line of lamps to ensure that the Napiers kept outside the 50ft line and that no lamps had been damaged. The cars ran on, not requiring their headlamps.

The night grew bitterly cold, yet hour after hour the Napiers held their mile-a-minute schedule. Every three hours they came *in to the depot* and the tyres were changed, the first stop for this purpose being made by Edge after 350 miles. Sometimes a tyre would leave its rim unexpectedly, but the cars could be held and the Rudge wheels stood the strain of undiminished speed until the depot could be reached, even when, on one occasion, Edge had to run almost a full lap on a rim. Incidentally, he had carried out some experiments at the Crystal Palace to see if he could cope with a situation such as this. While tyres were being changed, Edge lay down for a few moments and stretched himself, and as the sun rose he discarded his heavier clothing. Once, when one wheel only was replaced, the stop took just 31 sec, for the pit-work was excellent.

During the 14th hour Edge covered 72 miles, 150 yards - his best - while his slowest hour was the 23rd, when 61 miles, 360 yards were covered. This was probably because towards the end the surface of the track began to break up. Gravel was poured into holes that had formed by the Members' Bridge, and these the drivers did their best to avoid. The surface took toll of the tyres, to cool which Edge had arranged for a stream of water to be pumped across the track.

On the last lap but one, his car well up to schedule, Edge had the unpleasant experience of his windscreen breaking due to vibration. Fortunately the glass struck him and his mechanic flat, and they escaped injury. Torrents of rain fell soon after the cars pulled in, Edge's having averaged 65.905mph, covering 1,581 miles, 1,310 yards in the 24 hours. It had established World records from one to 24 hours, while records were also observed for the rather odd distances of 50 miles and 1,000 miles, totalling 26 records in all. The 24-hour World record stood for 18 years, until Gillett's AC bettered it at Montlhéry in 1924. The car obviously slowed towards the end, for after 17 hours the average was 67.03mph, and after 23 hours 66.05mph, but Edge had handsomely bettered his aim of covering 1,440 miles in the two rounds of the clock. The only mechanical attention his Napier required was for a fan blade to be bent away from the radiator after it had been damaged by a bat, which hit and penetrated the radiator. Three nearside front, three offside front, seven nearside back and 11 offside back wheels were changed in all. Edge finished somewhat stiff and bruised, but fresh enough to drive back to his hotel himself. The other two Napiers finished at only slightly lower average speeds, although the red car had broken a rear spring. In fact, Edge covered 42 miles, 1,450 yards more than the white car and 60 miles, 1,230 yards more than the red one.

This great feat aroused worldwide interest. Gordon Crosby painted a magnificent picture of the run, which in the 1950s Mrs S F Edge presented to the Veteran Car Club of Great Britain, while the *Graphic* published an artist's impression of Edge at speed during the night spell. Those who saw the run never forgot that scene, and certainly Edge may be said to have opened Brooklands far more dramatically than did the ceremony that had preceded his record-making run. Incidentally, I believe that '804' was sold to a Mr Crowther, of Huddersfield, who kept her for many years. The weight of Edge's car was 3,2771b, of the white Napier 3,5401b, and of the red one 3,4331b. Apparently the people who had driven down to watch the finish of Edge's run largely melted away when asked to pay a sovereign a car and 10 shillings (50p) for each occupant!

After Edge's run the opening meeting was something of an anti-climax. The attendance was not at all bad considering that the public did not know what to expect at Weybridge, whereas at Alexandra Park the London Cup race was being held on the same day - July 6. Over 13,500 people passed the turnstiles and 500 cars entered the grounds at Brooklands that day, while more cars, not forgetting horse-drawn carriages, were parked outside. The Hill had been divided into three lawns for the public, a fourth lawn, by the banking, being reserved for Members, while only competitors and their assistants were permitted in the Paddock.

Realizing the need for official cars, a single-cylinder Sizaire-Naudin was provided for the marshals, painted in the Club colours of yellow and black - it had the independent suspension and queer change-speed peculiar to its kind and was still engaged on official duties at Brooklands nearly 20 years later. In addition, Mrs Ethel Locke King's Rochet-Schneider had been sent to the Panhard works at Acton Vale to be converted into a lorry for use by the BARC. Indeed, all was in readiness for a red-letter day, especially when Lord Lonsdale arrived in his very fine Mercedes.

Unfortunately, not all the races proved exciting and, apart from a few cars capable of upwards of 90mph, the majority of the stripped standard chassis present looked painfully slow on the vast expanse of concrete. Add to that the inadequate meals, gravel paths that proved painful to the ladies, delays in getting into and out of the track and the steepness of the exit road, on which one car burst into flames and many others could scarcely make

the grade, and the failure of Brooklands' first race day can easily be understood. Many Pressmen were ignored so that, denied free passes, they made the most of Locke King's misfortunes. In spite of the drivers' smocks, cars proved difficult to identify on the track and no times or speeds were announced. As some compensation, there was a dead-heat in one event.

The first heat of the Marcel Renault Memorial Trophy Plate saw Tryon, in Edge's 40hp Napier, win by an appreciable margin from Huntley Walker's Darracq and Groves in Kerr-Smiley's Renault. Sorel, in Baron Turckheim's de Dietrich, experienced a carburettor fire and withdrew. The second heat was better as Earp's 35hp Iris battled manfully with F R Bircham's 40hp Iris, the latter leading until near the finish, when Earp speeded up to go by and win, M Fabry, in H R Pope's Itala, being a poor third.

Before the final, the Horsley Plate was run off for cars of about 30hp, over 3.28 miles. This short race produced an excellent finish, for although Walker's Darracq built up a big lead and won by about half a mile, Lord, in a Straker-Squire entered by Sidney Straker, took second place from Gore-Browne's Thornycroft by about 4ft, with Saunderson's Brasier a mere length away in fourth place.

The final of the Marcel Renault Memorial Plate resulted in Tryon, on the 6-cylinder, 4in-bore, 40hp Napier chassis, winning very easily, incidentally on Dunlop tyres. Earp's Iris was second, Walker's Darracq finishing third in spite of a burst tyre.

Then followed the Gottleib Daimler Memorial Plate of nearly 16 miles. At first Moore-Brabazon led in a yellow 35hp 'Kaiser Cup' Minerva, with Instone's Daimler and Sangster's Ariel-Simplex fighting out a duel behind. The bonnet of Sangster's car flew over his head and he was obliged to pull up, drenched in oil, and then, as he led into the Finishing Straight, Moore-Brabazon's carburettor caught fire and he, too, had to give up. So E M C Instone, in his vast 150 x 150mm, chain-drive Daimler, with scuttle and radiator typical of the make, won by nearly a lap; he used Continental tyres. Walker's Darracq, this time slowed by an inactive cylinder, was second and no-one else was placed; another Daimler suffered from a choked petrol feed when in second place coming up the Finishing Straight, while Smith, in Edge's Napier, had been left on the line as he forgot to engage a gear when the flag fell.

The Byfleet Plate, over 10.3 miles, followed and proved the best race of the day. Nazzaro's eyes had not recovered from the dusty roads of the French Grand Prix, so Wagner handled the Fiat. He got off splendidly, but Charles Jarrott soon overtook him, driving a 146 x 175mm, 60hp, chain-drive de Dietrich shod with Continental tyres. Newton, on Edge's 6-cylinder 45hp, 4.5625in-bore Napier, was close up to Jarrott throughout, and about 100 yards from the finish the Napier speeded up and finished dead-level with the de Dietrich, the stakes of 450sov being divided between Edge and Jarrott. Walker's Darracq was again third, about half a minute behind. Some comment was occasioned by Newton's last-moment spurt, and it was rumoured that the extra speed had been found by turning on an oxygen supply to the engine.

The big event of the afternoon was the First Montagu Cup race, for £1,400, over 30 miles. Cecil Edge, in S F Edge's Napier, caught Hutton's Mercedes on initial acceleration, but Warwick Wright then came up very fast in his Darracq. After three laps Wright led from Edge, and Dario Resta in a Mercedes led J E Hutton's Mercedes. On the next round, Edge, the favourite, retired with fluid leaking from his car. Wright thus led lap 5 in his old Darracq, while Hutton had overtaken Resta. On lap 8, however, the Darracq slowed and the next lap it pulled in with a hole in its crankcase and a bent camshaft. Resta was now in the lead as Hutton had gone on to three cylinders. Alas, approaching the Fork for the last time, Resta saw a man waving him round again and, ignoring his own lap-counting, and apparently missing the semaphore signal which the BARC said was working correctly, he continued for another lap, losing £1,400 for F R Fry, his entrant, that otherwise he could not have failed to win. His protest was disallowed and he was placed third behind Hutton and Okura's Fiat. Hutton, whose Mercedes was a 175 x 150mm, 14.5-litre, 1906 GP car capable of l,200rpm, with two bucket seats in lieu of a body, chain drive and Dunlop tyres, was believed to have averaged 82mph, although no official times were issued. A curious bonnet with water tubes along each side, terminating in a cylindrical header tank, was used. Resta's Mercedes was also a 1906 GP car, with normal Mercedes radiator. Edge and Wright both exceeded 90mph before they retired.

Brooklands' first meeting concluded with the Stephenson Plate 'standard car' race. The Marquis de Mouzilly St Mars, in a Darracq entered by Huntley Walker, won again on Dunlop tyres from A E Harrison's Ariel-Simplex, Capt W E R Owen passing F Coleman's White steamer on the Home Banking to bring his Junior in third.

So the day ended, odd and curious cars roaring and chuffing away from Brooklands through Weybridge, the inhabitants of which were by now quite alive to the fact that they had a motor track in their midst. Many of the competing cars had consisted of stripped chassis, and in the case of one 45hp Daimler, which had previously been in daily use, even the seat was absent, its driver sitting on a piece of carpet tied to the petrol tank, a broad belt round his waist having straps running from it to the dashboard to provide some measure of support. This first meeting, then, was not a success. It has, indeed, been described as a ghastly failure.

A second meeting was run off on July 20. A selling plate race was introduced, and there was a private contest between Coleman's White steamer and Sangster's Ariel-Simplex, both of 30hp, which the petrol car won. An attempt at handicapping had been made in the selling plate event by insisting on the carriage of extra weight for every sq in of piston area above a set minimum, but this was not particularly successful.

For August Bank Holiday the Press was afforded more generous treatment and the admission charge to the public enclosure was reduced from 2s 6d (12.5p) to Is (5p), which resulted in some measure of increased popularity. At this meeting £500 was offered for the International Plate, which Newton won, driving one of Edge's Napiers (Edge eventually developed a fleet of six of these cars for Brooklands, all fairly standard stripped chassis except for a special racing 90hp Napier with cooling tubes each side of the bonnet, which came to a knife-edge in front). On this occasion Newton crossed the line some 80 yards ahead of Gabriel's de Dietrich. Hutton's 1906 GP Mercedes won the Heath Stakes (£350), and the Belgian Plate race, also worth £350, was won by Tryon in Edge's Sixty Napier, which finished 100 yards ahead of Cecil Edge in another Napier. The Oatlands Selling Plate

race carried a £200 prize and was won by Browning in a 38.4hp Napier by 50 yards from Jarrott in a Sizaire. The Prix de la France saw Dario Resta and Hutton occupy the first two places in their 1906 GP Mercedes cars, with Tryon third in a Napier.

What really saved the day for Brooklands was undoubtedly the abandoning of the horse-racing tradition, and for this, the indefatigable Mr A V Ebblewhite must be thanked. From the first meeting he had disliked the drivers' coloured smocks, and after strong opposition from the horse-minded Committee, he was allowed to number the cars, thus rendering recognition easier for him. He then pressed for a proper system of handicapping, grouping of cars by price having failed to achieve anything. Aided and abetted by T D Dutton, 'Ebby' (as we knew this famous figure in later days) was permitted to handicap the fourth race at the fourth meeting, held on September 14.

To achieve this handicapping, cars were started from different points, a laborious enough job in itself to place them correctly, apart from ensuring that every driver was in a position to see the starting maroon. But handicap that race Ebblewhite did, and it was apparent that this was warmly appreciated by competitors and spectators alike. In June 1908, handicapping on time was adopted, and from July 1908 Mr Ebblewhite became the official Starter - it is said because Major Caulfield, who had replaced Hugh Owen, the original Brooklands Starter, disliked having to stand in front of one car whilst dropping the flag for its immediate companion! 'Ebby' continued to act in this capacity at Brooklands and at many other venues up to 1939 - a quite astonishing and commendable achievement. Although the cars were now numbered, drivers continued to wear individual colours right up to 1914, when car colours were substituted. Handicapping became universal for Brooklands' Short races, although at the closing meeting of 1907, held on October 12, only two races were so run. Napier cars won three of the events at this meeting, but only just, for Sidney Smith's car shed its nearside front tyre and several spokes, so it had to be stopped quickly after winning.

Another notable improvement introduced during the first season, for which Ebblewhite was also responsible, was that cars were timed. 'Ebby' had unofficially clocked lap times at the opening meeting, and by September this had Rodakowski's blessing and race speeds were announced. E G Drabble's GP Mercedes averaged 92.5mph, for example, in winning one of the faster races. Electrical timing, accurate to l/1000th of a second, was undertaken with a tape chronograph designed by Col Holden and K Elphinstone and made by Elliott Bros of London, the tape being placed in a special wooden stand, made by J Pitkin & Co of London, before speeds were calculated from it. Other scientific apparatus used at Brooklands in those early days included a rope attached to a car undergoing acceleration tests so that readings could be taken in conjunction with the electrical timing apparatus, and Edge's ingenious tyre-slip recorder consisting of four very accurate electro-magnetic Elliott revolution counters carried on the car and coupled to each of its wheels. Not so scientific was an ingenious trip-gate arranged on the track side of the tunnel so that if a car came along the entrance road at too high a speed an attendant could pull over a lever and produce a damping effect on the offending driver!

The prize money that first season was fantastic. In the first three meetings Mercedes cars earned £2,800, Napiers £1,760 and Darracqs £1,000. The most successful makes, based on prize money per entry, were Mercedes, Fiat, Daimler, Napier, Sizaire and Darracq. Of the drivers, H C Tryon was far and away the most successful, with J E Hutton and F Newton an equal second. Tryon and Newton drove Edge's 6-cylinder Napiers, Hutton the 1906 Grand Prix Mercedes.

That first season saw an exciting incident and a fatal accident. Huntley Walkers l00hp Darracq, baulked by Newton's Napier after the finish of a race, spun round and shot backwards over the top of the Members' Banking at the top of the Finishing Straight. The mechanic leapt out, but Walker stayed at the wheel and drove in the next race. The car was afterwards raced by Warwick Wright. It had cast-iron pistons, hollow conrods, overhead valves and low-tension ignition. The crankcase pressure was considerable and the engine threw out much oil, to the discomfort of the occupants. On one occasion a Bosch high-tension magneto was tried, but the car preferred the older system. The live-axle transmission stood up well to the fierce phospher-bronze cone clutch. Eventually a camshaft broke and pierced the crankcase, and although a good repair was made in those early days of aluminium welding, the Darracq was never the same again.

The other accident was altogether more serious. It happened at the September meeting. Vincent Herman, driving Moore-Brabazon's Minerva, overturned after crossing the finishing line by attempting to turn on to the Members' Banking at too high a speed; the front wheels collapsed and the car rolled over, pinning Herman beneath it. His mechanic was thrown clear, but Herman had been fatally injured. To make matters worse, a pitched battle took place outside the Clubhouse as BARC officials sought to prevent Press photographers from entering after the stretchers had been conveyed inside.

Arising out of the Napier-de Dietrich dead-heat at the first meeting, S F Edge, the Napier publicist, issued a series of challenges to be contested at Brooklands. First, that oxygen or no oxygen, any Napier could beat any car nominated by Jarrott. The stake was £1,000. Second, that a team of six 6-cylinder Napiers would run against any other team over distances of three, 20 and 100 miles and win all these contests. The stake was again £1,000. Finally, at the very end of 1907, Edge raised this wager to £10,000; vast sums of money when converted into terms to today's currency! No-one accepted these challenges, but doubtless they focused attention on the new and still not entirely successful Motor Course. Even in the first year of its existence, Brooklands was used for scientific research, for Edge had one of his 40hp Napiers timed, first in racing trim, then with an increasing number of wooden laths carried across the car, in order to calculate what effect wind-resistance had on speed.

In October Hampton & Sons held an auction of 31 cars, starting with a 90hp Mercedes and an 80hp Napier racing car, 'ready for the track', at Brooklands, where the cars could be tried out round the track free of charge.

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Before we leave the 1907 season it must be recorded that there was some record activity on the new track additional to the historic 24-hour record which Edge set in June. The BARC had

decided to recognize records in six class categories, these being based on RAC horsepower, as follows:

HP class	RAC rating
16	Up to 16.38
21	Up to 21.0
26	Up to 25.6
40	Up to 40.0
60	Up to 60.04
90	Up to 90.04

On November 6, Newton brought out Edge's 4-cylinder 25.6hp Napier and took the 26hp class flying-start half-mile record at 77.92mph and the 10 laps standing-start record at 71.43mph. On the same day Tryon had out a 38.4hp, 6-cylinder Napier with which he took the equivalent records in the 40hp class at 86.75mph and 80.94mph, respectively

Newton then brought out a 60hp, 6-cylinder Napier on November 30 and set these same records, in the 60hp class, at 97.3mph and 86.49mph, respectively. It looked as if every record established at the new track in 1907 (37 to date) would belong to Edge's Napiers, but as late as December 10 Clifford Earp set World records over 50 miles and 150 miles and for 1 and 2 hours in a 60hp, 6-cylinder Thames, his speeds being 76.58, 75.95, 76.26 and 75.95mph, respectively. It is interesting to note that then, and for some years afterwards, such records were recognized with a flying start.

Apart from official records, Sir Algernon Lee Guinness, Bt demonstrated the fantastic 160 x 160mm, 200hp, 22.5-litre, V8 Darracq at the track, a car which possessed practically no body apart from two bucket seats, had a small V-radiator, and a huge streamlined water tank over the engine. This exciting car had a wheelbase of only 8ft 6in and weighed just over 1,000kg. It had no shock-absorbers or differential and was wild to drive even with wooden wedges under the front springs to improve the steering castor angle. In action, flames shot out of the eight 5in long exhaust stubs. In October he was hand-timed by Messrs Ross and Sanders to cover 20 chains (measured on the 10ft line) first at 112.2mph, then at 115.4mph - a truly fantastic speed for 1907 and the first officially timed runs at over l00mph in England. It is amusing that this run was made at the request of an American, Mr Dugald Ross, who was said to have offered £2,000 for the Darracq if it proved really fast. For some reason the deal fell through after Mr Ross' thrilling experience and, a year or so afterwards, the engine was removed from the chassis. It had overhead valves operated by long pushrods and immense rocking levers, the inlet valves and springs completely sunk within the water jackets, cylinders in four blocks of two, a water pump at the front and two carburettors feeding into manifolds on the inside of the 'V'.

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Mr Locke King received a setback soon after the track had been opened. Inhabitants of New Haw had formed a habit of walking over on Sunday mornings to watch Brooklands being built and this reminded certain of them that a little-used public right of way existed across to Weybridge, which would be closed by the track. Their case was heard by the Weybridge Urban, Chertsey Urban and Chertsey Rural Councils and Mr Locke King promised to provide a new path and to keep a gate in the Railway Straight fence, guarded by an official when the track was in use, where the old path went across the Railway Straight. After the new path had been made the magistrates from Kingston inspected it and officially sanctioned the diversion, being relieved that the old route, which went up the embankment and over the main railway line, on which someone crossing it had been killed, would pass out of use.

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The use of Brooklands as an aerodrome had not yet been visualized, but it was anticipated in 1907 when a fur-coated Frenchman, M Bellamy, arrived in Weybridge with his royal falcon and small dog, bringing with him a flying machine in which he was said to have flown 500 yards at Modena. Mr Locke King guaranteed him £100 expenses and allowed a roller to flatten a piece of ground between the railway and the path of the Railway Straight that was then under construction as a take-off ground. However, although M Bellamy mounted his modified 50hp Panhard-Levassor car engine on punts in order to test his propellers on the lake, in what was termed an 'auto-catamaran,' he never became airborne and departed from Brooklands as suddenly as he had arrived.

1908

Napier wins Brooklands' first long-distance race

Before the opening of Brooklands' second year, improvements were made to the tracks surface and a large new grandstand was erected on the Members' Hill, overlooking the finishing line opposite the Paddock. To celebrate this an informal meeting took place in April at which spectators' cars competed in an 18-mile handicap sweepstake, which was won by a little Siddeley that had a 10-mile start, from a Berliet and a Thornycroft.

Racing began in 1908 on April 18 with a programme of six events. These consisted of two races for cars of given cylinder dimensions, a special event for 8.9hp single-cylinder Sizaire -Naudin cars, the fourth a 26hp race, the fifth a 40hp race, and a Private Competitors' Handicap for the Brooklands Cup. Certain minimum weights had to be observed, and the Clerk of the Scales was J Lyons Sampson, MIME, a red ball being hoisted at the large Telegraph Board when the winner had been weighed and found correct. The Stewards were the Earl of Lonsdale, the Viscount Churchill, GCVO and Col Holden. The first race attracted merely three 35.7hp Berliets, but no fewer than 10 Sizaire-Naudins were entered for the Sizaire et Naudin Cup, and the private owners comprised Bickford, Moss, Nalder, van Hoboken, C A Bird, Farmiloe, Woodward, Russell-Miller and Oscar Thompson. The makes represented were Berliet, Sizaire, Germain, Humber, de Dion, Napier, Ford, Arrol-Johnston, Mercedes, Renault, La Buire, Austin, Daimler, Iris and Darracq. As the cars passed the Fork once only in three of the races and went directly into the Finishing Straight in the remainder, the entertainment provided for the public can be considered distinctly meagre!

This was the year when Rodakowski sought to put Brooklands on its feet by introducing ample variety into its programmes. A race for motorcycles was held at the second meeting, the forerunner of so many more; it was over 5.5 miles and attracted 24 entries comprising the following makes: Minerva, NSU, Dot, Triumph, FN, Leader, NLG, Rex, Vindec, Chater-Lea, Laurin et Klement, Griffon and Matchless. Then there was the Naval and Military Cup race for cars owned and driven by commissioned officers of His Majesty's Forces, further Private Competitors' Handicaps, races for 90hp-class cars and a tyre changing plate of 30sov's. In the last-named the offside rear tyre had to be replaced by the spare tyre, and the tyre on that wheel hand-inflated. Newton's 26hp Napier won even this event, although slower over its tyre change than two Fords. Tyre change it literally was, as detachable wheels and rims were barred. As a further attraction a new stand had been built at the foot of the Hill, facing the Paddock and finishing line.

It was at this meeting that the crowd enjoyed a real thrill of the kind that Fleet Street has always craved. Resta, in the lead on the last lap of the 90hp race, was being overtaken by Newton in Edge's 90hp Napier when, at something like 110mph, the British car, climbing too high to clear the Mercedes, slipped down the slippery bank towards it. The cars touched momentarily, spokes flew from the Napier's wheels, and a hub cover was torn from the Mercedes, but Newton deftly swung his car upwards again, got clear, and snaked to the Finishing Straight to win. Resta lodged a protest, but it was not upheld.

At the May meeting a race for Private Competitors driving cars with standard open touring bodies attracted six entries and the 2nd Motorcycle Handicap a field of 30. Other novelties were a Household Brigade Handicap in which Sir George Abercromby represented the Scots Guards with a 58hp Fiat, Bullough, Clutterbuck and Bingham the Coldstream Guards and Moss the Grenadier Guards, and a Training Plate for 1908 Grand Prix Austin cars for which Mr (later Sir) Herbert Austin entered Moore-Brabazon (later Lord Brabazon of Tara), Resta, Hands and Warwick Wright with the four 6-cylinder T-head cars he had built for the French Grand Prix - and each driver had to change two tyres during the race! You just couldn't stop Rodakowski once he started! There was the Ladies' Bracelet Handicap, contested by Miss Ethel Locke King with her husband's Itala 'Bambo', Mrs Muriel Thompson in the Austin Tobble', Miss Christabel Ellis in the Arrol-Johnston 'Guarded Flame', Mrs Billing in a Mors, Lady Muriel Gore-Browne in a Humber, Miss Ridge Jones in a Sunbeam and Mrs Roland Hewitt in a little 6.5hp de Dion. As these ladies couldn't be called upon to don mens smocks they were identified by coloured scarves. Lady drivers were normally barred from BARC races. A Journalists' Handicap for staff of daily or weekly newspapers was won by Flatau of the *Daily Mail* in a 19.6hp Belsize, and amongst the entrants were Wilfred Gordon Aston of *Motoring Illustrated,* who favoured a 13.9hp de Dion, W Whittall of *Motor World* with an 8hp Rover and C J Bertelli of *La Nazione* in a 7.5hp OTAV

If the Club had been criticized by some for confining its races to IC-engined cars, it must be recorded that although the rules for the 1st O'Gorman Trophy race permitted 'self-propelled vehicles or motor cars, whatever their country of origin, without limitation of motive power, provided that it be wholly mechanical and without limitation as to the kind of fuel, the method of its delivery to the working parts, or the use of auxiliaries such as compressed oxygen, acetylene or others', only petrol cars entered.

This race was over 100 miles and was Brooklands' first long-distance event. Pits were erected near the Fork, as they were for later long-distance Outer Circuit races like the 200-Mile race of the JCC and the BRDC '500'. Seven entries came in, comprising one of Edge's Sixty Napiers, to be driven by Newton, Lewis' 67.5hp Deasy, another 59.2hp Napier of Edge's, to be handled by Reynolds, Lane with Burford's 76hp Mercedes, Pyine in Lord Northcliffe's 59.6hp Mercedes, Hutton's TT Hutton 'Little Dorrit' (later owned by F Hutton-Scott and driven in Veteran car events) and Pigot, resplendent in mauve coat, black sleeves and cap, in his Darracq 'Delilah'. The last-named, who had carefully rebuilt his old car, had the misfortune to see it almost burnt out on the line.

Unfortunately the race, run in August before some 7,000 spectators and a forerunner of those 'battles of the giants' which

were to become quite a feature of Brooklands, was marred by another fatal accident. Lane was going well after a pit stop when, coming off the Members' Banking at a speed estimated as over 97mph, his Mercedes swerved after passing the Hutton, shot down the banking, hit the parapet of the bridge and, its engine ripped from the frame, threw out driver and mechanic, their seats falling into the river, just missing one of the punts. The mechanic, William Burke, died soon afterwards. Lane was seriously hurt but was conscious when carried to the Stewards' room. J G Reynolds' Napier also crashed following a tyre burst
at much the same place, but with far less serious consequences as its occupants fell onto soft ground; they both walked away, Reynolds' nose bleeding, the mechanic holding the back of his neck. Newton ran home the winner in the Sixty Napier at 98.5mph. For this race the car numbers were exhibited in red on the large Telegraph Board in the Paddock, and the number of laps completed by each car was shown thereon in black figures.

Mr Roumieu, the Coroner at the inquest in Weybridge on Burke, said that Brooklands was *"pandering to a degenerate taste"*. The whole thing was very serious, and it was a matter for consideration whether it was worth going on. Fortunately, by this time Brooklands had won the respect of nearly all the leading daily and weekly papers and these caustic remarks had no effect on its future. Indeed, the *Daily Graphic* conducted an inquiry into the feelings of prominent motorists on the subject and gave considerable space to their favourable findings.

The cause of this, the second fatal accident since the track was opened, was never established. Lane had stopped to rectify trouble with tyres (significant?) and oiled-up ignition contacts on the Mercedes and had restarted quite late in the race - on lap 28 of the 36-lap contest - so there was no need to drive at high speed except to prove that his car was capable of it. He was estimated by some reporters to be doing from 100 to 115mph (but more likely 90 to l00mph) as he emerged from the Members' Hill, with Hutton's Hutton 'Little Dorett', a slower car, below the Mercedes.

Some observers suggested that Lane had adopted the ploy Nazzaro had used with the big Fiat, that of going nearly to the top of the banking and then diving down acutely to gain pace along the Railway Straight. In this instance Lane found himself too close to the Hutton and apparently steered abruptly away to try to make the car go up the banking, but instead it narrowly missed the Hutton as it slid downwards in front of it and struck the parapet of the river bridge. The Mercedes disintegrated, the engine being wrenched from the chassis and the bucket seats thrown into the river, over which the mechanic was flung (both men being sent some 30ft into the air - a horrid sight), landing on the opposite bank where he died instantly or soon afterwards. Lane was precipitated into the river by the nearer bank and suffered an eye and other not too serious injuries. The Mercedes caught fire and was destroyed.

Spectators tried to rush to the scene but were restrained by the gate official in the Paddock, and unfortunately this detained a doctor who wanted to assist, and when the official medical officer, Dr Herbert Bliss, got to the scene Burke was beyond help.

The Inquest on the following Wednesday, held at the Hand & Spear Hotel, was conducted by Mr G F Roumieu, the West Surrey Coroner, with Mr G Andrew as Foreman of the Jury. Mr Horace Bartlett appeared for the owner of the 76hp Mercedes, Mr H G Burford, of Muswell Hill, managing director of Milnes-Daimler Ltd, of Tottenham Court Road, London. He explained that the Mercedes carried no Registration Number as it was never used on the road. *"Quite right",* commented the Coroner. It transpired that the riding mechanic, Herbert Mark Burke, was a young man of 22 who had asked to go on the car to gain experience as he had a motor business. Charles Lane had also volunteered to drive the car.

Examination of the wreck showed that both front tyres and the nearside rear one were intact but that the offside rear tyre had left the wheel. Various theories were advanced as to the cause of the accident, but no conclusion was ever reached. It was put about that the track was rough and bumpy at the point where the Mercedes had left it, but Mr Rodakowski, the Clerk of the Course, would have none of this, and as an argument developed the Coroner hastily stopped it, saying that if this were true it would no doubt be put right, and if not there was no reason to suggest it. . . A gearbox bracket was found on the track, and it was suggested by a witness that the box might have moved, causing the axle to move; another idea was that the engine holding-down bolts had broken and that the engine had shifted and disrupted the steering, but Mr Hutton, who was travelling at some 90mph in his own Hutton as Lane overtook him, saw the front wheels of the Mercedes turned sharply to the right as Lane tried to avoid his car, showing that at this point there was steering control. Some ball-bearings were picked up from the track and one wonders whether a driving chain could have broken and locked a back wheel, which then broke up? The crash was so harsh, however, that it could have accounted for damage caused by the impact.

Some interesting match-races were contested at Weybridge during 1908, the programme conscientiously providing a lap scoring chart in spite of there being but two cars involved. One was between Miss Thompson, driving the Austin 'Pobble', and Miss Ellis, in Moss' Arrol-Johnston 'Guarded Flame' (in which the driver sat recumbent, the pedals straight ahead and the steering wheel at head level*), and the others resulted from Edge's wager. In the 26hp class, Cuepper, who had actually beaten Newton at the May meeting, took up the challenge for his firm with a much drilled but fairly standard 25.6hp Metallurgique. Newton, in the Napier 'Firefly', however, beat him easily in a race of 13.75 miles, Edge taking £250 from his rival. Newton averaged 78.75mph. Cuepper came out again with his 40hp Metallurgique to challenge Draper in Edge's Napier 'St George' in the 16.5-mile 40hp-class match. He led for a while, but Draper passed to win at 85mph, and Edge was £500 to the good. Cueppers whim of always altering the back-axle ratio before a race has been blamed for these failures, but Cuepper's own explanation is that the cars were delivered to him only two days before the contest and that while leading the Napier in the 40hp race the experimental pistons caved in and his car lost speed, while the smaller car required a higher compression ratio, which it subsequently received.

* There were even instances of cars with the steering wheel above the head of the driver, such as Nalders 35.7hp Berliet 'Grayling' and Brewer's 24.8hp Decauville. This arose through racing stripped touring chassis in which a low bucket-seat was easy to install but raking the steering column was fraught with engineering pitfalls, or wasn't altered because a temporarily discarded closed body was to be replaced. Such driving positions certainly wouldn't be permitted today!

More exciting was the challenge to Edge in the 90hp class, which came from D'Arcy Baker, who nominated Felice Nazzaro, who the previous year had won for Fiat the French GP, the Targa Florio and the Kaiserpreis. Nazzaro came over with the immense 89.5hp, 190 x 190mm, pushrod-ohv, 4-cylinder, chain-drive Fiat 'Mephistopheles', with detachable rims to its artillery wheels, against which Edge set Newton in the 6-cylinder, shaft-drive Napier 'Samson', a remarkable looking car, with cooling tubes forming the bonnet sides, and wire wheels. The Fiat weighed 3,314lb, the Napier 3,167lb. The match was for £250 a side and it took place at the Whit-Monday meeting. Incidentally, cars were now allowed to be known by registered nicknames, following a request by Colin Defries, but fortunately it was stipulated that the make of car must still be quoted; the registration fee was one guinea and the BARC profited by at least £24 from this source during the season of its inception.

Reverting to the famous Newton-Nazzaro match-race, it not only caused immense excitement, but resulted in a first-class mystery which has never been properly solved. On the Saturday before the race both cars were in trouble. The Fiat's engine had to be stripped and re-assembled during the Sunday, while Newton decided to have a final practice spin on the Saturday evening and stripped 1st gear as he was leaving the Paddock. Nazzaro also experienced tyre trouble before he found the correct path for the Fiat, higher on the bankings. The Napier works got down to cutting a new gear and the Napier was finally re-tested on the road early on Whit-Monday morning. The race was to start on the Members' Banking, continue for 9 laps and finish up the Finishing Straight opposite the Paddock, a total distance of about *27.25* miles.

The contest itself was rather a fiasco as Newton, after making a fine getaway and leading by about a quarter of a mile at the end of lap 1, retired on the third lap as Nazzaro was closing on him, the Napier having 'fired a big-end bearing'. The sensational factor, as Nazzaro ran on to his lone victory at 94.75mph, was the Fiat's lap speed - and the controversy this caused. According to the new electrical timing apparatus now being used by the BARC, Nazzaro's best lap was his second, at 121.64mph, when the sick Napier did only 113.01mph. I have before me as I write a carbon copy of a letter from the BARC to D'Arcy Baker, dated June 12, 1908, confirming these speeds and stating that the timing strip was some 490 yards from the standing-start line. This was a truly prodigious speed in 1908, when the previous highest speed officially recorded on Brooklands was nearly 19mph slower. Controversy arose because Mr Ebblewhite timed the cars by hand from his position at the Fork and made the speeds far lower - indeed, by his calculations the Fiat never exceeded 108mph. The disturbing discovery then arose that by both timings the Fiat should have led the race from the start, whereas Newton was well ahead after the first lap and still ahead when the Napier broke its crankshaft. In the end the RAC Competitions Committee upheld the BARC timing, but it is interesting that in a copyright list of over-l00mph race lap times, which Mr Ebblewhite compiled for *The Motor* in 1930, he sticks to his own figure of 107.98mph as Nazzaro's best time. The matter was of considerable moment for it was not until 1922, when K Lee Guinness took the V12 Sunbeam round at 122.67mph, that Nazzaro's time was beaten *officially,* and the facts are worth studying. I quote below from a most interesting summary of the matter which D B Tubbs wrote for *Motor Sport,* and which was published in the issue for October 1941:

A BROOKLANDS MYSTERY

Nazzaro's 120mph lap in 1908

"So far as I know, Brooklands has never been the setting for a full-dress 'mystery story'. There is, however, one mystery that I have never seen either completely propounded or adequately explained: that extraordinary lap of Nazzaro's on the FIAT 'Mephistopheles' in 1908, when he was clocked to do more than a hundred and twenty miles an hour.

"Capt George Eyston, in his book about the Land Speed Record (Fastest on Earth), *gives Lee Guinness the credit for the first authenticated lap at over two miles a minute, during his attempts on the ultimate speed record in 1922. After mentioning Nazzaro's performance, he adds: 'But it is curious that though the electrical apparatus certainly registered this speed, the hand-timekeepers, Messrs Ebblewhite and Dutton, made that lap only 107.98mph, although admittedly they timed from a different point on the circuit.'***

"What, then, I asked myself, is all this about? Either the FIAT went round at 121.64mph or it didn't. . .

"As to what happened in the race, all authorities seem to agree. This is what The Automotor Journal *has to say:*

"Newton got off splendidly and secured a quarter of a mile's lead in the first lap. By the end of the second lap there was less space between them, but not much, and everyone was at the pitch of excitement. Then, without warning, the Napier broke down and the FIAT flashed by at a speed which was anywhere in the neighbourhood of 120 miles an hour; for that was the officially recorded speed for the third (sic) lap.

"By the time he came to write his Motoring Reminiscences, S F *Edge had also accepted this figure. But at the time of the race he was by no means convinced by the electrical timing machine and, as was his habit, wrote indignant letters to the BARC, the RAC and the Press.*

"Before continuing with the story I will here set down a little table showing times and speeds given by the two methods of timing:

	Hand timing (mph)		*Electric timing (mph)*	
	FIAT	*Napier*	*FIAT*	*Napier*
Lap 1	*107.76*	*105.7*	*105.24*	*96.15*
Lap 2	*107.98*	*105.08*	*121.64*	*113.01*
Lap 3	*99.76*	-	*102.42*	-

Here are the times in seconds per lap:

	Hand timing		*Electric timing*	
	FIAT	*Napier*	*FIAT*	*Napier*
Lap 1	*92.4*	*94.2*	*94.6*	*103.55*
Lap 2	*92.2*	*94.8*	*81.85*	*88.1*
Lap 3	*99.8*	-	*97.17*	-

** The race started from a point on the Members' Banking 490 yards from the beginning of the Railway Straight half-mile where the timing strip was placed. The hand timing was done from the Fork.

"The Automotor Journal, *whom Ebby had furnished with his stopwatch figures, did its best to prove that both the methods were right. It argued that the discrepancy was due to the two timekeepers being situated at different points on the circuit. The cars would obviously go slower, they argued, on the hill round the banking than they went when flat-out on the* Railway *straight. Therefore, by an unhappy chance it was possible in timing three laps of a race to get a lap which included the fast section twice and the slow section only once. It never looked very convincing, it must be confessed, and the thoery was finally 'busted' when someone else did sums with the* AJ's *own figures, which proved that if Nazzaro had actually been lapping in the way they showed, he would have had to do one bit of a lap at 138mph and the other bit of the same lap at 74 odd.*

"In their following issue the paper very handsomely admitted all this, but pointed out that the sums, as sums go, were pretty hot. The trouble was that they were based upon the hand-timers' figures and that these were quite unofficial, since the BARC took no responsibility for them.

"The belligerent Mr Edge, meanwhile, had been carrying on a letter-writing duel with the entrant of the FIAT car, Mr D'Arcy Baker. The matter was complicated by the fact that the Competitions Committee of the RAC had not yet uttered upon the subject. It had not homologated the figures, and clearly, in Mr Edge's opinion, never would.

"Furthermore, besides the difference between the two sets of times, there was the troublesome question of the eye-witness accounts. Let me allow Mr Edge to speak for himself. Here is a letter of his to the Press dated June 24, 1908:

"'. . . According to The Automotor Journal, *in the first lap Nazzaro gained nine seconds on Newton. Now to gain nine seconds at the speed Nazzaro was certified to be travelling, viz 105.2mph, he would have had to gain on Newton 460 yards in the first lap. Every person who was present knows perfectly well that he did not do this...'*

"He goes on to point out that at the speeds alleged, the end of the second lap would have seen the FIAT a fifth of a mile ahead of Newton, whereas all eye-witnesses agree that it was a quarter of a mile behind when the Napier's crankshaft broke and it had to retire. This certainly is a peculiar thing; but the extraordinary misplacing of the cars is not confined to the electric timing. The Ebblewhite figures also show that the FIAT was faster than the Napier from the word go: 2.2 seconds faster, in fact, for the standing lap and 2.6 seconds for the flying one. How the Napier entry could have been leading in the face of these figures I have not the slightest idea.

"The first, and natural, reaction of the present-day reader to this controversy will be to distrust the efficiency of the electric apparatus. After all, 1908 is a long time ago, and we must have learnt a lot about electric timing devices in the last 33 years. A study of the two sets of times does not support this mistrust, however. In fact, it prompts a question which would have been of the utmost value in solving the mystery if it had been raised at the time.

"According to the stopwatch figures for the first two laps of the race neither driver varied his lap time by more than a fraction of a second. Now I put it to you, is it at all likely that neither of these two famous and expert drivers, in a race on which so much prestige and publicity depended, could return a flying lap appreciably better than his time from a standing start? It does seem odd, does it not?

"Now, if we turn to the electrically-recorded times, this difficulty has disappeared. In the second lap Nazzaro beat his standing lap by some 15 per cent and Newton did approximately the same. It begins to look as though the despised and primitive electrical timing of 1908 may have been nearer the mark than the hand-timers . . .

"The last word in the controversy must, I suppose, be given to the RAC. Here is a cutting from The Automotor Journal, *dated August 8, 1908:*

" '. . . to put at rest all doubt as to the accuracy of the time-records of the FIAT and Napier cars, the tapes used in the automatic apparatus were submitted to the RAC. After being examined with the utmost care by the Competitions Committee, they have decided that they are entirely satisfied with the accuracy of the records.'

"So there you have the evidence in the 'Great Brooklands Mystery'. How fast do you think the FIAT actually went?"

In considering Tubbs' conundrum one should sift further evidence. In an article on early days at the track by Capt E J Needham, which appeared in *The Autocar* dated November 6, 1931, the author (who recalls a delightful episode when Nazzaro mislaid his black kid driving gloves and refused to practise until every shop in Weybridge had been visited to provide another pair!) mentions a practice lap-speed of about 116mph, and certainly the Fiat never bettered 110mph for a lap when it appeared (modernized to some extent) in later years. On the other hand, a Napier did all but 120mph for half a mile in 1908, and in 1909 Hemery reached a speed of nearly 128mph over the same distance; Fiat's claimed to have covered a mile at 127.3mph during this race. Nazzaro himself said he thought he was doing about 125mph in places.

Kent Karslake, writing in *Motor Sport* in 1947, put forward another explanation, as follows:

"Whereas the electrical timing, which was finally officially confirmed, credited the winning car with a lap at 121.64mph, Mr Ebblewhite conceded it a speed of no more than 107.98mph, and whereas both the electrical timing and Mr Ebblewhite agreed that on each of the first two laps when both cars were running the FIAT was faster than the Napier, all eye-witnesses agreed that the Napier was leading by a quarter of a mile or so at the end of the first lap and was still ahead when it broke its crankshaft after the end of the second.

"In reality, therefore, there are two mysteries here: first, how could the Napier have kept ahead of the FIAT while the FIAT went faster than the Napier; and secondly, did the FIAT lap at more than 121mph or at less than 108mph? And curiously enough, the first, although on the face of it the more baffling, is, I think, in fact the easier of solution. According to a letter, which is quoted by Mr Boddy, from the BARC to Mr D'Arcy Baker, who issued the challenge on behalf of the FIAT, the cars were timed on their first lap from a point 490 yards from the starting line. This fact does not appear to have been apparent to Mr Tubbs, and Mr Boddy fails to draw from it what seems to me to be the obvious inference. If Nazzaro made such a bad start on the FIAT that Newton gained say the whole of the untimed 490 yards on him, then Nazzaro could have travelled slightly faster over the first timed lap, and yet have still been about a quarter of a mile behind at the end of it. Of course this supposes a very bad start indeed on Nazzaro's part, and the question naturally arises as to whether there is any evidence to support this supposition. I think that, in fact, there is.

"'Mephistopheles' was fitted with a 190 × 190mm engine, but I suspect that the chassis was nearly, if not quite, identical with the 180 × 160mm-engine cars which ran in the 1906 and 1907 Grands Prix. And in an account of the former race, I find it recorded that 'the FIATs were either very highly geared or else their clutches were awkward, for both Nazzaro and Weilschott stopped their engines on the starting line.' If history repeated itself at Brooklands two years later, one of the mysteries of the Napier challenge race would be solved. What remains obscure is whether, if both had stayed the distance, the winner would have been the car which finished first or that which made the best time.

"With regard to the speed of the FIAT, the question is a more open one. If it really lapped at over 121mph, the record, as Mr Boddy points out, stood until 1922, when K Lee Guinness improved on it with the V12 Sunbeam, and then by only just over 1mph. Because of this, and because I do not think it at all likely that 'Mephistopheles' was fast enough to lap at this speed, I personally incline to the view that the hand-timed speed of 107.98mph was nearer the mark. Mr Tubbs is impressed by the fact that, according to Ebblewhite's timing, Nazzaro averaged 107.76mph on his first lap and 107.98mph on his second, and asks, is it at all likely that he could not return a flying lap appreciably better than his time from a standing start? This inclines him to favour the electric-timing figures, which gave 105.24mph for the first lap and 121.64mph for the second. But this argument overlooks the fact that the first lap was not timed from a standing start, but from a point where the car had had over a quarter of a mile in which to get up speed; and it may be significant that, in the Grand Prix at Dieppe that year, Salzer, on the Mercedes, established the lap record, at 78.5mph, on the first lap from a standing start. Admittedly the Dieppe circuit was nearly 48 miles round, which is rather different from Brooklands' less than three, but it does suggest that the racing car of 1908, once it was warm, was at its best before it got hot.

"If then, the electrical timing apparatus was unreliable in the case of the Nazzaro-Newton match, what went wrong with it? I, for one, do not like to venture an opinion, but I would just remark that while the FIAT was going faster than the Napier, the Napier throughout was ahead of the FIAT. Is it possible that this caused confusion, and that Nazzaro's suspicious lap time was recorded from when he started on his second circuit until when Newton finished his? With the aid of the table of lap times and speeds published in Mr Boddy's book, his readers can try to work this one out for themselves."

So the real speed of the Fiat was still being debated hotly 40 years afterwards and the reader can draw his own conclusion. On the Thursday before the match-race lightning struck some lines at the track, but this could not have damaged the new timing apparatus surely?

One other match-race was due to be contested during 1908. The back cover of the race card for the May meeting announced a match between Edge himself, driving a GP Napier, and Charles Jarrott with either a GP de Dietrich or a GP Mors -apparently the Newton-Jarrott dead-heat and subsequent correspondence thereon was to be contested at last! However, the race card for the August meeting carried an insertion stating that Edge had notified the Club of his decision not to drive against Jarrott and the fatal accident in the O'Gorman Trophy race prevented Jarrott from driving alone over the course. At the end of 1908 J W Stocks' 25.6hp de Dion was declared the champion in the 26hp class, the entrant 'having produced his car and being alone eligible'. In July the RAC had observed dust-trials in the Finishing Straight, where an area of 200ft by 10ft had been treated with powdered limestone to provide artificial dust.

Private owners were already well catered for in 1908 and amongst them was Tom Faulkner, with a 1904 18-28hp Mercedes that is interesting because many of us have seen it performing outstandingly in Veteran car events in the ownership of S E Sears, after having been beautifully restored by the late C R Abbott. It was typical of the Brooklands car of the period, being a stripped chassis with a single bucket-seat. Faulkner had replaced the Mercedes carburettor with a two-jet Zenith and fitted steel pistons, which were just being developed for aeroplane engines, in place of the standard cast-iron ones. This put up the speed of the 24.8hp, 100 x 130mm, 4,084cc, T-head engine from 1,200 to l,500rpm. The specification embraced LT ignition, 34-elliptic *front* springs, Mercedes scroll-clutch and chain final drive, and the car would do some 60mph. It won the July Private Competitors' race at 54.58mph, and in the 1908 and 1909 seasons gained another win, two second and two third places, as a plaque on its footplate testified.

For timing record attempts, General Sir Capel Holden had devised an electrical timing apparatus, referred to in the previous chapter, actuated by the passage of a car over inflated, rubberized canvas timing strips placed across the track, three
'pens' making marks on a paper tape as contacts were closed within the strips. The Holden apparatus was regulated by a pendulum and the tape ran through it at the rate of a foot per minute, so that when long-distance records were being timed the room it occupied was liberally strewn with coiled tape! The pens were metal rods ending in thin sections of copper wire, the centre one being so connected to an electric clock that it made a kink in the line it was drawing on the tape at predetermined intervals. The outer pen made a similar kink when contact was made at the timing strip, while the third pen was actuated by the timekeeper's switch every time the car crossed a strip, so that errors due to people walking on the strips could be counteracted. A special scale, observed through a magnifying glass, was used for converting the recordings on the tape into measurements of time and distance. Sentry boxes were erected at the kilometre and mile positions for the convenience of officials observing record runs, and overhead wires connected the timing strips with the apparatus. When not in use the 100ft long by 4ft wide strips were stored in padlocked boxes alongside the track. This Holden apparatus had been approved by the RAC on November 18, 1907, and up to 1935 it was stored in a two-storey building opposite the Paddock, on the ground floor of which a new electrically-swung Synchronome pendulum had been installed. From 1908 a Short & Mason barograph foretold the weather for the benefit of drivers, as this same instrument continues to do for me today

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Brooklands needing no extensive repairs in the early years of its existence and, drivers being tougher (or winters more mild?) than in our time, record activity at Brooklands went on almost without a break up to the 1914-18 war. In 1908 activity began on January 2, when H C Tryon brought out Edge's 60hp Napier to try to capture the World 50-mile flying-start record held by the Thames. He succeeded by nearly 3mph, averaging 79.44mph, in spite of having to replace a rear tyre with one of smaller size when the distance had been nearly run. Tryon went on to try for the hour record, but another tyre burst and the
Napier turned round on the banking, and then left the track tail-first, literally flying over the road that ran from Paddock to tunnel, ending up in the earth adjacent to this road without much damage to itself or injury to its driver.

On February 5 Jarrott replied, in his Type FX 80.4hp 4-cylinder de Dietrich, to the tune of 83.112mph. One could hardly expect edge to stand for that, and on February 19 Newton came down with the 60hp Napier Tryon had used and took the 50-mile record away from the French car at 85.413mph. He continued, taking the

100 and 150-mile and 1 and 2-hour records, the last two formerly held by Edge himself. In the hour Newton covered 85 miles 555 yards, against Edge's 70 miles.

The next excitement was some really rapid work in the Brooklands, or local, 90hp Standard class. Dario Resta went for the 10-laps standing-start and half-mile flying-start records with a 76hp Mercedes and set up speeds of 89 and 95.5mph, respectively Five days later Newton, in a 90hp 6-cylinder Napier, had regained the half-mile record in this class at 102.85mph.

Before the month was out Stocks put in some good work at over 70mph with his 26hp de Dion, only to be vanquished by the Hutton, which covered 10 laps at 76.55mph and the flying half-mile at exactly 80mph. The keen competition in this new-found field of track record-breaking certainly pushed up speeds. Dario Resta set the 60hp class id-mile record at 100.84mph with H C Fry's 59.6hp Mercedes, which was the spare car for Salzer in the 1908 Grand Prix and had a 155 x 170mm, 13.1-litre engine with overhead inlet valves, giving some 130bhp, a 4-speed gearbox and chain drive. Newton, with yet another 60hp Napier, achieved 102.2mph, to which Resta responded with 103.15mph for the Id-mile, lapping at 102.01mph. A change was seen in October 1908 when M Naudin established Voiturette class records with a single-cylinder 9hp Sizaire et Naudin which was in the same trim as in the GP des Voiturettes in France, apart from its exhaust box. It covered the half-mile at nearly 66.5mph, and continued for the hour run.

The fastest (record) speed yet attained officially at the track was recorded on October 30, when Newton, with yet another Napier, set the 90hp-class half-mile record to 114.98mph, and did 10 laps at over 102mph. However, on the same day, Edge lost his 60hp-class half-mile record to Bablot, driving a Brasier, and the de Dion also gave best to this car in respect of the 10-lap figure. Late in November Newton brought out this most recent Napier and covered the half-mile at no less than 119.34mph. That was the last appearance of this famous driver, who afterwards ran a garage at Northampton. Edge took advantage of two fatal accidents and wrote to *The Times,* saying motor racing was becoming so dangerous that he proposed withdrawing his team of Napiers.

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Mr Locke King had many worries with which to contend. Occupants of houses near the entrance to the track objected to the crowds which came down to witness Edge's 24-hour record attack. Mr C J Dams, who owned Walpole House, built on land bought from Mr Locke King in 1899, and Mr and Miss Meares, who likewise built a house called The Summit on another piece of land bought from Mr Locke King, brought an injunction against the track, heard before Mr Justice Parker in the High Court of Justice during May 1908. Mr Locke King was defended by Mr Dickens, KC, Mr Romer, KC and Mr Maugham. Charges were brought of disturbance by noise, obscene language and actions, and of petrol fumes spoiling raspberry bushes. After a case which drew a 15-column report in *The Times,* Mr Locke King was called upon to pay the costs of both sides, some £7,000, and to construct a new entrance road to appease a few householders on his estate! However, the Judge permitted the Whitsun meeting to take place as arranged. Incidentally, the houses involved still stand, and the original entrance road can still be seen, while the turnstiles at the end of the foot passengers' entrance stood in the garden of a house occupied in later years by Mr K Skinner, the Secretary of the Brooklands Automobile Racing Club for all the years the track was in existence.

Incidentally, before this action, Mr Locke King had attempted to ban cut-outs on cars using the track. Brooklands was closed for three days while the new entrance was arranged and for a time it was thought that motorcycle racing there would have to be abandoned.

After the new road had been completed cars came in at Boxall's Lodge and followed the sweep of the Members' Banking to the tunnel. Foot passengers went under this road and the banking by subways, gaining access to the Hill via a path beside the foot of the banking - I recall the thrill of first seeing the towering expanse of weather-scarred concrete from this vantage point. Apart from the tunnel there was a narrow bridge, called the Members' Bridge, over the banking at the end of the cutting and eventually cars were allowed to use this, turning off the entrance road to do so. The new road took a sharp left turn to the tunnel and, being very narrow and on a gradient, this resulted in near-shaves and accidents to visitors' cars. Later still a footbridge over the Byfleet Banking provided access to the track from Oyster Lane. It grew more and more rickety with the passage of the years but remained to the end a splendid vantage point from which to view Outer Circuit races.

This second season saw the success of Locke King's venture emerging. People were already forming the habit of attending the track on non-race days, and the electric timing apparatus was in demand for timing all manner of runs; Humber Ltd, for example, brought four different Coventry Humbers down one day in February to have each one timed over a flying lap. On a typical afternoon Claude Johnson might have been observed carrying out comparative tests of fuel consumption, in top gear and overdrive top, with a 40/50hp Rolls-Royce chassis. On a certain Saturday afternoon Jarrott could be found testing the special suspension of his St Petersburg-Moscow de Dietrich (he puzzled himself by forgetting to close the half-compression device before he left the Paddock!), and Dario Resta and Peel, the celebrated golfer, frequently drove round just for the fun, the former in a big touring Mercedes, the latter in a beautiful little 18hp Gladiator. The RAC and Scottish 2,000-Mile Trial ended with a 200-mile speed test round Brooklands; the winner was Hancock's 20hp Vauxhall. This happy sense of freedom and anticipation of the unexpected made Weybridge undeniably pleasant on any weekday afternoon until all that ceased forever in 1939.

As 1908 was the first full season, it is worth giving a full list of the different makes which were entered: Berliet, Sizaire, Germain, Humber, de Dion, Napier, Ford, Arrol-Johnston, Mercedes, Renault, La Buire, Austin, Daimler, Iris, Darracq, Star, Metallurgique, Brasier, Fiat, Gobron, Hotchkiss, Clement-Talbot, Delaunay-Belleville, Weigel, Bianchi, Nagent-Hobson, Wolseley, Junior, Dennis, Buick, Hutton, Vinot, MP, Calthorpe, Minerva, Mass, MAB, Clement, Miniature Standard, Duplex, Westinghouse, de Dietrich, Belsize, Jackson, Sunbeam, Itala, New Leader, West, Hermes, Ariel, Certus, Vauxhall, Straker-Squire, OTAV, Delage, Thornycroft, Porter Lindsay, Rover, Deasy, Mors, Imperia, Aster, Varsity and Beeston-Humber.

It was during 1908 that Mr Locke King got the rateable value reduced from £3,451 to £1,525, and it was in the same year that the now-historic Cadillac interchangeability test was staged at Brooklands. F S Bennett, who ran the Cadillac agency in England, wishing to prove that the Cadillac spares service was infallible as parts really were fully interchangeable, approached the Technical Committee of the RAC and a most elaborate demonstration was devised. On February 29 members of the RAC picked out three brand-new single-cylinder Cadillac cars. These were exactly as crated in Detroit and had never had petrol in their tanks. They were wheeled into the road as soon as they had been selected, tanks filled, accumulators connected, and they were started up and driven through London traffic and down to Brooklands. Here they were numbered 1, 2 and 3 and driven for 10 laps, a note being taken of their performances. The Cadillacs were then locked away in the garages behind the Members' Hill, one car per lock-up. Before the test four lock-ups had been selected by the RAC and these had been so thoroughly cleaned out that not even a nail remained in the walls, nor were work-benches or trestles permitted in them.

On March 1 two mechanics were admitted by the RAC to shed No 1 and they proceeded to completely dismantle the car inside until no parts that could be separated remained attached to any other part - all screws, nuts, washers, etc, were detached, all split pins removed, piston rings taken from the piston, etc. By midday the garage floor was a mass of components and parts. The RAC then relocked the shed and admitted the mechanics to sheds 2 and 3 in turn, where the same process took place. The contents of all three sheds were then taken to shed 4 and thoroughly jumbled. On March 5 re-assembly commenced, the same two mechanics being employed and being permitted only wrenches, screwdrivers and pliers. As they required parts the RAC officials brought them from shed 4, after which this shed was relocked. The mechanics worked from 11.45am to 5pm on March 5, after which shed 1 was locked up for the night. Torrential rain fell that night and 3 inches of water accumulated on the concrete floor of the sheds. After this had been pumped out, the parts were found covered in red rust, but undaunted, the mechanics continued their task. By the evening of March 6 car No 1 was again complete and, amid intense expectation, fuel was poured into its tank. The engine ran at the first turn of the starting handle, and F S Bennett - and, I hope, the mechanics - received hearty congratulations. Car No 2 was subsequently assembled with equal facility and success. When it came to car No 3, the RAC removed 40 items from shed 4 and these had to be replaced from the Cadillac stores in London. Nevertheless, this car was also successfully assembled, and all three Cadillacs were run on the track with commendable results. This was a truly convincing demonstration and one to which Brooklands was particularly suited.

Another kind of test was that by jarrott and Letts of the 80hp de Dietrich which Jarrott was to drive in the St Petersburg -Moscow event. People waited to see the car, which appeared in the Paddock at 4 o'clock. It went out, but came back in again and Jarrott was puzzled by its bad running until told that he had not put the half-compression device out of action. The car then lapped just enough to satisfy the pair that the suspension should be able to cope with the worst Russian roads.

It can be said that during 1908 the track had come fully into its own for the purpose for which it had been constructed. Cars of all kinds were using it, for tests, tyre trials, duration runs, or just for the pleasure of enjoying unfettered speed. There was even that dust-laying competition, over a layer of fine limestone dust measuring 200ft by 10ft in the Finishing Straight, over which cars were driven first at 20mph, then at 30mph, checked by tapes running beside the cars, the new BARC accelerator in action presumably, the resulting dust clouds being photographed by cinematograph. Although rain and wind interfered with the competition, some useful results were obtained. Another important use for Brooklands was when the 2,000-Mile Trial finished with timed runs there, as already referred to, Mrs Locke King presenting the prizes with a gracious smile for each winner.

Of the many special runs being undertaken at the track, one of interest was a private speed test by two of the Rolls-Royce cars that had recently completed the 2,000-Mile Trial. For some reason the BARC did not encourage this duel, but the RAC provided Ebblewhite and Straight as timekeepers. Car K83 (its Trial number) averaged 65.90mph for 20 laps and K86 65.84mph. Having started 80 yards apart in pouring rain, the drivers did not see one another throughout the runs . . . More seriously, Daimler used Brooklands for their 1909 2,000-Mile test of the Knight sleeve-valve engine.

The track was attracting much useful publicity, *The Graphic* publishing a fine portrait of well-heeled lady and gentleman spectators watching the racing from the new stand on the Hill. And the ladies had their races; it was said that as in those days a woman's ankles were not supposed to be glimpsed, let alone the lower leg, one lady driver had her voluminous skirt tied down with cord before racing her rather exposed motor car . . .

Towards the close of the 1908 season S F Edge carried out some quite scientific acceleration and tyre-slipping tests, using special instruments and equipment, on his 60hp Napier 'Mercury' and his 90hp Napier 'Samson', predating the telemetry used for today's Formula One races. He discovered that the 60hp car increased pace at the rate of 5.7188 feet per second from a standing start in the space of 183ft and that 'Samson' accelerated at an average rate of 4.7867ft/sec over the initial 216ft. Then, using contact devices in the hubs of one front and one back wheel of a Napier, coupled to Elliott clockwork-actuated electric escapements, and the car doing flying laps of from 20 to 90mph, it was discovered that from no slip at the former speed, the slip between front and back wheel became a matter of 89rpm at 90mph. Edge also carried out wind-drag experiments by erecting screens on a Napier chassis.

To capture for readers the flavour of racing at Brooklands in its first full season I now append a list of the winners of the 1908 BARC races:

Easter Saturday meeting:

Spring Stakes: D Pigot (35.7hp Berliet), 78.25mph (possibly an error). Even money.

Sizaire et Naudin Cup: G F Santlebury (all drove 8.9hp models), 39.5mph. 3 to 1.

3rd 26hp race: F Newton (25.6hp Napier), 64.5mph. Evens.

Brooklands Cup (non-trade drivers): N G Nalder (35.7hp Berliet),

speed n/a. Evens.
3rd 40hp race: Marquess de Mouzilly St Mars (39.6hp Napier), 62.5mph. Evens.
2nd Surrey Stakes: Marquess de Mouzilly St Mars (39.6hp Napier), 63mph. 4 to 6.

Easter Monday meeting:
Continental Stakes: O Cuepper (48.2hp Metallurgique), 78.5mph. 6 to 4.
Naval & Military Cup: S Gore-Brown (47.6hp Gobron), 64.75mph. 2 to 1.
3rd 90hp race: F Newton (90hp Napier), 89.5mph. 3 to 1. Private Sweepstakes: C Hobson (48.6hp Brasier), 70.5mph. Evens.
Tyre-Change Plate: F Newton (25.6hp Brasier), 30.5mph - 3min stop. 6 to 4.

May *meeting:*
All Comers' Handicap: E A Anthony (22.5hp Ford), 45mph. 4th 26hp race: J W Stocks (25.6hp de Dion), 66mph. Touring race (non-trade drivers): O S Thompson (8.1 hp Wolseley), 26mph.
May Cup (non-trade drivers): P D Stirling (35.7hp Berliet), speed n/a.
Limit Sweepstakes (60mph cars): D Pigot (35.7hp Berliet), 58mph.
4th 90hp race: D Resta (76hp Mercedes), 93mph.
Private match-race: N G Nalder (35.7hp Berliet), speed n/a.
4th 40hp race: F Draper (39.6hp Napier), 83.5mph.

Whit-Saturday meeting:
2nd All Comers' Handicap: P D Stirling (35.7hp Berliet), 71.5mph. 6-8 to 1.
1st heat, 2nd Limit Stakes: Sir G Abercromby (58.1hp Fiat), 49.25mph. 2 to 1.
26hp match-race: F Newton (Napier 'Firefly'), 78.75mph. 5 to 4.
2nd heat, 2nd limit Stakes: J Keele (41.9hp Weigel), 49.5mph. 5 to 1.
40hp match-race: F Draper (Napier 'St George'), 85mph. 6 to 4.
90mph Stakes: F Newton (Napier 'Meteor'), 91mph. 2 to 1. Final, Limit Stakes: Sir G Abercromby (58.1hp Fiat), 50mph. 3 to 1.

Whit-Monday meeting:
1st heat, President's Cup: G Bliss (41hp Vinot), 59mph. 4 to 1. 2nd heat, President's Cup: O S Thompson (36.1hp Austin), 71mph. 3 to 1.
90hp match-race: F Nazzaro (89.5hp Fiat), 94.75mph. 6 to 4. Final, President's Cup: G H Nalder (35.7hp Berliet), speed n/a. 8 to 1.
5th 26hp race: F Newton (Napier 'Firefly'), 75.5mph. 6 to 4.
Household Brigade Cup: G C G Moss - Grenadier Guards (27.2hp Arrol-Johnston) 54mph. 6 to 4.
GP Austin Training Plate: D Resta (Quickest and best tyre-change). Evens.

Summer meeting:
1st heat, 3rd All Comers' Sweepstakes: Sir G Abercromby (58.lhp Fiat), speed n/a. 3 to 2.
2nd heat, 3rd All Comers' Sweepstakes: J Keele (41.9hp Weigel), speed n/a. 3 to 1.
1st heat, July Trophy race (Private drivers): L Bullough (44.5hp Junior), speed n/a. 4 to 1.
Final, All Comers' Sweepstakes: Sir G Abercromby (58.lhp Fiat), speed n/a. 2 to 1.
Ladies' Bracelet Handicap: Miss Muriel Thompson (Austin 'Pobble'), 50mph. 3 to 1.
2nd heat, July Trophy race: T Faulkner (24.8hp Mercedes), speed n/a. 2 to 1.
Match-race: J W Stocks (25.6hp de Dion), 71 mph. No betting.
August Saturday meeting:
1st heat, 4th All Comers' Sweepstakes: A E Hobson (27.9hp Nagent-Hobson).
2nd heat, 4th All Comers' Sweepstakes: L Naudin (6.2hp Sizaire).
3rd heat, 4th All Comers' Sweepstakes: J E Hutton (Hutton little Dorrit').
2nd Montagu Cup: F Newton (90hp Napier), l0l.5mph. Merit Trophy: G F Santlebury (8.9hp Sizaire). Journalists' Handicap: J Flatau - *Daily Mail* (19.6hp Belsize). Final, 4th All Comers' Sweepstakes: L Naudin (6.2hp Sizaire).

August Bank Holiday meeting:
1st heat, August Trophy (Private drivers): C Hobson (27.9hp Nagent-Hobson). 5 to 2.
2nd heat, August Trophy (Private drivers): A van Hoboken (71.7hp Mercedes). 3 to 4.
Match-race: Miss Muriel Thompson (Austin 'Pobble'). 6 to 4.
Final, August Trophy: C Hobson (27.9hp Nagent-Hobson), 60.5mph. 3 to 1.
1st O'Gorman Trophy - approx 100 miles: F Newton (60hp Napier), 98.5mph. 6 to 4.
(It was during this race that Lane's Mercedes crashed and his mechanic was killed.)

October meeting:
Large October Sweepstakes: W Jochems (48.6hp Mercedes), 59.5mph.
1st heat, 5th All Comers' Sweepstakes: H P Martin (38.lhp MAB), 45mph.
2nd heat, 5th All Comers' Sweepstakes: W Jochems (48.6hp Mercedes), 46mph.
Motor Cycle Handicap Plate: G Gibson (3.5hp Triumph), 53mph.
Final, 5th All Comers' Sweepstakes: W Jochems (48.6hp Mercedes), 70mph.

NB: Most of the above races were run on an individual handicap basis, the handicaps the work of Ebblewhite and Dutton. Speeds were not always declared, nor the betting odds, but some of the latter are quoted to show that bookmakers were present at Brooklands from the very early days. Attendances varied at these 1908 meetings. The Easter races totalled about 8,000, rising to 15,000 to 16,000 at Whitsun when the celebrated Nazzaro/Newton match-race took place. At the Summer meeting, which coincided with the French 'motor-week', it sank to under 1,500. HRH Prince George of Wales was present at the Easter races, which ended in a snowstorm, and the RAC Chairman, Prince Francis of Teck, was a regular visitor.

More uniformed Surrey policemen seem to have been in evidence then, employed to guard the trophies when these were

displayed and to accompany the more famous racing cars, such as Edge's Napiers, out of the Paddock and on their return. They were a jolly lot of men, who had their Police room at the track and who were not averse to bringing in the odd tyre if found on the track.

The first Brooklands motorcycle race was run off at the 1908 Easter Monday meeting, the winner being W Cook, riding a 248cc NLG-Peugeot, at 63mph. This was a scratch contest and to add interest the BARC held a motorcycle handicap event at its May meeting, which H Shanks won on a 234hp Chater-Lea at 42.75mph. After that no more motorcycle races were held until the Autumn meeting because local residents had brought the action for noise against the track and Locke King was obliged to build a new entrance road, and he decided that any objection to the noise from motorcycles should be allowed to die down before such racing was resumed. Motorcycle races were to be mixed with car racing at Brooklands in the future, and were run frequently by the BMCRC, which was formed in 1909 at the track.

Contrary to present opinion, the leading and many other newspapers not only devoted a great many column-inches to reporting the BARC meetings, but published full lists of runners at the forthcoming events. About the best of these reports were those by *The Times,* although it did not have an entry in the Journalists' Handicap. But almost all the leading newspapers followed much the same line, including the *Daily Mail, Daily Telegraph, The Graphic, Sunday Times, Sunday Chronicle, Morning Post, Pall Mall Gazette, Westminster Gazette, Country Life,* etc, and the regional papers such as the *Aberdeen Free Press, Belfast News Letter* and *Glasgow Herald* were also supporters of the new venture, so Brooklands started off with very extensive Press coverage.

1909

Many new World records and a novel Test Hill

In 1909 Major (later Col) F Lindsay Lloyd took over from Rodakowski as Clerk of the Course, with a stiff time ahead of him if Brooklands was to become really well established. He had a sound knowledge of electrical and civil engineering and went into his new task with enthusiasm. He did not retire until well after the Kaiser War and did more than words can tell for the Weybridge Motor Course - he was known and liked for his keenness allied to his happy knack of exerting a proper sense of discipline over the wild types he invariably encountered in his daily tasks.

Major Lloyds first venture was to have a Test Hill built from the top of the Finishing Straight opposite the Paddock up the Members' Hill. It was a concrete strip wide enough to accommodate a car, 352ft 3in long, with an average gradient of 1 in 5.027 and a maximum gradient of 1 in 4 for 154ft 7.75in; the gradient for 91ft 9.25in was 1 in 5 and for the remaining 105ft l0in it was 1 in 8. By running a road from the top of it to the bridge over the banking whereby spectators reached the Hill from the entrances, drivers could continue back to the Paddock after making an ascent. By means of the new Holden electrical timing apparatus it was proposed to offer the industry a valuable testing ground at Brooklands, which this Test Hill enhanced. Although we are told that the first car to try a climb failed ignominiously, very soon an 18/22hp Armstrong-Whitworth was put strenuously through its paces on it, not only up, but down the gradient, to test its brakes. On March 26 the first certificate was issued in respect of the Test Hill, stating that Kidner's 20hp Vauxhall had climbed it from a standing start in 15.041sec. The ultimate car record, established in 1932 by R G J Nash's Frazer Nash, occupied 7.45sec.

Major Lloyd was instrumental in reducing the BARC subscription from £5 5s (£5.25) to £2 2s (£2.10) provided Members also belonged to the RAC, and excellent, inexpensive lunches were put on for spectators. Novel events continued to be held. Thus we find the Private Competitors' races and the Sizaire-et-Naudin Cup race (which produced a glorious dead-heat) continued, an obstacle race introduced in which officials did their best to make various realistic dummy pedestrians collide with the competitors, and a 2.5-mile race run for 'No 8 Jackson motor cars with one-cylinder engines and a bore of 100mm and a stroke of either 120, 130 or 160mm'. In this last-named race handicapping was on length of stroke and I find it even more astonishing that nine of these queer little cars were present to contest the race than that the BARC fell for it - after all, there were Austin Seven, Morris Cowley and Fiat 500 races in later days. Even now, ingenuity was not exhausted. There was a driving competition, concluding with an ascent of the new Test Hill (Graham Gilmour's 54.6hp Adams took but 49.8sec), three relay team races, a handicap for members of the motor club (in which Henry Knox's Isotta-Fraschini 'Fly-by-Night' lapped at 73.75mph), and the 2-mile sprints for cars which had lapped at over 80mph during the season, the first being won by Sir George Abercromby's 39.5hp Napier. Finally, there was a delightful event confined to Fiat taxicabs. Twelve of these cabs were hired from the Fiat Motor Cab Company and were allotted to the entrants by a draw; they had to be 'in London hiring trim' and carry two passengers each. The slowest of these taxis lapped at under 24mph, but mostly they got round at better than 30mph, Harvey du Cros and Charles Jarrott coaxing theirs to lap at 32.96mph.

Motorcycle races continued to attract big fields, one of these having as many as 48 entrants. An innovation here was the Roadster event for standard touring motorcycles fully equipped with two brakes, metal mudguards, toolbag and contents, stand, touring saddle, silencers and a tank holding at least a gallon of fuel. Tyres had to be at least 2.25in and the tools to weigh not less than 31b. Even so, H A Collier's 964cc Matchless lapped at all but 63mph, timed on the 10ft line. The other motorcycle races had various cylinder-capacity limits. The fastest lap seems to have been by the aforementioned Matchless, at 73.56mph, run close by C R Collier's Matchless, which got round in 72.68mph.

Turning to the car racing generally, the O'Gorman Trophy was run again, but now over a distance of only about 28 miles and limited to cars of an RAC rating not exceeding 21hp. Hancock, in violet cap and green coat and sleeves, won driving Kidner's 20hp Vauxhall, his best lap being at 72.68mph. Curiously, Kidner's own 20hp Vauxhall also equalled this fastest lap, both cars running as stripped chassis. Another important race was the 3rd Montagu Cup, a Handicap for cars of 35 RAC horsepower and over. Some really fast cars competed, H J D Astley's 60hp Napier, driven by Hillier, doing one lap at 102.64mph and another at 100.57mph, while P D Stirling's 59.6hp Brasier went round at 97.62mph before trouble set in, and Sir George Abercromby's 39.5hp Napier wound up to nearly 95mph. At the other end of the scale, Viscount Torrington's 58. lhp Fiat couldn't exceed a lap speed of 55mph.

Many races were, indeed, run at quite modest speeds of around the 60mph mark, but the general pace was gradually increasing. Thus in one event A W Tate's ex-Fry 1908 59.6hp Mercedes, with new engine, which won two races at Easter, lapped at 95mph, and in the May Senior Handicap timekeeper T D Dutton remarked on some very even running, while Astley's 76hp Mercedes exceeded 96mph on one lap. Sir George Abercromby's Napier was usually good for 88-90mph and Baker Whites 60hp Napier Mercury 86-88mph. Then R Wildegose's Sixty Itala (the car so ably driven in subsequent times by Cecil Clutton) was credited with a lap at 93.22mph. Already the finish opposite the Judges' Box was deemed unsafe for the faster competitors, and for the October meeting, apart from the Long finishing line, as it was called, a Short finishing line, 50 yards behind the original line, and a Special Short finishing line, 200 yards still farther back, were instituted. In time, of course, even this did not suffice and the finishing line was eventually transferred to the Railway Straight. At the other end of the scale, several cars did not exceed 45mph for their best laps (the slowest seemingly was Powell's 5.2hp de Dion 'Mousie', at 31mph!).

The 'Four-Inch' races proved popular. Limited to cars of 25.6 RAC rating and under, they were run over varying distances and saw Stocks' de Dion, driven by W V Jolley, pull out nearly 74mph, and W E de B Whittaker lap at nearly 84.25mph in Baker White's Hutton. Match-races continued to be the order of the day. At the Whitsun meeting Leo Ralli (35.7hp Hotchkiss) challenged Sir Charles Forbes to a 200-sovereign contest over four laps. W H Cox drove the latter's 32.4hp Maudslay and proved the faster by several miles per hour. That was on the Saturday, and on the Bank Holiday Monday Gore-Browne lost a similar duel against P Stirling's Arrol-Johnston when his Piccard-Pictet broke down; both cars were in the then-popular 26hp class.

At the October meeting a Star had won the Senior Handicap at 63.75mph, and the Star Company challenged any other 4-cylinder car having similar cylinder dimensions (3.5in x 5in, 3,150cc). Vauxhall Motors Ltd responded and from Luton brought a most remarkable car, forerunner of the streamlined single-seaters which were soon to become familiar to Brooklands habitues. The radiator was hidden beneath a cowl tapering to an opening of a mere 2.5in x 16in; the body was scarcely wider than the driver's shoulders, and behind him was a short tapering tail, while discs covered the wheels. The chassis was the 16/20hp Vauxhall of 90 x 120mm (3,053cc) which had already had many successes at the track, mostly at around 60mph. This new car was dubbed 'KN', being as hot as cayenne pepper! The match-race was scheduled for November 12, but two days beforehand the Star blew up, and on the eve of the race the Vauxhall cracked a cylinder. The contest was postponed and when it did take place Hancock failed to get away in the first of the three agreed 5.25-mile runs, but on a rerun sportingly suggested by Lisle, the Vauxhall passed the Star to win at 75.4mph to Lisles 70.8mph. Later, the Vauxhall still further increased its advantage, winning at 76.1mph to the Star's 70.78mph.

For excitement and keen anticipation these private duels were overshadowed by a happening scheduled for the Summer meeting. Baker White had arranged for Felice Nazzaro to return to Brooklands in a new overhead-camshaft Fiat estimated, so the race card said, to give 180hp, and attempt to lower the World flying-start kilometre and mile records. These were held by Marriotts Stanley steamer at 121.58mph and 127.6mph, respectively. In making this attempt Nazzaro hoped to beat his already infamous Brooklands lap record of 121.64mph, established with a different Fiat in 1908. He was to be allowed to run in either direction on the track and was to be timed from the commencement of the Railway Straight, where a Union Jack flew. The end of the kilometre, at the beginning of the Byfleet Banking, was marked by an Italian flag, the finish of a mile, at about the middle of the Byfleet Banking, by another Union Jack. After his run Nazzaro would drive the car along the road at the back of all the enclosures. The great Italian driver came over with his Fiat, but it proved something of a fiasco. On his first run his three laps were timed at 99.16mph, 93.39mph and 81.48mph. Later he tried again, but could do no better than 102.01mph on his first timed lap, or 90.51mph thereafter. A pin-hole in a cylinder was blamed.

Before we leave the 1909 season it is interesting to quickly scan the lists of drivers for outstanding personalities and names known to us. W O Bentley is there, racing a 5hp Rex motorcycle; likewise McNab, who was later to make the first motorcycle hour record (he rode a 3.5hp Trump then), and J S Geddes on a similar machine, surely the friend Sammy Davis mentions in his great book *Motor Racing?* W B R Moorhouse, later to make his name immortal as an aviator, drove the Fiat 'Linda', Graham Gilmour, racing a big Adams, was another who took to the air; Noel Macklin, who later had much to do with the Invicta, ran a Mercedes; Charles Jarrott, although he had said in his *Ten Years of Motors and Motor Racing* that he had given up motor racing, nevertheless competed occasionally; Moore -Brabazon was present, staunch to his Metallurgique, and there were other names that were to become prominent in motor racing in times to come.

New makes which competed, additional to those listed as having run in 1908, were: Gregoire, Maja, White & Poppe, Chenard-Walcker, Singer, Isotta-Fraschini, Maudslay, Rochet-Schneider, Adams, Lancia, Lagonda, Humphries, Bedford, Martini, Briton, Zedel, Decauville, Lindsay, Hillman-Coatalen, Lucas Valveless, Imperia, Rolls-Royce, Brooks & Woollan, VS and Aspley.

Brooklands was on its feet at last and a proper appreciation of how to go fast round the track was rapidly being formed; for the next few years high gear ratios, wind-defeating bodywork and highly tuned engines were to become subjects for exhaustive experiment. It must have afforded Mr Locke King no little satisfaction, too, to be approached for advice by those who sought to build a motor track at Indianapolis, USA.

An excellent instance of the value of Brooklands to the industry was seen when, to overcome prejudice against the Knight double-sleeve-valve engine, which they had just adopted, the Daimler Company staged a demonstration of 22hp and 38hp cars using these engines. Following a 132-hour run on the bench under RAC supervision, each engine was installed in a chassis and the cars driven from Coventry to Brooklands, a distance of 112 miles. Here, runs of 1,930.5 miles by the 38hp Daimler and 1,914 miles by the 22hp Daimler were undertaken, again under RAC observation, the fuel consumption coming out at 20.57 and 22.44mpg, respectively, for average speeds of 42.4 and 41.88mph, whereas the road fuel consumption had been 19.48mpg in both cases. The engines were then subjected to another bench test of over five hours' duration, and this successful demonstration had a most beneficial effect on the public's regard for sleeve valves.

Sympathy was felt during the season for Sydney R Harbutt, who had turned H P Egleston's 41.9hp Bianchi round at the top of the Finishing Straight and entered the Paddock against the direction of the race and through the wrong gate after he had won the Montagu Cup race by a big margin. S F Edge led a campaign against the driver, but Harbutt, describing himself as "a *common paid mechanic driver"* in his first Brooklands race, said he had received no instructions about how to finish a race. After deliberation, the Stewards, Messrs Holden and Orde, suspended the car's entrant, Mr Egleston, for the remainder of the season. It is perhaps significant, in view of Edge's interest, that a Napier just beat a Daimler into second place!

In July, Wigglesworth and Wright had a narrow escape when their old racing Napier failed to pull up and went over the Members' Banking at the top of the Finishing Straight.

Record-breaking was late in starting in 1909, but in June Sir George Abercromby led off with his 40hp, 6-cylinder Napier,

putting the 40hp-class flying-start half-mile record right up to 94.14mph, beating Tryon's old figure by over 7mph. Then, before July was out, de Whittaker set the 26hp-class fs half-mile record to 84.59mph with a Hutton. There was then a gap until September, when the same combination improved on this same record, lifting it to nearly 88mph.

In November something of a stir was caused when Georges Boillot came over with a single-cylinder Lion Peugeot, which was in Coupe de *l'Auto* trim save for its exhaust system, and set four records in the new Voiturette class. Running for an hour, Boillot covered 68 miles 688 yards, taking the half-mile, 50-mile and 100-mile records on the way. The Lion Peugeot had an RAC rating of but 6.18hp, yet covered the flying half-mile at over 77mph.

Two days later it was the turn of C M Smith, who took a whole host of World records with a 5in-bore, 6-cylinder Thames car. He kept going for 300 miles (these long-distance records were still observed from a flying start) at over 87mph and, not content, set out again to better the figure he had established over 50 miles, being rewarded with an average of 91.32mph over that distance. Before the 1909 season ended Victor Hemery swept all before him. Arriving with a Benz of 84.8hp (it had a 4-cylinder engine of 185 x 200mm, giving a capacity of 21.5 litres), Hemery took the World standing-start half-mile, kilometre and mile records, averaging better than 70mph over the shorter distances, nearly 87.25mph over the mile, which is acceleration you wouldn't have scorned half a century later. The Benz was then given its head and proceeded to lap Brooklands right-handed. Over the half-mile it was timed at no less than 127.877mph, the kilometre being covered at 125.947mph and the mile at 115.923mph. Hemery found some difficulty in taking the bankings, which explains his appreciably lower speed over the mile. He took World honours for his mile run and the 90hp class records for the half-mile and kilometre. Because they were using the Holden timing apparatus, the BARC officials were able to give the record speeds to three places of decimals, the first time this had been possible for short-distance record attacks. In this enlightened age we can hardly comprehend the sensations of those who witnessed this huge chain-driven car rumbling down the Railway Straight at nearly 130mph. In sober fact, Hemery's wonderful mile and kilometre records stood intact for nearly 13 years until K Lee Guinness brought out the 350hp V12 Sunbeam after the First World War. Finally, on December 14, A J Hancock, Chief Engineer of Vauxhall Motors, set up two records which foreshadowed the outstanding performances that these cars were to achieve at Brooklands in later years. With the streamlined 20hp Vauxhall 'KN' aforementioned, he raised the 21 hp-class ss 10-lap record to 81.33mph and the fs half-mile to 88.62mph, the first records to be established in this category.

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Another factor which was to have a tremendous influence on the future of Brooklands had its foundation in 1909. Two years earlier, seeking to offset the fiasco of the first meeting, the BARC authorities had offered a prize of £2,500 to the first person to fly round the track before the end of that year. This attracted a gentleman who announced himself as A V Roe. He was allowed a shed near the Judges' Box opposite the Paddock and beside which was another shed, occupied by Moore-Brabazon's aeroplane. Here Roe assembled his machine and practised towed flights behind the cars of any motorists who were kind enough to tow him up the Finishing Straight. He was obliged to use a low-horsepower JAP engine while waiting for a 24hp Antoinette to come from France. The BARC prize had not been won at the end of 1907 and Rodakowski instructed Roe to leave before the 1908 racing season commenced. However, the aviator pleaded to be allowed to remain and permission was finally granted, providing his shed was moved to the Paddock side of the straight and painted dark green. Incidentally, Roe's original shed remained intact for years but I never saw it on my many visits to Brooklands - what a pity it was not properly preserved, like the tree at the RAE at Farnborough, to which Cody used to tether his early flying machines. Roe's new engine did eventually arrive, and it is claimed that on June 8, 1908 he actually flew at a height of 2ft for some 75ft, but witnessed only by the head-keeper and carpenter. Roe's only reward was an order from the track authorities to leave Brooklands immediately! In 1954, however, Vickers-Armstrongs erected a plaque at Brooklands to commemorate this feat by Sir Alliot Verdon-Roe, and since then the Brooklands Museum has built a replica of Roe's shed and his aeroplane.

However, by 1909 flying was no longer regarded with complete incredulity, and Major Lloyd realized that there was a future in it. He quickly set 100 workmen to clear the ground at the Byfleet side of the track, leaving some 30 or 40 acres level above the flooded ground. A shed was built to house the Farman biplane which M Paulhan had been invited to demonstrate. Paulhan arrived with his wife and stayed at the Hand & Spear, Weybridge. On October 28, 29 and 30, 1909 he gave a polished exhibition of the new art before 15,000 spectators, many of them Londoners who had never before seen an aeroplane in the air. Paulhan failed to break the distance record through running out of petrol, but he remained in the air for 2hr 49min 20sec, covering 96 miles, well outside the circuit of the track, inside which Major Lloyd had suggested he should fly for fear of colliding with the telephone wires. He also attained a height of 720ft and gave an exhibition of passenger carrying, Mrs Ethel Locke King being the first person to fly with the famous French aviator on this occasion.

So successful was this enterprise that steps were taken to clear almost the entire area on the Byfleet side for flying, although to the end the notorious sewage farm remained as an unsavoury pitfall for the unwary, because to remove it Mr Locke King would have had to pay the Town Council of Weybridge £65,000. Two large ponds, two farms, several small woods (above one of which Major Lloyd once shot 50 brace of partridge) and much arable land had to be removed or levelled, but by 1910 the river had been diverted and only one small farm building remained. Brooklands had taken on another role, that of Britain's first and foremost aerodrome.

As Brooklands' records were so closely bound up with track measurements, it is pleasing to be able to record that in 1909, when the Director General of Ordnance Surveys undertook to lay out the half-kilometre, kilometre and mile distances, the opportunity was taken to verify other measurements, using No 31 Invar tapes at a tension of 20lb. A lap on the 50ft line came out at 2 miles 1,349.70483 yards, the Director General apologizing for being unable to give a definite probable error as only one measurement was made, but guaranteeing this to be well within a limit of 1/50,000!

1910

Brooklands leads to experiments in streamlining

By the second meeting of 1910 the new aerodrome was ready. At the April BARC meeting, it was announced, Mr James Radley would be examined by the Royal Aero Club for his Aviators Certificate, weather permitting, for which he would be required to make three separate circular flights each of three miles and plane to the ground with his engine stopped, alighting on a spot within 150 yards of a selected point. History relates that Radley did not, in fact, qualify for his 'ticket' until June 14, 1910, but that he then did so in his Blériot monoplane at Brooklands, taking Certificate No 12, the first earned at Weybridge, although on the same day Certificate No 13 was awarded to the Hon Alan Boyle in his Avis monoplane. A competition was also announced by the BARC for all 'Brooklands Flying Tenants', a Brooklands Cup being offered to each aviator who succeeded in making a complete circular flight. This contest was announced in April and was continued as a feature of the Whit-Saturday meeting, when Radley was also billed to demonstrate his Blériot. At the Summer meeting three aeroplanes were to appear, Graham-White's Farman biplane, passenger trips in which were to be sold by auction in the Paddock, Graham Gilmour's Blériot monoplane and Lt Laurence Gibbs' RFA Sommer biplane. By this time two complete circuits without alighting were required before Brooklands Cups were awarded, a course having been marked out with marker-towers. Already difficulties of crowd control were being experienced, for having permitted people to walk across from the Paddock to the aeroplane sheds, keeping to the right of a line of white flags, and cars to drive over after the last race and park behind the sheds, the Brooklands authorities hastily added that if spectators left the path indicated, flying demonstrations would be delayed "*as it* is *dangerous to all concerned for spectators to walk about the interior of the ground, and aviators will not start should spectators be there".*

At the August meeting an Aggregate Time of Flight contest was held, 60 sovereigns or a cup at option going to the aviator who made the longest flight between the hours of 2pm and 7.30pm. The entrants comprised Cordonnier flying A C Thomas' Hanriot monoplane (40hp Clerget), Blondeau in Mrs Grace Bird's Farman biplane (50hp Gnome), Préroteau in H G Burfords Humber monoplane (35hp Humber), Gibbs' Sommer biplane (40hp Gnôme) and Graham Gilmour's Blériot (40hp JAP). This contest, for H C Neille's Cup, was continued at the October meeting, when Spencer in P D Stirling's RH-engined Spencer-Stirling biplane, Macfie's Gnome-motored Macfie biplane, Spottiswoode's ENV-engined Avis and Handasyde's JAP-engined Martin-Handasyde joined in.

I would not like to say whether it was this new-fangled aviation or the increasing speed of the cars which put Brooklands on its feet, but certainly it never looked back from this time until it was temporarily closed in 1914. For the modest charge of 1s (5p in modern currency) the public was admitted daily to the flying ground, and tea would be eaten amongst the pioneers of British flying in Mrs Billings' famous 'Blue Bird' tea shop - alas, this famous institution did not survive the war, being burnt down early in 1917. But non-race day admission was retained permanently and, years later, 1 spent some of my happiest days at Brooklands. It is now common knowledge that many world-famous personalities in aviation first flew at Brooklands, at one of the many schools formed there. Shed after shed was erected, nine machines being housed early in 1910, until, by 1911, there were 36 sheds in seven rows.

Streamlined bodies were by now the vogue and Brooklands was proving that it had valuable lessons to teach about what happened to the small-section tyres of the day when cars were driven without let-up for mile after mile, besides showing up defects in cooling and lubrication systems, etc, which had, nevertheless, passed unnoticed on the road.

The BARC continued its Saturday and Bank Holiday meetings composed of short races, some scratch events, some run under handicap, and in addition there was an Inter-Varsity meeting and separate meetings of the British Motor-Cycle Racing Club, which had been formed in 1909 largely by the efforts of George Reynolds, and which made the track its headquarters, running amongst other contests a 60-lap race for touring motorcycles and a 100-mile high-speed reliability trial. In addition, motorcycle races continued to be run by the BARC.

Hancock's 90 x 120mm streamlined Vauxhall 'KN' was a star performer at Easter, winning one race at 81.5mph, lapping at 85.24mph, whereas a stripped-chassis Vauxhall of the same size could only average 69.5mph. To encourage cars in the 16hp class the Raglan Cup races were instituted, the engine stroke of competing cars being limited to 121mm. The first of these races was won by Louis Coatalen's Sunbeam from Greach in Leverett's Arrol-Johnston, neither car reaching 60mph by quite a margin. The second race attracted a larger field and Lisle's Briton, lapping at 68.47mph, beat Coatalen's Sunbeam. Later, the 1st 16-Rating Handicap, of *5.75* miles, carried on this good work, and Coatalen's Sunbeam won from Bayliss' Sunbeam, while Hollebone's Diatto, on scratch, lapped at 66.64mph. In the 2nd 16-Rating Handicap Coatalen scored yet again, doing one lap at 67.27mph and winning easily from Goodchild's Oryx.

The O'Gorman Trophy had deteriorated to a 27.75-mile race for 21hp cars and only Kidner, the holder, Selz and Hancock, all on 20.lhp Vauxhalls and all representing the Luton company, contested it. Hancock won so easily that, after getting round at 80.82mph on his best lap, he slowed down to average 76mph. Kidner could not catch Selz's 'Hans VI' until it retired after seven laps. The car Hancock used had the engine out of 'KN' in a new chassis with even narrower body, the cooling element set lengthwise inside the radiator cowl, and a longer tail. The original 'KN', re-engined, won the August Private Competitors' Handicap for K Horn at 73mph, lapping at 79.78mph.

After a few races in which cars thought to be of equal speed were invited to run against one another, the BARC devised a method of grouping competitors that lasted almost until the end of the Club's career. They grouped competitors' cars by their

observed speed and introduced 60 and 70mph Motorcycle and 50, 76 and l00mph Car Handicaps. The first of these new races was the 76mph Handicap at the August meeting, and Seale's 14.3hp Brenna won at over 60mph from Stewart's Lancia and Horns Vauxhall. The 1st l00mph Handicap followed and Hadley, in Oscar Thompson's famous Austin 'Pobble', easily
beat his handicap speed of 77.78mph (the minimum speed for this race was 70mph) by lapping at 85.83mph. This was all the more meritorious as 'Pobble' had started life as a 1908 touring car. It was raced at Brooklands that year, but would not better about 58mph. With flywheel and connecting-rods lightened slightly and pistons afforded greater clearance, the lubrication pressure increased, quick-lift cams substituted for the standard ones and a new White & Poppe carburettor, and white metal in place of phospher-bronze main and big-end bearings, this Austin lapped at 88mph, while still starting easily and doing its l0mph in top gear. After some experimenting a reversion was made to standard gear ratios. Second to Thompson came Heim in a Benz, followed by Stewarts Lancia carrying the later distrusted No 13. The 1st Handicap for cars which had not exceeded 50mph saw a single-cylinder 7hp Austin pull out 41.38mph for a lap, to be beaten easily by Orloff Combe's 10.4hp Delage, which lapped at over 43mph, not one competitor reaching its handicap speed. Gerald Herbert's famous Singer won the 2nd 76mph Handicap from scratch at over 83mph, beating Coatalen's Sunbeam and the Hon L Bruce's de Dietrich, while the 2nd l00mph Handicap saw the Singer transferred to this category, in which it won by 15 lengths from the de Dietrich at much the same speed, although the scratch man, Lord Vernon in his ex-Fry, ex-Tate 59.6hp 1908 Mercedes, came in third out of a field of 11, doing his second lap at 101.59mph, far faster than anyone else and nearly 4mph faster than Messrs Ebblewhite and Dutton had expected.

With these new races, some based on rated horsepower and others as handicaps for all-comers, nearly everyone could look forward to a good chance of success at Brooklands in 1910. Sprint races over one lap, finishing up the straight, were popular, and there was the All-Comers' Plate of l00sovs in which seven cars were allowed 62sec start over 19.5 miles from the dreaded 89.5hp Fiat of Sir George Abercromby, a farce as it happened, for against the Fiat's best standing lap of 101.59mph, accomplished before it retired, Stirling's 59.6hp Brasier did 101.80mph and Wildgose's Sixty Itala 100.36mph. Later the Brasier lapped at 102.22 and the Itala at 101.80mph. An invitation race saw Burgess win in Hands' Calthorpe (entry fees were returned to each starter), and a delightfully complex one-lap race was the White & Poppe Handicap, for a trophy presented by Messrs White & Poppe to the entrant of any 4 or 6-cylinder car fitted with one of their carburettors and who showed the best efficiency over a flying lap under the formula:

$$\text{Efficiency} = 12.5 \sqrt[3]{\frac{(D-2)^2\,SN}{D}}^{\text{Actual mph}}$$

where D = bore in cm.
S = stroke
N = No. of cylinders.

In this race Lord Vernon did 100.78mph for his flying lap in the 1908 59.6hp Mercedes, but *not* using a White & Poppe carburettor, while Hancock's 20.lhp Vauxhall, so fed, did 90.18mph. Actually, out of 14 entrants only the Vauxhall, an Imperia, Herbert's winning Singer (fastest lap, 86.54mph) and Lisle's Star had the desired carburettor.

An important series of races were the 21-Rating Handicaps, over 8.5 miles. The first was won by Bashall's Vauxhall at nearly 70mph from Hancock's Vauxhall 'KN' and McKinney's somewhat smaller Excelsior. The second of this series was Hancocks, with one lap at just over 84.5mph, beating a Mercedes of identical rating. In the third of these races Lisle's Star was fastest away, at over 75mph, but it retired and the finish was then a close thing between Roy Feddens Straker-Squire and Patons Vauxhall, while in the fourth race Paton won from the Mercedes, with Lisle's Star third. Innovations were the fourth race (over half a mile) for Sizaire et Naudin cars, contested by eight of these remarkable 9hp machines with their single-cylinder engines, independent front suspension and rear-axle change-speed mechanism, and a two-mile race for *"4-cylinder Ford cars of 3.75in x 4in bore and stroke, furnished with a Model T-pattern chassis, the driving wheel and gear ratios being as supplied by the Ford Company for this pattern car".* This latter race attracted 12 Model Ts and Rowland Winn beat A E George and P Hendy.

The fastest lap made in a BARC race during 1910 would seem to be 106.38mph, set up by the Abercromby 89.5hp Fiat in the May Handicap. A mild collision happened between Turnbull's Berliet and Farquharson's Mercedes during the third lap of the March Handicap, remarkable only because the formers namesake was involved in a similar happening during a postwar race.

It is interesting to note that the value of Brooklands as a research and publicity centre had already been recognized by such celebrated automobile engineers as Kidner, Coatalen and others. Coatalen introduced a car during 1910 which, although it was not particularly successful, showed that, like the Vauxhall designer, he appreciated the importance of defeating wind-drag for high speed on Brooklands track. This car was the Sunbeam 'Nautilus' and I cannot do better than quote a description of it from an article which A S Heal wrote at my request for *Motor Sport* during 1946. Heal wrote:

"For *many years Sunbeam cars had competed in trials, hill-climbs and races in more or less standard form, so that the appearance of the specially-built, cigar-shaped, single-seater Sunbeam 'Nautilus' at Brooklands in March 1910 caused a good deal of interest and speculation. Coatalen was not only a brilliant engineer and an ardent experimentalist, but he was also a keen publicist, and he quickly realised that to the technical lessons to be gained by racing cars were to be added appreciable advantages in the way of advertisement. 'Nautilus" narrow single-seater body was built up of wooden slats mounted on hoops rather in the manner of a barrel, the nose and tail being formed by cones of polished brass. Only the driver's head protruded through the small cockpit opening. In order to reduce the wind-resistance still further, the front axle carried a streamline fairing and discs covered the wheel spokes. An undershield completely enclosed the underside of the car, and the exhaust pipe was apparently led along inside the car to the opening in the tail cone, instead of protruding from the body.*

"A *small radiator was mounted low down in front of the engine and it was supplemented by another mounted transversely behind the driver's seat. A small hole (about 4in in diameter) in the nose admitted air to the forward*

radiator, but no provision appears to have been made to provide any airflow to the rear one. The cooling system seems to have been the Achilles' heel of the car, for the rear half of the body had to be removed when 'Nautilus' raced at Brooklands. Even *this expedient appears to have been insufficient as the car boiled badly. In its first race it was baulked by a collision between two other competitors when it had a good chance of success after covering a lap at 77.6mph. At the 1910 Whitsun meeting at Brooklands,* The Autocar *reported that 'the Sunbeam got away (in the 21hp handicap, 8.5 miles) with a fine burst of speed and looked like winning at one period, but all at once it slowed up and was passed by the other three cars owing to lack of water in the radiator causing the engine to overheat."Nautilus was at first run with thermo-syphon cooling, but even the addition of a water pump failed to overcome the overheating trouble.*

"The engine had four cylinders of 92 by 160mm (4,244cc). Sixteen overhead valves were mounted vertically in the cylinder head and were operated, through pushrods and rather lengthy rockers, from two camshafts, one on each side of the crankcase. The weight of
the operating gear necessitated the use of very strong valve springs and the rockers caused a good deal of side-thrust on the valve stems. These two factors, according to Coatalen (The Motor, *May 19, 1914) were the cause of the cars unreliability, but it seems likely that the cooling arrangements must also bear some part of the blame. A forward-facing air scoop on the air intake of the carburettor provided a slight forced-induction effect and this, no doubt, was the cause of statements that had been made that the engine was supercharged. Incidentally, 'Nautilus' appears to have been the only chain-driven Sunbeam to have raced at Brooklands."*

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For some reason record-breaking hung fire in 1910 until the end of the season. Then, on October 6, Coatalen brought out one of his 10/16 Sunbeams and established a flying-start half-mile record in the 16hp class at 71.96mph. The day after Coatalen's record had been made Hancock arrived with the second of the famous streamlined Vauxhalls, which gave 60bhp at 2,500rpm, and succeeded in putting the 2lhp class fs half-mile to just over 97mph and the ss 10-lap record to better than 85mph. Not content, Hancock, in the same car, went out again later in October and improved on both figures, being nearly lmph faster for the fs record and showing an improvement of almost 5mph over the 10 laps. Desirous of being the first concern to achieve the magic l00mph with a car of 2lhp rating, a conference was subsequently held at which it was decided to run the car without oil in its gearbox and back axle. This daring expedient for minimizing drag was justified, for on October 26 the flying half-mile was covered at 100.083mph.

Finally, in November, Gerald Herbert brought out a 4-cylinder Singer and wrested from Coatalen the 16hp-class half-mile record, afterwards establishing a 10-lap figure in this category This must have been a bad blow to the Wolverhampton concern, for the Singer was nearly l0mph faster than their car and, moreover, it had averaged better than 77mph for the 10 laps.

1911

Mid-week meetings and private match-races

During the 1911 season the BARC held eight meetings and it is, perhaps, a reflection on the leisure people enjoyed in those days that one of these was held on a Wednesday and another on a Thursday The races were mostly Short Handicap events with the cars classified on estimated speed, a type of race which was the special preserve of Brooklands. Criticized these races have often been, but it really is difficult to see what else the organizers could do when such varied fields turned out at their meetings. At all events, the system worked well enough right up to the Second World War and BARC events had an importance of their own, ranking less than the classic long-distance races but being considered of more importance than the majority of those sprint meetings which clubs contrived to run, on public and private roads, on seaside promenades and on the sands, almost from the inception of motor racing.

It is amusing that even in 1911 Veterans were catered for. Two Veterans' Handicaps were held for cars built in 1908 or earlier. Then, as now, the old cars acquitted themselves well. Douglas Spies' 59.lhp Mercedes pulled out a lap at 83.99mph and Lord Vernon, on a Gordon Watney 76hp Mercedes, a lap at 83.42mph in the first race, which was won by Tapner, driving a Berliet for N S Hind, who was to become quite a Berliet fancier. In spite of carrying No 13, R W A Brewer, the noted authority on carburation, was second in a Decauville, both cars exceeding 70mph. In the second race for Veterans Baker White's 52.lhp Isotta-Fraschini lapped at nearly 71 mph. In both races Malcolm Campbell appeared on the card, driving a 34hp Darracq The Flapper', but on neither occasion did he finish.

The Whitsun meeting was notable for glorious weather, close finishes and the extraordinary aviation accident to Hubert Latham, from which he was lucky enough to escape uninjured. Latham arrived late and it was not until about 5 o'clock that he went up in the same machine that previously had carried him to Oxford. He had not been long in the air before he passed very low over one of the sheds nearest to the track, when one wing dipped so low that it struck the roof of the shed, and a moment later the front of the machine plunged through the roof and the tail shot up. People in the paddock hardly realized what had happened, so intent were they on the racing. But a telephone message came over from the flying ground very soon and the words 'Latham unhurt' were exhibited on the number board, which was the first news of anything untoward for some people. Those who reached the shed first found Latham quite calm and collected. No, he did not fancy he was hurt, and he would go up later in the other machine, which in fact he did.

Cody's arrival lacked the spectacular effect it had at the previous meeting, for he came over before anyone had arrived and started flying for the Manville prize at a minute before 10am, witnessed only by the timekeeper, Major Lloyd, and a few stragglers, including some tenants of the sheds, who were somewhat 'dishabille'.

But there was an earlier arrival even than Cody. Mr Barber flew over from Hendon long before the mists had cleared from the Thames Valley. He came in his Valkyrie racer with a Gnome engine and, though feeling far from fit, he flew back again in the evening after giving some wonderful displays, at times with both hands off the controls.

Sprint events and races for Private Competitors continued to be well-supported, motorcycle races still attracted excellent entries, but races for cars of different rated horsepower were less popular and only four were run, all of which were to be for cars in the 16hp class. When only two entries came in for the first race and it was seen that Coatalen's Sunbeam (which had been railed to Weybridge) could not run, its crankshaft having broken in practice, the Australian Craig was asked to race against Gerald Herbert's famous Singer in a 27.3hp Benz - in spite of its greater size the German car only won by 10 lengths. In the second race a Calthorpe failed to start, again leaving only two runners, Coatalen's new Sunbeam 'Toodles II' doing over 85mph for its flying lap and beating a 60hp Napier that had been put in as makeweight. For some reason neither Sunbeam nor Singer ran in the Whitsun 16hp-class Handicap, which was contested between six slow cars, the scratch man, Ballantine, in an Austrian-Daimler, lapping at little over 60mph. Much the same happened in June, the best lap in this race being at 61.41mph by Chas Smith's Thames car. For a time race winners were given a 20sec handicap in their next race, an unpopular arrangement, so that normal handicapping based on estimated speeds was quickly resumed.

The Brooklands crowd always loved speed for its own sake and naturally the l00mph Handicaps attracted much attention. Speeds had not risen appreciably, however, Hornsted (27.3hp Benz) only having to pull out 94.86mph on his initial lap to win the third of these races from the much smaller Singer and Craig's Benz. Hornsted again made fastest lap in the fourth race, at 95.23mph, and in the fifth of these races Smith's Sixty Thames went round quicker than the Benz, doing a lap at 94.15mph.

However, in the l00mph Short Handicap at the August meeting M Laurent was on scratch in the GP Mercedes entered by Gordon Watney (which had now acquired a radiator cowl and streamlined tail) and he did a flying lap at 101.43mph. In the equivalent Long Handicap this car was a non-starter so 'Cupid' Hornsted again had the honour of going fastest, the Benz lapping at 94.68mph. Coatalen brought out a 30hp Sunbeam for the 2nd l00mph Long Handicap at the Autumn meeting and won from Percy Lambert in the famous 20hp Austin 'Pearley III' and Hale's 48.6hp Berliet, the winner's best lap being at 87.22mph. The Berliet then got home first in the 2nd l00mph Short Handicap, lapping at 75.1mph, Alan Mander's 59.lhp Mercedes lapping at almost l00mph from scratch in an effort to close the gap; Lambert was third. A one-make race was contested during 1911 when four 15.9hp SCAR cars, driven by E Joicey, Clive Joicey, Whitlark and Martin, contested a private sweepstake. Gordon Watney also challenged the Maharajah of Tikari to a 5.75-mile duel for £100. Lord Vernon drove the challenger's Mercedes, the 1908 GP car, and was appreciably faster than Eric Loder in the Maharajah's 60hp Renault.

At the October meeting the BARC decided to put on a longer race than they usually ran and announced a 50-mile scratch event for cars up to 15.9hp RAC rating, these to have 'engine and chassis of a design made during 1911 as standard for touring cars by the manufacturer'. Nine entries came in, of Sunbeam, Iris, Peugeot, Vivinus, Crossley, SCAR, Schneider and Calthorpe. The Pond start was moved slightly so that after completing 17 laps and entering the Finishing Straight, the distance run should be exactly 50 miles. A lap-scoring board was erected at the foot of the Members' Hill and all was set for what may be termed Brooklands' first sports car race, for certain alterations from standard were permitted in the Sheet Announcement for the event. The Iris, Crossley and Calthorpe were non-starters, leaving a field of six, out of which Coatalen won from Bayliss, both on Sunbeams of 80 x 149mm, with the Schneider third. The fastest laps of these three were 69.95, 68.41 and 56.92mph, respectively. The slowest car in the race was the Vivinus, which couldn't better 54mph.

This was not the only long-distance event that year, for the RAC held a 277-mile race for 4-cylinder Stock Cars of up to 15.9hp, any form of bodywork being permitted. This race was well supported by manufacturers and 24 started. Bianchi's Crossley went very well until its magneto fell off and in the end Cathie's Star won at an average speed of 56.25mph from Tysoe's Singer and Lisle's Star, but later the Star entries were disqualified as being non-standard.

On the whole it was a most successful season. The first meeting had been held under curious weather conditions, sunny periods alternating with blizzards, so that only one aeroplane came out, soon to withdraw, and the start of the 75mph Handicap was delayed until snow had ceased to fall. In the new tea room for the ladies a blazing log fire was a great attraction! At Easter, however, things were very different and the attendance was estimated at well over 10,000. Unfortunately a bad accident occurred to Wilkinson in the l00mph race when he was driving Craig's Benz, which dived over the Members' Banking between the bridge and the tunnel.

During the year a party from the Institution of Automobile Engineers visited the track and many amongst them were taken round in a car by Norman Neill. An amusing innovation during the season was the holding of a series of private races, organized on non-race Saturday afternoons by keen racing folk. Major Lloyd gave this his blessing, but a dense mist upset the first assembly, only Cummings and Whitlark, with SCARs, coming down. However, they contested a series of match-races, started by Rudolph Selz, and Cummings lapped at over 64mph, the beat of his engine, heard through the fog, being as rhythmical as that of a Gnome rotary engine when firing well.

The motorcycles at BARC meetings continued to get quicker and quicker as time went on and in spite of opposition from the Indians, C R Collier's 580cc Matchless set the best lap at no less than81.94mph.

The Test Hill was naturally a counter-attraction to the track, and it had been necessary to put a notice at the foot warning those with metal-studded tyres on their cars not to try an ascent, many people with cars so shod having knocked lumps off the banks while slithering to the foot out of control after an unsuccessful attempt.

Yet another innovation was the construction of four hard tennis courts on the ground behind the Paddock which, in later years, was to become the site of the motorcycle sheds and R R Jackson's tuning establishment. They were surfaced with fine gravel by the British Hard Court Company, the Brooklands Lawn Tennis Club was formed, and so popular was this move that six more courts were built beside the tunnel road in 1913.

Needless to say, flying continued to be another immense attraction at Brooklands. Apart from the aggregate flight contests, which Howard Pixton headed with his 60hp ENV-motored Bristol biplane, the great Daily Mail Circuit of Britain £10,000 contest started from Brooklands on July 22. The first stage of the race was merely the 20 miles from Brooklands to
Hendon. Cars were allowed to park all along the By fleet Banking as, years afterwards, you parked on the Home Banking during JCC high-speed trials, and they stretched in an unbroken line for nearly two miles.

Gustav Hamel had appeared at Weybridge and he won the Brooklands-Brighton race as well as the Brooklands-Hendon-Brooklands event, in which his Blériot took 58min 38sec for the double journey. During 1911 the schools at Brooklands trained 44 pilots between them, but the Avro school had a poor reputation, their Earman being quite a joke on the aerodrome because of its condition. Keith Prowse & Co had acquired all booking rights for Brooklands' flights.

A contemporary writer admitted that although so many famous aviators were to be seen at Brooklands, car racing was the greater attraction. For instance, a most popular combination was the great 'Cupid' Hornsted on H A Arkwright's 27.3hp Benz. This car had apparently been sent over from Germany during 1910 and delivered to the Brompton Motor Co showrooms on a horse-drawn dray. Herr Heim came over to drive it but had no success, the big-ends running after about two miles and the plugs continually oiling-up. Hornsted, who was then the English Benz racing representative, and who had driven at the track that year, achieving a fair measure of success considering his Benz had been built for hill-climbs and boiled after about three-quarters of a lap, asked permission to drive the 27.3hp car during 1911. When this was granted he converted the 105 x 165mm, 5,715cc, 16-valve engine to force-feed lubrication. The makers sent over steel pistons to replace the cast-iron ones and, although these were not a success, fitting them disclosed that with a compression plate in place the engine, which had two sparking plugs in each head (fed by two magnetos), as well as the four valves, went better than before. It was run on pure castor oil, and Prof Low's patent sparking plugs suited it very well. The suspension was distinctly on the hard side but, using rubber dampers for the springs, Hornsted endured it. A tapered steel body and disc wheels were fitted. He had several exciting moments, as when a car above him on the banking slid into the Benz, taking away the offside rear hubcap, whereupon he couldn't quite avoid touching a car on the other side, which removed his *nearside* hubcap. On another occasion the radiator cap flew off during a 'declaration' handicap and hit 'Cupid' between the eyes. He lost all sense of direction for a while, but the car held its course round the By fleet Banking and finished second. Arising out of early remarks about the accuracy of the bankings, it is interesting that it was in this Benz that Col Holden was driven for an entire lap, at nearly 86mph, with Hornsted's hands off the steering wheel. The Benz was eventually developed into a really fast car, of the l00mph order. The *2.5*in diameter exhaust valves opened 30deg before bdc and closed 12deg after tdc.

Another remarkable car was that developed by Louis Coatalen for Sunbeam's and with which he was far more successful than with the freakish wind-defeating job that he had built for racing at Brooklands in 1910, albeit it seems that someone had taken a leaf out of Coatalen's book, as it were, for a Brenna appeared in 1911 with its radiator transferred to its tail and fed by air scoops, its nose being a smooth sweep carrying a cheerful full-moon face! To return to Coatalen's new car, again I cannot do better than quote A S Heal:

"In *1911, profiting by the lessons learnt with 'Nautilus', Coatalen produced another overhead-valve engine for a very successful racing car known as 'Toodles II'. To overcome the troubles experienced with heavy pushrods and rocker gear, the new engine had a chain-driven overhead camshaft in order to reduce the reciprocating masses to a minimum. The bore of the new engine was reduced to 80mm, while the stroke remained 160mm, giving a capacity of 3,215cc. The cylinders were cast in pairs and were set 16mm desaxe. The cooling* of *the* valve *seats and the lightening of the operating gear had evidently been given special study. There were two valves per cylinder, inclined at an included angle of 100 degrees. (They were 2in* in *diameter with a lift of half-an-inch, and timing was fairly normal.)*

"Each valve was mounted in a detachable water-jacket cage. Each valve cage had its own water off-take branch, and holes in the joint face registered with similar holes in the cylinder water-jacket. The whole of the water flow had therefore to pass through the jackets of the valve cages; 50mm diameter tulip valves with hollow stems were used for lightness. To avoid side thrust on the valve stems, the valve springs were enclosed in thimbles which moved in the guides, the forked ends of the rockers bearing on the thimbles. A second return spring was used for each rocker.

"The camshaft, which was carried in plain bearings, was driven from its front end by a compound roller chain enclosed in an aluminium casing. Trouble was experienced with the chain thrashing and, to mitigate it, a flywheel was fitted to the front end of the camshaft to damp out variations in torque. As was common practice at the time, the inlet valve opened at top dead-centre, but the exhaust valve did not close until 12 degrees after tdc. The oil pump, water pump and magneto were driven off the crankshaft sprocket on the nearside of the engine.

"Light steel pistons, turned from solid forgings, had most of their skirts cut away very much like the later Ricardo 'slipper' pistons. The piston crown was steeply conical and, with the hemispherical combustion chamber, gave a compression ratio of 5 to 1. With their two compression rings and gudgeon pins complete, these steel pistons only weighed 1 lb 7oz. Long, narrow H-section connecting-rods were carefully lightened by a row of 14 *holes of graduated size, so that little of the centre web remained. Throughout the whole design great care was obviously taken to reduce the weight of all the reciprocating parts, and one is reminded of Coatalen's famous saying: An ounce off the piston is worth a pound off the crankshaft and a hundredweight off the chassis'. At 2,600rpm the engine gave 63bhp, which was 26 per cent more than the side-valve racing engines developed from the 80 x 120mm, 12/16hp model*

"Not only was unnecessary reciprocating weight eschewed, but the frontal area of the car as a whole was reduced to a minimum. The narrow, sharply-pointed radiator was built up of oval-section tubes with numerous small conical projections. The air, after passing through the cooling element, was discharged through vents on either side of the bonnet. A bulkhead behind the radiator sealed off the engine compartment. The steering gear was mounted centrally, and a slender single-seater body with a longish, pointed tail was fitted. A smooth undershield ran the whole length of the car. The chassis was a standard 1910 model with three-quarter-elliptic rear springs. Rudge-Whitworth wire wheels were used and Triou hydraulic shock-absorbers damped the axle movement.

"During 1911 'Toodles II' won 22 prizes, including a 5-mile match race with C A Birds 60hp Napier at 83mph and two short handicap races at the May meeting. Coatalen also broke the 16hp-class short record (half-mile, flying start) at 86.16mph. The seasons successes brought the Sunbeam Company and their chief engineer a great deal of very welcome reclame and, in order to follow up the advantage thus gained, another engine was built in early 1912 with a gear-driven overhead camshaft in place of the chain-drive used on 'Toodles II'. No record appears to exist of this engine ever having been raced, and this may be due to the fact that the energies of the firm were devoted in 1912 to the preparation of a team of side-valve 12/16hp cars for the Coupe de l'Auto."

Wind-cutting bodies were now the rule rather than the exception, and further examples of radiators isolated from the bonnet had appeared, while H Youngs 60hp Itala obtained a mild supercharge from a forward-facing air-intake, which most people would ascribe to Parry Thomas 13 years later. Robert Brewer, ever the experimentalist, ran a 14.5hp 2-stroke Multitwo, while the Hon Lyndhurst Bruce thus early felt the effect of the British taxation system and linered down his 49.9hp de Dietrich to 40hp as an answer to the Chancellor of the Exchequer. It seems possible that this was not a success as the car never appeared as a 'Forty', although two larger examples of the same make were in the Maharajah of Tikari's racing stable. Eustace Gray, the popular Press Secretary of the BARC, sportingly raced his 17hp Hupmobile. One of the arrivals that year was a 7.9hp twin-cylinder Lion-Peugeot, entered by M Boissy, genial manager of Peugeot's London branch. This astonishing car was designed for the 1910 limited-bore Coupe de *l'Auto* race and its engine measured 80 x 280mm, 2,816cc, necessitating a bonnet so high that the driver could only see ahead by peering round it, for it was literally higher than his head. The exhaust pipe actually passed above him, supported on each side of his seat by stays. Probably this was nicer for driving round Brooklands than when competing in a road-race! At all events, Georges Boillot came from France to handle this astonishing car, which had a vertical inlet and two horizontal exhaust valves per cylinder, two magnetos and carburettors, a 3-speed gearbox and a final drive by side chains. He won the 76mph Handicap and the sprint race, covering one lap at 80.33mph; a very fine performance indeed for an 8hp car in 1911. This was far and away faster than subsequent speeds by an 8.9hp Lion-Peugeot driven by A Boillot.

A car which increased its speed noticeably during the season was Percy Lambert's 19.6hp Austin 'Pearley III'. At first its fastest lap was at a shade over 77mph, but at the next meeting it improved to better than 82, and after slowing somewhat in the July meeting, it reached a lap speed of 83, then 85mph, and before the season closed it could clock over 90mph. This car had a T-head, 89 x 115mm engine with 51mm valves having half-inch lift, double-distributor Bosch magneto, steel pistons weighing 111b each and pressure-feed lubrication at 70psi. In its early form this engine gave 62bhp at 2,000rpm. It used an 8-shape induction manifold to give one-way gas flow, later adapted to take two Solex carburettors. It used to run with Dunlop tyres on its front wheels and Continental tyres on the rears, and was last heard of in Manchester in 1930. During 1911 it netted six thirds and one second place.

Thus it will be seen that already Brooklands was attracting cars built specially for the requirements of racing there and that regular habitues could follow the fortunes of a number of highly individual cars meeting by meeting. This was to remain a fascinating aspect of future BARC Short Handicap races, particularly during the early 1920s, and is rather well emphasized by a suggestion which appeared in *The Autocar* during 1911 to the effect that someone should publish a book of memoirs on the various Mercedes cars which ran at the track. It was argued that already many of them were spoken of in awed whispers by the younger amateurs. *"Why, this was Jack Huttons car, my boy!"* or *"Resta won such and such a race on this very same car in 1907."* In Long Acre, Gordon Watney, later to take extensive premises at South Lodge Factory, near Brooklands, was what stock-jobbers would call 'the market' in Mercedes cars and from his premises emanated many of the entries. During 1911 he entered a 48.6hp and a 35.7hp, the former sold later, I believe, to Thomas Mackie, whereupon Watney raced the 76hp and 59.6hp cars driven by Lord Vernon.

The 48.6hp car was truly remarkable, being none other than the near-standard Sixty Mercedes allegedly with which Jenatzy had won the 1903 Gordon Bennett race in Ireland after the special team cars had been destroyed in a fire. Watney had found the car in a dilapidated condition in a West End garage and taken it in hand. He raked the steering lower, changed the system of engine control by variable-lift inlet valves to normal throttle control via a Zenith carburettor, and contrived to fit a long pointed tail behind the bulging scuttle, discs on the wheels and a radiator cowl. The car, which had a 140 x 150mm, 9,237cc engine, lapped eventually at over 87mph, never failing to turn out when entered for a race and increasing its speed over each preceding performance. Watney, incidentally, specialized in converting 1908-11 45hp chain-drive Mercedes cars into sporting 4-seaters, guaranteed to lap Brooklands at 70mph, for high-spirited clients. His house in Weybridge looked much the same after the Second World War as it had over 45 years earlier.

Lacon entered a 140mm-bore, 72.9hp, 6-cylinder Mercedes which was of no known catalogue model but was probably the experimental car built in 1905. The 59.6hp car of Watney was one of the 1908 French GP cars which ran regularly at Brooklands from 1908 onwards driven in turn by Resta, Tata, Laurent and Lord Vernon. Over and above these impressive cars -have *you* ever been round Brooklands at over l00mph in a car with but two bucket-seats for bodywork? - there was the old 20hp car of Farquharson and Lamberts Thirty. These Mercedes certainly changed hands with frequency and complexity.

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As early as January 28, M Laurent took out the 1908 59.6hp Mercedes aforementioned, I believe with yet another new engine, and broke the 60hp-class flying kilometre record at 105.29mph. Two days later he tried again and raised the record to 107.86mph, also taking the flying half-mile class record at 109.05mph. The bad weather delayed things for a while, then
Georges Boillot brought out the wonderful little Coupe de I'Auto Lion-Peugeot and ran for an hour, covering just over 75 miles and also taking the flying half-mile and 50-mile records at over 74 and over 75mph, respectively, in the Voiturette class. Just before this Coatalen had replied for Sunbeam with 'Toodles II', lifting the 16hp-class half-mile from the Singer at a rousing 86.16mph. August 11 saw Hornsted out with the improved 27.3hp Benz, with which he took the half-mile, kilometre and mile fs 40hp-class records at 103.76, 102.99 and 96.26mph, respectively, confirming the general opinion that Benz could take more records from Napier whenever they felt disposed to do so.

Next, Coatalen, aided by Richards, went for the first long-distance records to be broken for some time, using a 30hp, 6.3-litre 6-cylinder Sunbeam with streamlined body and three-quarter-elliptic rear suspension. Their pit-work was splendidly organized and the drivers changed places every two hours, the tyres being changed at the end of every four hours. By using a 'quick-lift' jack consisting of a plank of wood pivoted on a log, very speedy wheel-changes were accomplished; on one occasion the tyre-change, refuel and adding water, oil and grease was done in 87sec. They were successful in capturing World honours for distances from 400 to 900 miles and for durations from 4 to 12 hours, averaging very consistent speeds around 75mph, actually 75.66 for the entire 12 hours.

On October 7 Richards took the 10-lap Brooklands 'Long' record in the 40hp class with the same car at nearly 84.5mph and repeated this showing in the 16hp class with the smaller car at over 79.25mph. Percy Lambert, with his Austin 'Pearley III', then tried for the newly instituted flying mile and kilometre records in the 21hp class. Some days beforehand acceleration tests had been carried out and it was found that the Austin would reach 30mph in 51.1 yards and 45mph in 129.9 yards, equal to a mean acceleration of 7.62ft per sec per sec over 150 yards. On the first attempt on the records an oil pipe burst and
on the second the ignition control failed, but after this all went well and under good conditions Lambert motored over the kilometre at 93.79mph and over the mile at 91.09mph. His lower speed over the mile was probably partly the result of a shock-absorber breaking away when the car swerved so suddenly that he was nearly pitched out. The Austin records survived for only a fortnight when R S Witchell's slightly bigger Straker-Squire TDQ' put them up to 96.67 and 95.54mph, respectively. This beautifully streamlined narrow single-seater had the new monobloc five-bearing engine under a bonnet held down by wing-nuts, and the instruments were mounted *outside* the cockpit.

Singers had obviously been working quietly since 1910, and at the end of October and the beginning of November they made two separate attempts. Tysoe took first the flying half-mile and 'Long' records, at 90.04 and 81mph, respectively, and then the flying kilometre and mile records at 88.24 and 86.37mph, respectively, in the 16hp class.

One more successful record attack was put on in 1911 by Vauxhall Motors Ltd. Hancock arrived with a new Vauxhall, which had an 80 x 200mm engine, the cylinder head of which protruded from the top of the bonnet. Streamlining very much like that of the 20hp record-breaker was employed, with disc wheels, and the front axle was faired. A long pipe, ending well above the level of the driver's head, carried any steam formed in the enclosed radiator well clear of the cockpit. This car put it soundly across the Singer and Sunbeam, taking the 16hp-class half-mile, kilometre, mile and 'Long' records at 97.67, 94.91, 96.67 and 91.46mph, respectively. Naturally, as they had been the first

manufacturers to better l00mph with a 2lhp car, a record they still held, Vauxhalls were very anxious to realize the same honour with a 16hp car. Alas, in attempting to cover the half-mile at this speed the new car broke a conrod and a piston was forcibly ejected on to the ground.

Some excitement was occasioned by an announcement that the Fiat Company had built a car with which they hoped to do 140mph. It had a vast 4-cylinder engine of 190 x 250mm, rated at 89.6hp, as against the 84.84hp of Hemery's Benz which had clocked 127mph in 1909. This great chain-drive car apparently came out after the Whit-Monday racing and went round at considerable speed, the driver having to pull it down off the Members' Banking in order to get through the gap in a line of hurdles which the BARC placed across the beginning of the Railway Straight to deter people from fast lappery while touring cars were on the course after a meeting. Nothing more seems to have been done with the car at Brooklands, but I believe this was the Fiat with which Duray achieved 132.37mph over a one-way kilometre at Ostend at the end of 1913. The famous 1908 lap record-holding Fiat 'Mephistopheles', which had languished beneath a dust sheet, the subject of a law suit for some years, appeared again. With it Miss Esme Stewart created further excitement by attempting to better Hemery's half-mile 127mph record, but she only succeeded in just exceeding 90mph. Rolls-Royce Ltd then completed a demonstration run far more successfully with a Silver Ghost chassis with a square cowl over its radiator and a simple body with open-ended tapering tail, from which the steering column and outside levers rudely protruded, and disc wheels. This car covered the flying half-mile at 101.8mph.

Naturally, the methods of driving adopted by well-known competitors were a frequent topic of discussion. It was remarked that Hornsted liked to pull off the Byfleet, or Cobham Banking before he reached the river bridge, then make a really sharp turn to go in a bee-line for a point opposite the Pond, at which place he would be somewhere about the middle of the track. Coatalen described his experiences of Brooklands for *The Autocar,* with particular emphasis on an accident that had involved a Straker-Squire, as follows:

"First oj all, the critics do not realize that in a fast race the leading driver is travelling in a wind from ninety to a hundred miles per hour, at which speed he cannot possibly hear a car which is overtaking him, and when ninety miles is obtained (which is the speed at which 1 was travelling at the time of the Straker-Squire accident) no sound can be heard except the rush of the wind in ones ears. There is also another thing, which the critics do not know, and this is that the track is not true at every spot. That is to say, certain places on the bankings have sunk, so when travelling at a high speed and one comes to a sunken place, the back wheels of the car shoot up the banking; farther on, other parts of the banking which have raised themselves are encountered, and these shoot the car down the banking, so that at practically no time does the car pursue a course parallel with the top of the banking. The whole of this is accompanied by a great deal of jumping of the back wheels.

"I firmly believe that with two cars travelling at practically the same speed, say one travelling two or three miles faster than the other, it would be impossible for the second car to overtake the leading one on the banking by passing outside, as the passing car would want the same piece of ground that the leading car was travelling on. To pass the first car on the outside, the driver of the second would have to move some 9ft out of his proper course, this 9ft being made up as follows: track of leading car, 4ft 6in; overhang of the hub, 6in; space between the two cars when they come side by side cannot be less than 4ft; overhang of the hub of the passing car, 6in; total width, 9ft 6in.

"As should be well known, the angle of the banking increases very suddenly indeed near the top. That is to say, between the sixty-mile line and the eighty-mile line there will be a very big margin; but between the eighty *and the hundred-mile line this margin would be so small that the overtaking car would be on the part of the banking which would be too steep for its speed, and would certainly occasion a total slipping down of the car towards the bottom of the bank. I think this has happened before. If my memory serves me right, some two or three years ago a Napier car slipped down the banking on to another car it was overtaking, causing the hubs actually to touch.*

"In the Finishing straight the cars appear to run like trains, as that part of the track has been very little used; but on the banking it is a different thing. On one car I had last year I can assure you I used to dread arriving on the Byfleet banking, and passing under the Members' bridge. After three laps I was thoroughly exhausted, having to hang on to the steering for dear life, and sticking my heels on the special heel board to such an extent that one day I burst the back of the seat. I used to be lifted off the seat some 12 inches, the steering wheel

prevented me going any higher, and during the whole of this unpleasant shaking I had, of course, to be on the look out, ready to correct at once a skid of the car on the banking, as this happens pretty often, principally at the entrance of the By fleet banking.

"There is another nasty experience one encounters on the track, ie, *when the wind blows in the Finishing straight. When travelling high up on the track on the Home banking, one is perfectly sheltered from the wind until coming out from under the Members' bridge. At that moment, immediately the nose of the car gets out of the cutting of the Members' hill, the full force of the wind is felt, which thoroughly upsets the steering. This is more noticeable with disc wheels.*

"At very high speeds a car has very little adherence to the track and is, I think, as of ten floating in the air as resting on the track. One day, in practice for the Faster meeting, I was very nearly blown over the track; 1 think it was the biggest fright I ever had in my life. In fact, when the wind blows in the Finishing straight, 1 now have a practice of going higher than is necessary before arriving at the Members' bridge, commencing to come down before passing the Members' bridge, so as to be ready for this nasty gust of wind at that point catching the car."

1912

Brooklands introduces a series of one-make races

The 1912 season saw straightforward races run off at the regular meetings of the BARC. The 70mph and l00mph Short and Long Handicaps were held frequently, backed by Private Competitors', sprint and motorcycle races and a few specialized events. The longest race held by the BARC was the 4th O'Gorman Trophy, over 30 miles. Kidner, the trophy holder, entered Percy Lambert in his Vauxhall, which was again outstanding, setting class E and 21hp-class records for the ss 10 laps at 92.13mph during the race, while Witchell's Straker-Squire took the equivalent record in class D. Hancock's Vauxhall was nearly as fast as Kidner's until a radiator leak developed after five laps. The Kidner Vauxhall was streamlined like the famous 1909 record car, its frontal area being a mere 6.75sq ft, and the modified sv, 20hp, 89.7 x 118mm engine gave about 60bhp. An exciting incident happened in the 8th l00mph Long Handicap, Hind (Berliet) dead-heating for second place with Brown in Gordon Watneys 1903 Mercedes, although their fastest laps were 75.8 and 87.22mph, respectively. The 1903 Mercedes also won the 6th l00mph Long Handicap.

A star performer very consistently entered in the l00mph Handicaps was 'Cupid' Hornsted's 'Big Black' Benz, as the Brooklands public liked to call it. In actual fact the car was International white when it arrived in London about the middle of January, but Hornsted had since repainted it very dark blue. Hornsted was given this car by the makers in view of his excellent performance during 1911 with the smaller Benz. The new car was rated at 59.6hp, having two pairs of 155 x 200mm cylinders, giving a capacity of 15,095cc. Each head contained one inlet and one exhaust valve operated by pushrods on the offside, rockers, valve springs and gear being unenclosed. Two plugs were fitted horizontally into the cylinder walls on the same side as the pushrods and were fired by two magnetos. Cooling was by fan and lubrication by splash. The differential ratio was 26:29 and that of the external driving chains 35:44, which Hornsted increased to 38:44. He also took out the third leaf of each road spring, using it as a damper above the main leaf, which improved the suspension enormously. The original tulip inlet valves were of Benz triple-seat type.

At the opening meetings at Easter the Benz was on scratch in the 3rd l00mph Short Handicap and lapped at just over 77.5mph. However, still on scratch in the equivalent Long Handicap, Hornsted pulled out a lap at 103.33mph and won easily from the Mercedes cars of Geach and Samson. The inlet valves of the Benz distorted badly round their outer seats, but the mechanics changed them between this race and the Easter Sprint Handicap (incidentally, you could get a hand down the ports to remove a valve!), and Hornsted won the latter event from Brown's Gordon Watney Mercedes and Lambert's Austin 'Pearley III'. After this conventional valves were used and, pre-ignition apart, the 150hp Benz was a very successful car. Its steering was impeccable, as expected with this make. On one notable occasion when 'Cupid' was driving he came in with a large tree branch protruding from the bonnet!

In the 5th l00mph Short Handicap at the Whitsun meeting, Hornsted had a grand duel with Mander's famous 1908 Mercedes, now with one of the 13.5-litre engines installed, which had started 10 seconds earlier. Mander lapped at 98.04mph, but Hornsted passed him, lapping at 101.85mph, and went on to win. At this meeting the Benz was handicapped at 104.85mph, so in its next race 'Cupid' held it down to 91 or so and then retired. However, he was trying again in the Sprint Handicap and finished second to Mander's Mercedes, which had had a 4-seconds start. Incidentally, Mander disliked his car's tendency to skid and after 1912 withdrew it from racing. However, it was run on the road in 1922 and, I believe, much later became a feature of American veteran car meetings. With his handicap unchanged at the Summer meeting, Hornsted did a rousing two laps at 103.54mph, but was unplaced, though later he came home second to a Metallurgique in the sprint event. At the July meeting he put in three laps at between 102 and 104mph, but thereafter Eric Horniman handled the car and was appreciably slower. The 150hp Benz was quite a tractable car and Hornsted's mechanic, England, had taken it to London after Horniman had acquired it so that he could leave for his honeymoon in it from the Hyde Park Hotel.

Lord Exmouth was a hard trier during the season with one of the first 15.9hp 'Alfonso XIII' Hispano-Suizas to be seen at the track, and Hind won the 5th 70mph Long Handicap in one of the 4.3-litre Berliet cars which were to persist at Brooklands for many years. Pollak's SCAR 'Mud' won the Whitsun Private Competitors' Handicap - present-day exponents of nicknames for racing cars please note that in the Brooklands race cards the *make* always preceded such nicknames! Malcolm Campbell was reasonably successful with his Darracqs after he had tired of his Lion-Peugeot. He also rode a Triumph motorcycle.

The Darracqs were one of the 5-litre 1908 'Four-Inch' TT cars and a 1906 59.6hp Vanderbilt Cup car. The former was the second of these cars which Malcolm Campbell had owned, this one having disc wheels, radiator cowl and streamlined body. The other he had disposed of to G R N Minchin, who continued to race it and on one occasion lost one of the too-easily detachable wheels. These cars had pushrod overhead valves, the inlets sunk into the water jackets as on the V8 Darracq engine. The bigger car, 155 x 140mm, 10,567cc, pulled a 1.25:1 top gear, yet would run down to 18mph on that ratio. It had three plugs per cylinder, fired by two magnetos and a coil set. The 3-speed gearbox drove via a square-section propshaft that was prone to twist into corkscrew shapes, and l00mph was attained at about l,200rpm. This Darracq also passed into the hands of Minchin, who fitted Rudge wheels and a 4-speed gearbox, intending to let it continue its racing career. But the war came before this was possible, so the new owner turned the car into a sports 4-seater, and later it was burnt out in Ireland, the engine then being put into a boat.

Innovations for 1912 included one-make races for Model T Ford, Bedford, single-cylinder Zebra cars with Goodchild standard torpedo bodies, and Mercedes cars. There were actually

two Ford races, one of which was watched by Henry Ford himself, while the Mercedes race brought 11 entries, consisting of a 12hp that lapped at just over 50mph, a '20', a '24', four '48.6s', a '33.4', a '41.9', a '35.7' and the famous 1908 GP car. In the end Tate's '41.9' won from Cumming's '48.6' and Watney's '48.6', the fastest lap, at 86.23mph, being made by Tate.

Another novelty was a two-mile 'parade and sprint race' by Rigal, Resta and Medinger in the victorious 3-litre Coupe de *l'Auto* Sunbeam cars - Resta's intimate knowledge of Brooklands stood him in good stead in this event, and this great driver also reappeared during 1912 in a 9.5-litre Mercedes. At the next meeting a 3-litre Handicap attracted a big field, and Percy Lambert's Austin 'Pearley III' pulled out a lap at 81.51mph, against one of 81.11mph by Burgess' Calthorpe, a speed which proved too much for the latter car.

During the season N C Neill put up a cup for the greatest number of points gained in Private Competitors' races, the winner being Mr Horniman with Mr Whitehead the runner-up. The complicated contest for the 50-guineas Shell Points Prize presented by the British Petroleum Company started with the 9th l00mph Short Handicap; points were to be awarded in this race and in all l00mph Short Handicaps held during 1913. A pleasing announcement, amongst all this motor racing, was that Messrs Doust, Parton, Hardy, K Powell, Hendricks, R Powell, Kidson, Preddle, Wallis, Myers and Ritchie, refereed by Mr Scrivener, had accepted invitations to compete in an American tennis tournament on the Brooklands hard courts during the Easter meeting. For those who felt this preferable to the racing, a charge of 1s (5p) gained them admission from the Paddock.

Apart from BARC races, the RAC repeated its 100-lap, 277-mile Stock Car race, now limited to 4-cylinder cars not exceeding a 90mm bore, weighing over 2,000lb and with catalogue engine and chassis. But support was not generous, only eight cars starting. Haywood had the race in the bag with his Singer, being but 600 yards behind the leader after four hours' racing and speeding up in the last 50 miles to win at an average of 57.49mph by a mere two-fifths of a second, two lengths ahead of Usmar's Gladiator. The only other finisher was Engley's Turcat-Mery, and that didn't come home for another hour and a half!

The season was not without its thrills, for a Mercedes spun round in a complete circle in one race, while Farquharson's Sunbeam returned to the Paddock in flames after another. Most exciting of all, however, was the classic accident which befell Campbell's 59.6hp 1906 Darracq, both offside wheels of which collapsed after he had struck the concrete kerb as the car was coming very fast up the Finishing Straight. And it was in this race that Watney's Mercedes and Hind's Berliet had dead-heated for second place, just as earlier in the season Pullin's Cameron and Straight's stripped-chassis SCAR had gone over the line together in second position.

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Record attacks came early in 1912, and increased stimulus was lent by the institution of the new class records recognized by the RAC. These new classes were additional to the seven different hp classes already recognized at Brooklands. The nine newly-introduced classes were:

	Maximum capacity	*Minimum weight with driver*
Class A	l,639cc	1,4001b
Class B	2,048cc	1,5001b
Class C	2,458cc	1,6001b
Class D	2,868cc	1,8001b
Class E	3,851cc	2,0001b
Class F	4,998cc	2,2501b
Class G	7,784cc	2,5001b
Class H	13,929cc	2,7001b
Class J	Over 13,929cc	3,0001b

The distances were to be flying half-mile, kilometre and mile, and the ss 10-laps so far as Brooklands local records were concerned.

Appropriately, class A records were the first to be attempted, Henri Sambet establishing the three flying-start records at approximately 56mph with a 65 x 120mm Pilain. In April Burgess did the same thing in class B at 66mph with a 69.5 x 125mm Calthorpe. Then H Pelit, in a 2.7-litre Bedford, set the fs class D records at 71mph, and six days later Hubert Wood's 20hp Crossley set up the first recognized record for the Test Hill, ascending at 23.5mph. On June 18 the Pilain's record for the half-mile and kilometre were raised by a small margin, and
the class A 10-lap record set at 52.75mph by Turner-Smiths Stoewer. Tuck took Burgess' three fs class B records in July with his 69 x 130mm Humber, which had finished third in both 70mph Handicaps at the preceding BARC meeting. Geach, in the Singer 'Bunny', next took the Bedford's records up very considerably, although unkind observers remarked that his 86mph was 4mph below the speeds of 'Bunny' set up by Tysoe in the 16hp class in 1912 and considerably slower than the Vauxhall 16hp-class records, the engine size of the Luton and Coventry cars being 80 x 200 and 80 x 130mm, respectively, however.

Class C had been slow to interest, but in August Bianchi came down with one of Jarrott's 2.5-litre Crossleys and set up all four records at over 72mph. Soon afterwards Burgess replied effectively to Tuck, the Calthorpe beating all the Humber's records by some 4mph. The Stoewer then sought to place two of its class A fs records in a more unassailable position, pulling out 5mph or so greater pace over the half-mile and kilometre and setting the mile record, which it had not previously attempted, at 62.81mph.

Class E got going next, and most impressively, Lisle, meaning business, taking out an 80 x 150mm, 3-litre Star. He set the 10-lap record at 64.5mph and then went on and on, establishing 50, 100, 150, 200, 300, 400, 500, 600, 700 and 800-mile records as well as 1 to 12-hour records inclusive. The averages were remarkably consistent, over 67mph for 100 miles and held thereafter up to 400 miles, when a drop to just below 67 occurred from 500 miles onwards. The hour record was taken at 66.83mph, the 12-hour at 66.82mph.

There was a breather after that, then Resta brought out the 6-cylinder, 90 x 165mm, 30.1hp Sunbeam 'Toodles II' and took the World 50-mile record at 92.96mph. This was the old 12-hour record car, re-streamlined with a narrower radiator and body, etc. Encouraged, Crossman, Resta and designer Coatalen arrived with a 4-cylinder, 3-litre car and wiped up the Star's 10-lap and 50 to 400-mile (and its 1 to 5-hour) records, the 400-mile, 4-hour and 5-hour at 78.46, 79.78 and 78.36mph, respectively -

all these ranking not only as class E, but as World records. Four days afterwards Crossman and Resta came back with the same Sunbeam to lift their 10-lap and 50-mile records by a small amount and to go on slowly thereafter, slower than their existing records, but continuing for 13 hours so that the 6 to 12-hour and 500 to 1,000-mile figures, inclusive, were theirs, the 12 and 13-hour, at 75.92 and 75.99mph, being World records, as were the 900 and 1,000-mile.

Resta was out again in October with the wonderful Coupe de l'Auto-type 80 x 149mm Sunbeam, now 1091b lighter than before (it turned the scales at just over 19cwt), and went over the fs half-mile at 101.87mph, 16hp and class E records, the kilometre, mile and 10-lap also falling in both classes. He tried next with the 25/30hp car and set the World 100-mile and 1-hour records at 92.52 and 92.45mph, respectively

Reid's odd Arrol-Johnston then cleaned up class B, his l,810cc car taking all records from 10 laps to 6 hours, at 60.5 and 61.29mph. Hardly had these honours passed to the Scottish firm, however, than W O Bentley, then comparatively unknown, brought out his DFP and won from Reid the 10-lap record at 66.78mph. The year was now wearing on, but a lot more activity was to follow.

Hancock, in a new 90 x 118mm, 3,002cc Vauxhall, weighing approximately 20cwt, took the World 50-mile, class E and 21hp-class 10-laps, 21hp fs half-mile and kilometre, class E and 21hp-class fs mile and class E 50-mile records, the half-mile at 101.24mph.

Next, Witchell stole the Singer's class D fs records, using the Straker-Squire which had run so well in the O'Gorman Trophy race, bettering the old figures by some l0mph and going over the half-mile at 96.62mph, a fine feat on 2,843cc. On the same day, Hancock, in the latest Vauxhall, set a class E and 21hp-class fs kilometre record at 101.4mph. On November 7 the Stoewer returned to attack all the Brooklands class A records and, it being some l0mph faster than in June, Turner-Smith was entirely successful. On the same day Tuck got the three fs class C records with the Humber, this apparently being the car which held the class B honours in July, but now bored out or re-cylindered to 75mm bore.

November 15 saw much excitement, for Christiaens came out with one of the 6-cylinder, 110 x 160mm, 9,123cc Grand Prix Excelsiors to attack World and 60hp-class records, and there was a feeling that 100 miles might be crammed into an hour's running for the first time in history. Alas, after 50 miles trouble set in, but that distance was covered at 102.36mph. Christiaens then went for the shorter records, taking the class H fs half-mile at 108.3mph and the fs kilometre and mile and ss 10-lap records in classes H and 60hp, all at over l0lmph. The following day Percy Lambert took to the concrete in Lord Shrewsbury's slim single-seater Talbot of litres capacity, a car destined to make its name immortal early in the following year by covering over 103 miles in the hour. On this occasion Lambert contented himself with the fs half-mile, kilometre and mile classes F and 26hp records. He did 113.28, 112.81 and 111.73mph, respectively, which was indeed travelling -especially as the previous 26hp half-mile record stood at only 88mph.

Finally, before winter really set in, Victor Hemery arrived with another of the French Grand Prix cars, none other than the famous 4-cylinder, 15-litre Lorraine-Dietrich, which was to become such a Brooklands institution in postwar years. It had been vanquished by the Peugeot of less than half its size in the Grand Prix, so the House of Lorraine had apparently decided it must earn its keep at Weybridge. This it was easily able to do, although scorning any pretence at streamlining, for its huge engine was never working very hard. Hemery, indeed, kept going for six hours, capturing class J records from 10 laps to

500 miles and from 1 to 6 hours, those above 100 miles counting also as World honours. The 10-lap went at 101.25mph, the 50-mile at 101.61mph from a standing start, and the big car held over 95mph for 200 miles, its speed dropping thereafter, Hemery nevertheless averaging 86.36mph for six hours. Still the magic aim of 100 miles in the hour remained unrealized, Hemery doing but 97.59 miles in that period.

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So far as aviation was concerned, the 'flying village' on the Byfleet side was a hive of activity the whole year round, and a new road now ran to it from the Paddock, following the curve of the Byfleet Banking. The aviators organized impromptu races amongst themselves, usually to Chertsey and back, and also take-off competitions. The BARC held an aeroplane race in place of the former aggregate time of flight contests at each car meeting, the first from the flying ground to a point about five miles westward, so that the competing machines remained in view of those on the Hill throughout the race. Subsequent races were flown over two laps of a course which started under the lee of the banking to the right of the hangars, ran parallel with the Wey, then veered off slightly opposite the Paddock to turn at Coxes Lock Mills, a mile north, returning to the end of the Railway Straight, then taking in another circuit and finishing between the tower of the Paddock Clubhouse and the signal post of the L&SW Railway, a distance of 9 miles.

During 1912, 90 pilots were trained at Brooklands at the Bristol, Deperdussin, Sopwith, Vickers, Avro Hewlett and Blondeau and Ducrocq schools, and Harry Hawker, who had not taken his aviator's certificate until September 27, set a British duration record of 8hr 23min in a Sopwith-Wright machine with a 40/50hp ABC engine.

1913

First car and driver to cover 100 miles in an hour

Brooklands may be said to have become a national institution by the time the 1913 season opened. *The Autocar,* in its very first editorial of that year, stated that *"Brooklands remains one of the most valuable assets of the British motor world".* Repairs were completed before the end of January; moreover, the period which someone rather rudely referred to as the winter sleep of the London office of the BARC had given rise to the *Brooklands Year Book,* published annually thereafter, with a break after the war until 1924, and other useful publications relating to the track.

The season opened auspiciously with a record-breaking run by Percy Lambert which will live forever in motoring history. It ranked as the greatest feat accomplished at the track since Edges 24-hour run in 1907. Lambert was one of the most popular drivers at Weybridge and he had extensive experience of very fast cars, such as the Tearley' series of Austins and the single-seater Vauxhalls. During 1912 he had tried out a 25hp Talbot which Lord Shrewsbury's company had decided to race, and had obtained the outstanding short-distance records quoted in the previous chapter. This Talbot, designed by George W A Brown, not only had a very efficient engine, but it was endowed with the ultra-narrow single-seater body and faired chassis externals which Brooklands had brought into universal use by those seeking to motor really fast. There seemed every hope that this car would be able to win enduring fame by being the first to cover 100 miles in an hour's drive. Brown, having also designed the Tearley' Austins which Lambert had handled so ably, had no compunction about asking him to take out the Talbot on this notable occasion. So confident were the Talbot people of a successful outcome that the BARC was allowed to issue a circular stating the date and the goal at which Lambert would aim.

The day chosen was Saturday, February 9. Quite a crowd gathered, cars being drawn up at the mouth of the Finishing Straight. Amongst those present were Mr Locke King, Charles Jarrott, Hornsted, who was trying out his Benz, and other celebrities. At about 2.45pm Lambert started and soon the Talbot was lapping at over l00mph. All went well for 31 laps, then a tyre burst and flailed from the rim. Considerably jolted about, Lambert brought the car in and in less than three minutes was on his way again. Alas, his World hour run was spoiled, but the World 50-mile record fell, at 102.83mph, just bettering that made by the far larger Excelsior, while 26hp-class and class F 10-lap records and the 50 and 100-mile and 1-hour class F records were also captured, the hour at 97.13mph.

A week later Percy Lambert had another try. Donning his overalls and his imposing helmet with rolled-up ear flaps, he tucked his stocky figure into the narrow cockpit of the Talbot and, *sans* wings, screen and silencer, drove out of the gates of the Ladbroke Grove factory into London's traffic. Awed pedestrians saw the car go swiftly through Kingston-on-Thames and along the Cobham Fairmile to the track - a drive particularly pleasing to contemplate after experience of the police-infested Kingston Bypass of our time! Gangs of tyre-fitters had been practising all the preceding week and the fastest gang was now waiting to cope with any trouble the car might experience in that direction. The weather was miserable, with a heavy mist overhanging the track. The run was billed to commence at 11am, but it was nearly 11.45 before Lambert, having arrived in the Paddock, had moved off to the Railway Straight, had had all four wheels changed, the artillery type at the rear being replaced by discs, and had warmed up his engine. Discs were not used on the front wheels as steering would have been affected in the gusty wind.

At last the photographers were waved back, Major Lloyd entered the timing box, Coatalen, Hornsted, Crossman and others wished Lambert *"God-speed",* and the Talbot was away just after 12.43pm. Its standing lap was done at 87.24mph, some two seconds slower than on the occasion of its unsuccessful attempt. Thereafter, however, Lambert speeded up, his next lap being accomplished at 103.94, lap 3 at 104.66 and lap 4 at 105.10mph. Moisture forming on Lambert's owl-like goggles nearly blinded him and he could not see the top of the bankings. (He later suggested a white paint line along the top of the Members' Banking to assist on similar occasions.) Yet on and on the Talbot ran, some 18ft from the edge of the track, well outside the 50ft line on which record measurements were taken. At the depot, presided over by Harold Lambert, a big dial indicator was moved a notch as each lap was completed, while large 3-ply panels of about 3ft x 3.5ft displayed a black number each lap, indicating speed in excess of l00mph. The reverse of these panels carried red numbers, for display should speed fall *below* l00mph; these were never required. Indeed, the Talbot did 103.56mph on lap 5, went up to 104.12mph on lap 6 and 104.57 on lap 7, dropping a little to 103.97 on lap 9. After 10 laps the class F and 26hp-class 'Long' record fell, although the last lap was the second slowest so far. Somewhat faster next round, the Talbot then slowed to about 103.5mph for a couple of rounds and then, on lap 14, did its best speed to date, 105.20mph. The next round was only .0lmph slower, then Lambert eased up, next went right to 105.77 and then continued at nicely over 105 until he broke his own 50-mile record at 103.30mph.

The Press and the public were now agog, for this was a rousing speed at half-distance. And the Palmer tyres were holding . . . ! Lord Shrewsbury doubtless held his breath, while his chauffeur smiled broadly at all and sundry Lap 20 saw the Talbot clock 106.42mph, which subsequently proved to be the fastest lap of the run. Thereafter Lambert always bettered 104 and strove to exceed 105, except for an easy lap 23 (he had 38 to do) at 103.54. Realizing that success was within reach and still mindful of the tyres, on lap 32 he slowed right down to 101.64mph, then notched up again to 102.01, 103.09, 103.71, 102.81 - pulling out 104.39 on lap 37, when the World 100-mile record went into the bag at 103.76mph.

One lap to go, and little Percy Lambert would be the first man to exceed the century for 60 minutes - and they were 60 decidedly long minutes in 1913! He did not ease up, but kept the throttle well

open, doing his last lap at 104.72mph. The flag waved beside the timing strip and the job was done. A normal side-valve British car of modest size had succeeded where Continental special racing cars had failed. Moreover, the Palmer ribbed tyres had not only held out, but looked quite sound at the conclusion of the run. And the Talbot had maintained 2,500rpm for lap after lap without the slightest falter.

Lambert brought the car to rest beside the Railway embankment and, smiling broadly, climbed out - hero, not only of the hour, but of the 'Hour'! The Talbot personnel had held on high behind the car, before the start, boards bearing the numbers 1, 0 and 5, indicating they hoped the car would achieve 105mph. When Major Lloyd announced the official speed there was great rejoicing for, running well out from the 50ft line, Lambert was credited with a speed of 103.84mph, showing his actual speed to have been practically as forecast. His 37 flying laps did not vary by more than 2.2sec from the average lap time. Major Lloyd gave out the new records and, with a grubby and embarrassed Lambert on his left, the Earl of Shrewsbury and Talbot, KCVO, standing bare-headed outside the timing box, thanked all those who had made the achievement possible. A great occasion, with a sincere and simple ending.

The Talbot received a very good Press, *The Financial Times,* for example, remarking: *"Prodigious! Further proof is hardly needed now that Great Britain builds the fastest car in the world."* Talbots themselves issued an excellent book commemorating the performance, well illustrated with photographs and many 'stills' from the film of the run. Shots were included of the car being driven down to Brooklands and attention drawn to its stability at speed with a picture showing all four wheels on the track as the car left the Home Banking. It was emphasized that the interior temperature of the cylinders must have reached approximately 2,000deg F *("an extreme test for the engine cooling system")* and that for 3,600 consecutive cycles 80 charges of petrol were drawn in, compressed, fired, expanded and swept out every second, while at 105mph each piston did 5.5in each way over 80 times a second, which was compared with the beat of a wasp's wings, computed at 100 per second. The very wording of this publicity matter is a reminder of how long ago this record was achieved. Incidentally, 12 years afterwards the World hour record stood at only 115.42mph.

Of the car itself, it had a 101.5 x 140mm, 4,531cc, side-valve L-head engine developed from the production 25hp Talbot, which as a refined touring car was claimed to give 55bhp and had amongst its clientele such distinguished people as Lord Tweedmouth and the Dowager Duchess of Argyll. The racing engine gave a wonderfully straight-line power curve, developing 105bhp at 2,500rpm and 120bhp at 3,200rpm. The inlet valves opened 14deg 45min after tdc and closed 30deg 30min after bdc while the exhaust valves opened 40deg 15min before bdc and closed 9deg 30min after tdc. The carburettor was a Stewart Precision. This marvellous engine was installed in a chassis similar to the standard production. Front and rear dumb-irons were encased in knife-edge fairings and both finaldrive casing and tubes on the rear and front axles were streamlined. The broad Talbot radiator was cowled-in, its mounting feet protruding, and the bonnet contained a ventilation door of considerable proportions and sundry bulges to clear projections on the engine, also a scoop to feed cool air to the cockpit.

The cockpit was certainly narrow, but not unduly cramped, and as the only brake appears to have been a pedal working on the transmission, no hand-lever had to be carried, while the gear-lever was external. The exhaust pipe protruded through the scuttle on the nearside and there was a long, circular-section tail. This imposing car weighed 22.5cwt, or .75cwt more than the standard chassis, and the top-gear ratio was 2.43:1, in conjunction with the normal 880 x 120 tyres. At 2,500rpm the speed was 105mph, and fuel consumption for the entire run was 17ton-mpg. Derihon hydraulic shock-absorbers were used, and the tyres, which stood up for the full distance, were Palmer Cords, held by extra security bolts. The nearside rear tyre wore most, losing approximately 1.4mm from its centre rib compared with 1.1mm from its fellow and 0.1mm and 0.2mm from the front tyres. This equalled approximately 4.5oz of rubber, against 4.2 and 1.25oz, respectively, from the other tyres. The actual records taken during Lambert's great run were: World 50-mile (103.30mph), World 100-mile (103.76mph), World hour (103 miles 1,470 yards = 103.84mph), class F 10-lap at 104.24mph, 50-mile and 100-mile and 26hp-class 10-lap. Whether any lessons that the run undoubtedly taught were subsequently applied to the production cars I do not know, but certainly the 25hp Talbot of 1914 differed from the 1912 version in having no transmission brake, shorter rear-axle radius arms and repositioned cross-members.

The first race meeting of the year was held at Easter and attracted the usual delightfully varied field composed of cars old and new, large and small, to which only the BARC system of individual handicapping could do justice. The chief excitement was provided by Jules Goux, who was making his Brooklands bow with the 7.5-litre Peugeot of the type which had won the 1912 French Grand Prix. Essentially a road-racing car, and considered rather short in the wheelbase for track work, this beautiful Peugeot, with a new streamlined 2-seater body, was obviously a very rapid proposition indeed. Everyone hoped Lambert would bring out the now immortal Talbot, while record-holding Sunbeam and Straker-Squire cars were due to appear. Bobby Tate had a brand new 41.9hp Mercedes, Tuck a Humber identical with his record-breaking car, and Erl had at last forsaken his Paris-Madrid de Dion for an Alfonso Hispano-Suiza. Amongst the cars were many old favourites. Malcolm Campbells l0.5-litre Darracq that crashed so sensationally in 1912 was entered and was expected to have not only new axles but new cylinders as well. Col Cowper-Essex had put in his hoary 48.6hp Daimler, still good for well over 70mph; McBain was to drive his 1907 GP Lorraine-Dietrich, 'Saucy Soapbox', now endowed with cowled radiator and something of a streamlined tail above its huge external driving sprockets, while Hinds old 120 x 140mm, chain-drive Berliet, which had caused quite a stir in 1912 by reason of its fine wooden touring bodywork, now appeared with the appellation 'Black Beetle'.

When the day of the meeting dawned some disappointment was felt for not only was the Talbot scratched from every race entered, but the Singer, which Lambert was to have driven instead, was standing neglected in the Paddock, having melted a big-end in practice. For once, none of the Mercedes went specially well, while Campbell's 5-litre 1908 'Four-Inch' TT Darracq was suffering from a faulty magneto. After Cadbury's V-radiator Vauxhall had shocked the handicappers by easily beating McBain's old Lorraine-Dietrich and Campbells 10.5litre Darracq in the Private

Competitors' Handicap, everyone waited expectantly for the '100 Short'. Goux, in Boissy's Talbot, was on scratch, giving Crossman in Coatalen's 6.1-litre, 6-cylinder Sunbeam l0sec and Campbell's 1906 Darracq as much as 26sec start. The French crew of the Peugeot were all but mobbed by the enthusiastic crowd before the event. It turned out a great race. Taken with characteristic Gallic verve almost too high up the bankings, the Peugeot got well away and set about chasing Crossman. It took Goux some three miles to do this and thereafter a fine neck-and-neck struggle ensued until Crossman fell right back. Goux caught Tate's Mercedes and the Darracq on the run up the Finishing Straight after lapping at 101.12mph.

After a motorcycle race in which Franklin's 994cc Indian lapped at 76.79mph, but which was won by Pullin's Rudge, the '100 Long' followed at once, with Goux again on scratch and Crossman away 15sec before him. This time the Peugeot really went motoring, doing its second lap at 105.97mph, but as it crossed the line it was a few yards behind the 'limit' car, McBain's old Lorraine. Tate's Mercedes was a long way behind in third place. The 70mph Short Handicap saw a Model T Ford win at 56.75mph, and then came the first sidecar and cyclecar race, on handicap.

The New Motoring, as the economical motoring movement was called, had broken in a big way in 1912, and by 1913 big-cars-in-miniature were battling with the simple motorcycle-style 4 and 3-wheelers. Major Lloyd, who coined the name 'cyclecar', had long threatened a BARC race to encourage these fascinating little vehicles, and this was it. Zenith, Indian and Rudge combinations ran against an 880cc Morgan tricar, two friction-driven GWKs, Leno's Bebe Peugeot and Carden's single-cylinder 482cc JAP cyclecar. Wood's GWK won from Freddie Barnes' Zenith with the Morgan third. Tuck's new Humber went very impressively in the sprint race, but Goux scored another second place.

On the Thursday following the Bank Holiday, Goux came out to attack short-distance World records. The Peugeot,
however, had insufficient speed to beat the Benz records, nor was it so quick as Lambert's slimmer Talbot. The Frenchman had to be content with 40hp and class G half-mile, kilometre and mile fs records (108.56, 107.60 and 106.29mph), but he had the consolation of making the best time to date for the ss 10 laps, at 103.23mph.

The following Saturday exponents of the previously mentioned New Motoring had fun and games in a 100-mile high-speed reliability trial run by the BMCRC. Haywood's Singer, Hands' Calthorpe and a Morgan-JAP went very well, but one cyclecar broke a stub-axle and a GWK was let down by its tyres. The Singer was at first thought to have broken the 100-mile and 2-hour cyclecar records at over 50mph, but when it was weighed the 'Colonial' radiator and heavy-grooved tyres fitted for the run were found to have put it 30lb overweight.

On the Tuesday Goux, assisted by Georges Boillot, went after the World 6-hour record held by the Lorraine-Dietrich. The start was scheduled for 9am, but heavy rain fell beforehand, so Goux waited until 11.15am to give the concrete a chance to dry. The Peugeot got away at a 91.8mph standing lap, went up to 107.5 on the next circuit and raised its former 10-lap record to 105.58mph. Alas, a tyre went after 17 laps, losing Goux the 50-mile record, and although just over 100 miles were covered in the hour, the first time a French driver in a French car had accomplished this, another tyre failed after 27 laps. The Peugeot came into its depot again on its 40th lap, went round fastest of all on its 52nd lap at 109.22mph and was then withdrawn after 54 laps with big-end failure.

April 13 saw the Peugeot ready for yet another attempt to capture World honours. Goux got away at 9.30am on a rapid first lap, then settled down to circle the track always at over 105mph, sometimes as fast as 107mph, it being noticeable that he now resisted his earlier temptation to follow the reverse curve by the Itala works, instead cutting across to the right so as to place his car correctly for taking the Home Banking. The Talbot's 50-mile record was beaten by 2.67mph, the new speed being 105.97mph, and on the Peugeot went, very high on the Cobham Banking, so that it wore polished lines in the weather-darkened surface only 2ft from the edge. On one occasion, riding high on the Members' Banking, Goux dislodged quite a slab of cement, but still his car went on and on, dropping to a little under 104.5mph on two laps, but doing nearly 109mph on its 35th circuit. The 100-mile record fell at 106.20mph, an improvement of 2.44mph on Lambert's speed, and the 'hour' at 106.22mph. On the 41st lap tyres were changed and Boillot took over. Lap times were now less consistent, varying by some 5mph, but the 150-mile record was taken from the Lorraine-Dietrich at 101.59mph. A lap later the car stopped with the carburettor on fire and, although it was at first thought possible to get a replacement, ultimately attacks on short-distance records were abandoned.

Some days later W G Scott had a nasty experience when doing an endurance run in a racing, sleeve-valve, 15hp Argyll, the car shedding a track-rod cap, which resulted in it diving from the Home Banking at some 80mph, carrying away several feet of kerb beside the Railway Straight, demolishing a telephone hut and partially bringing down a telegraph pole, from which hung festoons of wire. The driver suffered a nasty cut under his left eye but the car stood up well to the impact.

Not unexpectedly, the Talbot Company did not intend to let Peugeot hold their records for any longer than could be helped. Indeed, on the Saturday preceding the Whitsun BARC meeting, Percy Lambert came down, intent on regaining his lost titles. In spite of an unfavorably high wind, he started his run at 11am. This time he drove noticeably higher up the bankings, the Talbot running with its characteristically irregular exhaust beat, to emerge unsteadily from behind the Hill and dive into the Railway Straight, leaving a long trail of light-colored smoke behind it. Clearly, the driver was not happy. He was being badly thrown about as the car struck the rough portions of the track near the top of the bankings, while the wind was making control a tiring and difficult proposition. After failing to take the short-distance records the Talbot was halted in the bay by the aviation ground and the discs removed from the wheels preparatory to trying for the hour record. All this time, competitors waiting to practise for the Whitsun racing were confined to short sprints down the Finishing Straight to the Fork and back, and much discontent was evident. Lambert had only run for a few laps on his fresh attempt when engine trouble intervened and the car had to be returned to London in the Talbot lorry which had brought down tyres and spares.

The chief excitement at the Whitsun meeting was to have been the Benzole Handicap, for a prize of 100 sovereigns and

a cup presented by the RAC. The SMMT and the Motor Union had presented second and third prizes of 50sov's and 20sov's, respectively, and briefly the plot was for cars to run on Benzole fuel supplied by the Club and presented by Mr Calvert Lord, a member of the AA. Handicaps were based on performances in previous races and the car which made a flying lap comparing most favourably with that made on petrol in the l00mph Long Handicap was to receive a cup. This led to unpleasantness, *The Autocar* observing: "For *the first time one heard it suggested that there had been 'pulling'. Whether any driver was venal or unsportsmanlike enough to fall a victim to the temptation, it is not for the writer to express an opinion, but the cold fact is that several habitues had no hesitation in affirming it. It would be ten thousand pities if there were any grounds for such suggestions, as hitherto motor-car racing has, in England, at all events, stood almost by itself as a thoroughly straightforward sport."* As it happened, rain washed out the Benzole and the sprint races.

In the Private Competitors' race Cadbury's 18.8hp Straker-Squire, a rather staid-looking car, put it across the handicappers rather beautifully as, unknown to them, it had a racing camshaft. It lapped at over 72mph and won by an immense margin at 66.5mph. The 100-mile Short Handicap was an exciting race. Kidner's new 98.5 x 150mm, 4.5-litre Vauxhall (forerunner of the E-type '30/98'), driven by Hancock, just failed to catch Percy Lambert's Singer by a few feet, having started from scratch, 40sec after Lambert got away. Hancock did his flying lap at 103.76mph. Robertson Shersby-Harvie's new 6.25-litre Rolland-Pilain 'Buster' went very nicely, lapping at over 95mph, but A S Henderson's 145 x 120mm 1907 Kaiserpreis Isotta-Fraschini retired and Eric Loder could make no sense of the 15-litre Hornsted Benz, which belched black smoke and ran insignificantly. The 100-mile Long Handicap saw much pushing to start Engley's Fiat, which was none other than old 'Mephistopheles' himself, but the car never got going properly, and in the end Lambert's Singer was just beaten at the post by Witchell in the racing Straker-Squire, both cars lapping at over 90mph. Coatalen only remembered to turn down the straight at the last moment to take third place in his new 4-cylinder, 80 x 120mm Sunbeam, which was like the older 15.9hp car except for the new engine of, surprisingly, 29mm shorter stroke - the dimensions of this engine possessing great significance in view of the heated Coatalen/Pomeroy long-versus-short stroke controversy that was raging at the time. Tucks new 69 x 130mm, 2-litre Humber received much favourable comment after lapping at over 75mph to win the 9th 70mph Long Handicap, and although put back to scratch, it was second only to Sydney Cumming's Cummikar in the 11th 70mph Short Handicap, after which Tuck spun round twice on the Members' Banking in trying to pull up. W O Bentley's DFP, later to prove such a rival, was an exceedingly close third. This was a '12/15', 70 x 130mm car which 'W O' had used for sprints in 1912, now with higher compression ratio and lighter reciprocating parts.

Major Lloyd was determined to continue his encouragement of the New Motoring, in spite of some qualms as to the penetrating noise made by such vehicles, so the first Cyclecar Handicap was held, attracting two GNs, a Lester, an Arden, a Chota, Leno in Boissy's Bebe Peugeot and John Carden's funny little 482cc Carden, which was started by the run-and-jump method. Archie Frazer-Nash early upheld the reputation of his products by winning in his GN 'Streamer' at 42.25mph from Whitehead's GN and Buckingham's Chota, his flying lap being accomplished at 54.35mph. After all this the weather stopped car racing, but Hawker and Gordon Bell braved the wind and rain in the air.

The day following the Whitsun meeting a 20/25hp Crossley chassis weighing nearly 53cwt with ballast and fitted with special twin rear wheels underwent tests at the track and was believed to have covered the half-mile at 50mph - but the results of the tests were conveyed only to the War Office, the vehicle having been designed for the transport of aeroplanes. The war clouds were gathering over Europe!

The new benzole fuel was attracting much interest at this time so Coatalen decided to use it when his short-stroke 15.9hp Sunbeam went for records. Hearn drove first and pushed the class half-mile record, held by the Humber, up by over l0mph, clocking 86.96mph. Coatalen then went for the ss 10-lap record and took it from the Crossley, again by over l0mph, his speed being 82.55mph.

During May the 8-litre rotary-valve Grand Prix Itala came over to Brooklands and several days were occupied in extensive testing under the supervision of Mr Bizio, managing director of Itala. Two laps were made flat-out in 3rd gear while fuel consumption was checked, and those responsible for the car even checked how much petrol and time were involved in changing a wheel, first with the engine running, then with it stopped. Tuck then took four class B records from the Calthorpe with the new Humber, going over the half-mile at 81.56mph and taking also the kilometre, mile and 10-lap records, the last-named vanquishing the DFP's by nearly l0mph. Really small cars, too, were becoming faster. Haywood's Singer took the mile and kilometre records from a Morgan at a BMCRC meeting at 65-66.5mph and later went for long-distance honours. Haywood drove it for two hours, then Baker took over, whereupon the little car was found to have a leaking radiator requiring replenishment every three laps. Even so, six records fell, from 1-hour (62.64mph) to 150-miles (58.9mph). With a gallon of petrol and a half-gallon of oil aboard the Singer weighed 20lb under the ACU cyclecar limit of 7cwt.

Here it may be remarked that the 4-cylinder small car with gearbox and propeller-shaft transmission was already challenging the simple cyclecar, with its engine of less than four cylinders, usually air-cooled, and chain, belt or friction transmission. Many were the advocates of the New Motoring who felt that scaled-down cars should be excluded from the cyclecar class. The fact remains that the official designation of a cyclecar merely stipulated an engine capacity not exceeding l,100cc and a maximum weight not above 7cwt. Doubtless the exponents of simplified motoring enjoyed the Cyclecar Handicap at the Essex MC meeting, when a Morgan raced against a Super and a Humberette, the Super winning after one of the Morgans plug terminals had come adrift. It should be explained that the Brooklands executive had offered free use of the track to county clubs associated with the RAC, but only the go-ahead Essex MC, under its President, Sydney Cummings, had managed a meeting on its own. Winners included Fish's 1913 24hp Berliet in touring trim with torpedo body, Lamberts Singer and an 8.6hp Marlborough.

The next event of note at Brooklands was the establishment of a series of now-classic records by the Argyll concern. Wishing to overcome any prejudice which might exist in respect of single sleeve-valves and worm-drive axles, the Argyll people planned

a really scientific onslaught on class D records using a modified version of their 15/30hp car which incorporated both these items of specification. The most outstanding aspect of these record attacks was the thoroughness of the pit-work. Not only was every conceivable tool laid out so that it could be instantly found amongst its fellows, but spares of every possible description were likewise arranged, while there was even a replacement for every copper pipe on the car, covered with rubber tubing as proof against vibration and each labelled to indicate its exact purpose. As it was vital to ensure adequate lubrication of the sleeve-valve engine, M Perrot, the Argyll designer, had armed himself with two flags. If no smoke showed behind the car, Perrot exhibited a white flag from the depot to remind the driver to pump in more oil from the reserve tank; if too much smoke was seen, Perrot's blue flag bade the driver turn off the supply. Every round the previous lap time was held out on very large boards, while a huge squirt was provided for rear axle replenishment at each stop. The drivers were W H Scott and L G Hornsted, with Toop in reserve, and the depot staff had obviously been drilled to mathematical precision.

The car had a 4-cylinder, 80 x 130mm (2,614cc) engine with its cylinders in two blocks, and normal Argyll single sleeve-valves with, however, some speciality about the port openings. On the offside a Zenith carburettor was accommodated immediately behind the radiator, feeding into the forward end of a straight inlet pipe, while a scoop led cool air into the crankcase. On the nearside two external exhaust pipes ran into two long exhaust tunnels. Two oil tanks were carried, one delivering in conjunction with the fuel feed system, the other from a hand-pump outside the nearside of the scuttle where there was also a screw-down greaser for feeding grease to the water-pump gland. Ignition was by a Bosch HT magneto, Bosch plugs were used, and the standard compression ratio was said to be retained. Stability was secured by the expedient of reversing the fourth leaf of each semi-elliptic spring in conjunction with Triou shock-absorbers - which suggests that Hornsted had a hand in preparing the car. Obviously, Argyll were anxious if possible to use a standard parallel-worm rear axle, and therefore they were relieved to find that such an axle ran cooler than a bevel axle which they tested on another chassis. The final-drive ratio was 3.25:1, in conjunction with 820mm Dunlop tyres on Dunlop detachable wheels. Discs were used at the rear, and sometimes on the front wheels as well, the radiator was conveniently cowled and the neat and strong single-seater body was built of sheet aluminium in the Argyll works. The car weighed rather over lton 4cwt with radiator full and tanks partly full. Argyll diagonally-compensated four-wheel brakes were used, while carburation and ignition settings were not altered after the engine left the test shop.

On Monday, May 19, all was ready and at 6.22am the Argyll got away after having indulged in a short preliminary run. Scott took the first spell at the wheel and the car was held as closely as possible to an average of 72mph. In spite of the chilly atmosphere it ran well, 50 miles being disposed of at 72.83mph. Scott was replaced by Hornsted, and shortly afterwards, at about 9.30am, the engine faltered. The car stopped at the depot on its 80th lap and it was found that an air-lock had interfered with the petrol feed. In a few minutes the trouble was cured and the Argyll was off again. After 157 laps were completed Scott resumed the wheel. His luck seemed to be out for on the 193rd lap a nail punctured the nearside rear tyre, which left the rim as the car entered the Railway Straight. Scott completed the lap on the bare rim and a rapid wheel change was made. After 210 laps all four wheels were changed and Hornsted took over, the strain now beginning to tell on both drivers. An occasional shower of rain and a considerable wind added to their difficulties, but the Argyll ran on and on. Not only did it lap most consistently, but it was noticeably silent, people standing at the Fork scarcely hearing it when it was running down the Railway Straight, despite the wind coming from that quarter. The rear-axle oil level did not drop and the casing was never more than just warm to the hand, so the precaution of topping it up with castor oil at every depot stop probably wasn't necessary. Moreover, no water was added to the radiator. The Dunlop-shod wheels were changed with each change of driver, but after careful examination some of the used tyres were put on again.

The evening light remained good, so Scott held the speed to the end of the 14-hour run. The Argyll captured 26 class D records from 1 to 14 hours and 50 to 1,000 miles. The hour record was at 72.75mph and the average for the entire 14 hours was 72.59mph. The highest average was 73.34mph for the 3-hour. Apart from class records, the World 14-hour record set up by Edge's Napier in 1907 was beaten by nearly 78 miles, the Argyll covering 1,016 miles 437 yards in that time. Of this magnificent achievement *The Autocar* said in an editorial: *"Till the Argyll got among the records no really high-speed performance had ever been made with a sleeve-valve engine or with a worm-driven back axle, and the fact that this has been done not only demonstrates the efficiency of the Argyll car, but shows that, properly constructed, the sleeve-valve and the worm-drive can rival the efficiency of the poppet and the bevel, and for that reason we regard the Argyll performances as being of exceptional interest and value from an engineering standpoint."*

Thus encouraged, the Argyll people went out again on May 27, possibly conscious that no class D records had existed previously, so that it seemed desirable to beat speeds set in other categories. New Triou shock-absorbers were fitted, but otherwise the car was unaltered. At 5.55am on a glorious morning Scott started, this time holding a lap speed of 78mph. After two hours Hornsted took his spell. All went well until Scott had taken over again, when the electrodes of a plug fused together. After a trifling delay the Argyll continued, but at 2pm a petrol pipe broke. Its rubber covering soon impeded the fuel flow and caused the car to slow. Hornsted changed places with Scott to schedule, the trouble being wrongly diagnosed as loss of oil. However, about 20 minutes later petrol began to pour out. A spare pipe was ready at the depot, but 7min 12sec were lost in cutting away the undershield with a chisel to insert the pipe. Almost at once the car came in again with the pressure pipe broken, but the tube was flattened with a hammer in two minutes and the Argyll was off again, its pressure gauge out of action. Alas, the average speed had dropped to 76.76mph. Scott also lost a rear tyre, as on the earlier run, the car coming to the depot on the rim with the valve still in place and a piece of tube flapping from it. This, incidentally, was the only stop for wheel changing, the Dunlops otherwise lasting throughout on this occasion.

Towards the end of the attempt it seemed as if the weather would intervene. Not very distant growls of thunder were heard, and just as Hornsted moved off at 4pm a rain and hail storm of unusual violence broke. The track was soon under water and Hornsted was forced to ease up, skidding right off the Railway

Straight on one occasion. However, a hot sun quickly dried the concrete and all went well until two more plugs fused at 5pm. This depot stop was accomplished very expeditiously and at 5.55pm the World 12-hour record was taken from
Sunbeam's by 3 miles 626 yards at 76.20mph. Scott ran on after Hornsted came in, taking the 1,000-mile record, and at 7.05pm Toop took his first spell at the wheel. Thunderstorms again licked the edge of the track and 2mph was lost on one lap, but the new driver stuck gamely to his task until the 14 hours had elapsed. The 200 to 1,000-mile and 1 to 14-hour records in class D were improved on by some 5mph and new records established from 50 to 150 miles. The 'hour' was raised to 78.29mph and the 600 to 1,000-mile and 7 to 14-hour records now counted as World honours, the last named at 76.43mph for 1,070 miles 57 yards. The best average was 78.76mph for the 4-hour and the fastest lap was at 82.45mph. Certainly Argyll's must have felt very satisfied with their 1913 record-breaking exploits. They were inundated with congratulatory telegrams, including one from the Duke of Argyll and another from Mr C Y Knight, inventor of the Knight double sleeve-valve.

On May 31 a meeting was promoted by the RAC and associated clubs which embraced a blindfold driving competition, a skilful-driving race, a team contest on the Test Hill, a relay race, a motorcycle race, an open handicap and a cyclecar handicap. It was all very reminiscent of the JCC Members' Days of our time. H O'Hagen (15.9hp Crossley) won the driving-skill business, taking the Percy W Northey Cup. Haywood's bull-nosed Singer, which I shouldn't have called a cyclecar at all, won the cyclecar race from scratch at 60mph, catching a GN, a GWK and a Morgan. Pearce-Jones and R H Cobb won the relay event for the Herts County AC in their Vauxhalls, Lambert won the handicap race in his-Singer at 84.51mph, although the Sheffield-Simplex went very fast before it retired, and Coatalen gave everyone a thrill by exercising the new 80 x 150mm, 6-cylinder GP Sunbeam.

Here I cannot resist mentioning that, the Indianapolis 500-mile race having been won by Goux's Peugeot at 77mph, *The Autocar* was prompted to observe that the Argyll's 14-hour record stood at 76.43mph and concluded: *"There are dirt tracks, and sea sands, and other varieties of motor tracks, but the much-maligned Brooklands seems to score here!"*

The new grandstand in the Paddock was ready for the Mid-Summer meeting and, being unroofed, enabled those who used it to see away over to the Railway Straight as well as to obtain a close view up the Finishing Straight; it was situated between the number board and the Press stand. New entries numbered an Alfonso-type Hispano-Suiza owned by the Hon Richard Westerna, Ivor Bellairs' 13.9 Mass, Edwards' 'square'-engined, stripped-chassis Bedford Buick, a Vermorel and a Hillman. As the Paddock bays filled on a grey but dry morning, the Straker-Squire's streamlining was seen to be further improved by the removal of transverse beading that had formerly encircled its bonnet and tail. Four carburettors had been tried in practice on the engine which, like certain of the Singers, had one enormous inlet valve in each head and two side-by-side exhaust valves for each cylinder. However, there had not been time to synchronize all four instruments, so they had to be removed. Toop's Sunbeam had a second aluminium jacket surrounding the valve caps so that water could rise straight to the radiator from the ports, while Coatalen's Sunbeam had solved the identification difficulty by adopting green wheel discs, which showed up well at speed.

Robertson Shersby-Harvie's 6.25-litre Rolland-Pilain 'Buster' worked its way through from scratch to win the Private Competitors' Handicap at 91mph, lapping at 99.81mph and defeating Townsend's 7-litre Sheffield-Simplex, which lapped at 89.25mph. The Hispano-Suiza managed a lap at almost 70.25mph. Watney's wonderful old 48.6hp Mercedes, well faired and with disc wheels and radiator cowl, gave Brown the l00mph Long Handicap. With a newly-found 6mph to play with it averaged 83.5mph, lapping at 86.92. Hancock's new single-seater Vauxhall, with E-type 30/98 engine, did a lap at 103.33mph to take second place and Witchell's 2,853cc Straker-Squire and Lamberts 2,867cc Singer enjoyed a fine duel, their best laps being at 88.94 and 89.25mph, respectively.

The next race was the first 75mph Long Handicap, the old 70mph Handicaps having been discontinued. It produced a really fine finish, Pollak's 3,178cc SCAR 'Mud II', with radiator behind engine and three-quarter-elliptic rear springs, beating Westerna's Hispano-Suiza by about half the length of a bonnet (and both cars had short bonnets!) after a lap of 78.67mph. The l00mph Short Handicap was one of those excellent races in which the scratch car, in this case Hancocks Vauxhall, worked its way through the field, travelling very fast, high up the bankings. Hancock did one lap at 104.85mph and averaged 97.25mph to beat the Sheffield-Simplex and Watsons Mercedes. The '75 Short' saw Nelson-Smith's 'limit' single-seater 9hp Hillman accelerate so well that it won at 60.75mph, staving off the SCARs of Pollak and Straight. The race was from the Pond to the Short finishing line, without a complete circuit. Hancock won the Sprint race practically on the post from Hind's Berliet at 85.25mph for the two miles. The Benzole Handicap, postponed from the Whitsun meeting, followed and Coatalen's 80 x 120mm Sunbeam, driven by Toop, managed to pick up speed after a while to win at 80.25mph from the Vauxhall, which wasn't so happy on benzole. Hancock lapped at 102.06mph, Coatalen at 84.70mph. The day's sport closed with the usual aeroplane handicap.

During this Mid-Summer meeting there was much discussion in the Paddock as to the prospects of a 500-mile race being held at Brooklands, but it was not until 16 years later that such an event was held there, and then it was under the auspices not of the BARC, but of the BRDC.

There was also the delightful story of John Lenanton who, holding the Mathis agency and wishing to impress M and Mme Mathis, who were in this country, had endowed a touring 10.4hp, l,328cc Mathis with a mauve single-seater body having a long high tail, a radiator cowl and wheel discs, and had entered it for the 75mph Handicaps, driving it down to Weybridge. It lapped at a mere 58.1 lmph in its first race and then, before its second race, a plug oiled when leaving the Paddock, and as the bonnet had been secured by some 40 screws, much delay ensued, the car reaching the line late. 1 gather M Mathis, who had come to Brooklands especially to see his car uphold its honour, was *not* impressed.

During July Tuck recaptured the class B 50 to 200-mile and 1 to 4-hour records from the Arrol-Johnston at speeds of from 65 to 68.25mph. His Humber averaged 66.16mph for the hour. Two car races were staged at the fifth BMCRC meeting, and Halsall's 8.6hp Winton won both, lapping at over 55mph. Further innovations

were introduced for the August BARC meeting, for which no fewer than 219 entries were received, exclusive of aeroplanes. Any fuel was now permitted, although extra oxygen was still barred, while under Supplementary Regulation No 20 a leather bonnet strap, 1.5in x 0.125in, was compulsory. Major Lloyd thoughtfully provided placards above each Paddock bay, bearing the entrant's name and make of car, a practice followed regularly thereafter. Two hopes were expressed in connection with the meeting, both of which have a familiar ring about them, namely that Lord Shrewsbury (who had entered Lambert and the '100-in-the-hour' Talbot) might lift motor racing to the eminence of horse racing, and that the SMMT might employ the 200 acres of level ground at Brooklands for a summer motor show. Neither hope, alas, ever came to fruition.

The new entrants included Dewis' new 41.9hp Mercedes, to be handled by 'Dolly' Resta, a 21hp Brenna and Allen's Sixty Thames with which Smith had established records way back in 1909. Then there were the Talbot, Holder's Vauxhall, which was similar to Hancock's E-type 30/98 single-seater, a 'Four-Inch' Cottin et Desgouttes of Lord Carbery, the aviator and, last but not least, Louis Coatalen's V12 Sunbeam. This Sunbeam was most exciting, comprising a 1912 Coupe de *l'Auto* chassis in which was installed a new 60deg, 80 x 150mm, V12 engine of 9,048cc capacity. A central camshaft actuated the side-by-side valves. There were Letts' 15.9hp Crossley, as a reserve, Benin's 80 x 130mm Hispano-Suiza, a 15.9hp Sirron, together with the little 4-cylinder Winton and 17.9hp FN from the recent BMCRC races. Tysoe was to drive the Lambert Singer.

The l00mph Long Handicap had to be run in two heats. In the first, the Straker-Squire lapped at 96.52mph and Engley got his old Fiat round at 93.09mph. In heat 2 , Hancock's Vauxhall managed a lap at 108.03mph, Lambert's Talbot one at 112.68mph. In the final, Lambert won from Hancock with Pollak's persistent SCAR third. A sidecar race saw the best lap set up at a mere 54.51mph by Luce's 986cc Zenith. In the 75mph Long Handicap Bianchi, in Letts' 2.5-litre Crossley, managed 80.59mph. In the '75 Short' Tuck's famous Humber lapped at 81.64mph, but was beaten by W O Bentley's DFP, which lapped at 75.12mph on an easier handicap, netting 'W O' his first win. Ingram Walker's old 'Four-Inch' Mercedes couldn't better 60.37mph. Lambert really tried in the l00mph Short Handicap and was third behind Hind's Berliet and Pollak's SCAR after a lap at 110.43mph. Alas, the V12 Sunbeam was not ready in time for the meeting.

The next enlivenment was a brave, single-handed attempt on the part of Hancock to break the 12-hour record with the single-seater 95 x 140mm Prince Henry Vauxhall, 'KN 2'. Previous to Hancock's attempt no driver save Edge had proposed to go so far without relief. The nearest approach, apart from Edge's achievement, was Hemery's 541 miles in the 15-litre Lorraine-Dietrich. So thick was the mist on the morning of August 30 that when the Vauxhall was brought out at 5am visibility was down to a few yards. Various attempts to get going were made, but each time Hancock had to give up. Eventually, at 8.16am, still under appalling conditions, the run commenced. The standing lap was done at 74.89mph and the next lap at 91.22mph. What followed was little short of a miracle, for the next 28 laps varied by less than two seconds and for five consecutive laps Ebblewhite could find *no variation at all* - yet visibility was still so poor that 'Ebby' had to stand at the timing strip to see the car go by, and for the first hour visibility was 80 yards. Even after two hours, Hancock could scarcely see the length of the Railway Straight. He aimed, nevertheless, to hold a speed of 95mph. Actually, the average was about 93mph until a leaking oil tank called a halt after 2hr 9min, after which 'AJH' increased to 95mph, so taking the World record at 92.1 lmph.

After 3.5 hours the car was refuelled and the wheels were changed, Laurence Pomeroy Snr himself washing the driver's face in champagne. Ninety-six seconds later the Vauxhall roared away. Its next stop was to change an unbalanced front wheel as tyre wear was affecting the steering. Just as the car was about to move off a broken valve-spring was diagnosed and this was changed, with a total delay of 8min l0sec for this halt. At 2.40pm, with many records captured, the car came to rest behind the aeroplane sheds. A lorry rushed out and the Vauxhall was refuelled, but some 15 minutes were lost, and half an hour later another valve-spring broke, this only delaying Hancock three minutes however. Alas, shortly afterwards the water-impeller belt broke and as the engine had boiled it was deemed inadvisable to put in fresh water for two minutes. However, the Vauxhall had a goodly margin in hand and the run continued, the car soon running at 90mph. Then, just after 4.30pm, as Hancock came off the Members' Banking, the Vauxhall swerved outwards and missed by a narrow margin the timekeepers' table situated by the corrugated iron fence on the Railway Straight. The Vauxhall continued, indeed it did that lap at 95.41mph, then slowed to 94.86mph the next round and came in, the driver pointing to the front of the car. A bronze casting had broken, allowing the offside front spring to slide right back to the limit of shackle movement. The car was over 50 minutes inside its next record, but the light was failing, so the attempt was concluded and Hancock, disappointed but looking very fit, eased himself from the slim cockpit. He had taken the 2 and 3-hour and 150 and 200-mile records in class F and the World and class F 4 to 9-hour and 300 to 700-mile records. The speed was most consistent, from 2 hours at 92.72mph to 700 miles at 87.74mph. The fastest lap was the 202nd, at 96.52mph. The car ran on Palmer-shod wooden artillery wheels with Rudge-Whit worth hubs.

Meanwhile, W O Bentley had been waiting patiently for the use of the track, and after Hancock had withdrawn he brought out his 12/15 DFP and drove for 10 laps in an attempt to win back his class B record from Tuck's seemingly invincible 2-litre Humber. 'W O' was successful, averaging 77.927mph. The opening laps were covered at over 80mph, but rain began to fall and the DFP then ran less rapidly. Shorter distance records might have been taken had the timing strips been in readiness. On the following Monday it was so wet that a further attempt was postponed, but a few days later 'W O' took the class B flying half-mile, kilometre and mile records from Tuck, the DFP's best speed being 82.38mph over the half-mile. The ss 10-lap record was also pushed up, to 78.67mph. The interesting thing about these attempts is that 'W O' was using light-alloy pistons in his car, made from 12 per cent copper, 88 per cent virgin aluminium, this later becoming the Air Ministry specification L8. This was one of the first times aluminium pistons had been used in a car engine, and as Bentley did not broadcast the fact, his rivals were hard put to explain the DFP's increase in speed.

When war broke out 'W O' employed his new piston material with outstanding success in Rolls-Royce, Sunbeam and other aero-engines, including his own BR rotaries. Unquestionably this made a notable contribution to the Allied victory.

No further successful record-breaking took place until October 1, when Sunbeam made a magnificent onslaught on the Vauxhall class F long-distance honours. Driving the slim, single-seater 4.5-litre, 80 x 150mm, 6-cylinder car, Jean Chassagne, K Lee Guinness and Dario Resta kept going for 12 hours, capturing World and class F honours from 2 hours onwards, from 200 to 1,000 miles and 250 to 1,700 kilometres, also taking the class F 50-kilometre and 150-mile records, a total of 41. The speeds averaged around 90mph, being at exactly this pace for 1,000 miles, and Vauxhall's longest record - the 700-mile - was improved upon by 5.67mph.

The Autumn meeting, postponed a week until October 4, was by way of being sensational, for some extremely fast cars competed, Jean Chassagne being entrusted with the new 9-litre V12 Sunbeam. In the l00mph Short Handicap he lapped at 114.49mph, but could not catch Bird's 80 x 149mm Sunbeam or Hind's Berliet. In this race Lambert did 110.68mph in the Talbot, now with a somewhat larger engine, and Jules Goux, on the 1913 3-litre Grand Prix Peugeot, 102.69mph. In the equivalent Long Handicap the Sunbeam came right through from scratch, lapping at 118.58mph, but the Talbot was slower and Goux made a bad start, being 5.6sec behind Holders Vauxhall, which started with him, after the first lap, although the Peugeot lapped at 101.64mph, the Vauxhall at only 97.08, later improving to 99.61mph. Bad weather caused the abandonment of several events and apparently there were insufficient entries for the 5th O'Gorman Trophy as it wasn't on the card. Chassagne had the honour of recording the fastest Brooklands race lap up to this time.

The remainder of the year was devoted to record-breaking. On October 9 Goux brought out the famous 3-litre, 1913 Coupe de *l'Auto* Peugeot, with a streamlined tail added. He took 16hp and class E flying half-*mile,* kilometre and mile records at over 105mph, doing the half-mile at 106.19mph. He also set the 10-lap record at 100.68mph. On the same day Jean Chassagne took the V12 Sunbeam for a canter, setting up a 60hp and class H 10-lap record at 110.03mph. It will be remembered that this local Brooklands record was observed from a *standing* start. The Peugeot weighed just over 19cwt whereas the Sunbeam turned the scales at over 28.5cwt. Witchell was also out and set up class D 10-lap and flying half-mile, kilometre and mile records with the Straker-Squire, the half-mile at 98.74mph.

The following day Chassagne proved the V12 Sunbeams reliability, taking World and class H records from 50 to 150 miles, 100 to 200 kilometres and for the 'hour'. The last-named classic fell at 107.95mph, beating the Peugeot figure by 1.73mph - and it could undoubtedly have been pushed higher still had Coatalen been able to find tyres capable of standing up to his latest creation. When this sensation had abated, Tuck took back the DFP records for the flying half-mile, kilometre and mile in class B, the Humber doing 83.53mph over the shortest distance and also taking the 10-lap record at 79.63mph. The same day - October 13 - Witchell, with the Straker-Squire, did 50 miles at 92.02mph, a class D record, and a few days afterwards raised his own 10-lap record by 0.48mph to 92.21mph.

Percy Lambert - the one and only 'Pearley' - was next on the scene. In the same Talbot with which he had been the first driver to exceed 100 miles in an hour he set the 26hp and class F 10-lap record at 107.8lmph, bettering the previous speed by 5.57mph. A new engine of 10mm longer stroke (101.5 x 150mm, 4,754cc), which developed 132bhp at 3,000rpm, had been installed for the Autumn races, and this was retained, the car weighing nearly 3cwt more than it had on its previous record bids. There was an interlude while W F Adams in a 70 x 110mm Vinot cleaned up the 50 and 100-mile, 50 to 150-kilometre and 1-hour class B records, the 'hour' at 68.13mph, and then Lambert came out again. Pretty obviously he was anxious to regain the coveted World hour record for Lord Shrewsbury before 1913 was out. The 10-lap class F record he raised again to 110.27mph and, continuing, took the World 50-kilometre and 50-mile records, the latter at 110.96mph. That was on Monday, October 27, and on the Thursday a serious attempt on the Sunbeams hour record was planned. At 11am the Talbot was ready, but the run was called off on account of wet and boisterous weather. The next day Lambert was all set at 7am, but he did not get away until about 9.30am. The weather was now glorious, and the 10-lap figure was again improved upon, by 0.04mph, leaving it at 110.31mph, while the World 50-kilometre record fell, 0.02kph faster than before. Then came tragedy. On the 21st lap the Talbot disappeared behind the Members' Hill - and it did not reappear. Exactly what happened will never be known, for only one person, a soldier with no knowledge of motor racing, saw the accident. It seems that Lambert experienced a tyre burst on a rear wheel and that the Talbot swerved, first down the banking, then right to the top, where the car rolled over and over. Whether the driver tried to climb out or was thrown out was never solved, but he died instantaneously from a fractured skull. He had averaged 110.4mph for the 20 laps and his fastest lap had been the fifth, at 114.23mph.

This fatality cast a gloom over the entire motoring world. Of Lambert, Major Lloyd said at the inquest:. "The *Club has lost a modest friend, a fine gentleman, and a thorough sportsman." The Autocar* observed: *"Lambert was the prototype of a new generation of racing motorists, bred as it were on the Track itself, and the foremost exponent of its use. Though not an amateur, in the Brooklands sense, he was keener than any amateur, and he drove always merely for the sheer pleasure he experienced in handling fast cars. He hardly ever missed a chance to compete in a race meeting or to create a new record, or to beat an existing one. He drove Austins, Vauxhalls and Talbots all with the same imperturbable nerve and skill, and came to be regarded as the leader of the latest type of racing motorist created in the atmosphere of the Track." P*earley' was laid to rest in Brompton Cemetery, a spoked wheel marking his grave.

Neither Tuck nor Bentley had viewed with favour the Vinot's incursion into class B. Tuck was the first to retaliate, and his Humber recaptured the 50 and 100-mile and hour records, the last-named at 75.78mph. W O Bentley then showed what his DFP could do. Already a Star was out after long-distance class E honours, and as this car was lapping at about 8lmph, the DFP was started about half a mile behind the other car with a view to keeping the pair well spaced out. However, 'W O' motored round to such good purpose that he soon caught the Star. He lapped at over 83mph from his third to his 11th lap, then dropped to 82.5mph, continuing at sometimes above, sometimes below 82mph. After 13 laps he gradually slowed, to 76.5mph on his 34th

and final lap, owing to a low head of petrol. The car stopped, out of fuel, on the next round, but was said to have consumed only 4.5 gallons in 94 miles. The records gained were the class B 10-lap, 50-mile, 1-hour and 50 to 150-kilometre, the 'hour' at 82.15mph. The manner in which these smaller cars were being developed at this time is remarkable and is well portrayed by the history of the 10-lap records contained in one of the tables at the end of this volume.

The aforementioned Star, driven by 'Dick' Lisle, was a standard 20.1hp, 90 x 150mm, 3.8-litre car with single-seater body having a tapering tail. Lisle kept going for eight hours, or 230 laps, at over 78mph, yet only one Dunlop was changed, the offside rear, after 600 miles at a speed of 79.03mph. Yet the car weighed over 26cwt. A start was made at 7.11am and at about 11am the DFP, as recorded, joined in for a while. Lisle had intended to run for 10 hours, but a broken steering rod is believed to have called a halt. He took 11 class E records from 150 to 600 miles, 3 to 8 hours and 500 and 1,000 kilometres. Some records were gained by only a small margin, but those from 6 to 8 hours showed an appreciable advance.

There was one more sensation before the 1913 season closed. As late as December 22 - they were tough in those times! - Hornsted brought out the 21.5-litre Benz and set up World ss half-mile and kilometre records at mean speeds of 70.47 and 73.57mph, respectively.

The big Benz had arrived in this country just before the Olympia Show, and it was to become almost legendary. Known as the 200hp Benz, it had an engine almost the same as that of the 150hp car but with a bore 30mm greater, the dimensions being 185 x 200mm (21,504cc), and fully-forced lubrication. It was geared 44:44 at the sprockets of its final chain-drive and did 140mph at a mere l,400rpm. The gearbox gave four speeds, 2nd gear being not quite 3:1. The car arrived in this country with steel-studded rear tyres (forbidden at Brooklands under BARC Supplementary Regulation No 13), Michelin expanding rims, an immense exhaust pipe ending by the scuttle, and a 2-seater, pointed-tail body. Incidentally, the RAC rating was 84.9hp, the wheelbase a mere 9ft 4in or so and the car weighed just over 32cwt. There were wonderous tales of mechanics being able to thrust an arm up the exhaust pipe to free the valves etc. A visit to the works on Hornsteds part had ensured normal single-seated valves being fitted to this car in place of the Benz triple-seated pattern, and struts were used between the piston crowns and gudgeon pins to guard against cracked pistons. There is a beautiful story to the effect that the exhaust pipe was extended to the tail of the car, to comply with the Brooklands regulations, by means of a convenient stove pipe taken from Hornsted's office . . . Palmer tyres were fitted on arrival at the track, to which the Benz was driven through London traffic, devoid of any form of silencer! 'Cupid' used to tell, in later years, how on one occasion he had driven the car in the middle of the day right through from Brooklands to Tilbury Docks, across Hammersmith Bridge, past Harrods stores, along Piccadilly, the Embankment, Bank, Whitechapel, Barking and so on, without boiling. I would dearly have liked to have seen the Benz go by! It was run in Hornsted's time with a cowl over the radiator and later a curved wind-deflector appeared on the top of the scuttle in lieu of a screen. The steering was well-nigh perfect, as with all the other Benz cars Hornsted had driven.

During the year K Lee Guinness had been carrying out exhaustive experiments with a view to perfecting a sparking plug able to stand up to the requirements of racing engines at Brooklands. So successful was he that he formed a small factory at Putney Vale for the manufacture of KLG plugs. When the Kaiser War broke out the Government took over and extended these works, realizing the importance of an uninterrupted supply of KLG plugs for our aeroplane engines. Thus Brooklands again made its contribution to the Allies' victory.

So concluded a very full year for Brooklands. Incidentally, one pleasure, that I imagine few of you have enjoyed, was being able to buy from the programme boys picture postcards of general views of the track and of Brooklands favourites - at a mere 3d (just over 1p) per packet of six!

The winners of Mr H C Neill's Private Competitors' Points Cup was O D Pollak, while the Shell Points Prize for l00mph Short Handicap successes since September 28, 1912 went to Bird's Sunbeam, and the Pratt's Points Prize for 1913 l00mph Long Handicaps to L R L Squires 18.8hp Straker-Squire.

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The aerodrome now being amongst the foremost in the country, the important and historic happenings there are too many to record in detail. But we cannot overlook the popular demonstrations by Gustav Hamel. He was billed to appear every Sunday and, flying over from Hendon in his Blériot with unfailing regularity in any kind of weather, he invariably attracted a big assembly of spectators - the 21 miles took 80 minutes on one occasion when he essayed the flight in the face of a full westerly gale.

Occasions that deserve mention were Hawker's British height record of 11,450ft, made on May 31 in the new Sopwith 3-seater biplane (80hp Gnôme), and the same pilot's subsequent records of 12,900ft with one passenger and 10,600ft with two passengers in the same aeroplane on June 16, nine months after he had learned to fly. Gordon Bell had arrived over Brooklands at 5.15pm four days earlier and proceeded to shoot-up the aerodrome in the new Martin-Handasyde monoplane he had brought from Eastchurch. For 15 minutes he roared in, out and round the hangars, relying on his 120hp Austro-Daimler engine to get him out of tight turns, but in the end it happened - in pulling up to clear a hangar the machine stalled and dived in, the passenger in the front seat being crushed to death and Bell very seriously injured. On July 27 Hawker secured the three-passenger height record in the Sopwith, climbing to 8,400ft. Then came the news that Pégoud had discovered aerobatics at the Blériot aerodrome at Juvisy. The Brooklands authorities gave the French aviator a chance to convince the sceptics, and on September 25, 26 and 27 Pégoud stunted at Brooklands in his slightly modified Blériot monoplane before an astounded crowd of sightseers. During 1913 the Bristol school passed out 70 pupils, Vickers' 35, Ducrocq two and Percival one. The group of sheds had now multiplied considerably, with quite a village out by the landing ground, as well as the original sheds flanking the Byfleet Banking. In the former position the Blériot Erecting Factory, one of the most up-to-date aeroplane factories in the world, was quite a landmark, while the War Department permanently leased a shed.

1914

First World War leads to enforced six-year sabbatical

Although the shadow of war hung over Europe, the Brooklands authorities went ahead with improvements for the 1914 season. A large additional balcony room was added on the north side of the Paddock building, with more than double the floor space of the old balcony on the south side, to provide increased accommodation for meals as Major Lloyd found that patrons preferred lunching near the bustle of preparation for the racing rather than on the Hill. A door connected this new balcony with the inside luncheon room, where Mrs Dempster presided and kept a blazing log-fire burning. Alas, in later years the new balcony deteriorated into the bleak luncheon and tea room used on race days by the public.

Another innovation was the introduction of Lightning Handicaps so that the very fastest cars had races all to themselves, starters being limited to six to obviate passing difficulties. The marsh by the Press Box was filled in, giving a raised point of vantage by the Paddock side of the Finishing Straight to such cars as could attain the summit.

One of the biggest changes came at the Whitsun meeting, when drivers were no longer compelled to wear coloured smocks, cars being identified by their own colour schemes. Also at this meeting, half-a-dozen men clad in bright scarlet and armed with Pyrene extinguishers formed the firefighting squad that from then on became a regular provision at BARC meetings. A memorial brass plaque to Percy Lambert was erected on the Clubhouse wall in the Paddock, and the BARC issued an improved edition of the *Year Book,* running to 80 pages, which was available free of charge from the London office to anyone applying for a copy.

Entries, if anything, were more diverse and interesting than hitherto. The expense of running ultra-fast cars was appreciated, so prize money was increased for the Lightning races to £50 for first place in a Short event and £60 for a win in a Long Handicap. The Palmer Tyre Company gave a £100 cup for the greatest mean speed in the Lightning Long Handicaps, and Shell and Pratt's repeated their Points Prizes. In contrast with the porringer cups of previous years the BARC Committee selected replicas of an elegant Flaxman vase of the year 1772. All was set for an excellent season, although *The Autocar* remarked that: "A *few more hefty racing monsters would, from the public's point of view, be unquestionably welcome."* Small cars were encouraged by races limited to cars up to l,400cc, while l,100cc cars and 3-wheelers were ministered to by the ACU.

Excitement commenced early, for on January 14 Hornsted brought down the 200hp Benz and essayed short-distance, flying-start records. New distances of 2, 5 and 10 miles were now recognized, with corresponding kilometre distances. Hornsted set the World 2-mile record at 122.05mph and the 5-mile at 116.08mph, while the class J half-mile record he pushed to 123.83mph and the class mile record to 123.54mph. Before the month was out he secured the World standing-start mile record at 87.34mph and improved his previous year's World half-mile to 71.25mph, also capturing the World and class 10-mile fs records at 112.57mph.

In February, W O Bentley brought out his improved DFP, which had been sent to Paris for modification to his requirements. The car now had a differential-less rear axle, a camshaft of Bentley's design and many small alterations. It had the usual very narrow single-seater body, small-section tyres on disc wheels and a very narrow, well-cowled radiator. It astonished everyone by setting the class B flying half-mile record to 89.70mph, also taking the kilometre and mile records up to 10 miles. From Bentley's experiments with this car the production 12/40 DFP resulted. During March Jean Chassagne reappeared in the V12 Sunbeam and captured the class H and 60hp-class flying half-mile and mile, and class H 2 and 5-mile records, doing 120.73mph over the mile.

The first BARC meeting of 1914 took place at Easter. The new Lightning Handicaps were the chief attraction, and in the 5.75-mile race Holder's E-type 30/98 Vauxhall single-seater won from Resta in the V12 Sunbeam and Hornsted's Big Benz, Resta lapping at 113.45mph and 'Cupid' Hornsted at 112.42mph. Read's 95 x 140mm Vauxhall won the Long race from the Benz after Holder had gone on in error for an extra lap, although Hornsted got round at 112.17mph. Stewart's 3-litre Crespelle won the Private Competitors' event, lapping at 76.62mph, but Robertson Shersby-Harvie's imposing 8.5-litre Itala came fast through from scratch to second place, catching an Alfonso Hispano-Suiza driven by the Farman pilot Greswell. The Itala was to become a notable Brooklands car. It was the 120hp rotary-valve 1913 Grand Prix car which Moriondo drove in that race and overturned near the grandstand, only to right the car and continue. For Brooklands it had been extensively rebuilt: it wore a rakish single-seater body with narrow radiator cowl, faired front dumb-irons and lever-quadrants, and discs on its rear wheels. Painted pink and black to match its driver's smock, at this meeting it did three laps at just over l00mph, winning the '100 Long' and being second to the Crespelle (which won again, although doing only 73.78mph) in the '100 Short'. Incidentally, this Itala was timed over the half-mile during 1914 at 119.5mph. It is pleasing to know that after its retirement from racing this exciting car became the family hack in Scotland (after a saloon body had been built for it in 1918), and that years afterwards Mrs Shersby-Harvie retained a Gordon Crosby painting of it; her son attended most Brooklands meetings from 1929 onwards and corresponded with me as recently as 1957.

Hind's Berliet won the 75mph Short Handicap from Fish's similar-sized Berliet, with Nelson-Smith's 60 x 120mm Hillman third. Rossiter had got his 85 x 130mm Hispano-Suiza home third in the aforementioned '100 Short', and Robert Brewer, who used Brooklands exhaustively for his carburation experiments, won the '75 Long' in a Belsize from Haywood's Singer and Rawlence's Berliet. The Crespelle then managed 78.92mph to finish second to the Itala in the '100 Long', with a most interesting scratch car third. The last-named was none other than a 4.5-litre, 16-valve Opel entered by Adam Opel and brought over from Germany by Carl Joerns. It was intended for the 1914 French Grand Prix and it lapped at 99.41mph. Rawlence's Berliet won the sprint race from

the Hispano-Suizas of Greswell and Rossiter. There were three of these Berliets running in 1914, with engines the same size as that of a 4.5-litre Bentley.

A few days after this meeting Nelson-Smith attacked class A records in the l,375cc Hillman with ball-bearing engine that he had been gradually developing and took those from half-mile to 10 miles at 70.71mph and the 10-laps at 69.49mph.

On the first day of May the TT Humbers and Sunbeams were being tested at the track and Hornsted came down late to try out the Big Benz. That evening, as dusk was falling, Hornsted gave S A Gibbons, who had served his time with Legros and Knowles, makers of the Iris car, a surprise ride at well over 120mph. Gibbons recalled this exciting occasion in an article published in *The Autocar* of May 9, 1941, and it captures the atmosphere of the Brooklands of those days better than anything in this book can do. Gibbons subsequently accompanied Hornsted on one of his many attempts on the World hour record, but always the rear tyres gave up before the end of those 60 long minutes. A tendency for steam pockets to form between the inlet valves of Nos 1 and 2 and Nos 3 and 4 cylinders had been cured by drilling the block to take .25in gas adaptors and leading copper pipes from these to the radiator. But always tyres held back the 200hp Benz. The only cord tyres of those days - Palmer - went the farthest, but that was only *58.5* miles. On one run a disintegrated cover had locked the offside chain, whereupon the huge car slid nearly 100 yards sideways, spun round three times, then shot backwards up the Byfleet Banking. Hornsted decided that something must be done, so he crammed in 3rd gear and let in the clutch. The Benz changed direction, spun again, and landed in the sewage farm, the only damage being to Toop, the luckless passenger, who received a violent blow on his nose from Hornsted's left elbow as he strove to hold the first slide - a poor return for Toop, who had practically lived at the track for weeks, preparing the car. The skid, lasting for about a kilometre, was something of a record in itself! On May 15 Hornsted netted the class J and 90hp-class 10-lap record at 107.82mph. Later the 200hp Benz went out to Ostend and wasn't seen again at prewar meetings.

The Whitsun meeting produced an interesting card. Shersby-Harvie's Itala was entered again, Humphrey Cook put in a 10.6-litre, chain-drive, front-braked Isotta-Fraschini, and for the first time in Brooklands history a 6-cylinder Rolls-Royce was entered, by T D Morison. Most of the old favourites were down and Oscar Morris produced a most intriguing hybrid consisting of one of the Weir-built 1904 Gordon-Bennett chassis, in which he had installed an 8-litre poppet-valve Daimler engine, endowing his cumbersome but fast car with a round, Spyker-like radiator and bonnet and an unwieldy body of coal-scuttle aspect. The Hon R Beckett put in a 3-litre Lion Peugeot, while Nelson-Smith, besides his Hillman light car, had devised a remarkable 8-cylinder Hillman of 2,714cc, with two separate 4-cylinder engines, two gearboxes and two final worm drives, for J H Bennett to drive. This two-engined car had gone well in practice, but was not so hot at the meeting. Mrs Thekla Duncan had a 35.7hp Mercedes and Carden a curious little 2-stroke 654cc Carden cyclecar. Unfortunately the Straker-Squire broke a valve in practice, while the Humber was another absentee, nor, as a contemporary writer put it, did the cheerful deep bass tones of Hornsted's Benz reverberate through the Paddock.

The Private Competitors' Handicap was run in two heats and a final. Malcolm Campbell's Grégoire won the first heat very easily indeed, and the Itala came through to second place, lapping now at 105.07mph. Incidentally, it was the first car listed in the card under the new colour scheme, being given as 'pink'. Here I must digress to say that the new system worked very well, although as drivers had not been called upon to register a colour or combination of colours, some cars were turned out alike, as for example the aluminium Vauxhall and Mercedes in this race. The new ruling produced some fine effects, such as Cook's 'black with red stripes' for his Isotta-Fraschini, the 'white bonnet and scuttle, mahogany body, black wheels' of Hind's Berliet 'White Beetle', the 'black and white, horizontally halved' of Lambert's Bugatti, and 'heliotrope, with red stars on tail' of Mrs Duncan's 6,786cc Mercedes. *The Autocar* likened the vertical brown and white stripes of Dewis' Mercedes to a Brighton bathing machine, suggesting fewer, broader stripes - which Tommy Hann was to pioneer after the war.

Mrs Thekla Duncan's car was a 1910 Gordon Watney 4-seater, 'The Knut', which had been given a racing body in 1912. It was used on the road and raced for her by Killam, who came from Gordon Watney's and then became a partner in the Bournemouth motor business of Brown and Killam, started by Mrs Brown's husband, who had money in Russia. The car lapped at 74.44mph. Mrs Duncan's daughter married Killam after the war; in 1951, aged 87 and in a nursing home, she still had the car's photograph and its driver's racing colours.

The second heat was dull, the big Isotta-Fraschini misfiring by the end of the Railway Straight on each lap, the Rolls-Royce non-starting, and the others going slowly round in procession, cutting out and coasting home. The exception was Morris' odd Daimler, which won at 75mph, lapping at 77.69mph. By contrast the '75 Short' produced a close finish, Hind getting his 100 x 140mm Berliet home first from scratch, lapping at just over 82mph, to average 75.75mph, the wind emitting its usual shrill whistle as it negotiated the radiator, a feature which earned for these Berliets the name 'Whistling Rufus'. Elwell's Calthorpe and Kensingtons purple Humber retired.

Hinds remarkable Berliet then won the '100 Short' by two lengths from Campbell's Schneider, a re-handicap of no less than 12sec being met by a lap at 83.70mph. Watney's 9.2-litre Mercedes, driven by Darby, was third, lapping at 87.84mph. The Itala, doing its customary just-above-100 lap, took the lightning Short' from Toop in Watney's 3-litre Peugeot, which lapped at 98.04mph, and Campbell's 3-litre Sunbeam.

The Light Car and Cyclecar Handicap was a victory for George Bullock's 2-cylinder, l,080cc Winco, at 60.75mph. Carden, blowing into a rubber tube to provide a petrol feed, lapped at 57.05mph in the Carden, and John Leno's Bebe Peugeot was third behind a Singer, at 52.89mph. The slowest lap was by Jones' 902cc Tweenie at 46.03mph.

Morris' unfaired Daimler certainly excelled itself by lapping at 79.30mph to win the final of the Private Competitors' Handicap at 77.75mph. The Hispano-Suiza Alfonsos of Dr da Costa and the Hon R Westerna were second and third, both lapping at not far short of 80mph, so it was quite an Hispano-Suiza day, especially as Nicolson's white car of this make was second to Haywood's Singer in the '75 Long', following a stern chase after a 63.5mph GWK. The Humber again retired, likewise a Buick.

In the l00mph Long Handicap, Campbell's 15.1hp Schneider won a fierce duel from Westerna's 15.9hp Hispano-Suiza with Watney's Mercedes third, lapping at almost 90mph and the Isotta still sick. The 'Lightning Long' race was excellent. Read's Vauxhall led away, but Campbell's Sunbeam caught it along the Railway Straight. For two laps Campbell was out in front, lapping at over 90mph one round, but at the Fork the Itala had caught Toop's Peugeot and Read. It lapped at 107.34mph and passed the now sick Sunbeam down the Railway Straight to win at 99.25mph from the Peugeot and Vauxhall. The Singer did well to win the sprint race at 66.25mph from two Alfonso Hispanos and there was momentary excitement when the Hillman's radiator cowl fell off.

The next activity at the track was unusual, and a reminder that the war clouds were gathering, for a Field Day under the patronage of HM Queen Alexandra was held on June 20 to aid the Chertsey Division of the British Red Cross Society. Field-Marshal the Rt Hon Earl Roberts, VC, KG, OM and Sir Frederick Treves Bt, GCVO, CB, Serjeant-Surgeon to the King, inspected troops, who afterwards 'fought' a rearguard action with gun-carrying and scout aeroplanes going into battle. Tents sprang up all over the grounds, motor ambulances lent by prominent firms rushed hither and thither, and to a roar of musketry and aeroplanes, 'British forces' retreated over a temporary bridge thrown across the Wey by the Fork while dogs and stretcher-bearers looked for the 'wounded'. To show what fun it all was, military bands played by kind permission of Colonels Commanding. To her credit, it is reported that Queen Alexandra expressed a wish to see a fast car in action. Alas, no racing drivers could be found and in any case barriers had been put across the track at various places.

The interest the Queen displayed is all the more interesting in view of her refusal to look up at the aeroplanes at a postwar Hendon air pageant, as recounted in *Empire of the Air,* by Lord Templewood (Collins, 1957).

The Queen, who was accompanied by the Dowager Empress Marie of Russia, would have had her wish satisfied had she been present on the following Wednesday, for Hornsted, with the 200hp Benz, tried yet again for the hour record. This time he took a French mechanic from the Itala works and described the man as the most satisfactory passenger he had ever had. But after only six laps the offside rear tyre left the rim and dealt Hornsted's right elbow a nasty blow. Major Lloyd asked Hornsted to postpone his attempts on the World flying-mile record until after lunch, in case his arm should stiffen. At 2.40pm the Benz went out again and came round in the reverse direction at what was obviously a great speed. Looking in at the timing box Hornsted learned that he had done 120.28mph over the mile, whereas the existing record (made in one direction only) stood at 115.02mph. Very elated, he climbed back into the car and covered the mile the normal way of the track in 28.09sec, equal to 128.16mph. This gave a mean of 124. l0mph, a new World honour by over 8mph, while the run at 128.16mph represented a class J and 90hp-class record and was the fastest speed yet timed at Brooklands. It is interesting that these records made by a German car were the last to be established before the war.

The Inter-Varsity meeting, which had been postponed because of bad weather, was held in July. The one-lap and two-lap races started and finished at the Fork, and there were eight of them in all, four for cars, three for solo motorcycles and one for sidecar outfits. The car races were won by R M Knowles' Austin (twice), H W Cooks Isotta-Fraschini and Lionel Martin's Singer Ten, Cook losing one of these races when he missed a gearchange soon after starting.

The Mid-Summer meeting suffered a poor attendance as it clashed with a horse race meeting at Sandown Park - which indicated that Brooklands no longer attracted a purely specialized crowd but now appealed to the sporting public. For once motorcycle races were not incorporated in the programme, so the conclusion came an hour earlier than usual. The Long Handicaps were held before the Short races so that at least *two* flying laps could be timed, and handicaps adjusted if need be before the second event for which a car was entered. The RAC ratings were now dropped from the race card, only bore, stroke and cc figures being given. Excellent racing was seen, but only six new cars were entered. These comprised Campbell's 5.7-litre Charron, of which much was expected, although it was largely standard; Fish's 80 x 160mm Grégoire; two new Schneiders, one a 3-litre entered by Capt Lindsay
Stewart and Bovier's 5.5-litre car entered from the London Schneider agency; Geach's 3-litre Coupe de *l'Auto* Peugeot, companion to Watney's car, and Cory Wright's Bedford-Buick. Robinson had taken over Shersby-Harvie's 3-litre Calthorpe. It is worth remarking that throughout the entire meeting only one non-starter was posted.

In the Private Competitors' Handicap Barlow's Sunbeam challenged Capt Stewart's Schneider, but towards the end of the race Humphrey Cook's Isotta-Fraschini, showing better form and doing a lap at 91.38mph, and Williams' Straker-Squire, came up rapidly, passing Barlow but allowing the Schneider to win at 70.25mph.

Only four started in the Lightning Long Handicap, Reads Vauxhall beating Campbell's 3-litre Sunbeam from the same mark as the flag fell, but Campbell going ahead easily before the Railway Straight. Watney's Peugeot, Toop up, made good use of the 12 seconds' start over Holder's scratch E-type 30/98 Vauxhall, and everyone finished in the order in which they were started, but with the Sunbeam only half a length ahead of Read, winning at 86mph. Campbell had lapped at just over 9lmph and was believed to have something in hand, Holder at 98.23mph on his first flying lap, while Toop was but 1.15mph slower than Holder on his second flying lap. Several drivers seemed to forget how many laps they had covered in the 75 Long', with consequent confusion at the Fork. However, Fish's Grégoire, a new car with the additional embarrassment of starting from scratch, proved able to lap at 80.33mph and won at 75mph from Broadbent in the little Hillman that Nelson-Smith usually drove, this car having beaten Pollak's Grégoire on initial acceleration. The Hon R W Beckett's 3-litre Lion Peugeot was third.

The '100 Long' followed. Hornsted elected to drive Bovier's new Schneider and the car was promptly re-handicapped an extra 12 seconds. Campbell's Charron and Geach's Peugeot retired on the first lap, leaving Hornsted to take the lead after Williams' Straker-Squire had slowed down at the Fork. However, Rossiter's red and yellow Hispano-Suiza, driven by A G Brown, a very odd looking 85 x 130mm car with long faired front dumb-irons, disc wheels and a high, narrow radiator, passed the Schneider beautifully on the Byfleet Banking, winning by three lengths from Hornsted at

86mph. Brown made fastest lap in the race - 93.09mph - although Cooks Isotta-Fraschini, which was third, managed 92.06mph.

In the 75mph Short Handicap Capt Stewart's blue Schneider - a beautiful car with narrow Renault-type bonnet, wider scuttle and a 'typewriter cover' tail - won by some 80 yards at 71.5mph, Robinson's Calthorpe second and the Hillman third. Campbell's Darracq and Pollak's Grégoire fell sick, Harold Lambert's 8-valve Bugatti retired and Fish's Grégoire, from 'owes 16sec', also fell out.

Came the '100 Short', in which, as a contemporary report so nicely expressed it, "Mr *Hornsted was again penalised for being Mr Hornsted".* At last Cook's red-and-black striped Isotta did the trick, taking the lead behind the aeroplane sheds and emerging to win at 87.75mph from the Straker-Squire and Hornsted's Schneider. Cook lapped at 92.74mph and must have disgusted the bookmakers for he was quoted at 10:1, odds normally only given for likely non-starters. Geach, from scratch, made the best lap at 95.05mph in the Peugeot, but to no avail. The Lightning Short Handicap proved dull for the starters were the same four cars that contested the 'Long', but Campbell's Sunbeam was no longer on form, nor was the Peugeot, so Read's Vauxhall led a procession to win at 82.5mph from Campbell and Holder. The Hillman shone again in the sprint race, covering the standing two miles at 66.25mph, beating the Straker-Squire and Peugeot on the post, at the same average, incidentally, as the even smaller-engined Singer had accomplished at the previous meeting.

On the following Tuesday the postponed Inter-Varsity meeting was held now in magnificent weather. The races started and finished at the Fork, like those contests staged by the MCC for clubmen in later years. Knowles' Austin won the one-lap event from Lionel Martins Singer, Cook having to be content with third place after missing a gear-change as his Isotta-Fraschini went on to the Home Banking - he nevertheless did 77.03mph from a standing start and won the two-lap contest from Read's Vauxhall and Sandeman's 8.3hp Mathis. Knowles' 'dark horse' Austin then won a three-lap race and Martin's Singer won the glorious scrap for cyclecars, motorcycles and light cars.

And so we come to that fateful Bank Holiday meeting of August 3. An excellent entry came in and newcomers included the Hon F G Pearson's 1913 Coupe de *l'Auto* Anasagasti, a sister 4.5-litre GP Opel to that driven at Easter by Carl Joerns and to be handled by the same driver, Birch driving a 2.8-litre Hespel and C G Pullin's 3-litre Aberdonia. N S Hind entered his short-chassis, 25hp Berliet 'White Beetle', now endowed with a streamlined saloon body. In a recent letter he told me that he had rather a dispute with the authorities when they watched him strip the car of mudguards, lamps, etc, in the sweltering heat and then refused to let it race, or even leave the Paddock, on grounds of safety. Hind owned, besides, an ordinary 25hp Berliet, his old chain-drive Berliet Forty 'Black Beetle' that he started racing in 1911 (this car, or its sister, ran on an isolated occasion at Brooklands as late as 1925), and an 8-valve Bugatti having the polished mahogany bodywork he favoured, which he also raced in 1914. Two aeroplane handicaps were now included in the programme, an all-but-topical touch being 'the firing of a bomb on the Aviation Ground when the first competitor starts'.

The rumour of war was heard on all sides, gaining reality as trains full of troops rolled along the high embankment overlooking the track. Visitors to Brooklands were startled to find that Carl Joerns had fled to Germany, so neither of the GP Opels would run - actually the cars themselves were stored safely in this country for the duration and appeared again after the Armistice in Capt A Miller's possession, while both are still intact to this day.

In the strained atmosphere the meeting got under way at noon. Morris' odd Daimler, a coat of workshop grey over its former aluminium, won the Private Competitors' Handicap from Elwell's 'limit' aluminium and blue Calthorpe and Nicolson's Alfonso Hispano-Suiza. The Daimler pulled out a lap at 86.32mph, the Straker-Squire one of 87.99mph. Lionel Martin next won the '75 Long' in his l,097cc Singer, getting round, be it noted, at 70.84mph on two consecutive laps, with Elwell second and Pollak third. The last-named did a lap at 73.89mph in his SCAR, while the 'limit' car, Haywood's red, white and blue (body, chassis and wheels, respectively!) l,097cc Singer did 73.56mph, in contrast to which the Hespel could scarcely exceed a lap speed of 60mph.

Morris' hybrid Daimler gained further laurels in the l00mph Long Handicap, lapping at over 87.5mph to win from Nicolson and Tuck's TT Humber. Lambert's black and white horizontally-halved l,327cc Bugatti then won the Light Car and Cyclecar Handicap from Ware's Morgan-JAP and Martin's Singer, doing the fastest lap at 70.95mph to boot. The unfortunate W D Hawkes, in a 2-cylinder, 965cc Victor, lapped at a timed 43.92mph!

Excitement came with a bang in the Lightning Long Handicap, Resta coming through from scratch in the time-honoured fashion to win at 106.88mph in the V12 Sunbeam, which did its first flying lap at 111.92mph, its second at no less than 113.97mph. Against this Lee-Guinness in the 4,441cc GP Sunbeam failed to catch Holder's Vauxhall, although both cars lapped at nearly l00mph, and the Straker-Squire 'Nymph' followed the Vauxhall over the line after leading until the run-in. Toop's Peugeot was in trouble at the start but subsequently also lapped at nearly l00mph. Afterwards a re-handicapped Harold Lambert lapped at 72.71mph in his little Bugatti to win the 75 Short' from Martin and Remington in Sanford's Bedford-Buick. Then came the '100 Long' in which Tuck's very fast TT Humber, lapping at over 92mph, beat Fish's purple Grégoire and the Nicolson Hispano-Suiza.

Everyone who wasn't too worried by the war news crowded the rails at 4.10pm for the Lightning Short Handicap, appetites whetted by the exciting Long race. Again the Straker-Squire led until the Fork on the last lap, when Toop, in Watney's dull-aluminium GP Peugeot, came up fast to win at 90.72mph after a flying lap at 98.23mph. Holder's Vauxhall, slower, nevertheless netted second place, while Resta, lapping at 104.85mph in the Sunbeam, could do little with an 'owes 3sec' re-handicap. Finally, the Sprint race, in which Nicolson's Hispano-Suiza caught Sanford's Bedford-Buick, which was followed in by Malcolm Campbell's Grégoire. After which the Brooklands clientele watched the aeroplanes and then went its many ways, not to return for six long years; many, indeed, not to return at all. . .

The next day war clamped down on Brooklands, Major Lloyd already with his regiment, and three BMCRC meetings, the September BARC meeting, at which speed trials were visualized, and another Essex MC meeting were cancelled for all time. The position of the various points awards at that time was: Private Competitors' Prize: F Oscar Morris right out ahead of Malcolm Campbell and Shersby-Harvie, who tied for second position.

Pratt's Points Prize: Read leading from Holder and Campbell. Shell Points Prize: Holder leading from Read and Campbell.

Year by year, the fastest laps established during BARC car races were:

1908	Nazzaro (Fiat)	121.64mph
1909	Hillier (Brasier)	102.64mph
1910	Abercromby (Fiat)	106.38mph
1911	Laurent (Mercedes)	101.43mph
1912	Hornsted (Benz)	103.76mph
1913	Chassagne (Sunbeam)	118.58mph
1914	Resta (Sunbeam)	113.97mph

Apart from a combined Inter-Varsity meeting in 1915, mainly for motorcycles but with a few small cars present, the track was not to see a race for six years. Mr Locke King, as one would have expected, promptly offered Brooklands to his country before the Defence of the Realm Act was passed or, indeed, any compulsion was put upon him. He gained but poor return. All that he had built up following the stormy years of 1907 and 1908 was to be lost, requiring a fresh start when peace returned.

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On August 5, the day after war broke out, the RFC took over the grounds. In his *History of British Aviation,* R Dallas Brett remarks of Brooklands aerodrome that not only was it established before any other aerodrome in this country, but from the beginning it was the centre of three-quarters of the real work and effort behind British aviation. Dallas Brett confirms that the idea that Hendon was the hub of all aerial activity in England was a popular misconception and continues: *"At Hendon flying was ably exploited as an entertainment for the public. At Brooklands the public was a minor consideration. Sporadic efforts were made to entertain the jew who were attracted to the Byfleet side of the Track, but it was clearly understood that nothing was to be permitted to interfere with the free use of the aerodrome by those who were conducting practical experiments."* From 1910 until the outbreak of war, 318 civilian pupils had been trained at Brooklands against 175, the next largest number, at Hendon.

During 1914 Raynham had broken the height record in an Avro (80hp Gnôme) and Jack Alcock had made flights of long duration, often in bad weather, in a Maurice Farman pusher-biplane to test the new l00hp Sunbeam engine. He was usually first off in the morning and last in at night, and Coatalen flew with him on occasion. Then Dukinfield Jones did similar tests of the Isaacson radial engine in a Flanders biplane and Howard Pixton occupied himself likewise on various Sopwiths, including one with the new ABC engine built by Armstrong Whitworth. The Vickers 'gun-bus' and Martinsyde monoplane were other new machines that were tested over Brooklands. Harry Hawker, returning from Australia, gave habitues a thrilling demonstration with the l00hp Sopwith 'Tabloid' that had won the Schneider Trophy race, later giving a stunt exhibition on this machine every Sunday. Not surprising, then, that the RFC had a good use for Brooklands.

For a while Handasyde, Blériot and A V Roe remained at Weybridge, but later they went, leaving the RFC in sole possession. In 1915, Vickers Ltd built their famous Vickers Sheds where the Itala works had been. The side of one hangar rose flush with the outer edge of the track at the Fork and, bearing the words 'Vickers Ltd, Brooklands' and the Vickers insignia in huge white symbols, was to become a famous landmark, beneath the shadow of which so many and diverse racing cars were to line up when racing was resumed.

Solid-tyred Leyland and Thornycroft RFC lorries played havoc with the track and although after the war the authorities patched matters up to some extent Brooklands was never quite the same again. It became necessary to close the track for increasingly long periods each winter for repairs and, even so, the roughness of the surface caused much criticism and complaint. There was also the influence of the Vickers sheds, fast cars being more difficult to hold when crossing the Fork than before due to the airstream bouncing back off the side of the hangar. Then Vickers Ltd obtained permission to tow their big twin-engined Virginias and Vimys, etc across the track to the aerodrome, and the course had to be temporarily closed to mere motor cars during such 'ferrying'. However, this is anticipating, for it was not until 1920 that Locke King had cleaned up sufficiently to enable the BARC to take over again.

IMAGES

1906

Brooklands begins to look like a race track, but there is still much work to be done. Some 200,000 tons of concrete would be needed to surface the track.

Steam-driven cranes and other machinery operated around the clock, and seven miles of railway line were laid down within the Brooklands perimeter, linked to the London & South Western Railway, for the delivery of construction material at the rate of 80 truck loads per day.

Scarcely a person in sight, yet the simultaneous construction of the track and essential bridges, as well as the rerouting of the River Wey, was a demanding logistical and technical exercise which at one stage involved the employment of 2,000 workmen, most of whom lived on site in temporary accommodation.

Part of the hanking under construction. The Members' Banking was the steeper of the two banked sections of the track, having a super-elevation of 32ft and a gradient of 1 in 2 at the top, compared with the Byfleet Banking's 17ft super-elevation and a maximum inclination of 1 in 2.125.

The remarkable Hennebique bridge takes shape. Built to take the Members' Banking over the River Wey, its construction was started in December 1906 and was completed some four months later.

1907

A prized possession from the Brooklands Society archives is this rare, albeit somewhat deteriorated copy of the Official Race Card produced for the first car meeting at the track, when a programme of six races was held on July 6,1907.

A car park with a view. Spectators' vehicles lined up at the Fork enclosure during an early meeting. Note the minimal protection at the edge of the track.

The extremely long wheelbase and minimal bodywork of H C Tryon's Napier are emphasised in this side view of the car against a backcloth of enthusiastic onlookers, with the Brooklands banking just visible above their heads in the distance.

The 60hp Napiers before starting their famous 24-hour run in 1907. Edge's car is on the outside, Newton's in the centre and Tryon's on the inside of the track. Edge averaged 65.9mph, covering over 1,581 miles during the two rounds of the clock, a record that stood for 18 years.

A photo opportunity for Frank Newton, in the cockpit of the 60hp Napier, and for S F Edge, who is standing behind the car.

H E Hall at the wheel of his Belgian Germain, winner of the first race at the fourth car meeting to be held during Brooklands opening season, on September 14.

Sir Algernon Lee Guinness about to demonstrate the 200hp, 22.5-litre V8 Darracq to the American, Dugald Ross, who had apparently offered £2,000for the car if it proved to be sufficiently fast, although the deal subsequently jell through.

1908

Felice Nazzaro's famous 89.5hp Fiat 'Mephistopheles', which came over in 1908 to compete against Edge's 90hp Napier 'Samson'. It won its race and in doing so was electrically timed to lap at 121.64mph - a speed that has been the subject of lively controversy ever since.

The 1908 RAC 2,000-Mile Trials-winning 20hp Vauxhall seen at the end of a 200-mile speed test at Brooklands. Percy Kidner and A J Hancock were regular competitors at the track around this time in Vauxhalls.

Tom Faulkner's 1904 18/28 Mercedes before winning the July Trophy race in 1908 at 54.58mph. It was

typical of the largely standard, stripped chassis seen in numbers at Brooklands during the early years of racing at the track.

A photograph signed by Charles Jarrott of the single-cylinder Sizaire-Naudin, with its independent front suspension, by transverse leaf spring and sliding pillars, clearly visible.

The biggest car in S F Edge's stable of Brooklands racing cars was this 90hp Napier 'Samson'. Driven by Frank Newton, seen here, it contested the famous match-race with Felice Nazzaro's Fiat in 1908, retiring on that occasion.

1909

Hugh Fortescue Locke King with one of his pet poodles, photographed in March 1909.

The 1909 20hp Vauxhall (KN', one of the first applications of complete streamlining of an entire car. It resulted in the capture of records at higher speeds than had been made in the 40hp class, the half-mile being covered at 88.6mph.

"Now promise me you'll not drive too quickly!" A delightful Edwardian scene, with a suitably unsmiling driver contemplating the serious work ahead. Presumably he removed the pipe before venturing onto the track

Roy Fedden and his Straker-Squire, the driver still resplendent in jokey-style silks, which had been mandatory as an identification feature from the start of racing at Brooklands, although cars were required to display running numbers for this purpose from late-1907 onwards. Drivers' silks continued to be worn up to the temporary closure of the track in 1914.

Ariel was a make of car seen at Brooklands from the very first meeting, subsequently FA Bolton becoming a prominent competitor in a 59.6hp model.

1910

There is nothing new about one-make racing. In 1910 one of the Brooklands meetings included a race exclusively for Sizaire-Naudin cars, in which eight of these remarkable little voiturettes turned out to do battle.

By 1910 streamlining had really taken hold as a performance aid, wind-cheating bodywork often being accompanied by wheels completely shielded with discs. This is a typical Paddock crowd of the time, with the race results board overlooking the scene.

Coatalen in the unconventional chain-drive Sunbeam 'Nautilus' which he evolved in 1910. The radiator is behind the seat.

The 20hp Vauxhall with which A] Hancock established a series of classic records in 1910- exceeding l00mph for the first time in the 20hp class, after gearbox and bach axle had been drained of oil.

1911

A leisurely pit-stop, Edwardian-style? This team seems to have time to spare, parked in the Paddock entrance road, with the Members' Banking in the background.

The 1911 Sunbeam 'Toodles II', with Coatalen at the wheel. Amongst its successes were the 16hp class half-mile at 86.16mph.

One of the successful 60hp GP Mercedes rebodied by Gordon Watney, with its characteristic streamlined nose cowling over the car's normal broad radiator.

The 16hp Vauxhall with which A J Hancock substantially raised 16hp class records in 1911. The half-mile was covered at 97.67mph, but a piston came out in attempting to clock 100mph. Note the pipe arranged to take steam clear of the driver's jace should overheating occur.

The Fork quickly became a popular viewing area for spectators, car enclosures being provided on both sides of the Finishing Straight. Drawing by Tony Hutchings.

Aviation was in its infancy at the time the Brooklands Motor Course was built, but by 1910 it had been joined by an aerodrome inside the Byfleet Banking, and within a year the Flying Village would contain 36 numbered sheds (No 13 being omitted) plus emergency and maintenance facilities. Drawing by Tony Hutchings.

1912

An unlikely looking combination, perhaps, but this one was the winner of an Open Sidecar Handicap. Although motorcycle racers had their own meetings at Brooklands, some predominantly car meetings would also include events for them.

Percy Lambert at the wheel of the Austin 'Pearley III' after winning the 7th l00mph Long Handicap at the 1912 Summer meeting, his best lap being at 83.28mph. Note the external speedometer.

Weighing-in for the 1912 RAC Stock Car race. The car in the foreground is a Crespelle and behind it is another French marque, the SCAR. Standing by the weighbridge is Mr Cann, a well-known member of the BARC staff.

Haywood's Singer, which competed in the 1912 RAC Stock Car race. Note the very delectable Vinot service van in the background!

Dario Resta in the 30.1hp, 6-cylinder Sunbeam 'Toodles II' with which he set the World hour record to 92.45mph in 1912. Note the external speedometer and isolated radiator. Louis Coatalen, the designer, is standing behind the car, third from right.

Victor Hemery in the huge 4-cylinder, 15-litre Lorraine-Dietrich with which he set a series of class J records at Brooklands at the end of 1912 ranging from 10 laps to 6 hours, the majority being World records.

A plan of the motor course indicating the locations of the Railway, Cobham and Pond start lines, the three finishing lines and the timing lines for half-mile, kilometre and mile sprints. Drawing by Tony Hutchings.

The 2,853cc Straker-Squire 'PDQ' which established class D records in 1912, driven by Mitchell These included the flying-start half-mile at 96.62mph. Note the external levers and instruments, in curious conflict with the otherwise careful streamlining of front axle, body and wheels.

1913

Percy Lambert leaving London for Brooklands in the famous 25hp, 4.5-litre, side-valve Talbot, which was the first car to cover over 100 miles in the hour. During the record attempt fairings were fitted over the front dumb-irons and discs on the rear wheels.

Percy Lambert's victorious 25hp Talbot after setting new endurance records at the track, including breaking the '100mph in the hour' barrier, to the delight of his team, who had displayed '105' boards, so confident were they that he would succeed. His official figure for the hour was 103.84mph.

C A Bird's Sunbeam 'Raffles II', with which he won the 1913 Shell Points Prize for successes in l00mph Short Handicap races held since the previous October.

The Test Hill quickly became a magnet for anyone aiming to set and then improve on their own 'to the top' timing figures, but increasingly it was also incorporated into the courses for road car trials.

AJ Hancock at his depot with the 4-litre 'Prince Henry' Vauxhall KN2 during his attempt on the World 12-hour record in 1913. Starting in a thick mist, Hancock broke 15 records, when a spring broke after 700 miles at 87.74mph. One lap was covered at over 96mph and, later, with a side-valve 30/98 engine, this car lapped at well over 100mph.

Hancock races an LSWR passenger train down the Railway Straight in the course of his attempt on the 12-hour record with the Vauxhall.

A pause for a wheel change during Hancock's 12-hour record attempt. The driver is being offered a glass of refreshment while eight other helpers surround the Vauxhall and a ninth has a replacement front wheel and tyre at the ready.

The thick mist which had covered Brooklands at the start of Hancock's record attempt had lifted by the time this photograph was taken of him on the banking. Eventually the run would he halted by a broken casting, which allowed the offside front spring to slide loose.

A busy scene in the Paddock during the 1913 BARC Autumn meeting.

Lambert's single-seater Talbot in the process of raising the World hour record to 103.84mph, the first time any car had covered 100 miles in the hour.

Percy Lambert, who drove Austins, Vauxhalls and Talbots. He was the first man to cover 100 miles in the hour, but tragically was killed on the track in October 1913.

1914

Spectators gather on both sides of the Finishing Straight to watch cars being assembled for the start of a Relay race, another popular-innovation within the expanding Brooklands racing scene.

Brooklands was used in the early days for all manner of tests and experiments. Here is a Napier equipped with Venetian blind slats [or the purpose of measuring the effect of wind drag on speed and power.

The 9-litre side-valve V12 Sunbeam photographed on the Paddock entrance road, with the Members' Banking in the background. This car set the World hour record to 107.95mph in 1913 and covered the half-mile at 120.73mph in 1914, driven by Jean Chassagne.

Flying activities at Brooklands had grown to such an extent before the First World War that motor racing spectators would often take a break from the motor course, walk down to the aerodrome and take a look at the aviators and their machines.