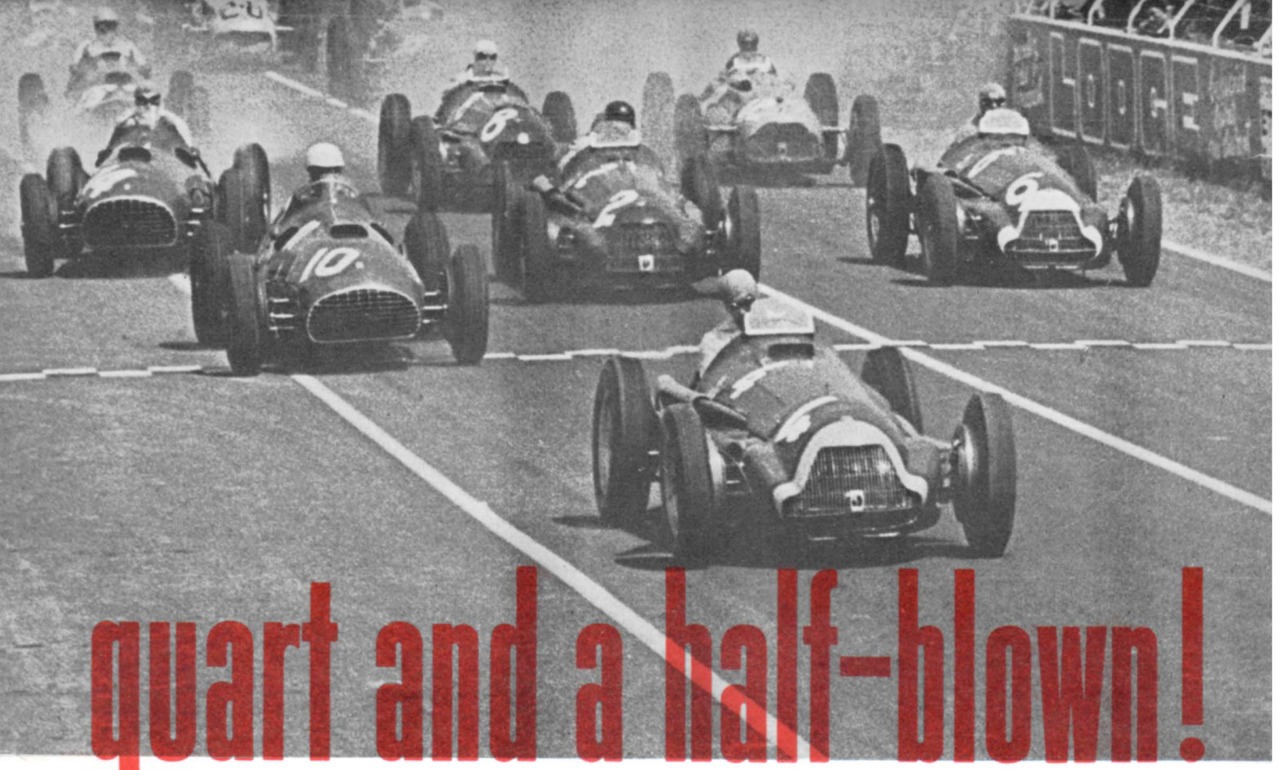


quart and a half-blown!

Photo: Geoffrey Goddard

The 159 Alfa and 4CLT Maserati—up to 385 hp from 91 inches!

By KARL LUDVIGSEN

RACING engines sound loud and hard by nature, but this one had a more portentous ring. The banks of the river Po echoed the crackling shriek of more than a dozen, small, supercharged machines, their shrill notes wailing as tires spun on greasily wet patches along Turin's tight Valentino Park course. It was the Italian Grand Prix of 1948: postwar racing was into full stride. Rain on the course was squally and the outlook as forecasted by the sullen brow of Guidotti, Alfa Romeo racing manager, was more of the same. Were they losing? Not at all, for the imperturbable Jean-Pierre Wimille was drifting the latest high-boost Type 158 Alfa a clear lap ahead of the pack. They just weren't holding down the place and show spots, a calamity which was practically unheard-of!

This time, as on several past occasions, the leading interloper was "Gigi" Villoresi on a 16-valve, 4-cylinder Maserati. Just two months earlier, this Offy-like engine had been bedded down in a new chassis called the Type 4CLT/48, and for the first time since the war it was a palpable threat to the Alfas. "Yes," said Guidotti to Alfa's Managing Director Dr. Alessio, "we may have this won, but next month for Monza we'll need two more cars like this one and another driver—say Taruffi . . ."

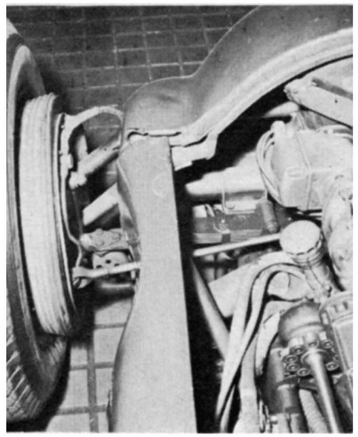
At a critical time in history Maserati (and a new car builder named Ferrari) had given Grand Prix racing a needed dose of competition, which of course was nothing new to the tough Alfa Romeo crew from Milan. Founded in 1906 and racing seriously since 1921, Alfa always carried Italian red to the fore with machines like the 1750 cc blown sixes and slim Type P's of the early thirties. Designers like Jano, Colombo and Ricart could call on Nuvolari, Varzi, Farina, Chiron and other greats to handle their machinery.

When in 1937 it was rumored that Alfa was about to produce a new car for the current Voiturette Class, or "second formula", good things were naturally expected. What was not expected was that the same car would be dominating major Grand Prix events in 1951, eight full years of racing later. Pomeroy has given due attention to the fabulous record of the Type 158 Alfa in Volume II of *The Grand Prix Car*. He says:

"In this period (1947 through 1951 only) the company made 99 separate entries in 35 races. Of these they won all but four, so they had 31 victories together with 19 second places and 15 thirds. They made fastest lap in 23 of the races and suffered only 28 retirements. Taking into account retirements, the cars raced a total of 18,153 miles under Formula I (plus 854 miles in 1946)—an average of 6,800 racing miles per car for an overall reliability factor of 81 percent. This is a record of reliability and success without parallel in motor racing history."

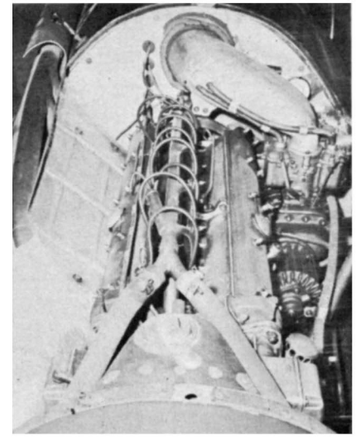
Keep this performance in mind while gazing at handsome showroom posters of modern racing victories. There's been nothing like it since. What's more, those Alfas were probably the cleanest, prettiest GP cars ever carved out of alloy. Small in size but developed to the limit of prewar design and postwar materials, these 91-inch straight-eights were strictly team machines. Not one was ever sold to a private owner, though not for want of customers!

Fully contemporary and directly competitive with the "Alfettas" were the four-cylinder, 16-valve Maseratis, including the 4CL, 4CLT and 4CLT/48. In complete contrast, however, the Maserati brothers depended almost entirely on the sale of their cars, as their official team entries were very occasional. As a result, Maserati cars filled out



Finned brake drums set well out in the air stream, Porsche-type trailing arms shackled to a transverse leaf spring were typical of Type 158 and 159 Alfa.

Zanardi, Alfa-Romeo's famous racing mechanic, finds plugs accessible on this otherwise complicated straight 8. Early models had one mag under exhausts.



Two Roots blowers drag cockpit air into progressively linked triple-throat Weber carbs. Straight path blasts exhaust out in shrouded headers.

the bulk of the starting grids up through 1950, a typical figure being eleven out of twenty-four starters for the 1949 Italian GP. The 4CL prefix connoted light weight, ruggedness and maneuverability, simplicity for easy maintenance, and power that was usually adequate and occasionally extraordinary.

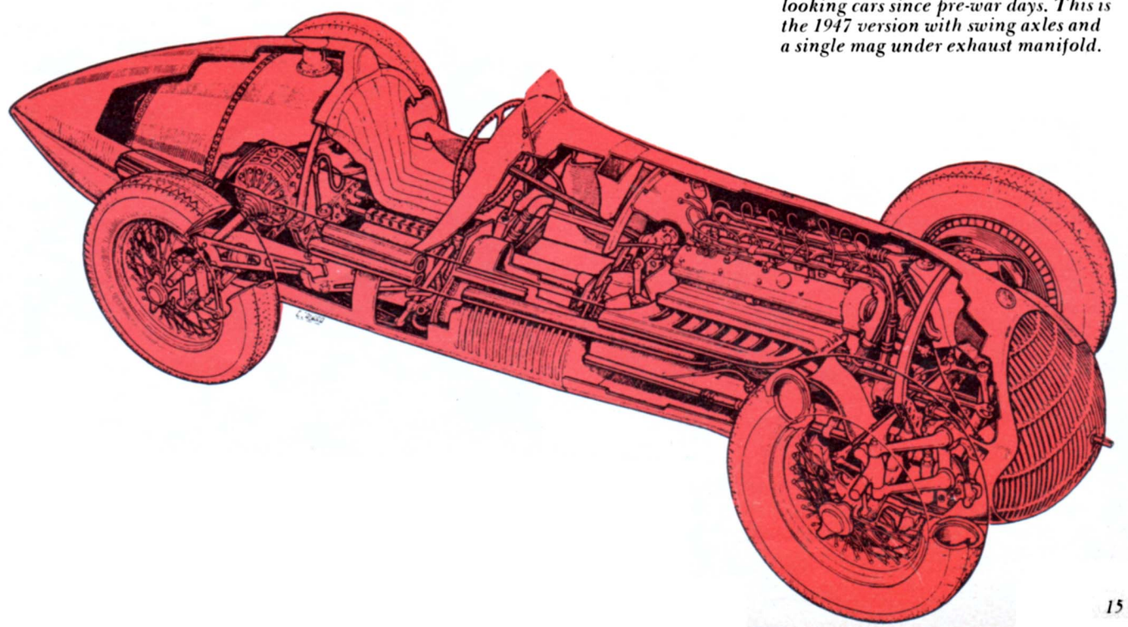
In spite of the design superiority of the Alfa Romeo, the 4CLT/48 Maserati appeared more representative of the cars that contested the first postwar Grand Prix formula, and seems to be more familiar to race fans in this country—perhaps due to the still-potent reputation of the make at Indianapolis. Sixteen-valve Masers of the latest type are gradually finding their way to these shores. George Weaver's ex-Parnell car is a frequent winner in SCCA Unlimited events, while Indy qualifying in '57 was graced by probably the purest, freshest 4CLT/48 or *San Remo* Maserati now running. It holds the 1½ liter lap record for the Indiana track, and is now sheltered by Foreign Motors Ltd. of Brooklyn.

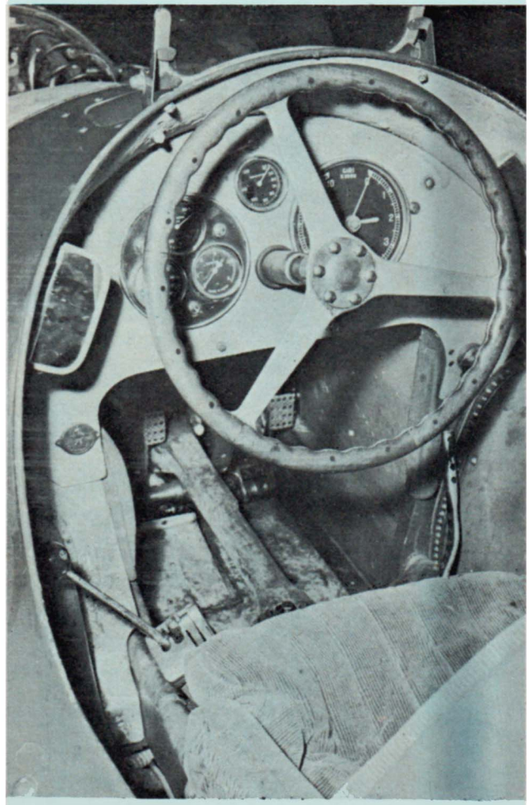
From 1935 up to the War, the reigning Formula 2 was for 1½ liter cars, with or without blowers. Although overshadowed by the staggering achievements of Mercedes and Auto-Union during this period, it provided a sporting playground for English ERA's and assorted Maseratis, racing cars of aggressively traditional design. Right up to 1939, Alfa Romeo was the only firm to give the Germans any argument in the "heavy metal" class, but with much smaller coffers, their publicity-oriented management decided that more headlines could be made with a 91-inch machine.

By the winter of 1937—just twenty years ago—Gioiacchino Colombo had completed drawings for a brand-new 1½ liter Alfa under the designation "308". Though the overall concept was fresh and perfectly scaled to expected performance, the engine was virtually one bank of the three liter V-16 being prepared for 1938, and may actually have *predated* the larger unit.

Since in those days, the *Scuderia Ferrari* existed only to

Even without being cutaway, the Type 158s were probably the most exciting-looking cars since pre-war days. This is the 1947 version with swing axles and a single mag under exhaust manifold.





Gentlemen, choose your weapons. The cockpit of the Alfa 159A is snug, with gearshift and hand brake levers at the sides. Accelerator pedal between clutch and brake is typically Alfa, so is thoughtfulness which put drag producing mirrors inside.

away. However this was only academic to Maserati, who made motoring history by retiring all three entries on the first lap. Gigi Villoresi had the satisfaction of setting fastest practice lap in a 4CL capable of 170 mph, with a spectacular, German-designed streamlined body, but his less dashing brother Emilio finished third behind the Mercs in an Alfetta, now numbered Type 158.

Farina and a 158 Alfa took on the bigger, *pukka* GP Mercedes and Auto Unions at the fast Berne course in August, jolting everybody by holding second place on the first lap and finishing sixth ahead of two of the fabled silver cars. A month later there was war in the land but the Italians, not yet involved, journeyed again in 1940 to the hot, sandy Tripoli track. Under the palms, four Alfas flung the gauntlet at a platoon of Maseratis and just got away with it, Gigi Villoresi's Maser falling to fourth after leading in the early laps. Speed of Farina's winning Alfa over the 244 miles was a fantastic 128.2 mph (Indy average that year was 14 mph less!), with one lap at 134.

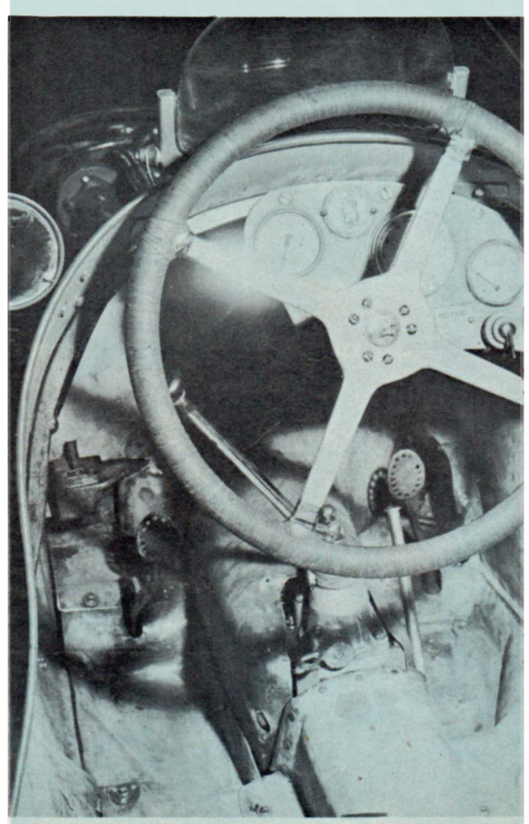
(Continued on page 43)

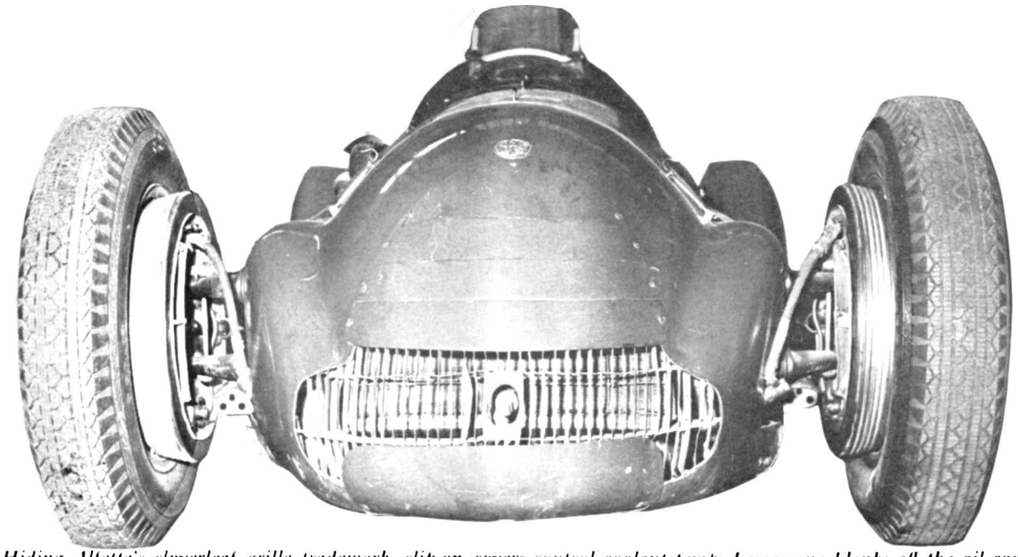
race Alfas, the first cars were partially assembled and dyno tested at Ferrari's Modena factory. First to check out the new Alfetta was the *Scuderia's* head tester, Marinoni, who finally pronounced it, in June of 1938, an eminently satisfactory motor car. A month later, two out of three cars went through to take first and second in the Coppa Ciano at Leghorn, a debut which was not deceiving.

These developments were not overlooked by the Maserati brothers, whose product was elbowed back to third place in the above race. Their simple, long-stroke fours and sixes were no longer up to it, and in the fall of '38 rumor predicted a new four-cylinder Maser to enhance Italy's chances in Formula 2. Bindo Maserati announced the Type 4CL in January, 1939, mentioning that it had four valves per cylinder and optional single or two-stage superchargers. Testing in later months precluded the use of the two-stage rig for the time being, and proved the merits of the 4CL's "square" dimensions (78 x 78 mm).

Technically this car, revised in chassis, too, first raced in England; but its real baptism was at the Tripoli GP of May, 1939. Unfortunately, one Herr Adolf chose this occasion to demonstrate his interest in the 1½ liter class, sending two W165 Mercedes. They took first and second place going

Thinking perhaps of the distance to Modena, the owner of this 4CLT/48 placed the St. Christopher medal next to 9000 rpm mark on tachometer. Levers are central, gas pedal is not.

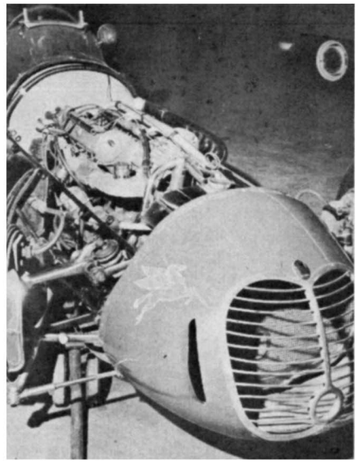




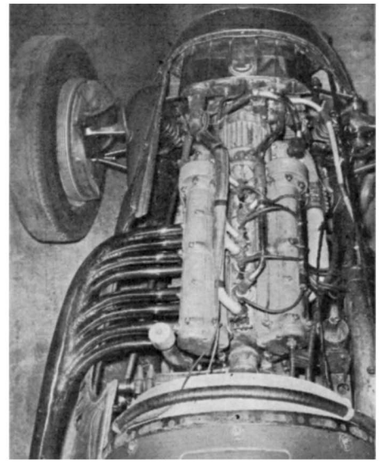
Hiding Alfetta's cloverleaf grille trademark, clip-on covers control coolant temp. Lower one blanks off the oil cooler.

SPECIFICATIONS

	ALFA ROMEO—TYPE 159	MASERATI—4CLT/48
Type	8 cyl, in line	4 cyl, in line
Valve Arrangement	Inclined 45 degrees	Inclined 45 degrees
Bore & Stroke	2.28 x 2.76 in (58 x 70mm)	3.07 x 3.07 in (78 x 78mm)
Stroke/Bore ratio	1.2/1	1/1
Displacement	90.2 cu in (1479 cc)	91.1 cu in (1498 cc)
Compression Ratio	6.5/1	6.5/1
Ignition	two Marelli magnetos	one Marelli magneto
Carburetion	triple-throat Weber DD	twin-throat Weber SD
Boost Pressure	3 atmospheres	2.6 atmospheres
Max. Power	385 bhp @ 9000 rpm	260 bhp @ 7500 rpm
Bhp per cubic inch	4.27	2.85
Piston speed @ max. bhp	4170 fpm	3850 fpm
Drive Train	4 speeds, Rear ends from 4 to 6/1	4 speeds, Rear ends from 3.41 to 5/1
Wheelbase	98½ in	98½ in
Front Tread	49¼ in (later 53)	47½ in
Rear Tread	49¼ in	49½ in
Weight dry	1830 lbs	1670 lbs
Frame	Tubular ladder, bore-section side rails	Tubular ladder, 4" dia side tubes
Front suspension	Porsche-type trailing arms, transverse leaf	Parallel wishbones, inboard coils
Rear suspension	Swing axle or de Dion, transverse leaf	Live axle, trailing quarter elliptics and torque tube
Shocks	Friction and tubular hydraulic	Houdaille rotary
Frontal area	10 sq ft	11 sq ft



The San Remo *featured short, stiff, and therefore very light coil springs mounted inboard of the forged control arms.*



Eight exhaust pipes for the 16-valve supercharged four, under them is the latest type steering's single drag link.

Earlier, ex-Parnell 4CLT/48 is fitted with non-standard British drums, original steering arms for double drag link

QUART AND A HALF

(Continued from page 17)

The 158 Alfa had a small speed-margin at this time, but there were more Maseratis and plenty of sharp private-owners to run and drive them. As a result, the two makes had comparable records before the war. Since the FIA decided to make use of all this 1½ liter equipment for a postwar "stopgap" Formula I, Alfa and Maserati were sitting high, wide and handsome when 1946 rolled around—the 4½ liter unblown cars being little competition for them at that time.

As a backdrop to the episodes of the next few years, it must be recalled that Italy had very much lost the war and could hardly be expected to rebuild the roads, let alone develop racing cars to run on them. In spite of this, the Maserati brothers had contrived to design and build a team of modified 4CL's, during the actual years of conflict. Villoresi used one of these to win the first postwar GP at Nice on Easter, '46.

In the meantime Colombo lent a hand in dusting off the Alfa Romeo team cars before leaving to create the first true Ferrari. He rigged up a two-stage blower group for the Type 158 that endowed it with 254 bhp at 7500 rpm. (On the bench in 1938 it had given 190 at 6500; as raced in '38: 205 at 7000, and up to 225 at 7500 in 1939. Those first two years were thus spent mainly in raising the reliable rev-limit of the engine and thereby increasing the output, while the postwar boost can be attributed to higher supercharger efficiency and pressures, with the rev-limit staying the same.) The 4CL Maserati was rated at 220 bhp at 6600 in 1939, and 7000 rpm were probably being used in 1946 editions.

First postwar race for Alfa was on June 9, 1946, when both Farina and Wimille broke their cars at St. Cloud. We mention this sorry day only because Alfa Romeo did not lose another Grand Prix race until July 14, 1951—and they entered *all* the big ones. Their handlers were *virtuosi*: Wimille, Varzi and Trossi through 1948, and Farina and Fangio in '51 and '52.

Development of the 158 was steady and patient, horses being up to 265 in 1947. The following year Wimille drove a new version with bigger primary blower in Rheims practice and in the Italian GP, as described before. This type, the 158/47, delivered 310 bhp at 7500 rpm as a rule, some identical engines being rated at 335 horses at 8000.

In the middle of 1947, Maserati started supplying parts for a new 4CLT model. This looked just like the 4CL, but had a tube frame instead of box-section and used the once-discarded twin blowers in series, giving nearer 240 bhp. A year later, this same engine was inserted in a greatly-revised chassis and body, the complete car being called the 4CLT/48 or *San Remo*, after its first race (and victory). Lower and cleaner, with the rakish shape of the "Wilbur Shaw" 8CTF, this modern classic of a race car was faster and handled better than its forebears, factors that helped Villoresi split up the winning Alfa trio at Berne. Later at Rheims, where Wimille had practiced with the 158/47 Alfa, Nuvolari put in several fast laps with a 4CLT/48 and called it "the best Maserati ever". When it worried the Alfas so badly at Turin, it had revised valve timing and new Roots blowers, bringing horsepower close to 250.

At this point, some ten years after their inception, both cars had settled down enough in design to give us a chance to describe them.

The Maserati had firm anchors in the past, and its engine and drive line were passed down with little change. As a matter of fact, the top end of this four-barrel seems to share the Miller heritage with a lot of other European equipment, right down to four valves per cylinder — specially suitable for supercharging and large bores. For long life in the hands of private owners, the two blocks of two cylinders each are made of cast iron, with the water jackets cast open and covered with alloy plates. Heads and blocks are integral, avoiding high boost gasket problems, and the valves are angled 90 degrees. Port faces slant out at the same degree, and have eight openings on each side instead of the "siamesed" ports of the Offy, giving an eight-cylinder look to the smooth, simple exhaust header. All valves are 1.575 inches across the head. They are closed by coil springs and opened by fingers instead of the cup-type tappets on the 4C and 8CTF. Neatly housed, the twin overhead-cams are twirled by a forward-located gear train that also drives the two blowers, one above the other, at engine speed. A colossal Weber twin-throat carburetor feeds the bottom primary blower with a concoction of 85 percent methanol, 8 percent benzol, 5 percent acetone and 2 percent castor oil. This last seven percent is primarily for cooling valves and piston heads, and lubricating the lobes of the blower. Shell supplied a similar formula to the German teams of the thirties.

Final boost is about 25 psi, piped in through a simple log-manifold with two "blowoff" or "backfire" valves. In early editions the water pump and magneto are located just under it on the right; late cars mount the pump on the nose of the secondary blower, practically under the header tank.

Surprisingly there are only three bronze-backed main bearings and no separate main caps — the entire magnesium crankcase casting splits horizontally to receive the crank and is bound together again by long bolts. Most of the 4CLT/48 crankshafts were conventional, being driven by completely machined, H-section con-rods with split, two-bolt big ends. As a last-ditch effort in the middle of 1951, the Orsi shop produced a massive, built-up crank which allowed one-piece rods and roller rod-bearings.

Lubrication is dry-sump, a feature which kept many of these Masers in the race in later days when they held oil like a hair-net. Two oil tanks were usually stowed right under the driver's seat, paying obeisance to Maserati tradition, but the newer editions had a sidesaddle tank slung on the right of the engine.

All these engines naturally varied in detail, but most were rated at 260 bhp at 7500 rpm. Later Orsi cars may have been nearer 290 with 30 pounds boost at the same revs, but it was too little and too late, though still commendable for that engine.

The four-speed, centrally-controlled gearbox is mounted in unit with the engine and drives a live rear-axle through a torque tube. A gear set at the bevel pinion drops the driveshaft to lower the driving position, this being the main change from the 4CLT in the drive train. Radius rods equal in length to the torque tube control the hubs, which are also linked to trailing quarter-elliptic leaf-springs and Houdaille shocks.

At first the 4CLT/48's also followed their predecessors in steering layout, having the steering box at the firewall with a long cross shaft from which two drop-arms and drag-links controlled each front wheels separately. Later on, the right hand drag link was eliminated and a more European split track-rod system was installed.

One wholly new feature of the *San Remo* Maser was the front suspension, which abandoned longitudinal torsion bars in favor of stumpy coil-springs operated by an inboard extension of the upper wishbone. At first this unusual mounting seems a waste of effort, but the leverages involved were such that a very stiff—small, and therefore light—coil could be used.

Also new was the chassis, which is based on two 4-inch tubes underslung at the rear and terminated by a cross tube at the front suspension mounts. Several more cross tubes and body hoops add to its stiffness. The body, of course, was completely revised—much smoother but still unmistakably a Maserati.

The *San Remo* was certainly not "basic transportation," but it was simple enough to be torn down and built up in two days by one weary mechanic in the back of a dim garage—a scene which was repeated hundreds of times from 1948 through '51 as private owners competed not only for prizes but for the expense money that would keep them in spare parts. Diametrically opposite were the Alfettas, which perhaps more than the Maseratis demanded to be torn apart after every race, but which could relax while the job was done thoroughly in the Milan workshops. These were machines that *had* to win to justify their very existence in a stringent, "recovery" economy. While reliability was certainly important, the 158 Alfa had to be able to jolt all comers off the tracks on blistering speed alone—and they did it.

Colombo's muscular masterpiece was an entirely new design, but in detail it took full advantage of the many experimental ideas that had been poured into Alfa Formula I cars during the struggle for success in the 750 kilogram formula. The 158 was a neat combination of many tested techniques.

Foundation of it all is a starkly simple, ladder frame with box-section side-members and four tubular crosspieces. At each end of the front tube are Porsche-type trailing-arm suspension units, looking precise but fragile and allowing very limited wheel movement. The top arm is directly pivoted on a friction shock and linked to a vertical tubular unit, while springing is by transverse leaf—all these same com-

(Continued on page 44)

QUART AND A HALF

(Continued from page 43)

ponents appearing at the rear end, too. Like the Maserati, there's no anti-roll bar.

Steering resembles the later 4CLT/48's, with a worm and wheel gear just above the clutch housing. A long drag link under the exhaust pipes operates a bell crank and the two slim track rods.

Many versions of Alfetta brakes were seen, with varying dimensions and venting systems, but they all had several features in common: two leading shoes all around, fine and deep finning in aluminum muffs, and drums which were set well out from the wheel to receive the full 180 mph air blast. Like most other contemporary G.P. cars, linings were by Ferodo.

Rear suspension, through most of the Alfetta's racing life, was by simple swing axle. Each bulb has a short, light, tubular radius rod which causes toe-in as the wheel rises, and as experience was gained more and more negative camber was introduced to give a greater margin of understeer before breakaway.

With a great racing heritage, the engine is classic in layout and dimensions. The straight-eight configuration is still statistically the most successful in Grand Prix racing, and the Alfa follows through by having a relatively long stroke. Though the car was much criticized for this, and its resulting high piston speed, its compact combustion chambers and high-velocity ports were very well suited to high supercharge and combustion pressures.

Another resemblance to the *San Remo* Maserati—and a characteristic of prewar design—is the combined block and head, this time of alloy with liners and shrunk-in valve-seat inserts, and the use of two such blocks of four cylinders bolted together at the center. Again there are 90 degrees between valves, but only two valves per cylinder. The alloy crankcase is split on the crankshaft centerline and houses seven roller main-bearings plus one outrigger bearing next to the flywheel and multi-disc clutch.

Unlike some earlier Alfa efforts, the 158's gear drive to the twin overhead cams runs up the front of the engine. Additional gearing and a short, flexibly jointed shaft on the left turn the small secondary blower, which in turn is geared to the big primary Roots unit. On top of the latter is a progressive triple-barrel downdraft Weber carburetor, originally with a long "elephant's trunk" air intake drawing from below and behind the slanting radiator with integral header tank. Small ducts from the intake vented the float bowls to balance fuel surface pressures.

At first, a single magneto for all eight centrally-placed plugs was stowed under the exhaust manifold, next to the water intake piping, but this was replaced by two four-plug units at the camshaft noses, where things weren't quite so hot.

Oil from the blower-drive drains into the rear of the deeply-finned sump, which is scavenged by two pumps. An oil reservoir is in the cowl, while a cooler is slung under the radiator. To its right is a duct leading to a shroud around the exhaust manifold, carrying heat rapidly away from it.

A slender drive-shaft carries torque at high revs to the rear-mounted, four-speed gearbox, coupled in unit to a limited-slip differential. The box is placed flat and has a push-pull control, much like the racing Ferrari arrangement of later years. Its lever and gate are low at the left, with a reverse latchout, and are as finely finished as the rest of the cockpit. In fact, Alfa Romeo seems to have been the only Italian firm to rival Mercedes in smooth detail-work.

Alfa Romeo again resembles Daimler-Benz in that it was a conscientious firm with an important production car program. A year off from racing in 1949 was required to develop the 1900 sedan. In the meantime the *San Remo* Maseratis had a field day running against the twin and four-cam Ferraris and Talbots, winning six out of sixteen major races and giving their owners much "go" for the money. When Alfa came back in 1950, they scored only two wins, but the 4CLT/48's were getting tired and oily and very much in need of new factory parts, which were just not available. As a result, a lot of these rugged machines were privately reworked to keep their original shape or even to improve upon it.

Typical of one approach was Reg Parnell's car, which eventually had an engine that was more English than Italian. It had bronze blocks, a special crank, and a longer-than-stock primary blower, among many other things.

Nor had the Maserati brothers abandoned their brainchild. While turning out odds and ends for their new OSCA Formula 1 car, they just-by-chance came up with a 295 bhp 4½ liter V-12 which could be dropped perfectly into the San Remo chassis. Prince Bira had such a swap made, which put him back in the running for some minor 1951 events, but the V-12 never poked out sufficient horses.

In 1952, most promoters turned to the unblown two liter Formula 2 and Maserati owners had a new problem. The resourceful Enrico Platé stripped the blowers off his brace of cars, rebuilt the engines to the larger size and chopped eight inches out of the frames. With two twin-throat Weber 35 DCO carbs they produced some 150 horsepower, and in spite of a weight disadvantage they gave Schell and de Graffenried some very good rides. These cars, plus an experimental Orsi-Maserati based on them, were rebodied as "Buranos" for *The Racers*.

All this, we hope, illustrates the point that Grand Prix racing is not always the pure science that it's made out to be, and has just as much room for specials as any other kind of motoring competition. In fact, one rich Parisian even had a *San Remo* reworked into a sports car. If, however, you *must* win every time out without fail, it helps to have an expert staff, extensive facilities and rigid control guided by experience—all assets of Alfa Romeo. The 158 had made it, and in 1950 and '51 the job was simply to keep it on top.

Since the opposition hadn't accomplished much in 1949, the type 158/47 reappeared practically unchanged. Later, in 1950, Ferrari's unblown cars started to menace, so yet more boost was applied, bringing the output to 360 at 8500 rpm. Bigger brakes were seen, too, and the type number "159" began to be heard.

In 1951, there was an occasional hint of desperation in the once-invincible Alfa team; but their engineers worked miracles to wring more power out of that straight-eight. To offset a gigantic thirst, big, side fuel-tanks were fitted, giving a total of 65 gallons, which made the cars practically undriveable for the first few laps. Also available, but never made standard, was a neat de Dion rear end. The dead-axle tube curved around behind the final drive and was located by a single, triangulated trailing arm above the center plus one radius rod below each hub. Brakes were set in at the wheels and were more shrouded by the rims than in the swing-axle versions. The cross leaf-spring remained.

Major engine revisions and still more boost allowed the 159 to scream up to 10,500 revs on the test bed and register 404 horsepower—well over double its original rating. At 9500, a more workable limit in the gears, 385 horses were on tap. Traction became a serious problem, but the cars were reaching 195 mph on the faster courses.

Sustaining this output depended a lot on the use of methanol itself as a coolant for pistons and valves. Valve overlap was deliberately made extreme to force a high-pressure draft right through the head, deliberately wasting fuel in a "fifth stroke." They were getting less than a mile and a half to the gallon. In addition, cool water was pumped direct to alternate exhaust valve guides, as is now done by Maserati. After long use of a single exhaust pipe, twin manifolds were again fitted to reduce heat loadings.

Alfa just eked out a World Championship for Fangio with the type 159A, which was used at only two races. These drew carburetor air from the cockpit or from a cowl scoop, depending on the weather, and horsepower figures of 430 were hinted at. The machines were reshaped, looking somehow bigger and stumpier in the rear and had a new, shrill blower whine, recalling the '39 Mercedes.

Excepting the sorry efforts of the V-16 BRM, which is another story altogether, Barcelona in 1951 saw the end of serious supercharged Grand Prix racing. The success of the unblown 4.5 and 2 liter Ferraris had pointed down a new road which, as pointed out in "Whence Come the Horses," has led to many technical advances.

Though they were criticized as extravagant, expensive and pointless, we still get a colossal kick from small complex machinery howling at high revs under three or four times atmospheric pressure. This was racing for its own sake, with the sky the limit. There may yet be a renaissance of blowers, in which case Alfa-Romeo and Maserati might again win two-thirds of all G.P. events between them, as they did from 1947 to 1951. Not bad for a quart-and-a-half, blown.

Karl Ludvigsen