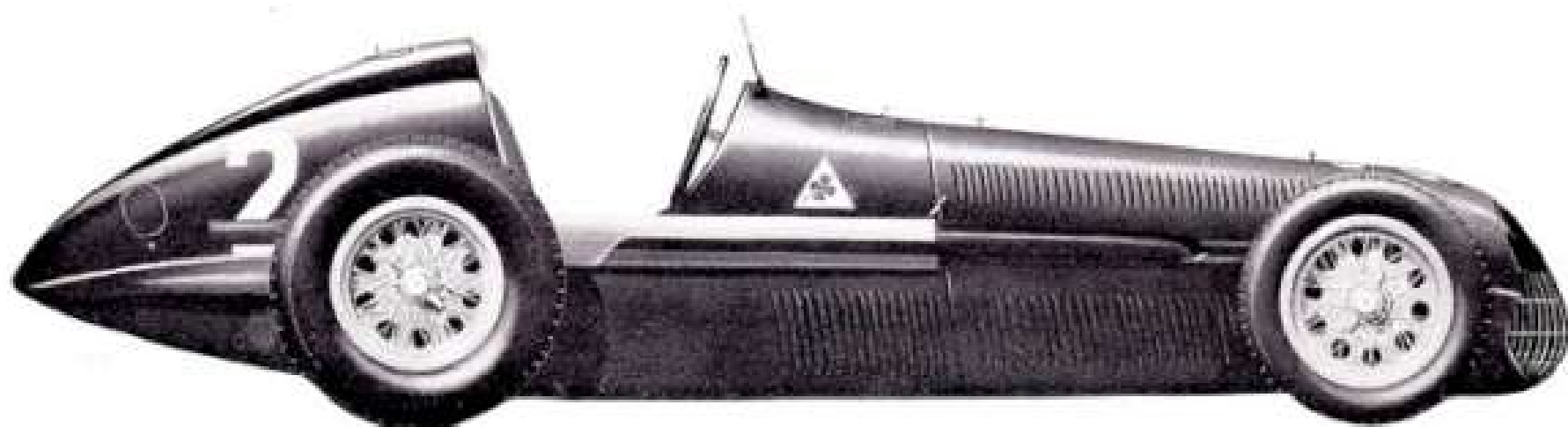


The Alfa Romeo Type 158/159



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THE ALFA ROMEO TYPE 158, winner of the 1950 European (British) Grand Prix at Silverstone. Average speed 90-95 m.p.h. for 202 miles. Driver: Dr. Giuseppe (Nino) Farina.

The Alfa Romeo Type 158/159



by David Hodges

For years after the war, the Alfa Romeo 158 was the car to beat in Grand Prix racing; 1950 was their finest year, although the challenge was at last strong and the cars were no longer driven automatically to team-arranged victories in the grandes épreuves. Fangio and Farina running nose to tail in one of the lesser races of the year, the Bari Grand Prix. (Photo: Planet News Ltd.)

It is beyond dispute that the Alfa Romeo Type 158 was a most remarkable racing car. Briefly, it was a front-line car for eight years, extending over a period of thirteen years; it was outstanding in voiturette and Grand Prix racing; it won the first race in which it was run and the last race in which it was run; as a voiturette it was faster than near-contemporary Grand Prix cars, as a Grand Prix car it was all-conquering.

Just as one of its predecessors, the Alfa Romeo B-type, came to typify the monoposto racer of the early 'thirties, so did the Type 158 completely fit the imagination's requirements for a Grand Prix car of the immediate post-war years—it was red, balanced and purposefully proportioned, it could thrill with its noise and many of the men who drove it were obviously heroes. A row of Alfas leading a Grand Prix field away in the late 'forties or early 'fifties was a splendid sight.

The 158 was born of Italian despair during the years of German superiority in the Grands Prix of the late 'thirties. More specifically, to fulfil Ferrari's requirement for a new car to campaign in 1.5 litre voiturette races from 1938 onwards. Its whole career is often recalled as being on a similarly modest scale—perhaps it was by the standards of the pre-war German teams, but by 1940, when there was the encouraging prospect that it would be a fully-developed car tailor-made to run under a new Grand Prix Formula in 1941, a dozen had been built exclusively for the works team and, in memory, the Alfa Romeo supporting caravan at Rheims in 1948 has been equalled in post-war years only when Daimler-Benz returned to racing in 1954.

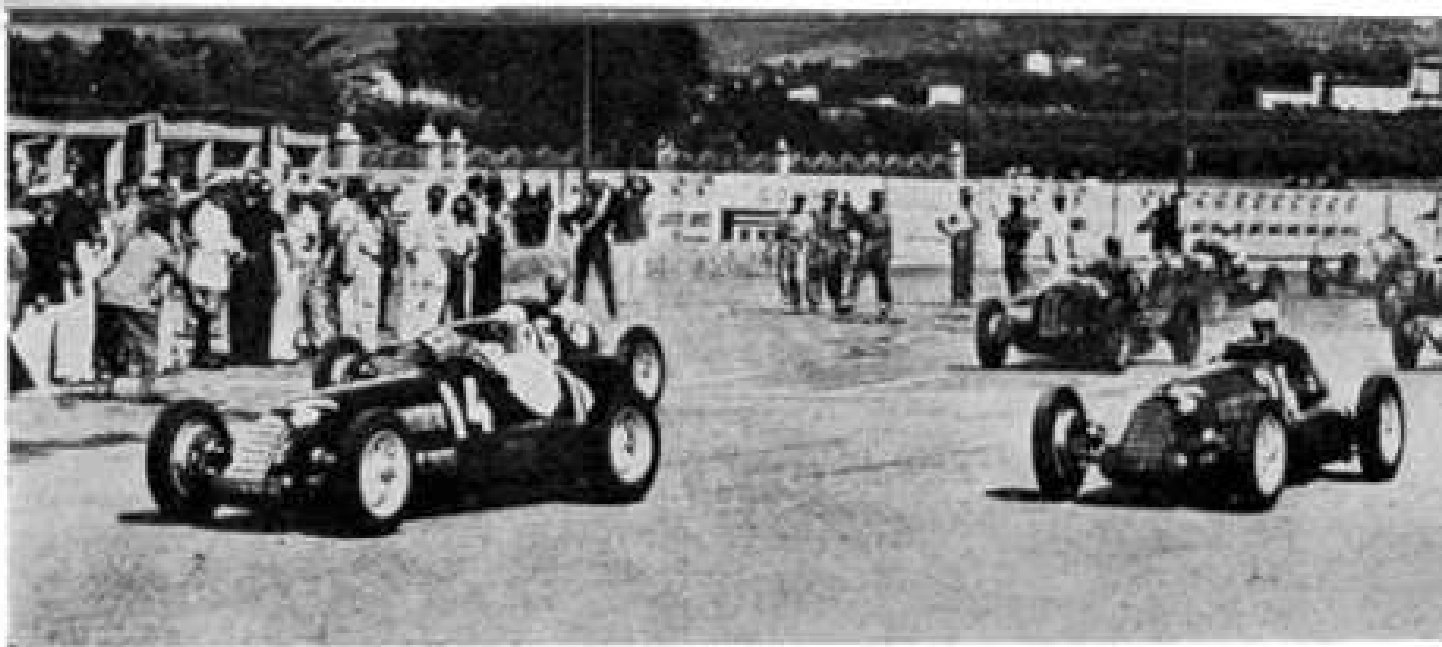
The design was entrusted to Gioachino Colombo, who had worked with Vittorio Jano, designer of the classic Alfa Grand Prix cars, for over a decade. His design proved to be simple and straightforward and was to become a classic in its own right.

THE ALFETTA

Colombo worked in the Ferrari plant at Modena and it was here that the first batch of cars was laid down. Components for six were put in hand, the major parts were machined at Milan and during the winter of 1937-38 the first four cars were assembled. Meanwhile, Alfa Corse had been formed, out of the Scuderia Ferrari and for a while with Enzo Ferrari as manager, but until the new racing department in Milan was completed early in 1939, the cars were based at Modena.

The 158—1,500 c.c., eight-cylinders—power unit was a straight eight, being to all intents and purposes half of the V-16 316 G.P. engine (which derived from it, although the 316 first appeared in practice at Tripoli, before the 158). There was, however, one important departure. In the V-16, the gear train driving camshafts and ancillaries was at the rear, in previous Alfa 'eights', it had been placed between two blocks of four cylinders. In the 158 engine it was at the front, and this made possible a shorter crankshaft.

The basic engine consisted of two aluminium block castings, bolted together and to the crankcase, with dry steel liners. The cast Elektron crankcase was split on the centre line; the crankshaft was machined from a chrome steel billet and ran in eight main bearings and a ninth subsidiary; dry sump lubrication was naturally employed. Coolant was fed into the block(s) through eight ports on the right and taken off through four risers in the centre of the cylinder head. The plugs, one to each cylinder, were centrally positioned and the two camshafts operated two valves per cylinder. A single-stage Roots supercharger, mounted on the left of the engine, delivered a boost of 17.6 p.s.i. When this engine was first tested on the bench at Modena it delivered 180 b.h.p. at 6,500 r.p.m.; for its first racing appearance some six months later, this had been increased to 195 b.h.p. at 7,000 r.p.m.



First outing: three Type 158B Alfa Romeos leading the field away in the 1938 Coppa Ciano at Leghorn. Emilio Villoresi (14) and Clemente Biondetti (24) finished in first and second places.

(Photo: Alfa Romeo S.A.)

The clutch was in unit with the engine, and the four-speed gearbox with the final drive. Between the two, the one-piece propeller shaft passed centrally below the driver's seat.

The main frame members were near-rectangular steel tubes, in the second and subsequent cars 4.8 in. deep and 1.38 in. wide, about 18 in. apart, and joined by four cross-members, the engine, and the final drive housing. This proved acceptably rigid for twelve years—almost to the end of the car's active career. Suspension was by trailing arms and transverse leaf spring at the front, and swing axle and transverse leaf spring at the rear; hydraulic and friction dampers were used.

Outwardly, the cars which lined up for the 1938 Coppa Ciano at Leghorn, appeared slight and very 'voiturette'. At this stage the tail had to accommodate only a 37½ gallon fuel tank and was consequently small (the top of the spinal fairing was almost level with the scuttle and hardly formed a head rest), the nose sloped back at a weak angle, but featured a formidable portcullis grille, the front suspension was exposed, and the body was generally slim, so that the mirrors extended in fairings outside the rim of the cockpit. On these first cars, the exhaust emerged low down, and was carried through a single pipe under the right rear wheel.

The 158 was immediately dubbed 'Alfetta', and the field which it entered in 1938 was dominated by 4C and 6C Maseratis, for the E.R.A. effort had faded, there were no competitive French cars and the Germans were apparently little interested in the voiturette class. It made its racing debut in the Coppa Ciano on 7th August, 1938; three Alfettas started, Emilio Villoresi (brother of Luigi) won, Clemente Biondetti was second, and Francesco Severi seventh. During the rest of 1938, the cars enjoyed mixed fortunes, showing potential and suffering teething troubles, scoring another 1-2 in the Prix de Milan at Monza, but failing in two other races (see page 9).

Before the 1939 season opened, bearing weaknesses in the 158 engine were remedied, the main bearing

lubrication system was improved and needle big-end bearings were fitted, again principally in the interests of consistent lubrication. During the season, the only fundamental frailty ever to show in the engine became apparent, but by its end output had been increased to 225 b.h.p. (now at 7,500 r.p.m., made possible by the modifications to bearings), and doubts about reliability had been dispelled.

The first race of the year brought two shocks—the Mercedes W.165 and its success in its one and only race, and a failure in the 158, which in effect presented that Tripoli G.P. to the German firm. The cooling system of the 158 proved inadequate in the heat, and at the increased engine speeds. Lang ran away with the race, Farina held off Caracciola in the second Mercedes for ten laps, but three of the Alfas retired, overheated, and only Villoresi finished, preserving his engine by keeping the revs well below the permitted limit.

The cooling system was immediately modified. Coolant was already brought into direct contact with the steel liners and so work was concentrated on the heads, where cold water was now directly introduced, and the working pressure of the system was increased to 17.6 p.s.i. At the same time, the engine lubrication system was reworked and, coincidentally, the cars



Emilio Villoresi at the Tripoli pits in 1939. His car was the only 158 to finish in the Grand Prix. (Photo: Alfa Romeo S.A.)

Alfetta. Francesco Severi racing a 158 in 1938.

(Photo: Alfa Romeo S.A.)



Some consolation for that defeat came in 1940 when Farina won at a record speed.

(Photo: Alfa Romeo S.A.)





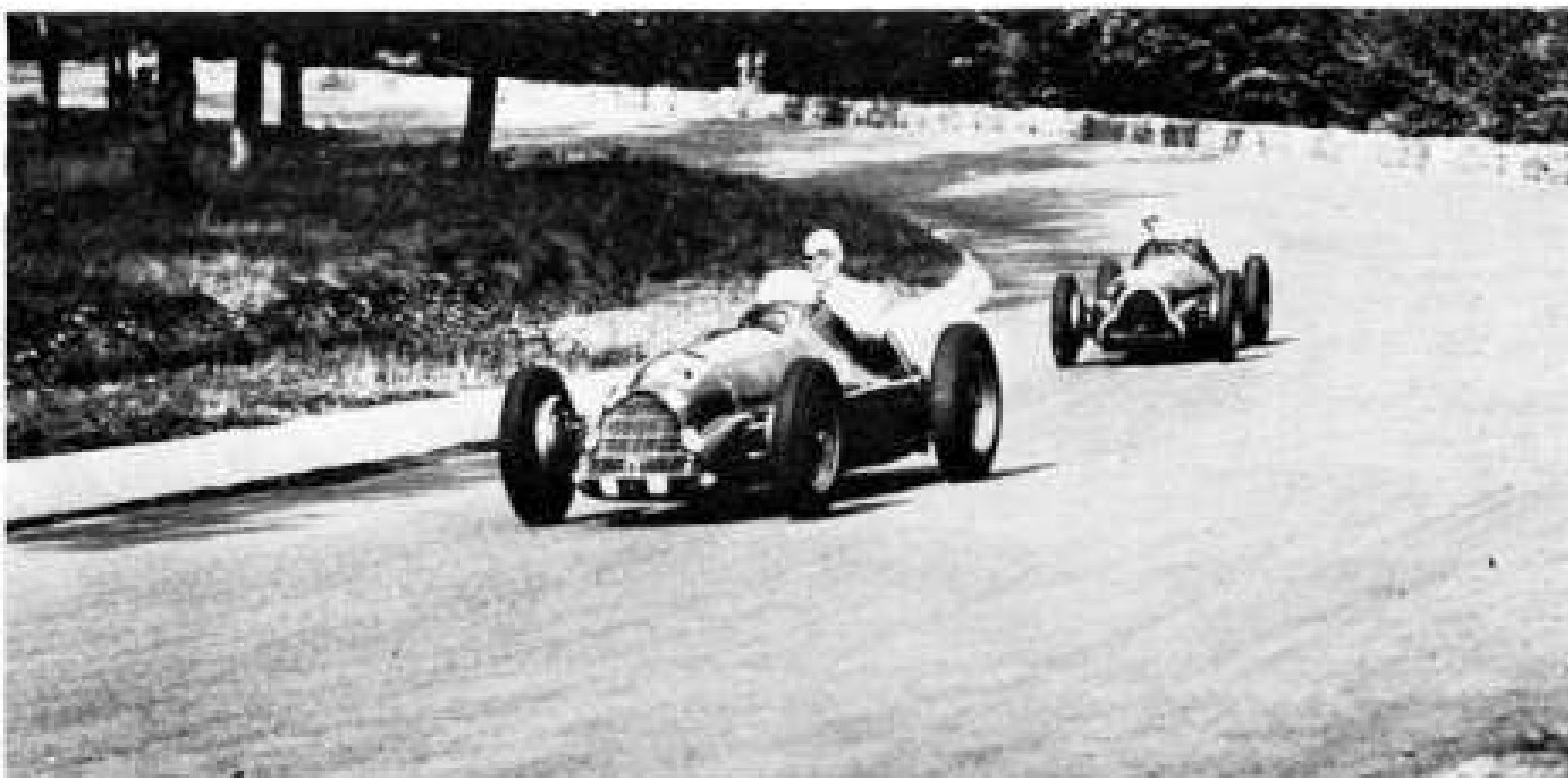
Left: Jean-Pierre Wimille, the finest driver of the immediate post-war years, driving a two-stage supercharged, twin-exhaust 158 in the 1947 Swiss Grand Prix. Right: Giuseppe Farina, who first won a race with a 158 in 1939, shows his classic style to the Silverstone crowd in 1950.



were rebodied; from July 1939, they did not change in outline. Then the Alfettas won their other races of the season and in the Swiss G.P. on a streaming Bremgarten circuit, Farina actually held second place among the 3-litre Grand Prix cars for the first seven laps.

Six new cars, 158C, were built for 1940 (two of the first batch had been written off in accidents: Emilio Villorosi was killed testing at Monza and Aldrighetti practising at Pescara). These were to race once as voiturettes and, years later, and in circumstances which could hardly have been foreseen, were to dominate the *grandes épreuves*. The Alfetta phase in the career of the 158 ended at Tripoli in 1940 when four of the new cars were run. A Mercedes entry was half expected, but the Germans were pre-occupied with other matters, so a direct 'revenge' match was not possible. A demonstration run would convince only if it set new records, and this consequently became the Alfa objective. Although at one stage it appeared that Luigi Villorosi might derange it with his Maserati, it was duly achieved. The Alfettas finished 1-2-3; more to the point, Farina set a new lap record and improved on Lang's 1938, 3-litre, record average.

Development work and testing continued into 1942, then seven complete 158s—one an experimental 158D with a de Dion rear axle—were laid up in the Monza garages together with two rear-engined Type 512 prototypes. In 1943, the Germans took over control in Northern Italy, and requisitioned Monza as a vehicle park. They did not, however, take over the 158s, for as soon as the manager of the Milan A.C. got wind of this last move, he arranged with Alfa Romeo for the cars to be spirited away to the village of Melzo, where part of the Alfa design department had been evacuated. With the cars went crates of spares and tools and even the partly dismantled Alfa Corse mobile workshop.



Thus Alfa Romeo were able to enter two 158s for the St. Cloud G.P. in June 1946. Farina and Wimille both led this 112 mile race, both retired—a complete team failure which was unique in the post-war career of the 158. In both cases, the sleeve holding the disc pressure bearing of the clutch overheated (it was a twisty circuit), and seized on the spline shaft. But the cars were still advanced by comparison with their opposition, and now that the Alfa Romeo management had made the decision to return to racing, the immediate task of keeping ahead was hardly exacting. 'The others' were faced with the prospect of starting from scratch (from this group eventually emerged the only real challenge to Alfa Romeo, cars bearing the name of their one-time associate, Ferrari), or making do with revamped versions of cars which had started life without the basic advantages of the thoroughbred 158.

Four 158s ran in the G.P. des Nations at Geneva in the following month. Two were in the 1940 'Tripoli' form, but the pair driven into first and seventh places, by Farina and Varzi, had two-stage superchargers (158/46B). These gave an immediate increase in power to 254 b.h.p., still at 7,500 r.p.m., and they were fitted to all the team cars for their last two races of the season, the Turin and Milan G.P.s. Varzi and Wimille finished 1-2 at Turin; Trossi, Varzi and Sanesi, the test driver who owed his team place partly to factory 'politics', took the first three places in the final at Milan. At this meeting, there were some signs of a strife rare within the team—Wimille was not included, apparently having resented orders to let Varzi win the Turin G.P., and Farina retired an apparently healthy car. 'J.-P.' returned in 1948, but Nino Farina did not drive another G.P. car for Alfa Corse until 1950.

GRAND PRIX SUPREMACY

In 1947, the Type 158 became a Grand Prix car, under a Formula which might have come into effect in 1941.

To oppose it, there were no V-8 Mercedes or V-12 Auto Unions, but unblown Talbots and blown Maserati 'fours' and E.R.A.s. In England, B.R.M. were to produce a car to the Formula, too late; in France, the near-parallel C.T.A.-Arsenal

Eleven wins in eleven starts. Farina on his way to another victory, in the 1950 Italian Grand Prix (and to clinching the first World Championship), in the then-latest '158/50', followed by Fagioli in a 158/47. (Photo: Alfa Romeo S.A.)

Voiturette. The 1938 Alfa Romeo Type 158.
(Drawing: Alfa Romeo S.A.)

project was short-lived; in Italy, the Porsche Type 360 Cistalia was virtually still-born. Ferrari started work on a supercharged V-12 designed by Colombo.

The Alfa Romeo team entered four races in 1947, winning them without difficulty and apparently not bothered by occasional desperate interruptions, notably by Sommer and Chiron. Minor improvements increased the power output

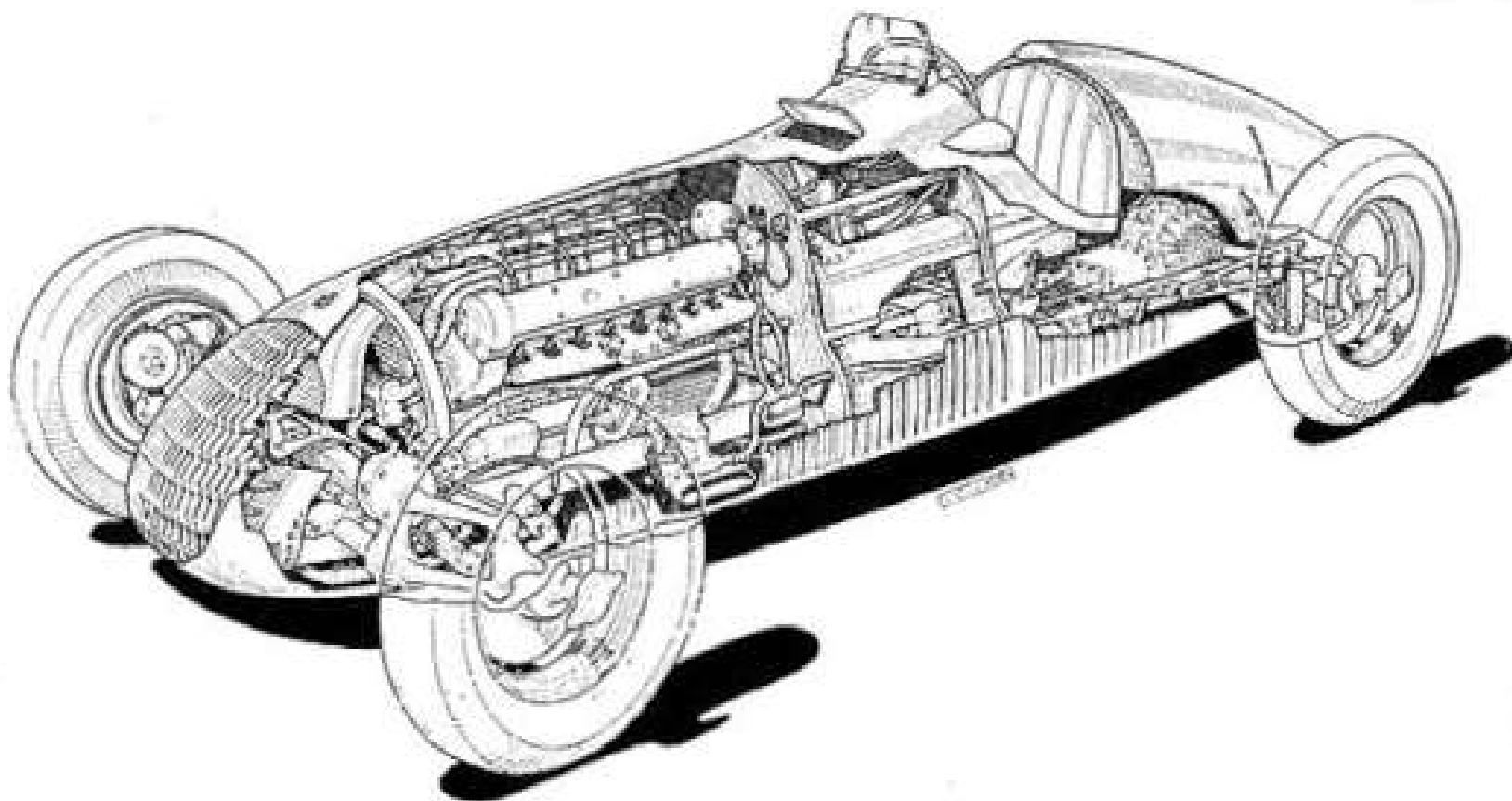
of the 'normal' 158 two-stage engine, to 275 b.h.p. at 7,500 r.p.m.; the 158/47 which was under development at the same time, was not needed.

The 158/47 had an enlarged low-pressure blower, which pushed output above 300 b.h.p. (310, still at 7,500 r.p.m.). Associated detail alterations included the addition of a fuel tank to the right of the cockpit, revised air-intake trunking and, outwardly, a return to single exhaust pipes.

But even the small increase in power achieved in the engines raced during the year found a weak spot. Crankcases—Elektron castings with an ultimate tensile strength of approximately 16 tons/sq. in.—developed minor cracks at the main bearings. On all the engines, therefore, tie rods were fitted between the caps of the crankshaft main bearings and the block(s). With this seemingly makeshift repair, they were to serve for another four years.

In 1948, the first race for the 158s was the tragic

Peak year. When the Type 158 was first raced in England, in 1950, it was simply to demonstrate its domination of the premier class. From their inevitable front-row positions Farina, Fagioli, Fangio, joined on this occasion by Reg Parnell, led from the start of the British Grand Prix. (Photo: Motor)

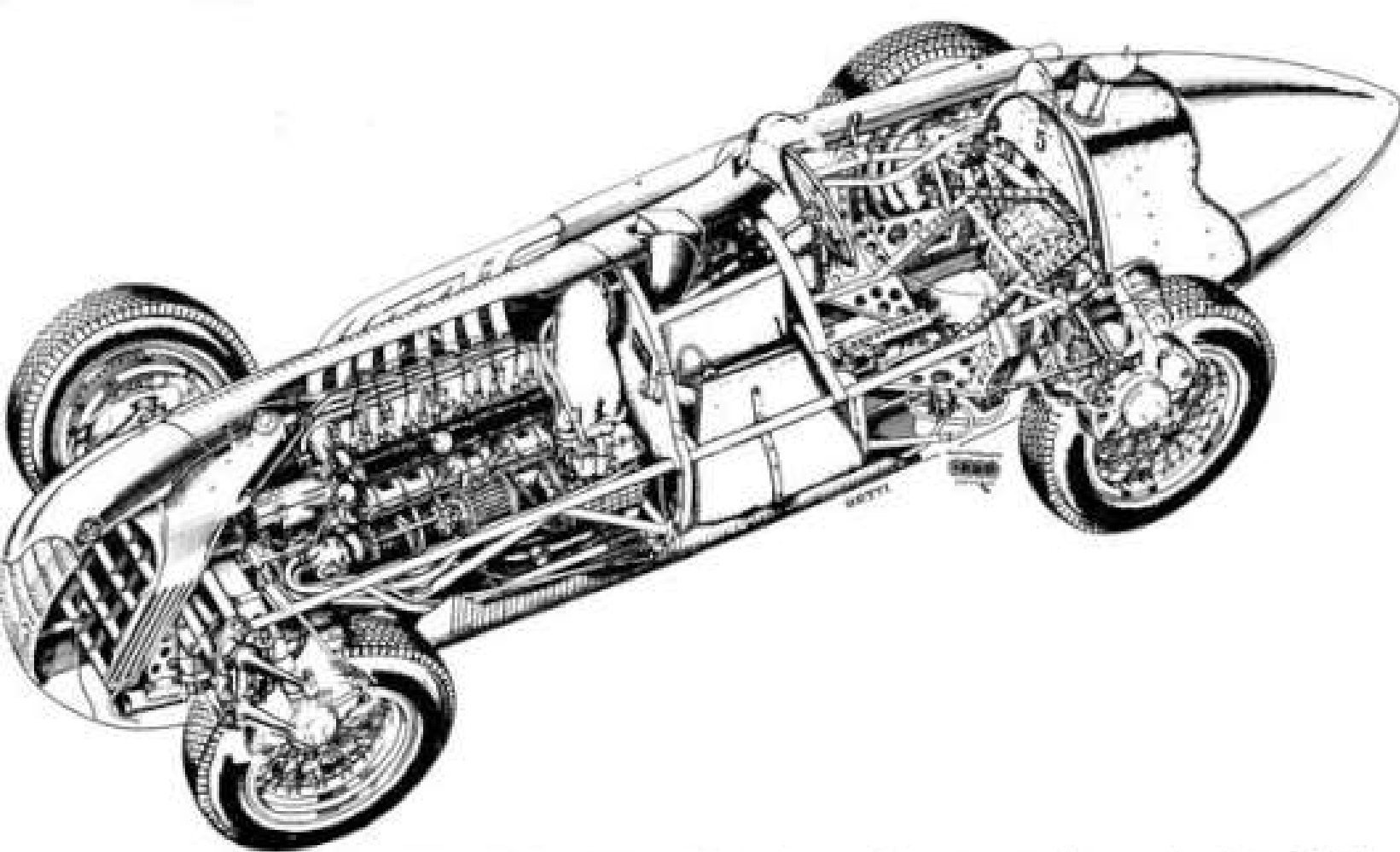


Swiss G.P. In practice, Sanesi and Varzi tried the 158/47, and when the veteran went out for a fast time on a wet circuit, he lost the car on a twisting downhill section, crashed and was killed. In the race, the new 4CLT/48 Maseratis interfered with the Alfa procession, and Villoresi split them in the final order. Next, after an interval of 13 years, an Alfa works team was entered in the French G.P. Once again, the 158/47 appeared only in practice, when Wimille attempted to beat Lang's circuit record. In this he was unsuccessful, but he won the race, supported by Sanesi and Alberto Ascari, driving his only race in a 158, and towards its end obediently easing to let his seniors take their appointed places.

The Italian G.P. was marked by the debut of Colombo's V-12 Ferrari, and the racing debut of the latest version of his straight-eight Alfa, the 158/47. In the hands of Wimille it won by a lap (but the 158s failed). Finally in 1948, four cars were raced at Monza, in the Grand Prix which marked the re-opening of the autodrome, when Wimille, Trossi and Sanesi arranged themselves to finish in order in 158/47s and Taruffi brought a 158 home fourth.

After scoring 13 consecutive victories, the cars were





Grand Prix car. The 1951 Alfa Romeo Type 159. (Drawing: Quattroruote)

Fangio, a choice not universally acclaimed in Italy.

In the first outing, Fangio saw off a formidable collection of Ferraris with a single car in the San Remo G.P. Then the 158s left the mainland of Europe (for the first time since they crossed to Tripoli in 1940), to run in the British G.P. at Silverstone. Four were entered, and their drivers led the race as they pleased, Fangio retired with a broken

not raced in 1949. The Alfa Romeo Experimental Department was pre-occupied with work on the production '1900' for much of the year and this appears to have been the primary reason; a shortage of funds (or a reluctance to apply them to a cause not fully appreciated by those who made them available for factory reconstruction) may have been a contributory factor, as may have been the deaths of three great Alfa drivers: Achille Varzi at Berne, Count Trossi of cancer and Jean-Pierre Wimille in a practice accident in South America. However, time was found for work on the 158/47. This was still concentrated on the induction system, and the power output was again increased, to 350 b.h.p. at 8,600 r.p.m.

RETURN TO RACING

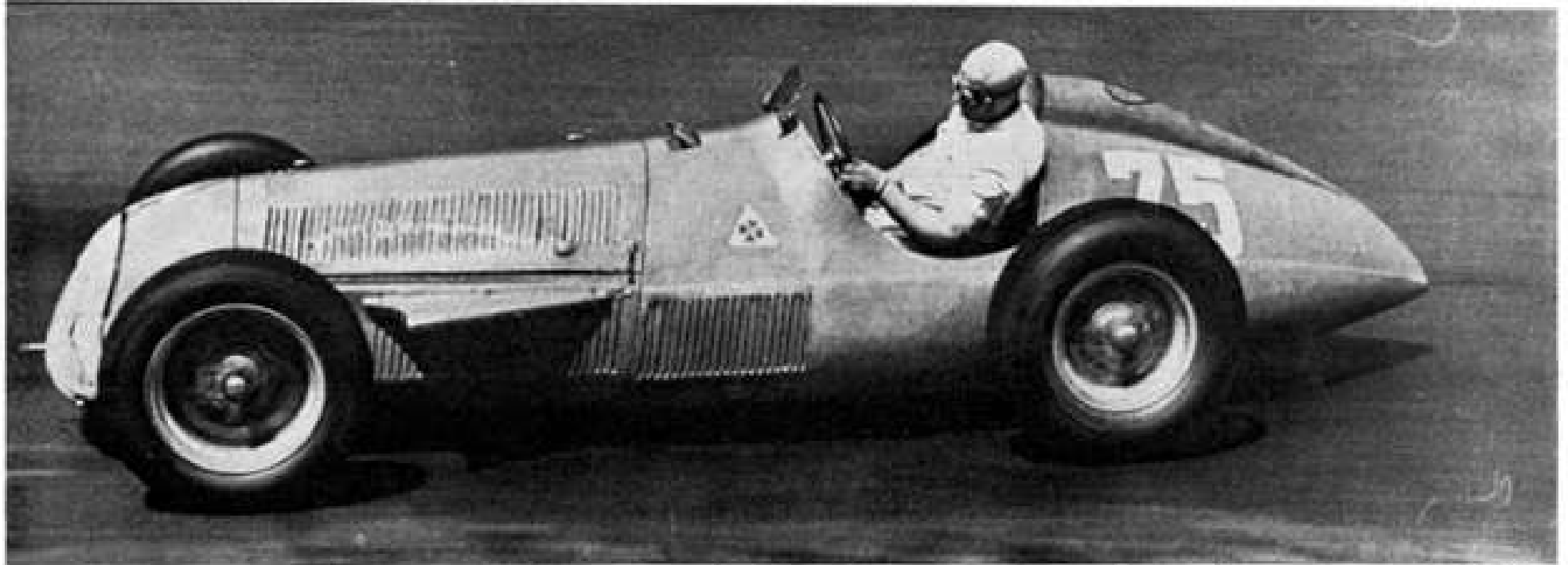
In March 1950, it was quietly made known that the 158s would be raced in the coming European season. Their regular drivers were to be the 'Three Fs'—Farina, back in the fold, Fagioli, the veteran who was to prove his worth as a steady anchor man, and

connecting rod, but Farina, Fagioli and Parnell finished two laps clear of the next runner, Giraud-Cabantous (Talbot).

Five weeks later, the Belgian G.P. was an event of significance to the future of the 158, for its unsupercharged challenge took on momentum. That Sommer led the race when the Alfas stopped for fuel, revelled in it, and then blew up his Talbot, was entertaining, but incidental; that an experimental unsupercharged 3.3-litre Ferrari ran (in the hands of Ascari), was of considerable moment. The Ferrari did not run in the French G.P. at Rheims, where in practice, Fangio at last improved on the record (but failed to break it in the race). But at Geneva, Alfa Romeos did not monopolise the front row of the grid for the last G.P. des Nations: Ascari and Villoresi were second and third fastest with unblown Ferraris. From the start, Ascari, with a 4.1-litre car, held second place to Fangio, and had lost only 40 seconds to him when he retired two-thirds of the way through the race.

Thus far in the season, the Alfa Romeo drivers had





Defeat at last came in 1951. Fangio, relaxed yet trying very hard, in the German Grand Prix, the second successive race in which he followed a Ferrari across the line. (Photo: Alfa Romeo S.A.)

kept revs in hand (to order), certainly they had not used all the bench power available to them, and at least one car in the team had usually been run with an 'easy' final ratio. Time was catching up with the 12-year old design, and as few chances as possible were taken to ensure reliability (further to this end, major components such as crankshafts were used for only a few races, and then discarded). As an interim measure, the engine was stressed a little more, as the supercharger pressure was again increased to squeeze out another 20 b.h.p. The brakes were also improved, and this latest revision was considered enough to justify redesignating the cars Type 159.

Farina drove a 158/50 with a '159' engine to victory in the International Trophy at Silverstone, before the season reached its climax at Monza. Five Alfas (159s for Fangio and Farina), were entered for the Italian G.P. to face, principally, two Ferraris with full 4.5-litre engines (Ascari and Villoresi). Ascari actually led for two laps, retired, took over Serafini's car and finished second; Fangio's gearbox failed, he took over Taruffi's Alfa and retired again. Farina won the race, and the first World Championship.

BACKS TO THE WALL

Rumours that in 1951 Alfa Romeo would resurrect the 12-cylinder Type 512 engine naturally redoubled. But in fact, this was not contemplated, and four new 159s were built—without new cars a full team could hardly have been fielded, such had been the wear and tear and 'cannibalising'. Still more was asked of the engine; it was taken to 10,500 r.p.m. on the bench, and run for longer periods at over 9,500 r.p.m., but in racing drivers were usually constrained to 8,500–

9,000 r.p.m. (and thus to under 400 b.h.p.). But more and more power was absorbed in driving the superchargers (135 b.h.p.), and the engine developed a phenomenal thirst, for some fuel was also 'wasted' in cooling it; eventually, it was returning about 1.6 m.p.g. (of a fuel with a 98 per cent methanol content). Room for tanks was found around the cockpit—their capacity and disposition varied from car to car—while in an occasional 'long-range' configuration (the term is relative), another was placed alongside the engine. The total normal tankage was increased to 66 gallons, and still two refuelling stops were needed in a 300 mile race. And the handling qualities were not improved. The laws of diminishing returns increasingly applied.

The increased loads imposed by higher speeds in conjunction with the greater all-up weight, found the swing axle arrangement wanting. This was revised, and the de Dion rear axle, first tried when the 158 was a mere three-year old, was re-introduced on some cars. Physically, little more could be done, by Satta, the Chief Designer responsible, or even by Colombo, who had by this time returned to Alfa Romeo, and extemporising was sapping the innate strength of the team, down to such vital detail as pitwork.

NARROW VICTORY

The 1.5/4.5-litre Formula at last reached a stage where no *grandes épreuves* started as foregone conclusions. Alfa Romeo and Ferrari first met in the Swiss G.P., when Fangio won and Taruffi finished second in a Ferrari; Farina won the Belgian G.P., Ascari was second in a Ferrari; Fangio took over Fagioli's car to win at Rheims, when the runner-up was again

Left: That the 158/159 should have appeared slim in profile was a tribute to its fine lines for, as this shot of Fangio in the 1951 Italian Grand Prix shows, it was a bulky car. This example was a 'de Dion' 159, on which the twin exhausts were reintroduced. (Photo: Alfa Romeo S.A.) Right: Final race and final victory. Juan Manuel Fangio in the 1951 Spanish Grand Prix. (Photo: Cyril Posthumus Esq.)



Ascari. This was the 27th consecutive victory for the 158/159 since 1946.

The splendid run ended at Silverstone on 14th July, when Gonzalez won an enthralling British G.P. for Ferrari. Then, on another circuit suited to the Ferrari, but not the Alfa, Nürburgring, Ascari won again for the Prancing Horse. Monza appeared to afford an opportunity to restore Alfa fortunes and four cars, revised and designated 159M ('M' denoting *Maggiorata*, i.e., increased), were entered for the Italian G.P. Three retired, leaving Farina in screaming pursuit of Ascari and Gonzalez, hopelessly handicapped by inept pit stops and finally by a split tank.

Three all, and the Spanish G.P. became the decisive race of the season. Alfa Romeo went to it with successes in two lesser races as encouragement and with Fangio, their spearhead, equipped with a 159M which had its frame stiffened by additional bracing (apart from thicker main tubes in the 159, this was the first modification in this department since the second car was built). Ferrari lost the race by default, fitting small rear wheels which threw treads; Fangio won, to gain his first World Championship, and the racing career of the Alfa Romeo Type 158/159 ended with a victory.

For this was the end, not simply of the model, but of Alfa Romeo's glorious Grand Prix history. A revised, much lighter, version of the Type 159 reached the project stage, but the money needed to build it was not available. Alfa Romeo were not disposed to finance it entirely from their own resources, and an adequate subsidy could not be obtained.

The perfectly straightforward Type 158/159 was a rare Grand Prix car, in that it was fully developed, and without radical departure from the original design. Circumstance favoured it—had racing continued through 1941, the story would doubtless have been very different. As it was, such basically new cars as were built during its active life, especially the Porsche-designed Cisitalia, failed to reach the circuits and even the ultimate supercharged engine, the V-16 B.R.M., reached them too late. It was left to another perfectly straightforward car, the unsupercharged V-12 Ferrari, to beat the supreme Alfa Romeo and in so doing, force the closure of an outstanding chapter in Grand Prix history.

© David Hodges, 1966

Gleaming new 158s (on 'slave' tyres) in the Alfa Corse shops early in 1940. These have the 'definitive' outline, most noticeably with the scuttle line extended to enclose the rear-view mirrors and a higher tail line. (Photo: Alfa Romeo S.A.)



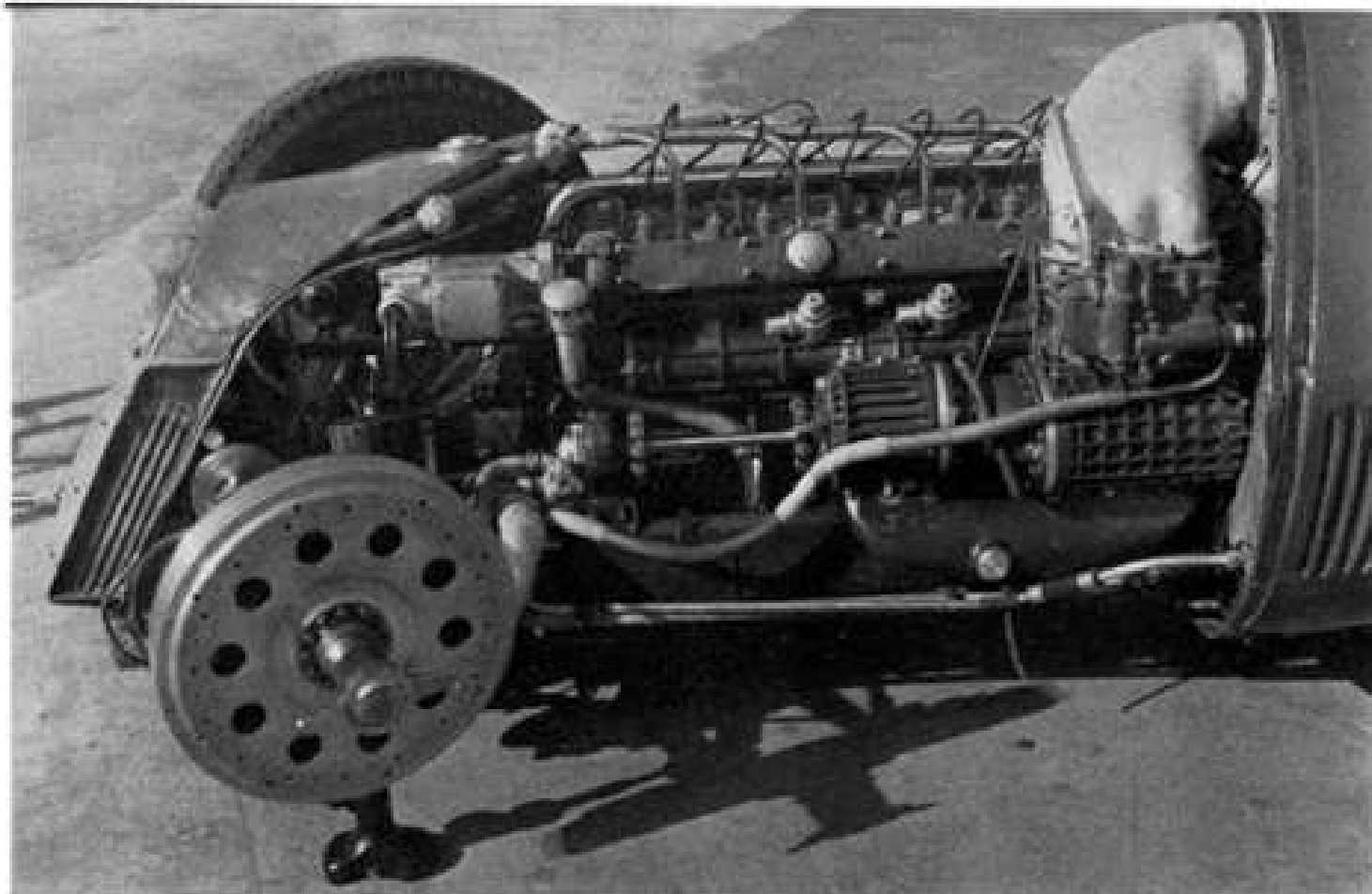
Battista Guidotti, who was the outstanding manager of the post-war Alfa team and could drive as well as some of the men employed in the équipe in that capacity, braking fiercely while testing a 158 in 1950. The grille is partly blanked with plates: these were used in cold weather to maintain optimum engine temperatures. (Photo: Alfa Romeo S.A.)

The writer is grateful to Cav. Luigi Fusi for assistance most generously given in the compilation of this Profile, particularly in clarifying such hitherto obscure details as the nomenclature of the Type 158 and 159 Alfa Roméos.

RACING RESULTS*		
1938		
Coppa Ciano	Villoresi	1st
	Biondetti	2nd
	Severi	4th
Coppa Acerbo	Severi	4th
	Villoresi	retired
	Biondetti	retired
Prix de Milan	Villoresi	1st
	Severi	2nd
	Marinoni	retired
	Sommer	retired
Circuit of Modena	Villoresi	retired
	Biondetti	retired
	Severi	retired
	Sommer	retired
1939		
Tripoli G.P.	Villoresi	3rd
	Farina	retired
	Pintacuda	retired
	Aldrighetti	retired
Coppa Ciano	Farina	1st
	Pintacuda/Biondetti	3rd
	Biondetti/Severi	5th
Coppa Acerbo	Biondetti	1st
	Pintacuda	2nd
	Farina	3rd
Prix de Berne	Farina	1st
	Biondetti	2nd
Swiss G.P.	Farina	6th
	Biondetti	9th
1940		
Tripoli G.P.	Farina	1st
	Biondetti	2nd
	Trossi	3rd
	Pintacuda	5th
1946		
St Cloud G.P.	Farina	retired
	Wimille	retired
G.P. des Nations	Farina	1st
	Trossi	2nd
	Wimille	3rd

Eventually blower air was drawn through an intake on the scuttle, just ahead of the cockpit screen, and as a further precaution against the entry of foreign bodies, this was normally kept closed during the opening laps of a race. The engine sat well down in the chassis (a main member can be seen below the supercharger drive) but there was obviously little possibility of reducing the overall height of the car.

(Photo: Jerry Chesebrough)



Turin G.P.	Varzi	1st	French G.P.	Wimille	1st
	Wimille	2nd		Sanesi	2nd
	Trossi	6th		Ascari	3rd
	Farina	retired	Italian G.P.	Wimille	1st
	Sanesi	retired		Trossi	retired
Milan G.P. Heat 1	Varzi	1st	Monza G.P.	Sanesi/Trossi	retired
Heat 2	Trossi	2nd		Wimille	1st
Final	Sanesi	1st		Trossi	2nd
	Farina	3rd		Sanesi	3rd
	Trossi	1st		Taruffi	4th
	Varzi	2nd	1950		
	Sanesi	3rd	San Remo G.P.	Fangio	1st
	Farina	retired	British G.P.	Farina	1st
1947				Fagioli	2nd
Swiss G.P. Heat 1	Varzi	1st		Parnell	3rd
Heat 2	Trossi	2nd		Fangio	retired
Final	Wimille	1st	Monaco G.P.	Fangio	1st
	Sanesi	2nd		Farina	retired
	Wimille	1st		Fagioli	retired
	Varzi	2nd	Swiss G.P.	Farina	1st
	Trossi	3rd		Fagioli	2nd
	Sanesi	5th		Fangio	retired
Belgian G.P.	Wimille	1st		Fangio	1st
	Varzi	2nd		Fagioli	2nd
	Trossi/Guidotti	3rd		Farina	4th
	Sanesi	retired		Fangio	1st
Bari G.P.	Varzi	1st		Fagioli	2nd
	Sanesi	2nd		Farina	7th
Italian G.P.	Trossi	1st		Farina	1st
	Varzi	2nd		Fangio	2nd
	Sanesi	3rd		Fangio	1st
	Gaboardi	4th		de Graffenried	2nd
1948				Taruffi	3rd
Swiss G.P.	Trossi	1st		Farina	retired
	Wimille	2nd		Fangio	1st
	Sanesi	4th		Fagioli	3rd
			Circuit of Pescara		



In the original 158 air for the supercharger was drawn through the lower side louvres (see drawing on page 1) and with it came solid debris from the circuit. In an attempt to avoid this, an extended intake trunk, facing forward and down, was used on the first two-stage cars and on some until 1950. Standard on all cars, however, was the direct cooling of the exhaust manifolds—air was fed into the separate compartment (right) under the bonnet from a low frontal intake. (This car is also wearing poor-weather splash guards).



The Type 159 car with which Fangio won the 1951 Spanish G.P. at Barcelona. Note the twin exhaust pipes.

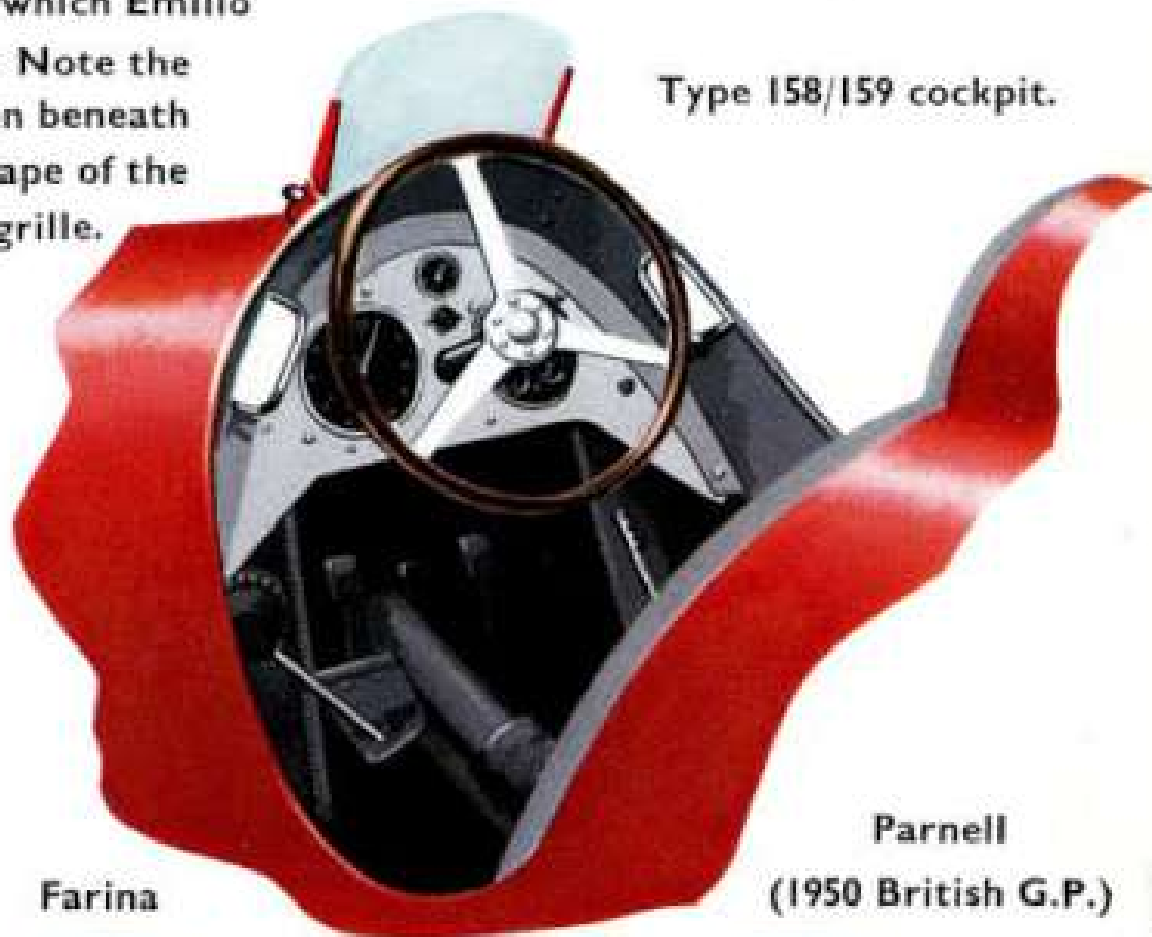


The Type 158B car (above and below, left) with which Emilio Villoresi won the 1938 Coppa Ciano at Leghorn. Note the exhaust pipe position beneath the car, and the shape of the radiator grille.



exhaust pipe position beneath the car, and the shape of the radiator grille.

Type 158/159 cockpit.



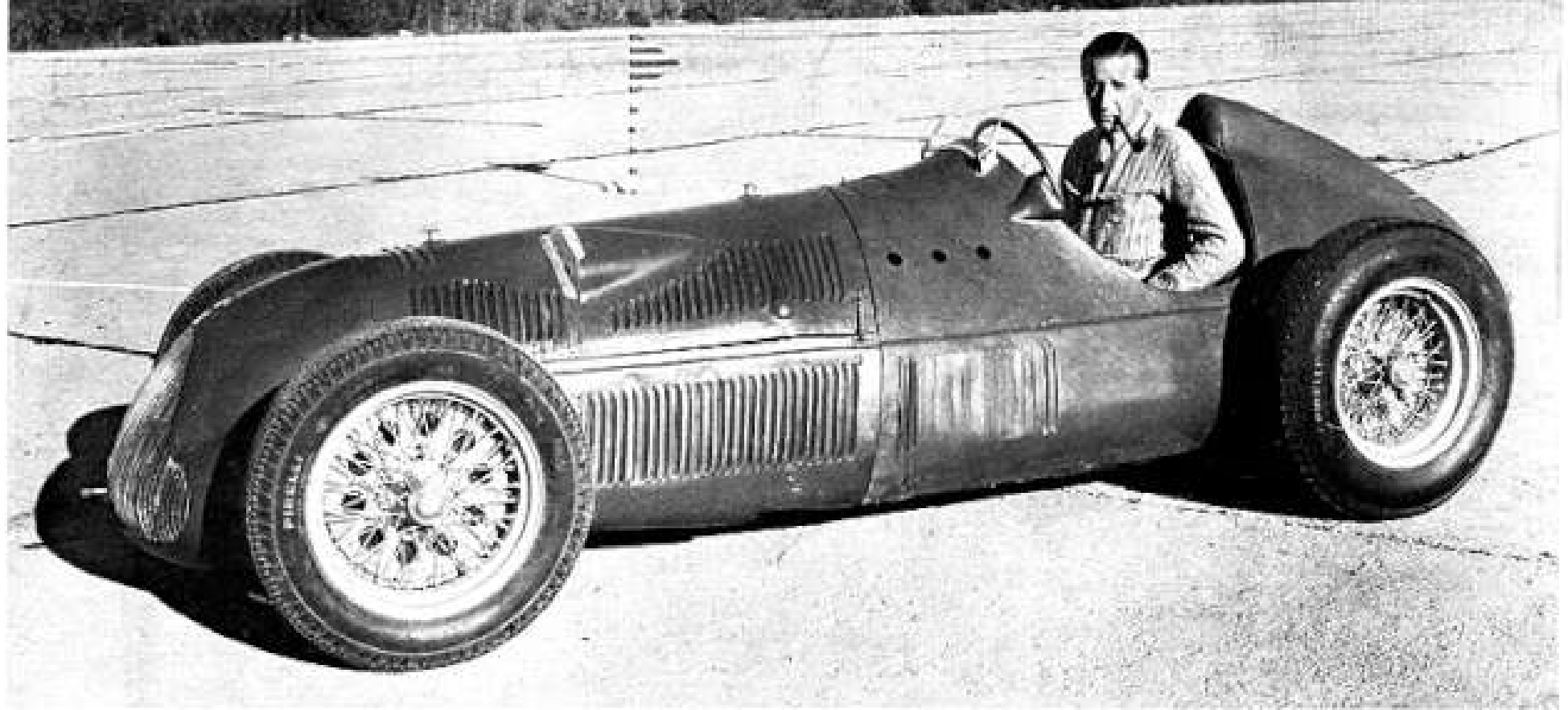
Identification Colours, 1950-1951 Season

Fangio

Farina

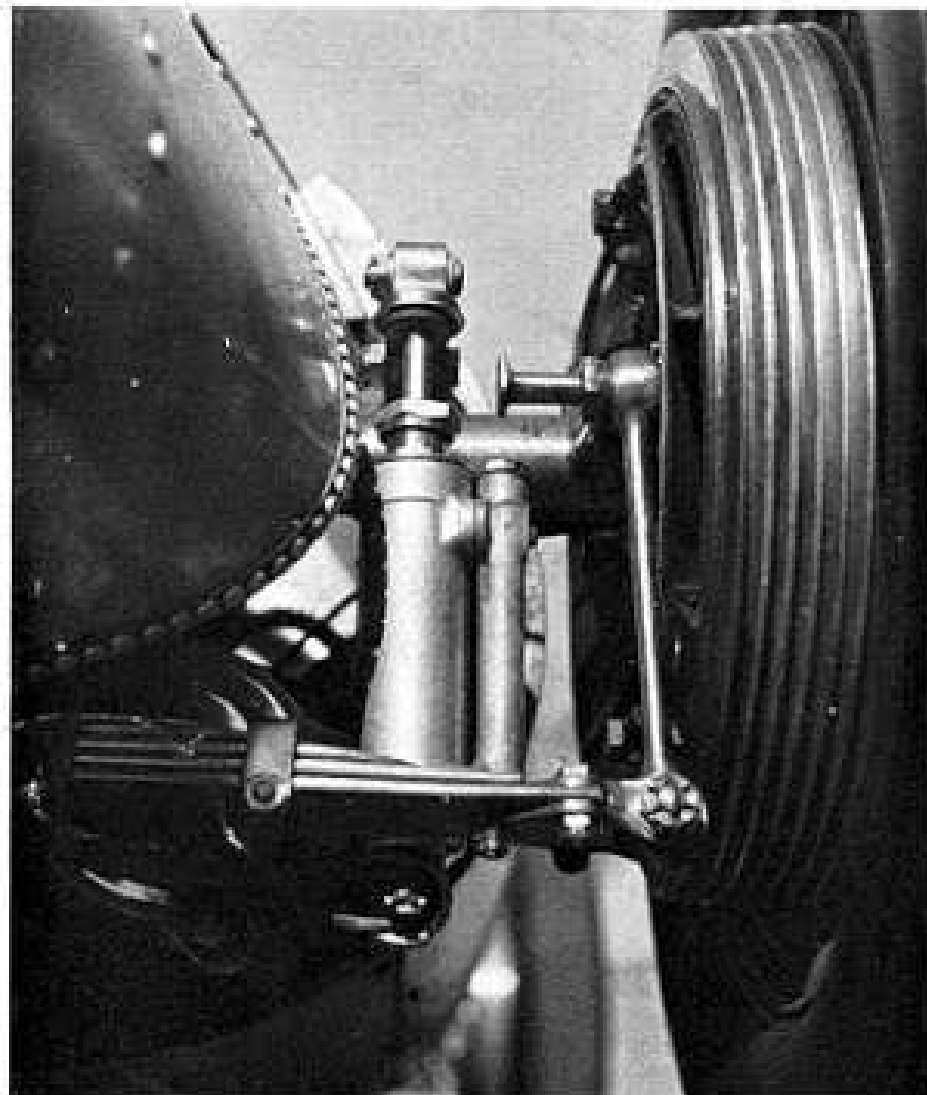
Parnell (1950 British G.P.)





This 158—in very hack condition—was tested in 1948 with a bonnet-top supercharger intake (here with a blanking plate). At the wheel, sucking his inevitable pipe, is Count Trossi. (Photo: Alfa Romeo S.A.)

International Trophy, Silverstone			French G.P.	Fangio/Fagioli	1st
Heat 1	Farina	1st		Farina	5th
Heat 2	Fangio	1st		Sanesi	10th
Final	Farina	1st		Fangio/Fagioli	11th
Italian G.P.	Fangio	2nd	British G.P.	Fangio	2nd
	Farina	1st		Bonetto	4th
	Fagioli	3rd		Sanesi	6th
	Fangio	retired		Farina	retired
	Sanesi	retired	German G.P.	Fangio	2nd
	Taruffi/Fangio	retired		Farina	retired
1951				Pietsch	retired
International Trophy, Silverstone				Bonetto	retired
Heat 1	Fangio	1st	Bari G.P.	Fangio	1st
Heat 2	Farina	1st		Farina	retired
(Final abandoned)	Sanesi	2nd	Italian G.P.	Farina/Bonetto	3rd
Swiss G.P.	Fangio	1st		Farina	retired
	Farina	3rd		de Graffenried	retired
	Sanesi	4th	Daily Graphic Trophy, Goodwood	Fangio	1st
	de Graffenried	5th	Woodcote Cup	Farina	1st
Ulster Trophy	Farina	1st	September Handicap, Goodwood	Farina	1st
Belgian G.P.	Fangio	1st	Spanish G.P.	Fangio	1st
	Sanesi	2nd		Farina	3rd
				Bonetto	5th
				de Graffenried	6th



Massive. The swing-axle rear suspension, with its five-leaf transverse spring, a brake drum and part of the main fuel tank. (Photo: Jerry Chesebrough)

*Voiturette, 1938-40 (except Swiss G.P., 1939)
Formule Libre, 1946
Formule 1, 1947-51

ALFA ROMEO TYPE 159M—SPECIFICATION

Engine: Eight cylinders in line, with twin overhead camshafts gear-driven from front of crankshaft. Water-cooled (capacity 2.35 gal.), dry sump lubrication (oil capacity 7 gal.).

Bore 58 mm. (2.29 in.), stroke 70 mm. (2.76 in.), capacity 1,479 c.c. (90.2 cu. in.). Two valves (1.4 in. diameter, inlet and exhaust) per cylinder at an included angle of 100 degrees, operated by five-bearing crankshafts: one Lodge sparking plug per cylinder; two Marelli magnetos, front-mounted; firing order, 1-3-6-8-4-2-7-5; compression ratio, 6.5 : 1.

Aluminium cylinder head integral with block (in two parts), steel (dry insert) liners; cast magnesium crankcase; one-piece machined nine-bearing crankshaft.

Roots-type two-stage supercharger, total boost, 42.6 p.s.i. Weber carburettor.

Max. power: 425 b.h.p. at 9,300 r.p.m. (bench).

Transmission: Multi-plate dry clutch; gearbox in unit with final drive, four forward speeds and reverse (ratios: top, 1.0 : 1; 3rd, 1.18 : 1; 2nd, 1.52 : 1; 1st, 2.39 : 1); ZF limited-slip differential; final drive ratios, 4 : 1 to 6 : 1.

Brakes: Hydraulically-operated 2 ls drum, mounted outboard, 14.8 in. diameter front, 13.8 in. diameter rear; Ferodo linings, total area 205 sq. in., swept area, 395 sq. in. Handbrake on rear wheels.

Chassis: Tubular frame, with two main members (1.38 in. x 4.8 in.) linked by four cross members, engine, and final drive unit. Aluminium body and tanks (66 gal., main tank in tail).

Suspension: Front: trailing arms and transverse leaf spring; rear: de Dion axle and radius rods; telescopic shock absorbers.

Wheels: Borrani wire-spoke centre-lock; tyres: Pirelli; front, 5.50 x 17 or 5.50 x 18; rear, 7.00 x 18 or 7.00 x 19 (nominal sizes).

Dimensions: Wheelbase, 8 ft. 2½ in. Track: front, 4 ft. 2 in.; rear, 4 ft. 4 in. Overall length, 13 ft. 2 in. Overall height, 3 ft. 6 in.

Max. body width, 3 ft. 0 in. Frontal area, 8.1 sq. ft. Weight: dry, 15.3 cwt.; starting line, all-up (approx.) 21 cwt.

Maximum speed: Approximately 190 m.p.h.