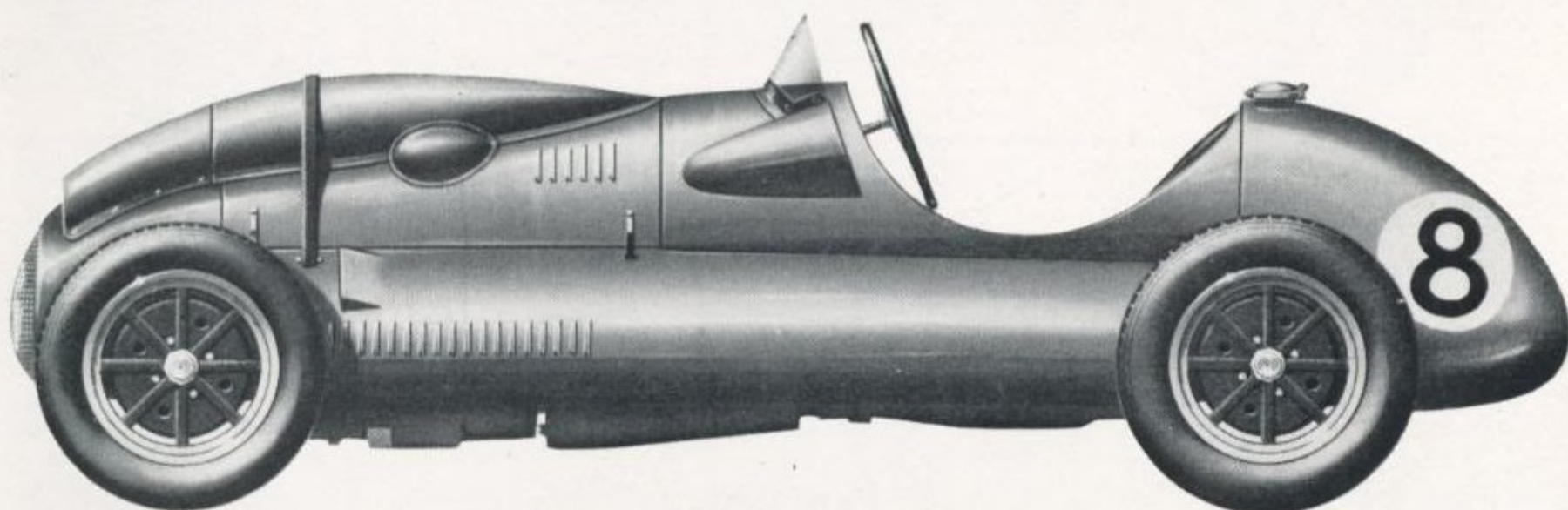


The Cooper-Bristol F.2.



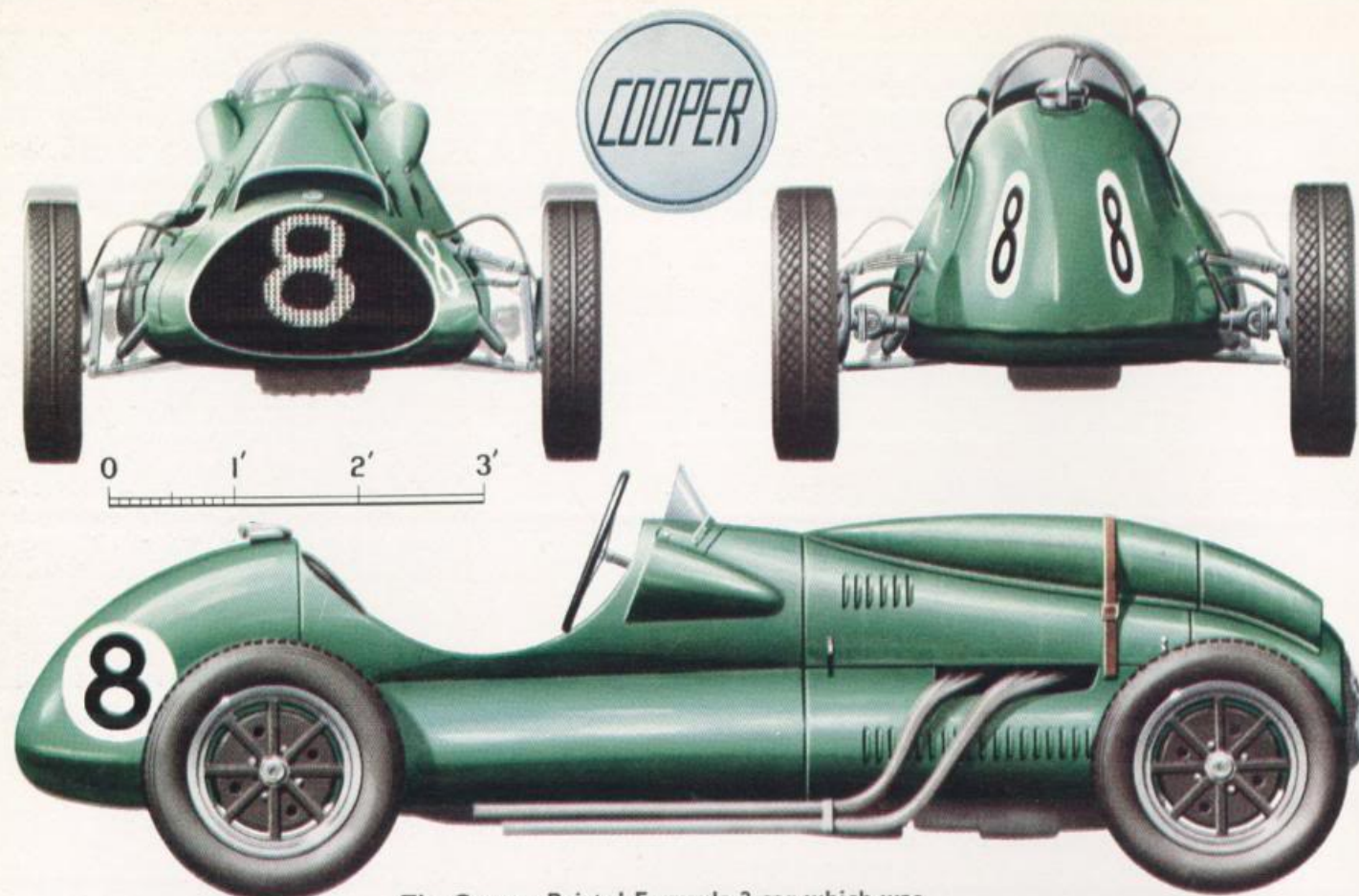
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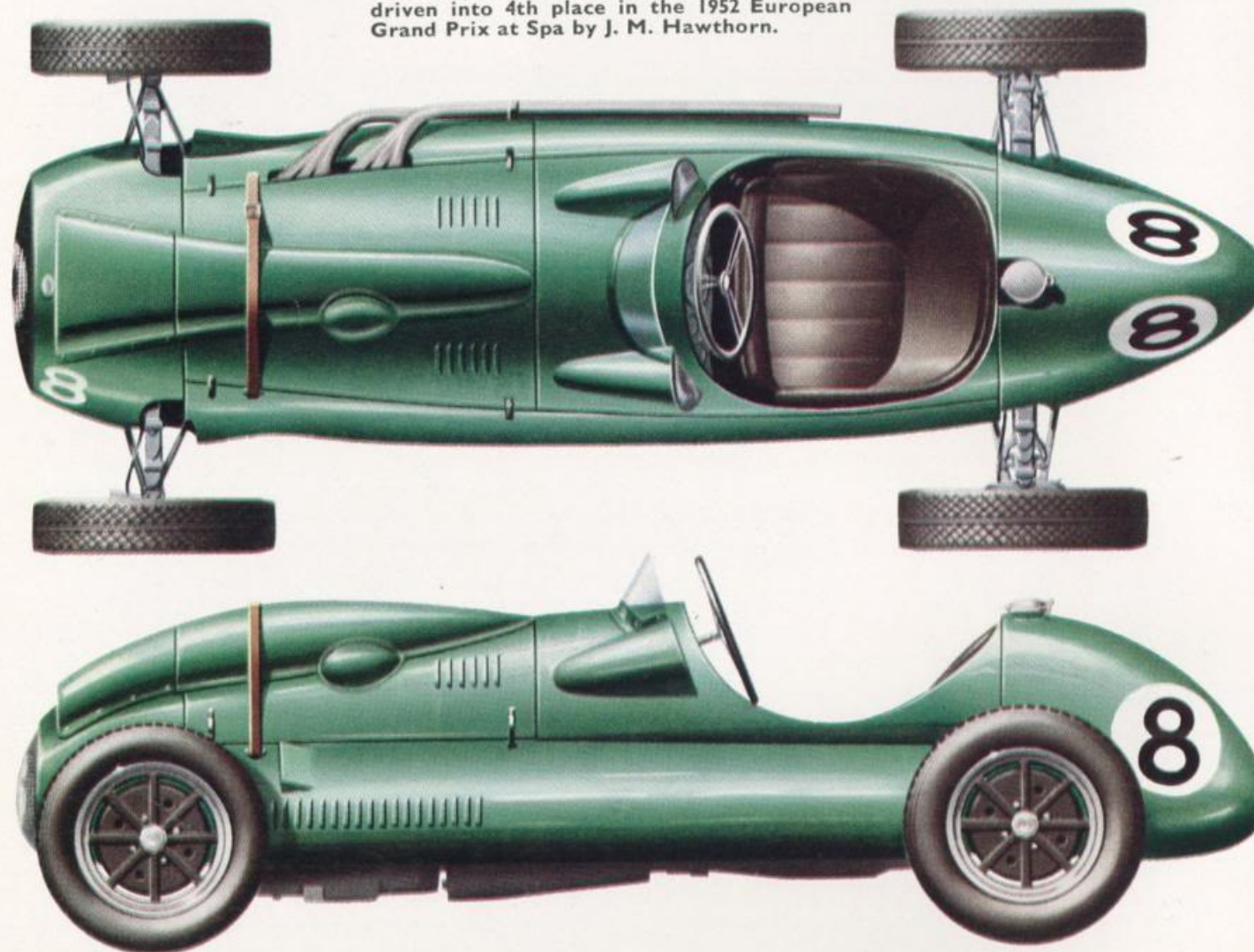
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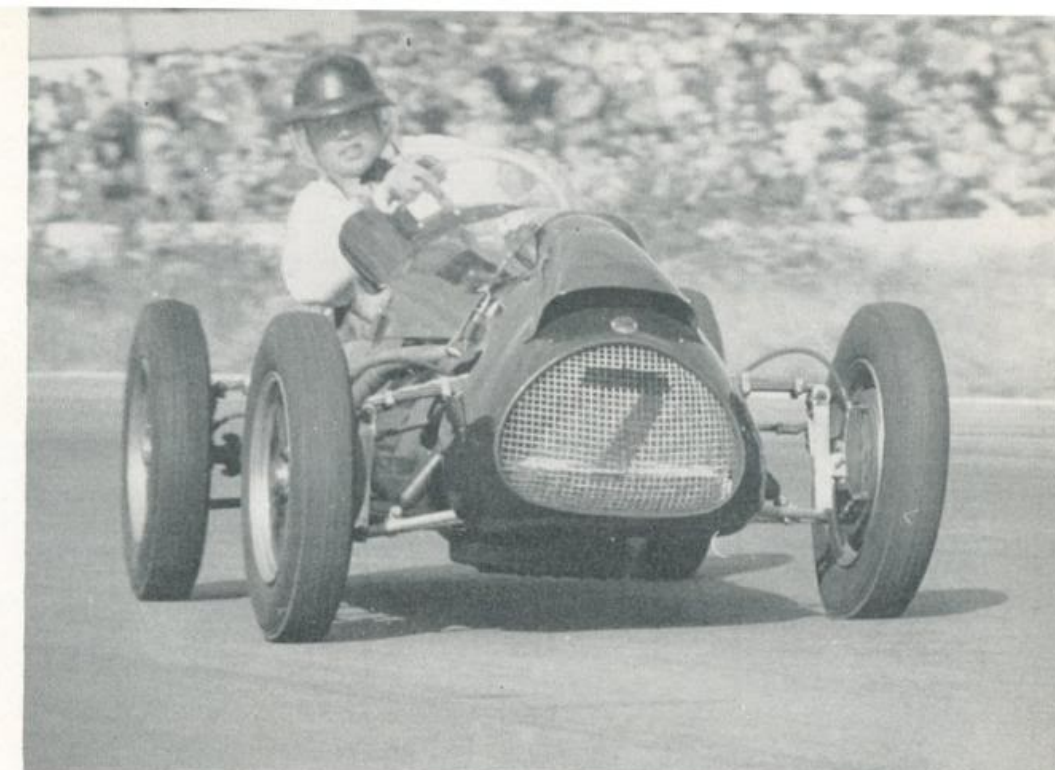


The Cooper-Bristol Formula 2 car which was driven into 4th place in the 1952 European Grand Prix at Spa by J. M. Hawthorn.



© WALTER WRIGHT

Photographer's favourite—Hawthorn caught in a drift.
(Photo: Geoffrey Goddard)



The Cooper-Bristol F.2.

by Keith Davey & Anthony Pritchard

The Cooper originated in 1946 as a 500 c.c. racing car with a J.A.P. engine mounted at the rear of a chassis based on the front parts of two Fiat 500 touring car chassis joined back-to-back, thereby providing independent suspension on all four wheels. The car was built in the family garage at Surbiton by 23-year-old John Cooper and his father Charles. Cooper Senior already had strong connections with motor racing as he had worked for Kaye Don on the Wolseley Viper, the 'Silver Bullet' and Don's Type 54 Grand Prix Bugatti. At first the car was driven by both John Cooper and his friend Eric Brandon, but a second car was soon built, and the Cooper 500s were so successful that an initial production batch of 12 was built. Many more followed and, despite intense competition in the early days, Coopers achieved almost complete domination of this class of racing; in all, nearly 400 Cooper 500s were built.

In 1949 the Coopers introduced a sports car prototype. They had earlier considered the possibility of a small rear-engined car, to be powered by a Triumph twin motor-cycle engine, but the final product was on more conventional lines. This had a Vauxhall Wyvern 1,500 c.c. engine mounted at the front of a chassis of similar general design to that of the 500s, and transmission by a Vauxhall three-speed gearbox. The body was a simple two-seater with cycle wings and the more powerful M.G. 'TD' engine in modified form was subsequently adopted. A total of six Cooper-M.G.s were built, the best known of which was JOY 500, owned by Cliff Davis. This was fitted with very stylish bodywork copied from the Superleggera Touring 'Barchetta' style used on the Tipo 166 Mille Miglia sports Ferrari. The success of these early front-engined cars encouraged the Coopers to try their hand at something more ambitious and the result was the Formula 2 Cooper-Bristol.

THE CHOICE OF ENGINE

The introduction by the F.I.A. for 1948 of Formula 2 for cars of 2,000 c.c. unsupercharged and 500 c.c. supercharged had stimulated considerable interest in the U.K., as it represented a much cheaper form of racing than Formula 1 and by 1951 fairly competitive cars had been built by H.W.M., Alta and Connaught. A problem facing all British constructors of Formula 2 cars was a lack of sufficiently powerful engines. Alta used their own engine and this unit was also chosen by H.W.M., but Cooper, E.R.A. and Frazer Nash all fitted the Bristol unit. This was based on the pre-war B.M.W. '328' engine, something of a compromise and already beginning to be outdated in 1939. The '328', a high-performance version of the six-cylinder 1,971 c.c. (66 × 96 mm.) B.M.W. unit had been modified by the designer, Dr Fiedler, so as to have hemispherical combustion chambers. Twin overhead camshafts would have been necessary with the design layout of this engine had not Fiedler retained the single camshaft with the inlet valves opened by upright pushrods in the normal manner, but with further horizontal pushrods crossing over to the exhaust side. After the war the B.M.W. engine was put into production by the Bristol Aeroplane Co. Ltd. without modification and used to power their own touring cars and Frazer Nash sports cars. The Frazer Nash was exceptionally successful in its class (see Car Profile no. 20) and the Bristol engine was one of the few reasonably high-performance units available at the time at a reasonable cost. Despite a power output of 127 b.h.p. at 5,800 r.p.m. in the form originally used by Coopers, it still had a power deficiency of 35-40 b.h.p. compared with the twin overhead camshaft cars raced in 1952 by Ferrari and Maserati. Furthermore, it was a heavy engine and its considerable depth made

it impossible to build a car with a low bonnet line unless the engine was canted or, as with the G-type E.R.A., offset in the frame and converted to dry sump lubrication.

CHASSIS DESIGN AND CONSTRUCTION

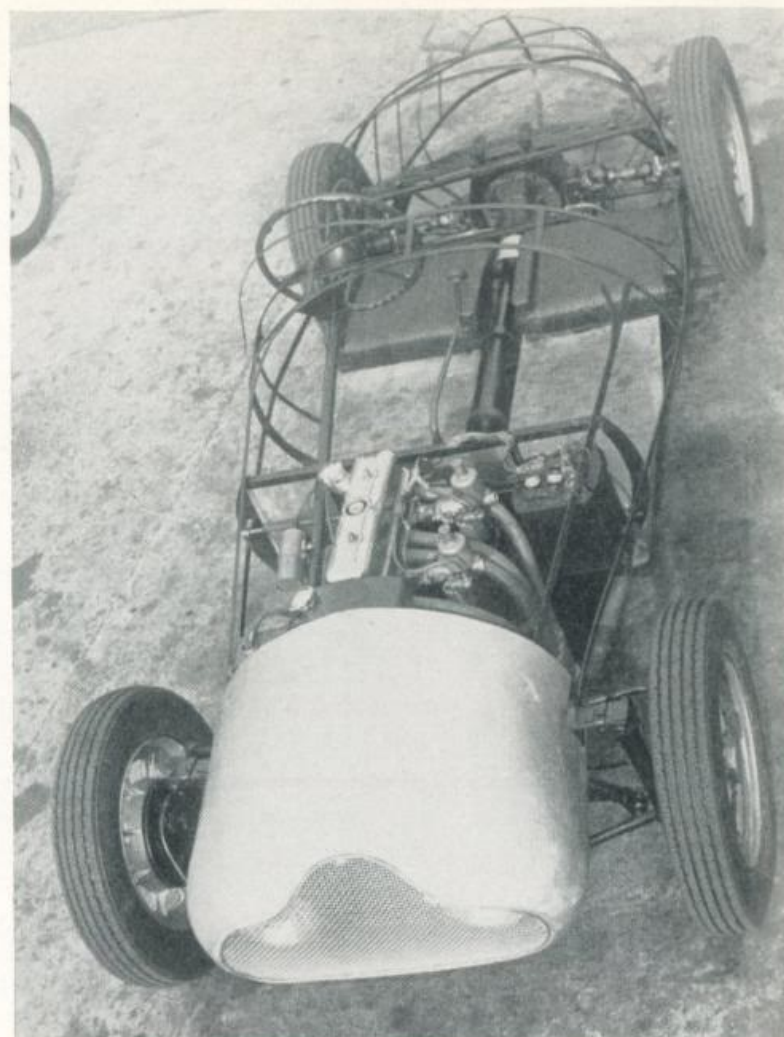
To overcome these drawbacks, the Coopers aimed at building a car that was as light as possible and they succeeded in keeping the dry weight of the design complete with engine to a little over 9 cwt. Following their sports car practice the engine was front-mounted and the frame consisted of main side members of drilled box-section with a tubular superstructure running parallel to and above the channel-section members and 'hoop'-shaped members providing additional rigidity mounted behind the radiator, in front of the scuttle and to the rear of the driver's seat. Suspension front and rear followed the Coopers' 500 practice by having a high-set transverse leaf spring, wishbones and telescopic Armstrong dampers front and rear. Despite the Cooper-Bristol's very low weight, it was a very strong car affording considerable protection for the driver in the event of an accident. As Charles Cooper once said, 'If I see anybody shunt one of my motor-cars, I like to see them get up and walk away.'

Transmission was by a Borg and Beck clutch, a four-speed Bristol gearbox with overall ratios of 3.46, 4.47, 6.31 and 10 : 1, and a Hardy-Spicer open prop-shaft to a spiral bevel final drive; the latter component, however, was soon changed to a hypoid bevel unit. Rack and pinion steering was featured and the Lockheed hydraulic brakes had 10-in. drums which were integral with the 15-in. cast alloy bolt-on wheels, another feature derived from Cooper 500 practice. Fuel capacity was 24 gallons with a tank mounted in the tail and smaller tanks mounted on either side of the frame. The bodywork was in style distinctly reminiscent of Ferrari practice.

THE 1952 SEASON

The first important race meeting of the British season always used to be the Easter Goodwood meeting, and it was here that the Cooper-Bristol made its debut. There were three cars entered, two for the Ecurie Richmond drivers Eric Brandon and Alan Brown, who had previously raced Cooper 500s, and the third for a young and almost unknown driver, Michael Hawthorn, who had previously raced a 1½-litre Riley. Bob Chase had considered Hawthorn to have great potential, and had bought the car for Hawthorn to drive. As they were new cars, quite a lot of interest

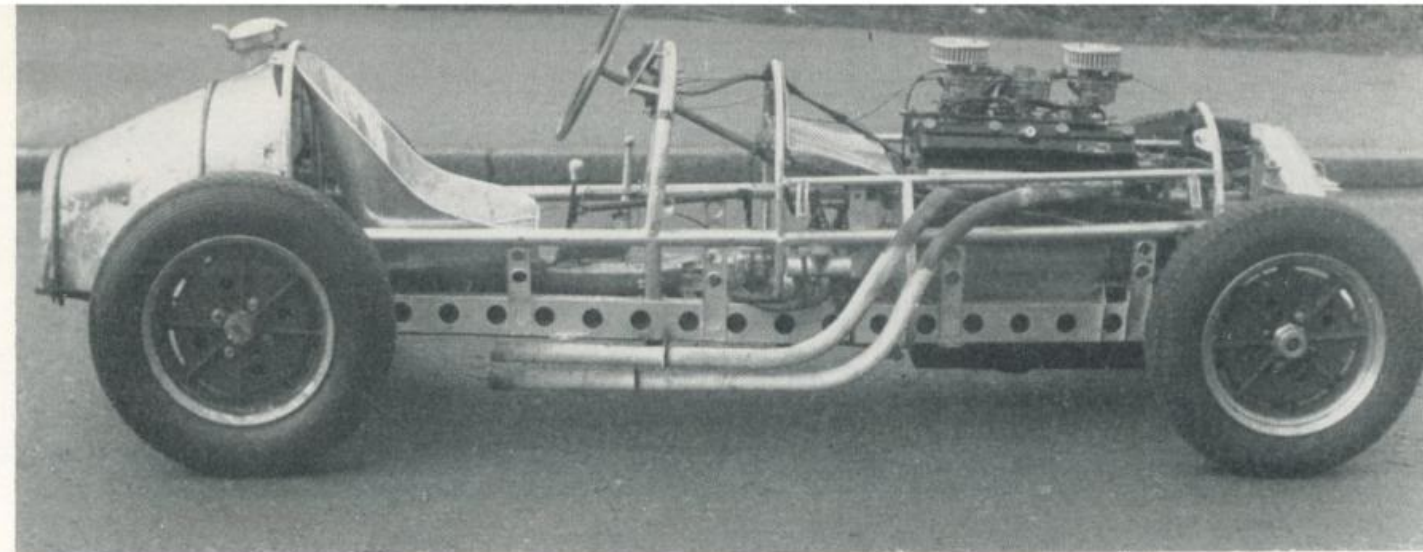
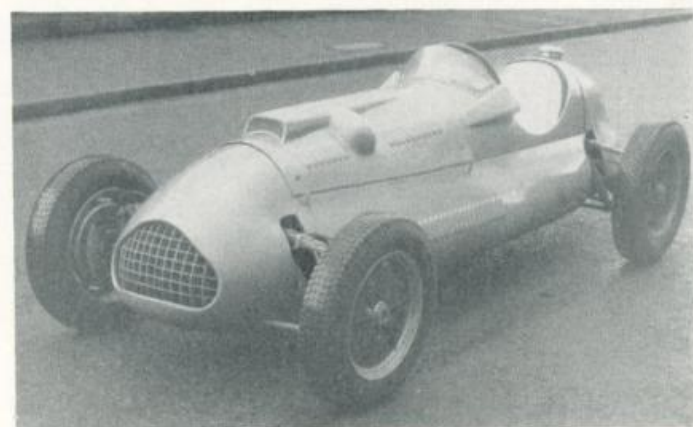
Left: The 'Barchetta'-styled Cooper-M.G. of Cliff Davis in 1953. Right: The prototype Cooper-Bristol.



The first front-engined Cooper, the M.G.-engined sports car, is shown in prototype form. (Photo: Guy Griffiths)

was centred on the Cooper-Bristols, but no one expected them to do really well on their first outing. In the Lavant Cup, a 14-mile Formula 2 sprint, Hawthorn, whose car was running on alcohol fuel and had a higher compression ratio than the other Coopers, ran away from the field with Brown and Brandon taking second and third places. In the Chichester Cup Formule Libre race of the same length, Hawthorn met no serious opposition and scored another victory ahead of Tony Rolt in the E.R.A.-Delage and a 4½-litre Lago-Talbot. In this race, Fangio drove Brown's Cooper, but was placed sixth as a result of carburettor trouble. After Brown had won a handicap race with his Cooper, Hawthorn went out to battle with Gonzalez at the wheel of the 4½-litre Thinwall Special in the Formule Libre Rich-

(Photos: Guy Griffiths)



Note the drilled box-section frame of the 1952 Cooper-Bristol. The gear change mechanism was derived from A.F.M. and Veritas practice. (Photo: Guy Griffiths)

mond Trophy. Throughout the race he closely trailed the Argentinian and took a very good second place. On the basis of one day's racing, both Hawthorn and the Cooper-Bristol had become headline news.

Hawthorn gained further successes in short distance Formula 2 and Formule Libre events at Ibsley, an airfield circuit in Hampshire. In the *Daily Express* Trophy meeting at Silverstone, run, as usual, in two heats and a final, Hawthorn won the first heat by 2.4 sec. from Behra's Gordini. At the start of the final, Hawthorn shot into the lead with Behra hot on his heels, but on lap three he was passed by the Gordini and pulled into the pits. The cause was a broken gear lever, and Hawthorn lost five laps before he was able to rejoin the race; he eventually finished 18th. Two other Coopers ran in this race, one, the Ecurie Richmond car of Brown, which had engine trouble, and the prototype car driven by Reg Parnell, which retired in its heat when in fourth place.

The weekend after Silverstone the Ecurie Richmond cars ran in the Swiss Grand Prix at Berne, while Hawthorn ran in a minor event at Boreham in Essex. Hawthorn had an easy win, but Brown and Brandon were faced with a strong Ferrari team, and Brown did quite creditably to finish fifth, despite an engine which had turned rather rough. Brandon finished eighth and last.

Over the Whitsun weekend Hawthorn won a 40-mile Formule Libre race at Charterhall on the Saturday and followed this up with a victory in the Formule Libre Sussex Trophy at Goodwood on the Monday. The following week he drove the works prototype car in the Ulster Trophy at Dundrod. This was a Formula 1 race, and the chief opposition came from the Thinwall Special, driven by Taruffi. Taruffi stalled on the line, and Hawthorn nipped into the lead, which he held for five laps. When Taruffi stopped for a change of wheels and a refuel, Hawthorn regained the lead, only to lose it once more when he made his own pit stop. He eventually finished in second place.

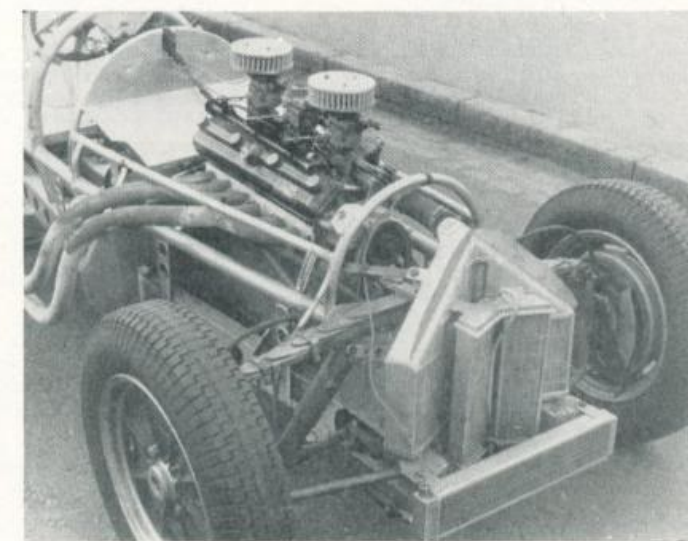
The following day was held the Gran Premio dell'Autodromo at Monza, in which Brown and Richmond were driving the Ecurie Richmond cars. It is worth mentioning here that Fangio, who drove a B.R.M. at Dundrod, flew to Paris and then drove to Monza to compete with an A6GCM Maserati on its European debut. He was far too tired to race and crashed on the second lap, breaking his neck. He did not race again until 1953. Brandon and Brown did

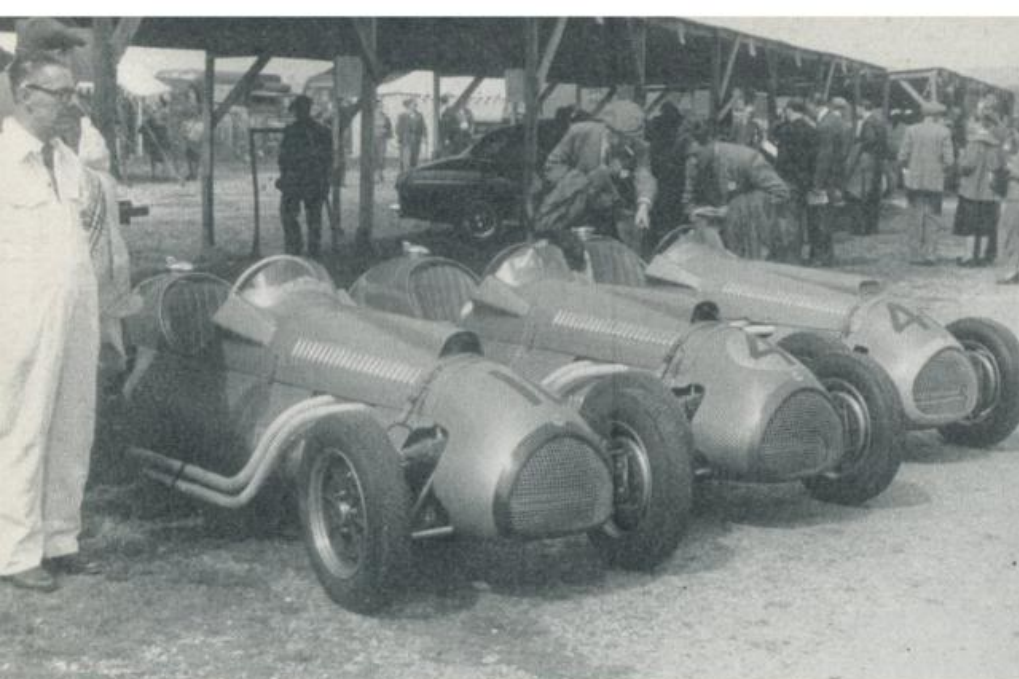
very well to take fifth and sixth places.

The Richmond team remained on the Continent to run in the European Grand Prix at Spa on 22nd June. For this race they were joined by Hawthorn, and it was also the debut of the new G-type E.R.A., another Bristol-engined car, driven by Stirling Moss. Hawthorn put up a magnificent performance, finishing in fourth place, which he had held for much of the race. Brown took sixth position and Brandon was ninth. A week later the same Cooper drivers took part in the Rheims Grand Prix. In this event Hawthorn again drove the prototype car, which had now been sold to A. H. Bryde. Rheims is a very fast circuit, and as none of the Coopers could exceed 130 m.p.h. they were completely outclassed by the much faster Ferraris and Gordini. The best showing was by Hawthorn, who finished seventh, while Brandon was eleventh after several pit stops in a vain attempt to cure carburettor trouble. Brown retired with a serious oil leak. Hawthorn also drove Bryde's car in the French Grand Prix at Rouen, but he was forced to retire with a split radiator header tank.

By now Cooper-Bristol production was well under way, and cars had been supplied to John Barber, Ecurie Ecosse and the Fraser-Hartwell Syndicate (driver André Loens). As a result, a grand total of five cars ran in the British Grand Prix at Silverstone: Hawthorn (entrant Bob Chase); Reg Parnell (entrant A. H. Bryde); Brandon and Brown (Ecurie Rich-

A view of the engine and combined oil and water radiators of the 1952 car. (Photo: Guy Griffiths)





The smart turn-out of the Cooper-Bristols on their debut at the Easter Goodwood meeting, 1952, belied the frenzied activity which went into their preparation. Standing to the left of the picture is Charles Cooper. (Photo: Guy Griffiths)

giving him a total of 10 points in the World Championship.

Before the Italian Grand Prix at Monza the Ecurie Richmond cars ran at La Baule and the Grenzlandring without success, and they were joined at Monza by Hawthorn and Wharton, the latter driving the Ecurie Ecosse car. Once again the Coopers were outclassed in terms of speed, as they were close to 30 m.p.h. slower on the straights. Hawthorn was put out of the running shortly after the start by a sheared magneto drive and, although he rejoined the race after an

hour, he had covered insufficient laps to be classified. All the cars finished, with Wharton in ninth place, which wasn't too bad in the circumstances, and the Richmond cars thirteenth and fifteenth.

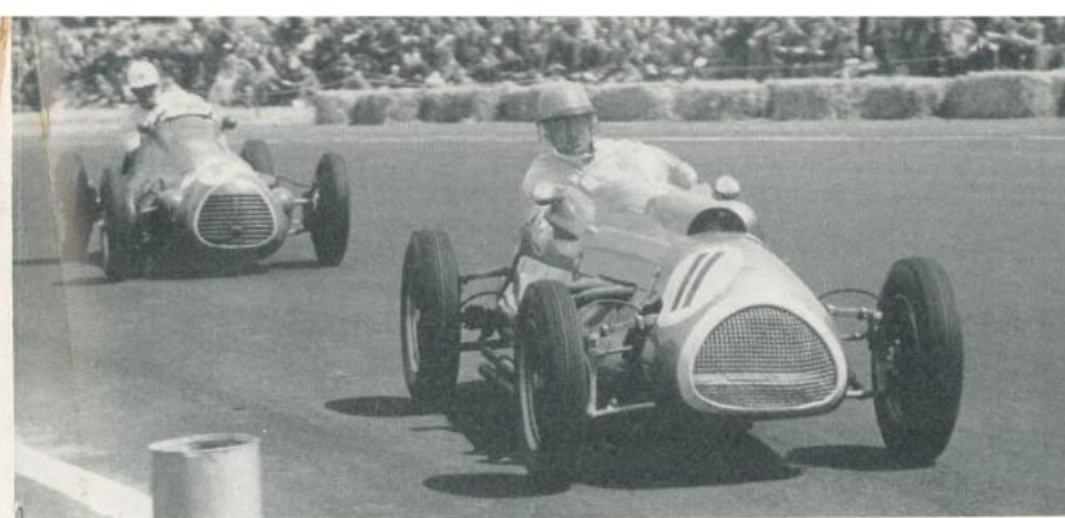
As a prelude to an invitation to join the works Ferrari team for the 1953 season, Hawthorn was offered a Ferrari for the Modena Grand Prix. He arranged for his Cooper to be driven by Roy Salvadori. Hawthorn decided to try the Cooper out, but, probably owing to the sudden change-over of cars, he pranged it rather badly, injuring his ribs. As a result, both drivers non-started.

The season was rounded off by minor races at Snetterton, where John Barber won the 15-lap Formule Libre event, an International meeting at Goodwood and a small event at Charterhall. Brown took third place in the Formula 2 Madgwick Cup at Goodwood, beaten by two Connaughts. Mike Hawthorn, however, must have felt even less happy when

mond); and David Murray (Ecurie Ecosse). Once again the race was Ferrari-dominated, but after Farina's Ferrari had suffered engine trouble Hawthorn finished third, with Parnell seventh. Brandon and Brown both had mechanical troubles and finished at the tail of the field, and David Murray retired. Hawthorn's performance was particularly significant as he now had seven points in the World Championship, and was ranked fifth equal with Manzon (Gordini). Brown also possessed two points on the strength of his performance at Bremgarten.

On August Bank Holiday Monday Hawthorn put up a further magnificent performance in the *Daily Mail* International Trophy meeting at Boreham, where in appalling weather conditions he won the Formula 2 category at 82.21 m.p.h., having led Villoresi's 4½-litre Ferrari for many laps; the Formula 1 and 2 races at this event were run concurrently. A total of seven Cooper-Bristols ran in this race. The following Sunday, Bryde drove his car at Comminges but retired, and a week after that Hawthorn put up another excellent performance in the Dutch Grand Prix at Zandvoort. The very good handling characteristics of the Cooper-Bristol made it a most suitable car for this comparatively slow circuit, which winds its way through the sand dunes. He put up a sufficiently good practice time to be placed on the front row of the grid, beating one of the Ferraris and the whole of the Gordini team. In the race he took an excellent fourth place behind the three works Ferraris,

Right: Victory smile. Mike Hawthorn after his first victory with the Cooper-Bristol at Goodwood, 1952. (Photo: Patrick Benjafield)
Below: Mike Hawthorn on his way to fourth place in the European Grand Prix at Spa in 1952. (Photo: Autocar)



Alan Brown's Ecurie Richmond Cooper-Bristol leads Harry Schell's Platé-Maserati in the 1952 British Grand Prix. Note how much higher the Cooper bonnet line is. (Photo: T. C. March)

to form a structure which was deepest at the bulkhead and tapered towards the front and rear suspension mountings. Below this diamond-shaped structure there were two longitudinal members to which were attached the lower wishbone pivots of the front and rear suspension.

he heard that Duncan Hamilton had blown up the very special engine of the Chase Cooper-Bristol in practice, breaking the crankshaft and wrecking the engine completely. The Chase car was, however, driven at Castle Combe by Wharton, and for this race a 'standard' Frazer Nash engine had been fitted. With this, he took second place in the Formula 2 race and third place in the Formule Libre event. There was a nasty shunt, however, in the Formula 2 race when Brown's Cooper hit Barber's, which was sideways across the road, and shoved it into Whitehead's Alta. All three cars were badly damaged. In the final meeting at Charterhall none of the Coopers entered achieved any success.

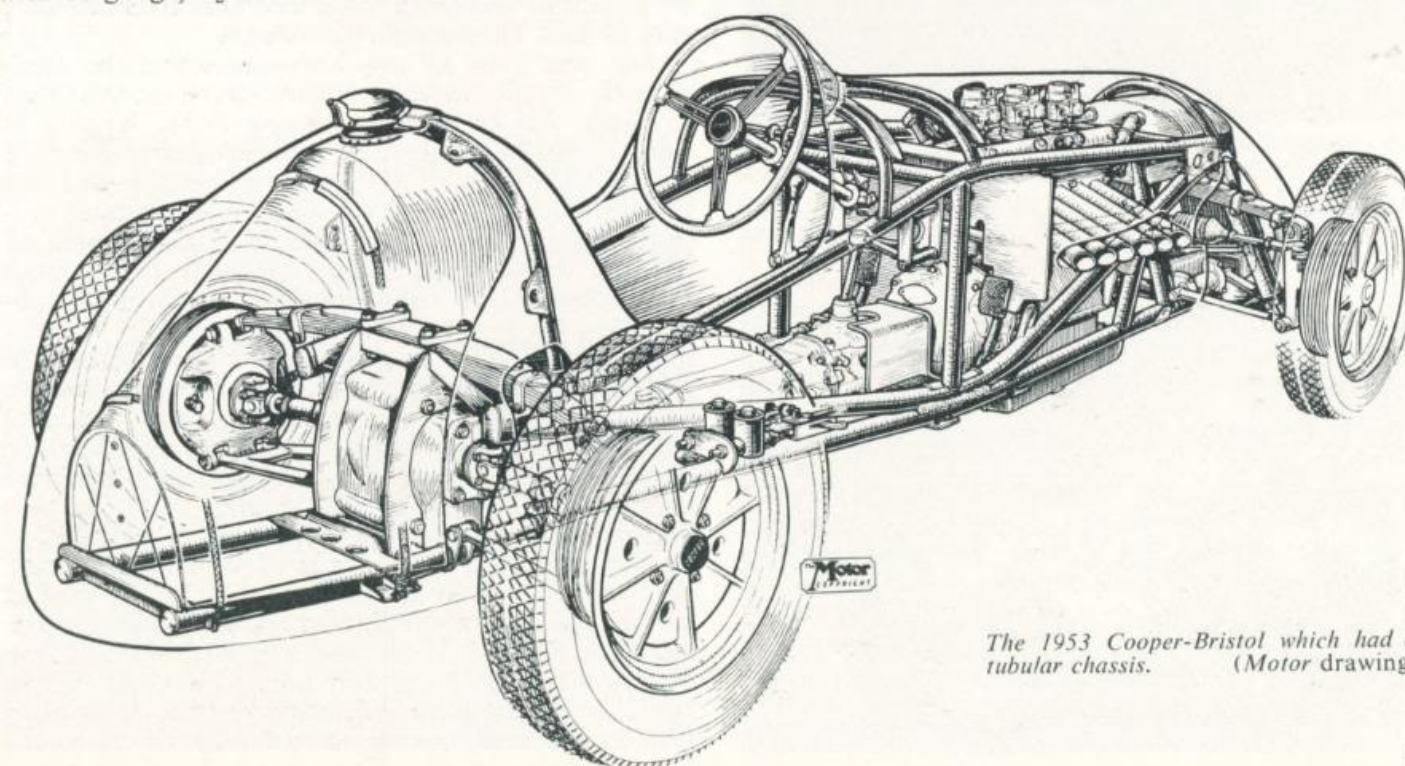
MODIFICATIONS FOR THE 1953 SEASON

Coopers were so well advanced with development work that the 1953 car was ready by the October of the previous year. Although engine tuning to a higher state than the works specification had been carried out by private owners, notably by Leslie Hawthorn to the Bob Chase car, power output in standard form was substantially increased to 150 b.h.p. at 5,750 r.p.m. by a number of modifications which included raising the compression ratio to 10 : 1 from 8.5 : 1. A new frame was used, of tubular construction throughout, with 16-gauge, 1½ in. diameter steel tubes welded up

was given a new magnesium alloy casing and a change was made in the wheel and brake design. Although the Cooper retained cast light-alloy wheels, these were now separate from the brake drums and 11 in. Al-fin drums were fitted. New and lighter cast magnesium combined brake back plates and stub-axle carriers were also fitted. Another change concerned the radiator; this had previously been a vee-shaped affair with the point facing the engine and with an integral oil-cooler of the same shape, mounted in the vee. For 1953 a new design was introduced of flat construction with a low-mounted oil-cooler and twin radiator cores inclined inwards forming a triangular pattern. A vertical slot between the cores provided a direct air supply to the carburettors.

THE 1953 SEASON

Cooper prospects in Grand Prix racing during 1953 were rather diminished by the fact that Hawthorn would no longer be seen at the wheel of Bob Chase's Cooper-Bristol with its engine tuned by Leslie Hawthorn to a degree higher than that of the other Coopers racing in 1952 and distinguished by the 'trunk' air intake on the bonnet. His fine performances during that year had culminated in an invitation to join the works Ferrari team, which he had accepted, and the Chase car was to be rebuilt as a sports car. New cars had been ordered by Bob Gerard, Rodney



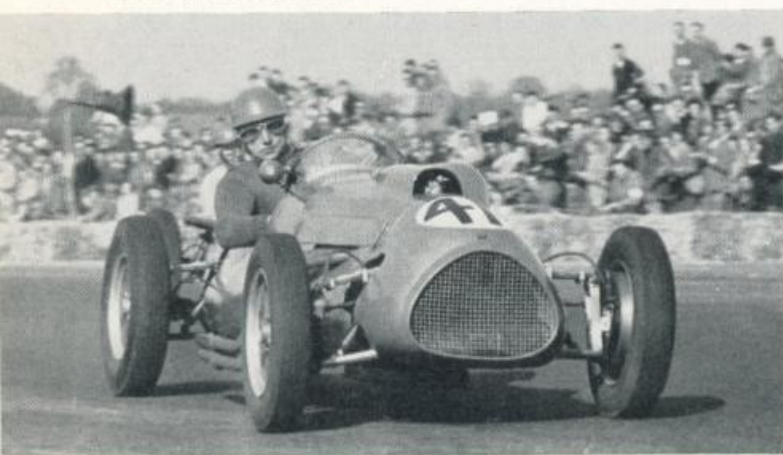
The 1953 Cooper-Bristol which had a tubular chassis. (Motor drawing)



Ecurie Ecosse cars in the wet—J. Lawrence's Cooper leads Ian Stewart's C-type in the 1953 Leinster Trophy. Lawrence won the racing car class. (Photo: Autocar)

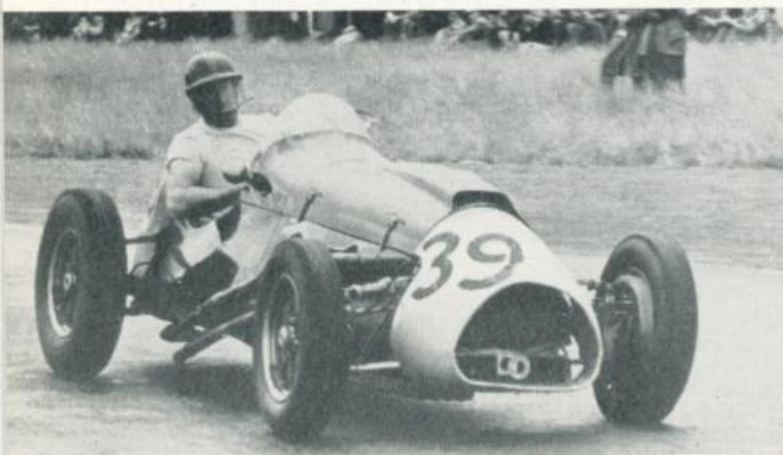
Nuckey, the Ferrari driver Tom Cole, and a special works version was to be driven by Ken Wharton, who had handled a Formula 2 Frazer Nash during the preceding year.

Coopers had received an invitation to take part in the Argentine races at the beginning of the year, and entries were made for Alan Brown and John Barber, who was to drive the Fraser-Hartwell car. Charles Cooper accompanied the cars as Team Manager. Neither Brown nor Barber were top-line drivers and, as the cars were in any case underpowered, they performed rather according to expectations, finishing eighth and ninth at the tail of the field in the Argentine Grand Prix. A fortnight later the cars ran in the Buenos Aires City Grand Prix, held over a shorter distance. Alan Brown blew up his engine and Barber took twelfth place.



Eric Brandon's hard-worked Ecurie Richmond car in the 1953 Daily Express Trophy at Silverstone. (Photo: T. C. March)

A great all-rounder—Ken Wharton, B.R.M. works driver, Hill Climb Champion, Rally winner and on this occasion winner of the Formula 2 race at the 1953 Charterhall meeting. (Photo: Autocar)



The first race of the European season was the Syracuse Grand Prix, held on 22nd March. Rodney Nuckey and Tom Cole appeared with their new cars and other Cooper entries were received from Eric Brandon and Peter Whitehead, who was driving his new Mk. II car in which he had installed the engine from the Formula 2 Alta he had raced the previous year. This was the memorable race in which all the works Ferraris retired because of faulty valve springs. The winner was de Graffenried's A6GCM Maserati. Nuckey, Brandon and Whitehead, through Ferrari's misfortune, took third, fourth and fifth places, but all were six laps behind the winner. Tom Cole crashed as the result of a burst tyre. The car overturned and caught fire and, although poor Cole escaped unscathed on this occasion, he was to crash with fatal results at Le Mans less than three months later.

The Easter Goodwood meeting saw the debut of both the Equipe Anglaise (Bob Chase) Cooper-Alfa driven by Paul Emery and Stirling Moss's new 'non-Cooper' referred to later. None of the Coopers at this meeting achieved any substantial success, although Jimmy Stewart with the Ecurie Ecosse car won a handicap race. Those two forceful drivers Wharton and Gerard appeared with their cars at the April Snetterton meeting, and at last in 1953 Coopers began to get a faint whiff of success. Wharton won the Formule Libre race, setting a new lap record of 87.72 m.p.h., and Gerard was second in the Formula 2 race to Eric Thompson's Connaught.

The next event of any importance was the Daily Express Trophy meeting at Silverstone on 9th May. Wharton put in another stirring drive, lapping at times faster than he had the previous year in the V-16 B.R.M. Although he was second in his heat to Hawthorn's works Ferrari, because of a persistently misfiring engine he could manage no higher than fifth place in the final. Moss was second in his heat but retired in the final, and Gerard was eighth in his heat and eleventh in the final. The following day Rodney Nuckey won a Formule Libre event at Helsinki from Laurent's privately-entered Ferrari, and followed this up three days later with another victory at Tampere.

A week after Silverstone was held came the Ulster Trophy, and Wharton put up another fine performance. In his heat he finished a mere seven seconds behind Hawthorn's Ferrari at an average speed of 88.07 m.p.h. compared with 88.28 m.p.h. He repeated the performance in the 104-mile final and finished second again, a minute in arrears. At the end of the month Cole and Whitehead ran their cars in the Formula 1 Albi Grand Prix and, as a result of tyre troubles afflicting the B.R.M.s, Whitehead finished fifth in the final, taking second place in his class.

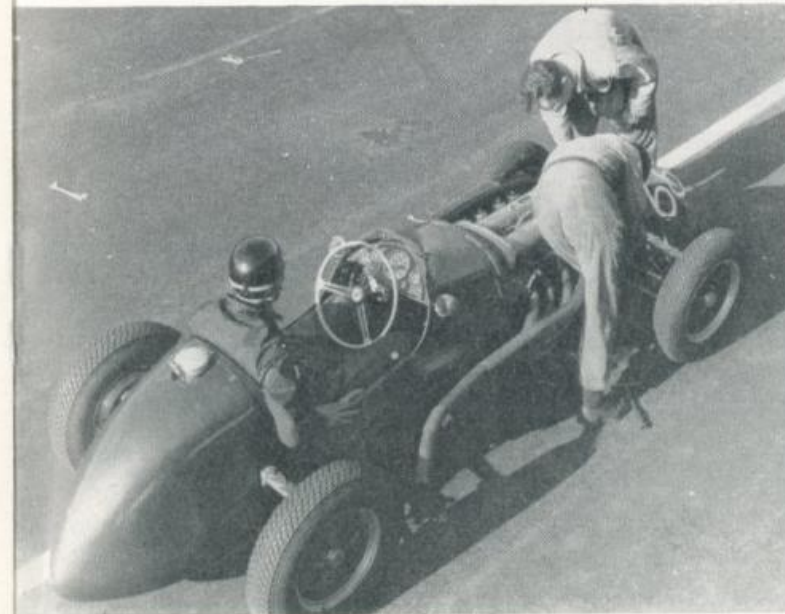
Sole Cooper driver in the Dutch Grand Prix at Zandvoort was Ken Wharton, who went well until eliminated by a broken suspension wishbone.

The Rouen Grand Prix at the end of June was another combined Formula 1 and 2 race. Two Coopers were entered but, as they were faced by 4½-litre Lago Talbots and two 2½-litre Ferraris, they had little hope of doing well. Bob Gerard was placed eighth overall and second in the 2-litre class to Schell's Gordini, and Moss in the Alta-engined car was tenth, despite gearbox trouble. These two cars then went on to Rheims for the French Grand Prix, held a week later, and here they were joined by Wharton's car. Once again they were completely outpaced and, although Gerard took eleventh place, five laps in arrears of the Maseratis and Ferraris, Wharton retired with big-end trouble and Moss with clutch failure.

Back on home territory again, the Coopers reappeared in the British Grand Prix at Silverstone. Once again the British cars had insufficient power to stay with the Italian cars, and out of six Coopers entered there were only two finishers—Wharton in eighth position and Whitehead ninth. Even they had troubles, and finished 10 and 11 laps behind the winner respectively. The season continued with the German Grand Prix at the Nürburgring. This was another unhappy meeting for the British cars for Brown, with the car he was sharing that year with Eric Brandon, retired with suspension trouble—a common failing at the Nürburgring—and Moss and Nuckey were sixth and eleventh. Moss, who had gearbox trouble, was now driving a standard Mk. II Cooper, fitted with his Alta engine.

Wharton was the sole Cooper entrant in two further Continental events. In the Swiss Grand Prix at Bremgarten he finished seventh, three laps in arrears, and at Cadours he took sixth place, behind three Gordinis and two privately-entered Ferraris. The Surbiton cars then turned out in greater numbers for the Italian Grand Prix. Wharton finished, but he was unclassified as he had covered only 57 laps as against the winner's 80. He had struggled for much of the race with a misfiring engine and just before the end had suffered a broken magneto drive which had resulted in his pushing the car across the line.

Tony Crook's Cooper-Alta waits on the side-lines at Silverstone in 1953. (Photo: Guy Griffiths)



Bob Gerard on the grid before the start of the 1954 British Grand Prix. (Photo: Autocar)

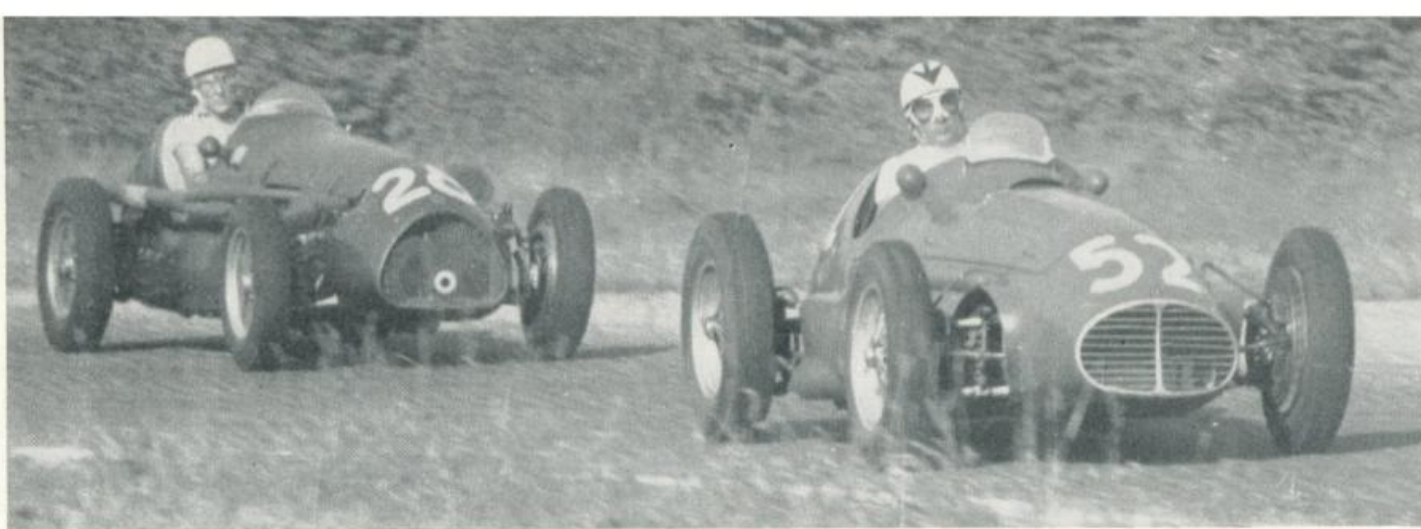
Brown and Moss were twelfth and thirteenth, but Moss's performance was particularly meritorious and reference is made to this later.

At the end of the season there was the usual Goodwood meeting, where Gerard took third place in the Formule Libre Goodwood Trophy and Moss was second to Salvadori's Connaught in the Formula 2 Madgwick Cup and took fourth place in the Formule Libre Woodcote Cup.

COOPERS FITTED WITH OTHER ENGINES

Various other power units in addition to the Bristol were used during 1953. Peter Whitehead and T. A. D. Crook ordered new chassis to which they fitted standard 1,970 c.c. four-cylinder Alta engines as used in the H.W.M. Formula 2 cars. The only modifications necessary to the standard chassis affected the top tubes. In theory these cars should have done quite well, as the power output matched that of the Bristol engine and they were around 2 cwt. lighter than the successful H.W.M. As the results tables reveal, they failed to achieve any really satisfactory performances, but Whitehead continued to race his car in a few events during 1954, by when it had been fitted with a 2½-litre engine to comply with the new Formula. Peter Walker also had a 1952 chassis fitted with a supercharged 2-litre E.R.A. engine.

A very non-standard car was raced by Stirling Moss during 1953. Although known as a Cooper, it was to the design of Ray Martin in consultation with the late John Cooper, Technical Editor of *The Autocar*, and used a very small number of Cooper (of Surbiton) components, including wheels, certain frame tubes and some body parts. It was very non-Cooper in that it possessed coil spring front suspension, a de Dion rear axle, disc front brakes and inboard-mounted rear brakes. The car was a complete failure for a variety of reasons, and half-way through the season Moss had the Alta engine and gearbox transferred to a standard Mk. II chassis. This ran in the German Grand Prix at the Nürburgring where it finished sixth, and it took third place at Les Sables d'Olonne. By the Italian Grand Prix at Monza the Alta engine was running on S.U. fuel injection and in the race it used nitro-methane, an oxygen-bearing fuel. In this way the power output was boosted from 150 b.h.p. to 200 b.h.p. at 6,000 r.p.m. At Monza Moss showed tremendous speed, passing some of the slower Italian cars along the straight, but with the high power output available the Cooper began to show its deficiencies, and whenever the car exceeded 135 m.p.h. along the



Fast but unreliable, Moss's fuel injection Cooper-Alta slipstreaming Bonetto's A6SSG Maserati in the 1953 Italian Grand Prix. (Photo: Motor Sport)

straight the tyres would tend to throw a tread. After numerous pit stops Moss finished thirteenth. Although the Cooper appeared always to have superlative roadholding, there is no doubt that further chassis development would have been necessary if the car were to be raced with an engine of an output matching that of the Italian cars. The Moss car in Monza form had a maximum speed of about 165 m.p.h.

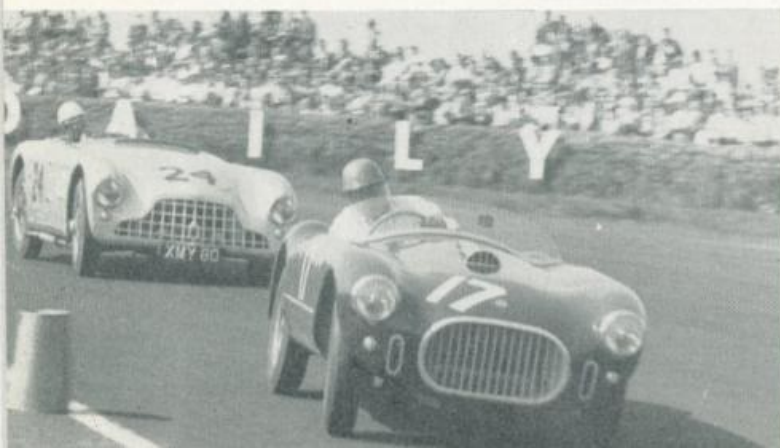
FORMULA 2 POSTSCRIPT

In 1954 Formula 2 was superseded by the new Formula 1 for unsupercharged 2,500 c.c. cars. Single-seater Cooper-Bristols continued to be raced by British drivers, including Horace Gould, who subsequently graduated to a 250F Maserati, Keith Hall, who became a works Lotus driver, and Bob Gerard. The latter enlarged the capacity of his car to 2,246 c.c. and as late as 1956 took eleventh place in the British Grand Prix. In all, twenty single-seaters were built, including those with Alta and E.R.A. engines, and quite a number of these were converted to sports two-seaters. In 1955 Jack Brabham fitted a Bristol engine into a rear-engined Cooper sports car. He drove this in the British G.P. at Aintree and used it to win that year's Australian G.P.

THE SPORTS CARS

For 1953 the Chase Cooper-Bristol was completely rebuilt as a sports car. This was fitted with a very handsome full-width body designed by Chase's full-time mechanic, Bernie Rodgers. Rodgers later designed the Warrior-Bristol sports car for Rodney Nuckey and the Peerless G.T. At the same time, Chase had ordered a Formula 2 car which was powered by an Alfa Romeo 1,900 c.c. engine, but this did not prove a successful combination.

Alan Brown's Cooper-Bristol Sports leads an Aston Martin DB3 at Silverstone in 1953. (Photo: Guy Griffiths)



Shortly afterwards the Factory announced a production version of the sports two-seater, and this was very similar to the Chase car except that the dimensions were rather more generous. The chassis was more rigid than that of the M.G.-engined cars, and was still based on the box-section frame of the 1952 Formula 2 car but with undrilled side-members, 18-gauge steel tubular upper longerons to support the body and additional cross-bracing. The radiator was of the 1952 pattern, but the wheels were not integral with the brake drums. A full-length under-shield was fitted and the dry weight was a little over 2 cwt. heavier than the Formula 2 cars.

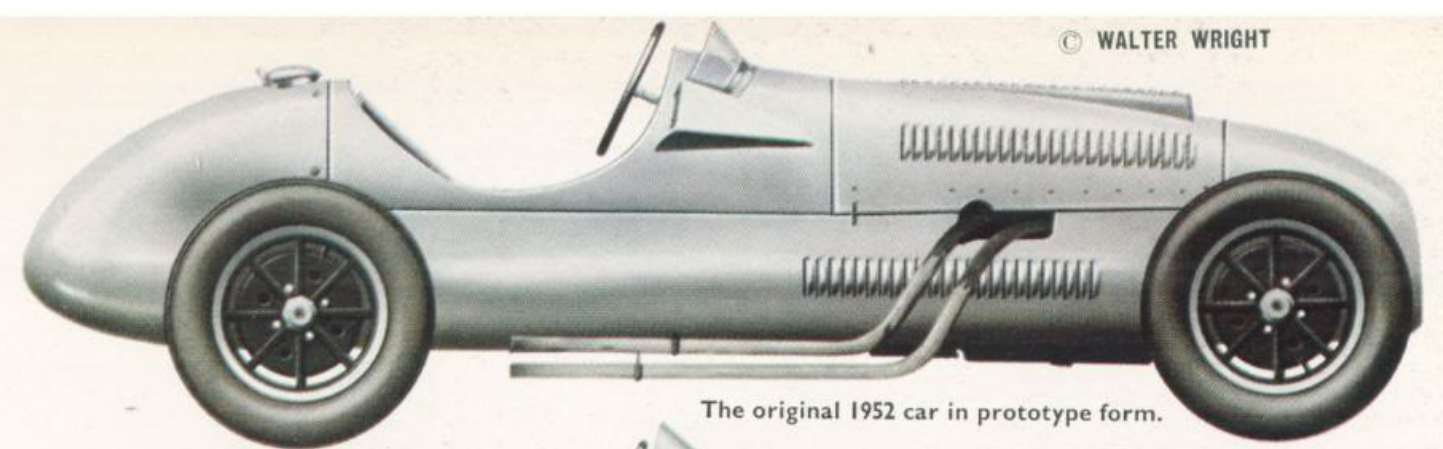
There were originally plans for producing 25 of these cars at a basic price of approximately £2,000, but total production amounted in fact to only six cars. The Chase car, driven by Alan Brown, achieved a fair degree of success in British events and its record included a second place on its debut at the opening Goodwood meeting in 1953, eighth place and a class win in the production sports car race at that year's *Daily Express* Trophy Silverstone meeting, and a win in the 1954 British Empire Trophy, held on a handicap basis. The prototype production car did not appear until the 1953 Goodwood Nine-Hours race, where it was overturned by John Coombs.

The performance of the sports Cooper-Bristol was about the same as that of the faster Le Mans Replica Frazer Nashes. One car, raced by Tony Crook, had cycle-wing two-seater bodywork so that it could run in either sports or racing car events. Although only these six cars were made by the works, quite a number of Formula 2 cars were subsequently converted to sports car specification.

© Keith Davey and Anthony Pritchard, 1967.

SPECIFICATION: FORMULA 2 MK. II SINGLE-SEATER

ENGINE: (Manufacturer: Bristol).
Capacity: 1,971 c.c. (66 × 96 mm.).
No. of Cylinders: Four in line.
Valves: Two per cylinder inclined at an angle of 80 degrees.
Valve Actuation: Cross-over pushrods.
Compression Ratio: 10 : 1.
Carburettors: Three Solex Type 32BI downdraught.
Ignition: Coil or vertical magneto.
Lubrication: Wet sump.
Power Output: 150 b.h.p. at 5,800 r.p.m.
Max. b.m.e.p.: 152.5 lb. p.s.i. at 3,500 r.p.m.
B.H.P. per sq. in. of Piston Area: 4.7.
Peak Piston Speed ft. per min.: 3,620.
Fuel: 80 per cent 80-octane petrol, 10 per cent benzol and 10 per cent methanol.
Fuel Consumption: 12-15 m.p.g.
Sump Capacity: 10 pints.
Exhaust System: Two sets of three pipes merging into two tail pipes.



The original 1952 car in prototype form.



The car raced by Ken Wharton throughout the 1953 season. In this form it finished 8th in the 1953 British Grand Prix.



The car raced 6th in the entered as having

by Bob Gerard from 1953-1956. In the form shown it finished 1953 *Daily Express* Trophy at Silverstone. In 1955 it was an engine of 2157 c.c. and in 1956 of 2246 c.c. Note the

modified exhaust systems of this and Wharton's car above.



The sports Cooper-Bristol raced by Anthony Crook. This car had detachable wings and lighting so that organisers would accept it in racing car events. It was

rebuilt from Crook's Cooper-Alta.



The first of the sports—the rebuilt Formula 2 car owned by Bob Chase. As seen here it finished 2nd in the 2-litre class of the 1953 Goodwood Nine Hours race driven by Alan Brown and Michael Currie.



Another view of the sports Cooper-Bristol. These cars were undeniably well styled and this photograph makes interesting comparison with the Cooper-M.G. shown earlier and the Tojeiro-Bristol illustrated in Profile No. 60.

(Photo: Guy Griffiths)

TRANSMISSION:

Clutch: Borg and Beck single dry-plate.

Gearbox: Bristol four-speed and reverse with ratios of 1st, 10 : 1; 2nd, 6.31 : 1; 3rd, 4.47 : 1; and top, 3.46 : 1.

Final Drive: Open prop-shaft to E.N.V. hypoid bevel gear on frame with magnesium alloy final drive casing.

CHASSIS:

Frame: Triangulated multi-tubular frame of 16-gauge steel tapering towards the front and backwards from the bulkhead (box-section with tubular reinforcement on 1952 cars).

Front and Rear Suspension: Transverse leaf spring and wish-bones with Armstrong telescopic dampers.

Steering: Rack and pinion.

Brakes: Lockheed hydraulic two-leading shoe with Alfin 11 in. drums (10 in. drums on 1952 cars).

Wheels: Cast light alloy (integral with drums on 1952 cars).

Tyre Size: Front, 5.00 x 15; rear, 6.00 x 15.

Fuel Capacity: 24 gallons, tanks in tail and on either side.

DIMENSIONS:

Wheelbase: 7 ft. 6 in.

Front Track: 3 ft. 10 in.

Rear Track: 3 ft. 10½ in.

Overall Length: 11 ft. 4 in.

Overall Height: 3 ft. 3 in.

Unladen Weight: 9¼ cwt.

Ground Clearance: 5 in.

SPECIFICATION: BRISTOL-ENGINEED SPORTS CARS

As for the Formula 2 Mk. II with the following differences:

ENGINE:

Compression Ratio: 9 : 1.

Power Output: 141 b.h.p. at 5,750 r.p.m.

Fuel: Pump petrol.

Exhaust System: Two three-branch exhaust pipes meeting approximately half-way down the car to form single tail pipe.

TRANSMISSION:

Choice of three sets of gear ratios according to axle ratio:

Top:	3.27	3.64	3.916
3rd:	4.22	4.70	5.05
2nd:	5.96	6.64	7.14
1st:	9.55	10.62	11.43
Rev:	9.45	10.52	11.31

CHASSIS:

Frame: Similar to box-section of 1952 cars, but with undrilled side members, 18-gauge tubular upper longerons and hoops to support the body and additional cross-bracing.

Suspension: Armstrong shock-absorbers at rear mounted on the built-up cross-members instead of on the side tubes.

Tyre Size: 5.00 or 6.00 x 15.

Fuel Capacity: 19 gallons.

Body: Panelled in 18-gauge aluminium with full-length under-shield.

DIMENSIONS:

Wheelbase: 7 ft. 6 in. (as F2 car).

Front and Rear Track: 4 ft. 2 in.

Overall Length: 12 ft. 0 in.

Overall Width: 4 ft. 8 in.

Overall Height: 3 ft. 2 in.

Dry Weight: 11¾ cwt.

Ground Clearance: 5½ in.

Cooper-Bristol Performances in Grandes Epreuves

1952

Swiss G.P.
Bremgarten
18th May
280 miles

5th A. E. Brown
8th E. Brandon

European G.P.
Spa-Francorchamps
22nd June
315 miles

4th J. M. Hawthorn
6th A. E. Brown
9th E. Brandon

French G.P.
Rouen
6th July
3 hours

Retired J. M. Hawthorn, split radiator header tank

British G.P.
Silverstone
19th July
249 miles

3rd J. M. Hawthorn
7th R. Parnell
20th E. Brandon
22nd A. E. Brown
Retired D. Murray

Dutch G.P.
Zandvoort
17th August
234 miles

4th J. M. Hawthorn

Italian G.P.
Monza
7th September
313 miles

9th K. Wharton
13th E. Brandon
15th A. E. Brown
Not classified J. M. Hawthorn

1953

Argentine G.P.
Buenos Aires Autodrome
18th January
252 miles

8th J. Barber
9th A. E. Brown

Dutch G.P.
Zandvoort
7th June
235 miles

Retired K. Wharton, suspension

French G.P.
Rheims
5th July
312 miles

11th F. R. Gerard
Retired K. Wharton, big end failure
Retired S. Moss (Alta engine), clutch

British G.P.
Silverstone
18th July
263 miles

8th K. Wharton
9th P. Whitehead (Alta engine)
Retired F. R. Gerard
Retired J. Stewart, crash
Retired A. E. Brown, fan belt
Retired T. A. D. Crook (Alta engine), fuel feed trouble on the starting line

German G.P.
Nürburgring
2nd August
256 miles

6th S. Moss (Alta engine)
11th R. Nuckey
Retired A. E. Brown, suspension

Swiss G.P.
Bremgarten
23rd August
294 miles

7th K. Wharton

Italian G.P.
Monza
13th September
312 miles

12th A. E. Brown
13th S. Moss (Alta engine)
Not classified K. Wharton