

THE COMPLETE **Ferrari**



Godfrey Eaton


THE COMPLETE FERRARI

In the hundred years of the history of the motor car no marque has made such an impact on the public or the car enthusiast as the magic name of Ferrari. It remains the great fantasy car, dreamt about by the envious and possessed by the lucky few. In terms of sheer aesthetic beauty and formidable engineering performance the sign of the prancing horse has no equal.

Since 1947 Enzo Ferrari, founder of the company and its inspirational genius, has designed and built a vast array of exceptional cars both for the track and for the road. This book sets out, for the first time, to give chapter and verse on every significant model ever produced by the Ferrari factory. It covers the GT, sports and sports prototype cars; the Formula 1 and Formula 2 single-seaters; the CanAm cars; those that were raced at Indianapolis and some of the earlier models such as the Alfa-Ferrari Bimotors, the Type 158 and 159 Alfettas – attributable to Ferrari when he was still closely associated with Alfa Romeo through the pre-World War II Scuderia Ferrari – and the Type 815s which were his first attempt at building cars as an independent constructor.

For each model a brief specification is provided, together with notes on development, competition use – where applicable – and such information as can usefully be given on chassis numbers. There are detailed appendices on the various Ferrari designation and chassis numbering systems; designers and bodybuilders; Ferrari drivers; championship and classic race wins; engine configurations and specifications; and a selection of road test data, including that on the latest Testarossa.

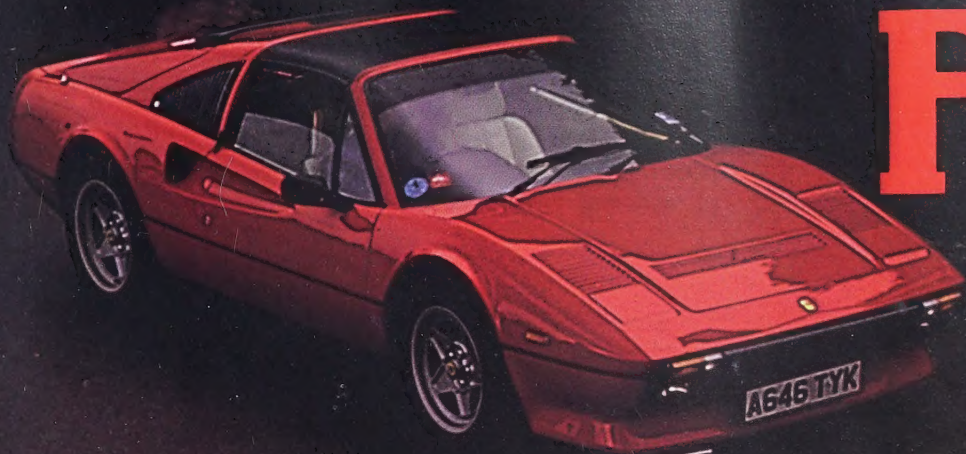
This encyclopaedia of Ferraris – for this is what this book sets out to be – is heavily illustrated with over 500 colour and black and white photographs, many of which have been specially commissioned. *The Complete Ferrari* is an essential addition to the enthusiasts' and the specialists' libraries.



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testarossa

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Godfrey Eaton

Edited by Geoff Willoughby



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Page 1: Clay Regazzoni's 312T (foreground) and a 308GTS.

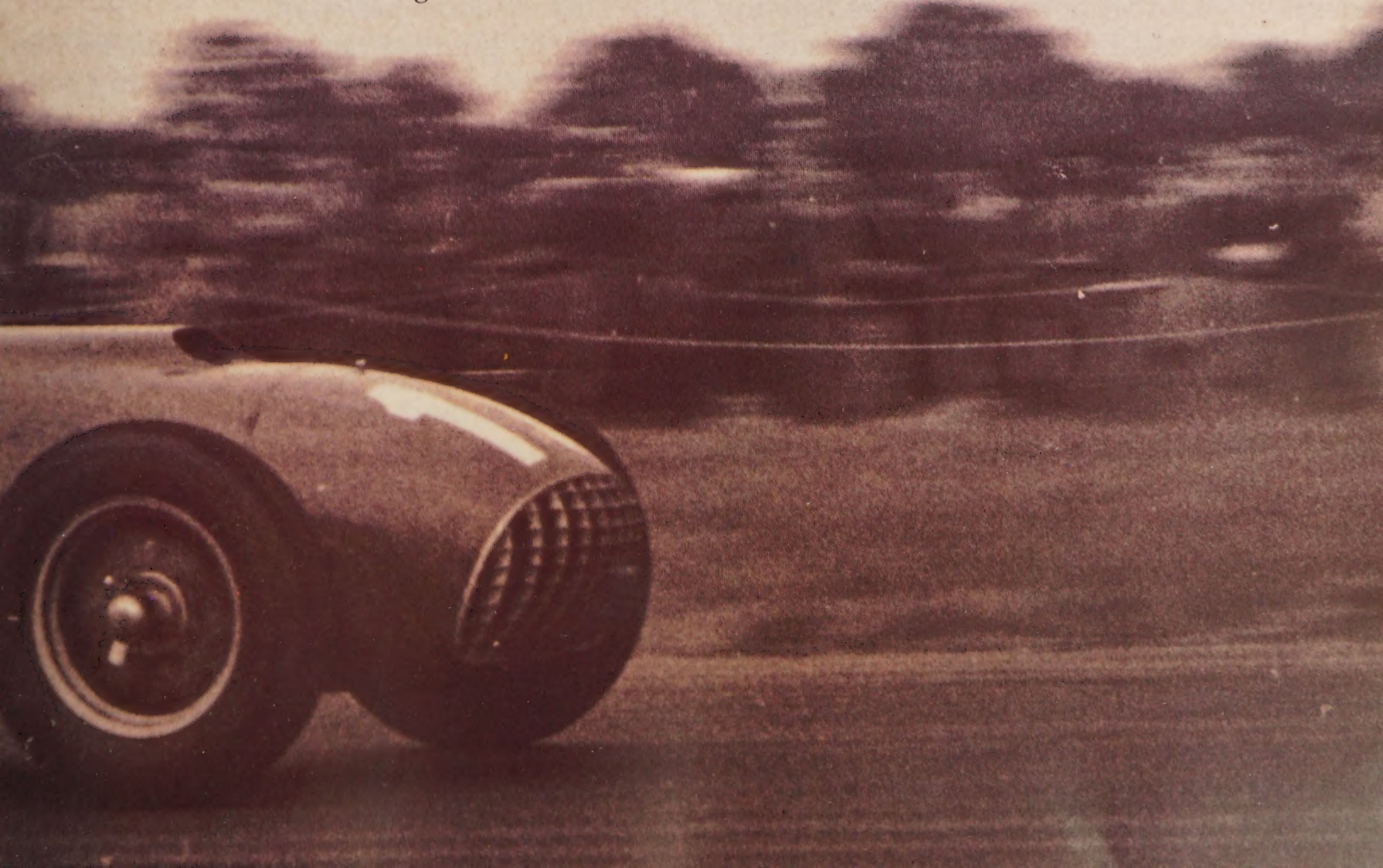
Pages 2-3: The aggressive-looking Testarossa — half-race,
half-road-going styling.

Below: Villoresi at the 1951 British Grand Prix (Silverstone) in a
twin-ignition 375F1.



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Introduction

Since the advent of the automobile a century ago, there have been hundreds of different makes manufactured, most of which have, over the years, gone out of production for one reason or another. Among the marques produced some have made a short-term impact, yet taken overall there are only a handful of manufacturers whose cars have really fired the imagination of the enthusiast. Names such as Bugatti, Alfa Romeo, Duesenberg and to a lesser extent Mercedes, Lotus, Jaguar and Aston Martin readily spring to mind, but one name stands out above all others: FERRARI. Both the cars and the autocrat who gave his name to the marque have become legends in a relatively short life-span.

Not only has Ferrari been responsible for some of the greatest racing cars seen on the world's circuits; his talents have also produced world championship sports racing and gran turismo cars which have, on many occasions, swept all opposition aside. As if this were not enough, his factory has created a series of road cars which were and are not only aesthetically pleasing in design but also reliable, fast and safe. As one well-known motoring journalist wrote, they are the greatest cars in the world!

This volume sets out to be a textbook on – but perhaps a more valid and apt description would be ‘reference guide’ to – the Ferraris built from 1947 up to the present day. As such it is hoped it will provide the historian of the marque with useful, albeit brief, information as a starting point and the enthusiast with a book which will enable him (or her) to extract, at least, the minimum data on each type. In doing this the book does not become a veritable tome; it also keeps the price down! This being so the reader should possess some of the many specialized publications on the market dealing with the marque which give, in greater depth, the broader information on each type including, in the case of the racing and sports racing machinery, their racing history and achievements.

While every effort has been made to achieve a high standard of accuracy, there is little doubt that errors may have crept into the facts and figures as in many cases some of the experts do not agree on what constitutes a fact regarding a particular type. Comments are therefore invited, with a view to a possible reprint at some future time, from anyone who may have some specialized knowledge of Ferraris.

In the early years there were a number of variations of the same basic model which meant that the same engine (with some minor modifications) could be used for a variety of

purposes, thereby saving much-needed cash. To take an example – the V-12 Type 166 was used not only as a racing and sports racing car but also as a road car. Ignoring the racing and sports racing cars and concentrating on the road cars, it has to be said that there were variations in body styles for these early cars as, at that time, Ferrari obviously was not so concerned with appointing one coachbuilder to design and build bodies for his cars. This came later, as we find the early Type 166 Inter (the road car) having coachwork designed and carried out by Touring, Vignale, Bertone and Stabilimenti Farina. In view of this it would not be feasible, without increasing the size of this volume to unmanageable proportions, to illustrate all the styles of a number of the early production models. At a later stage when there were increased production runs of the many road-going cars manufactured, Ferrari settled basically on one designer – Pinin Farina (later to be known as Pininfarina). With certain exceptions, however, while Pininfarina designed the coachwork it was the firm of Scaglietti, down the road from the factory, which carried out the work.

There are many interesting facets to the Ferrari story such as the special prototype sports racing cars; the show cars, usually introduced at various motor shows, which never made the production line; and the one-off engines which again never saw a chassis. Unfortunately too little is known about these power plants with illustrations scarce and in many instances non-existent! However, the special prototypes and show cars find their place amongst the following pages.

This book could not have been compiled without the help of many people, all experts in their own aspects of the fascinating world of Ferrari.

Ferrari, the Man

Enzo Ferrari was born on 18 February 1898 on the outskirts of Modena – not so long after the official ‘birth’ in 1885 of the internal combustion engine. His life has been bound up with the automobile, as his father owned a metal shop to which he added a motor repair business where the young Ferrari learned the rudiments of automobile engineering, having declined his father’s offer of a more formal engineering education. During these early years he became interested in motor racing when he accompanied his father to the local circuits to watch such giants as Vincenzo Lancia, Felice Nazzaro and others. Such excursions fired his ambition to become a racing driver and his involvement with motor racing, although it is said that he had originally wanted to be a singer or a journalist.

The young Ferrari left the army after World War I in ill health and somewhat depressed, but had in his pocket a letter of introduction, from his commanding officer, to the Fiat company. Fiat declined to employ him; however, he had the good fortune to get work as a tester with a firm which converted Lancia light trucks into passenger vehicles. He then moved on to another firm doing similar work with Isotta Fraschini chassis. There he met Ugo Sivocci who also had an ambition to become a racing driver. Between them they built the CMN (Costruzioni Meccaniche Nazionali) racing cars competing in hill climbs and the illustrious Targa Florio race.

By 1920 Ferrari was on his way with a ‘contract’ in his pocket to drive for Alfa Romeo. His co-drivers were the well-known Antonio Ascari and Giuseppe Campari, later to be joined by Sivocci. Perhaps Ferrari could not be counted among the ‘greats’ as a racing driver, but he was competent and gained a second and fifth place in the arduous Targa Florio run over atrocious road surfaces in the early twenties. While he was not sidelined by the firm as a driver, the management had noted his flair for administration and his almost uncanny instinct for selecting the right man for the right job. Two examples will suffice – he persuaded Luigi Bazzi, who became renowned as the world’s foremost automobile technician and incidentally his lifelong friend, to leave Fiat; and he also enticed Vittorio Jano, one of the best automobile designers, to join Alfa Romeo from Fiat. Perhaps he was remembering the rebuff he had received from Fiat some years earlier.

The twenties were a time of expansion in car production and Ferrari no doubt felt that the best way to increase sales was to build up a formidable racing team which could win races and thus make his firm’s name

known to the public. To this end Alfa Romeo set up a racing department to which Ferrari was assigned, and as a keen observer of developments in racing car design he was greatly impressed with Fiat’s 1922 2-litre 6-inline cars designed by Bertarione. These cars were almost invincible, but then Louis Coatalen of the Sunbeam Company offered Bertarione the position of designer for Sunbeam.

Fiat, however, had Vittorio Jano to replace him and in 1923 came up with another winner – a 2-litre straight 8. It was then that Alfa Romeo stepped in as the company badly needed a designer, and Jano moved across to help Giuseppe Merosi produce their grand prix contender – the P1. The project was abandoned when Ugo Sivocci was fatally injured practising for the 1923 Italian Grand Prix at Monza. With Jano in command the successful P2 was designed and, with modifications over the years, continued to be one of the foremost racing cars built in the twenties. Incidentally, Jano remained with Alfa Romeo until 1939 when he took up an appointment with Lancia; but Ferrari and Jano were destined to cross paths again in 1955 when the Lancia team of V-8 D50s was handed over to Ferrari to race because of the parlous state of the owner company’s finances.

By 1929 Ferrari was at a point in his career when he wanted to become his own master. With the help of two young and wealthy industrialists who were interested in racing their Alfa Romeo sports cars, he formed Scuderia Ferrari. His idea was to race Alfa Romeo sports racing cars using amateur drivers who would have their share of any prize money but would not be so expensive as the professional drivers. He did engage one professional so that promoters would pay ‘start’ money: it didn’t take Ferrari all that long to realize that amateurs brought neither prestige nor a satisfactory cash flow to maintain a team. However, the venture was not without its compensations as Alfa Romeo had agreed that he should run their racing team and he was also given an area as concessionaire for the sales and repair of their automobiles.

The year 1932 saw the advent of the Alfa Romeo Type B Monoposto (known as the P3) but, after a season’s racing in which it was supreme, the factory put the cars ‘under wraps’, leaving Ferrari only the Monza sports cars to race – and these were no longer competitive. As a sideline he tried his hand at running a team of racing motorcycles, choosing the British radial 4-valve Ridges plus a few ‘cammy’ Nortons, and for 2 seasons won the 250 cc, 350 cc and 500 cc classes in the Italian champion-



At least he had kept his name before the Italian press.

During this period both Mercedes and Auto Union had entered grand prix racing, the former with the backing of the German Reich. At this time Alfa Romeo was beset with financial problems so the Italian government intervened and handed back the P3s to Scuderia Ferrari to race. While the cars were updated and managed to win an important event here and there, the German teams had the upper hand as the Italians did

not possess the necessary finances to keep abreast of new developments.

Ferrari was at a low ebb at this time but, never one to dwell on misfortune, he and Bazzi together with Arnaldo Roselli ('borrowed' from the factory) built 2 Bimotors. A year later, in 1936, the George Vanderbilt Cup race was resurrected after a period of 20 years. Scuderia Ferrari entered 3 Alfa Romeos to be driven by Tazio Nuvolari (12C-36), Count Antonio Brivio (12C-36) and Giuseppe Farina (8C-35). Nuvolari won with the Count in third place after having ignition problems. The 'Cup Race' was run again in 1937 and on this occasion the Scuderia entered Nuvolari and Farina with the 12C 1936 cars. Nuvolari 'blew' his engine and Farina was fifth with a sick car. Ferrari had, at least, done his best to keep the Alfa Romeo name in the limelight.

Still without a race-winning car in 1937, Ferrari persuaded the factory that he should build a small-capacity car for voiturette racing, which had become popular. He was 'loaned' Gioacchino Colombo as chief designer and together they produced the Alfetta 158 with a 1500 cc straight 8 power plant.

Apart from 1947, when Ferrari's factory was building his own V-12 cars, 1938 was another milestone in his life, for in that year the Alfa Romeo works took back all their cars, having decided they would race them. Ferrari was invited to become race manager and the team was named Alfa Corse. However, having been his 'own man', he couldn't settle and fell out with Ugo Gobbato, the firm's manager, because of the overriding influence of the Spanish engineer, Wilfredo Ricart, with whom he had nothing in common. He resigned, returning to Modena with Bazzi, Alberto Massimino and a few others. The terms of separation decreed that Ferrari was not to build any cars for 4 years which would bear his name, but this did not stop him from producing 2 sports racing cars constructed mainly from Fiat parts for the 1940 Mille Miglia.

After World War II, during which his works produced a variety of parts for Italy's involvement in the hostilities, he gathered round him a good team of engineers and technicians, including Bazzi, and to design his V-12 power plants he called on Colombo who left Alfa Romeo. The rest of the Ferrari story is carried on in the pages of this book.

Never one to suffer fools, Ferrari has frequently been at loggerheads with the governing body of motor sport and the press of his country. There can be no doubt that he is a very remarkable man who has always been able to take the rough times with the smooth, managing to come out of a long losing spell in grand prix racing with a winner. He is known not only for his racing cars but also for showing the world that his road cars are among the greatest ever built, being reliable and very fast with coachwork designs which have rarely, if ever, been surpassed. The overworked word 'legendary' is one which can be equally applied to both man and his machines.

New entrance to the service department at Modena



The Prancing Horse

Ferrari's prancing horse (*cavallino rampante*) logo has a long and illustrious history dating back to 1692 when it was the device of a crack Italian cavalry regiment and subsequently adopted by Francesco Baracca as his personal emblem.

Baracca started his career as an officer cadet at the Accademia Militare and, after passing out and further training, was posted to the Piemonte Reale Cavalleria, one of Italy's oldest cavalry regiments. During his early years with the regiment the Italian army established an aviation section and Baracca, showing a keen interest in flying, was selected for training which he did at Reims (Italy had no facilities). After gaining his wings, he returned to Italy as an instructor, adviser and test pilot.

Early in World War I Baracca showed his prowess as a fighter pilot and, as was the custom, after 5 'kills' he qualified as an ace. He celebrated the occasion by decorating the fuselage of his Nieuport with a personal emblem – the *cavallino rampante* which was painted on a white patch. The horse was a fiery black steed, rearing up on both hind legs and with a drooping tail: the correct heraldic term for this posture is 'forcene', not 'rampant'. Baracca had based his emblem on the horse that formed part of the Piemonte Reale Cavalleria regimental coat of arms.

On the afternoon of 19 June 1918 Baracca (with 34 'kills' to his name) took off in his Spad SXIII but never returned.

The Ferrari connection

While Hans Tanner's account in his book *The Ferrari* (first published in 1959) of how the car manufacturer came by his prancing horse emblem makes good reading, it is somewhat far-fetched and it is difficult to separate fact from fiction. An account more likely to be founded in truth comes from a friend of the Baracca family who relates that Ferrari made the first move in proposing that he might use the *cavallino rampante*. He was on good terms with the family; Enrico Baracca (Francesco's father) was a customer of Ferrari when he had the Alfa Romeo dealership, and it was with the Baraccas' approval that he adopted the logo.

It is quite incorrect to suggest that Ferrari used the emblem on the Alfa Romeos he raced for the company as it appeared first in mid-1932 when his Scuderia Ferrari had charge of the Alfa Romeo team. It is interesting to note that, from July 1932 when the emblem appeared on all the Scuderia cars, the horse

was different from the one used by Francesco Baracca. It was not only less wild-looking but also standing on one hind leg and the tail was erect – truly 'rampant'. Why the change was made is unknown but what is known is that the Baracca design had become the property of the Regia Aeronautica which might have objected to Ferrari using an identical logo.

Ferrari placed his black horse on a yellow (or gold) shield, yellow (or gold) being the colour of his native Modena. The letters 'S' and 'T' were on either side of the supporting hind leg and surmounting the shield were the Italian national colours of red, white and green. The shield was first seen at the Spa 24-Hour Race in July 1932 when it was located immediately behind the car radiator on both sides of the bonnet (hood). Subsequently it appeared on the scuttle sides. The year 1933 saw a minor change when the horizontal stripes became a chevron configuration, still used today. The shield reverted to its original position in 1934 – at the front of the bonnet (hood) and (with odd exceptions) remained there until the Scuderia was wound up in 1937. The shield was used on one occasion as a nose badge when it graced the Ferrari/Bazzi Bimotors in 1935.

Ferrari's first car, the Type 125C of 1947, did not sport the famous shield but had a new nose badge. This was the now familiar yellow rectangle with red, white and green horizontal stripes at the top and the stylized Ferrari name beneath the black horse. By early 1950 the horse was reduced in size and the badge, basically unchanged, appeared on all Ferraris except the Dino competition cars of 1965-9, the Dino 206GT and 246GT series and the early 308GTs.

The Scuderia shield did not reappear on the works-entered Ferrari competition cars until 1952, which would seem strange. When re-introduced, the horse had been 'tidied up' and the Formula 1 cars carried the shield until 1963 but it was noted at the Monaco Grand Prix of that year that the emblem had been reduced in size. The sports prototypes still used the large shield until 1966 when the smaller shield became regular 'wear'. During this period neither the Dino 206S nor the Dino 166F2 cars had shields although they were to be seen on these tipos on rare occasions. At the South African Grand Prix in 1975 the large shield came back and has adorned all Ferrari grand prix cars since that time.

For the complete story refer to *Ferrari*, Vol. 15, Nos. 3 and 4. *Ferrari* is the official journal of the Ferrari Owners' Club (UK).



Cavallino rampante - the final design



Pre-1947 Cars



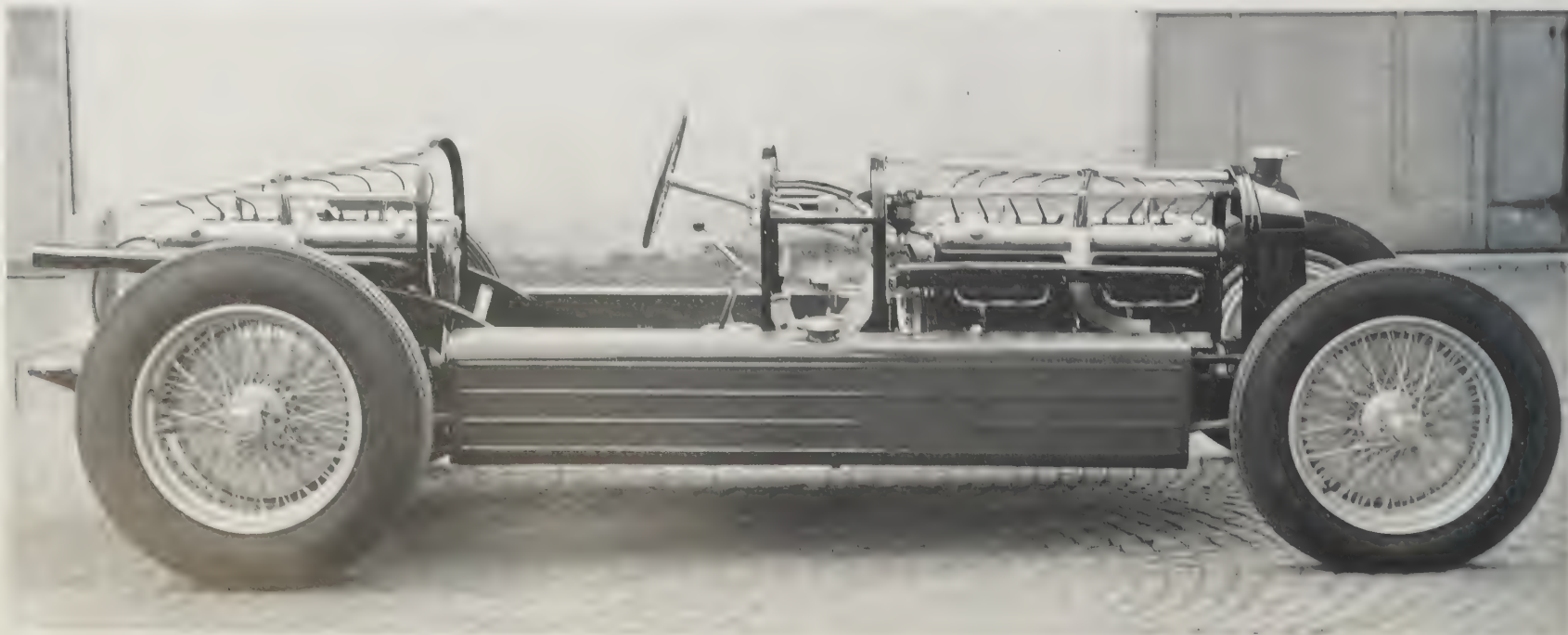
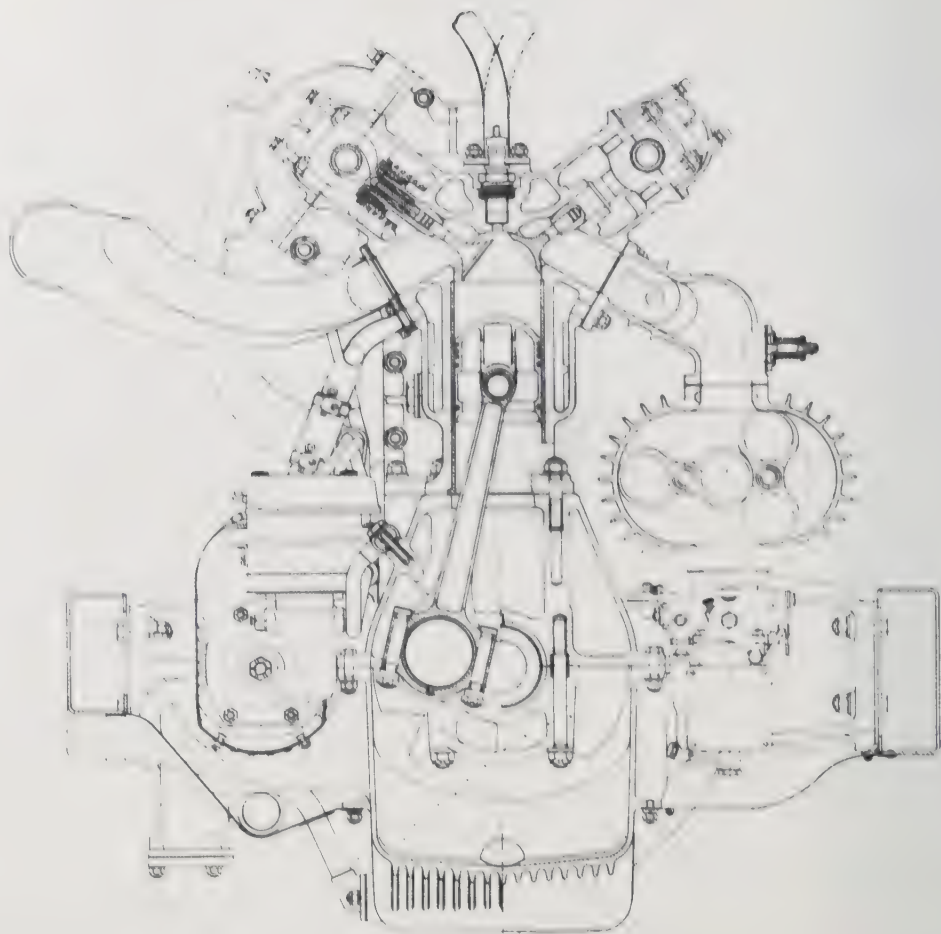
Alfa-Ferrari Bimotore

The 2 Bimotore's built were identical apart from engine capacities. Since 2 straight-8 engines had to be installed fore and aft of the driving compartment, the chassis of the Tipo B Alfa Romeo was extended by 6 ins., giving an overall wheelbase of 100.2 ins. The car usually driven by Tazio Nuvolari had a total displacement of 6330 cc (2×3.2 -litre units) with a power output of 540 bhp; the other, handled by Louis Chiron, had 2×2.9 -litre units with a capacity of 5810 cc giving 520 bhp.

Both cars were built in quick time between December 1934 and April 1935, making their debut in a formule libre race at Tripoli on 12 May where they performed well finishing fourth and fifth. They were not only very reliable but also showed they were too fast for any racing tyres available at that period. In the Tripoli race Nuvolari was in his pit no fewer than 13 times for tyre changes!

There were few races the cars could enter so it was decided to attack some records. On 15 June 1935 Nuvolari set 2 new Class B international records taking the flying kilometre at 199.92 mph and the flying mile at 200.77 mph. It must have given Ferrari and Bazzi great satisfaction to have built such cars, even if their use on the circuits was limited to formule libre races. Bazzi in later years referred to the episode as 'youthful follies'.

After their short career 1 car was dismantled but the other, after a few minor modifications, was sold into the United Kingdom and appeared on a number of occasions at Brooklands in the hands of a variety of drivers.



Preceding pages: Alfa-Ferrari Bimotore with Nuvolari in the driving seat.



Opposite: Alfa Romeo Bimotore 8C 1935 engine.

Opposite below: View of the Bimotore stripped of bodywork. Note placing of engines front and rear.

Right and below: This Bimotore had 2 2.9-litre engines. Louis Chiron is at the wheel.

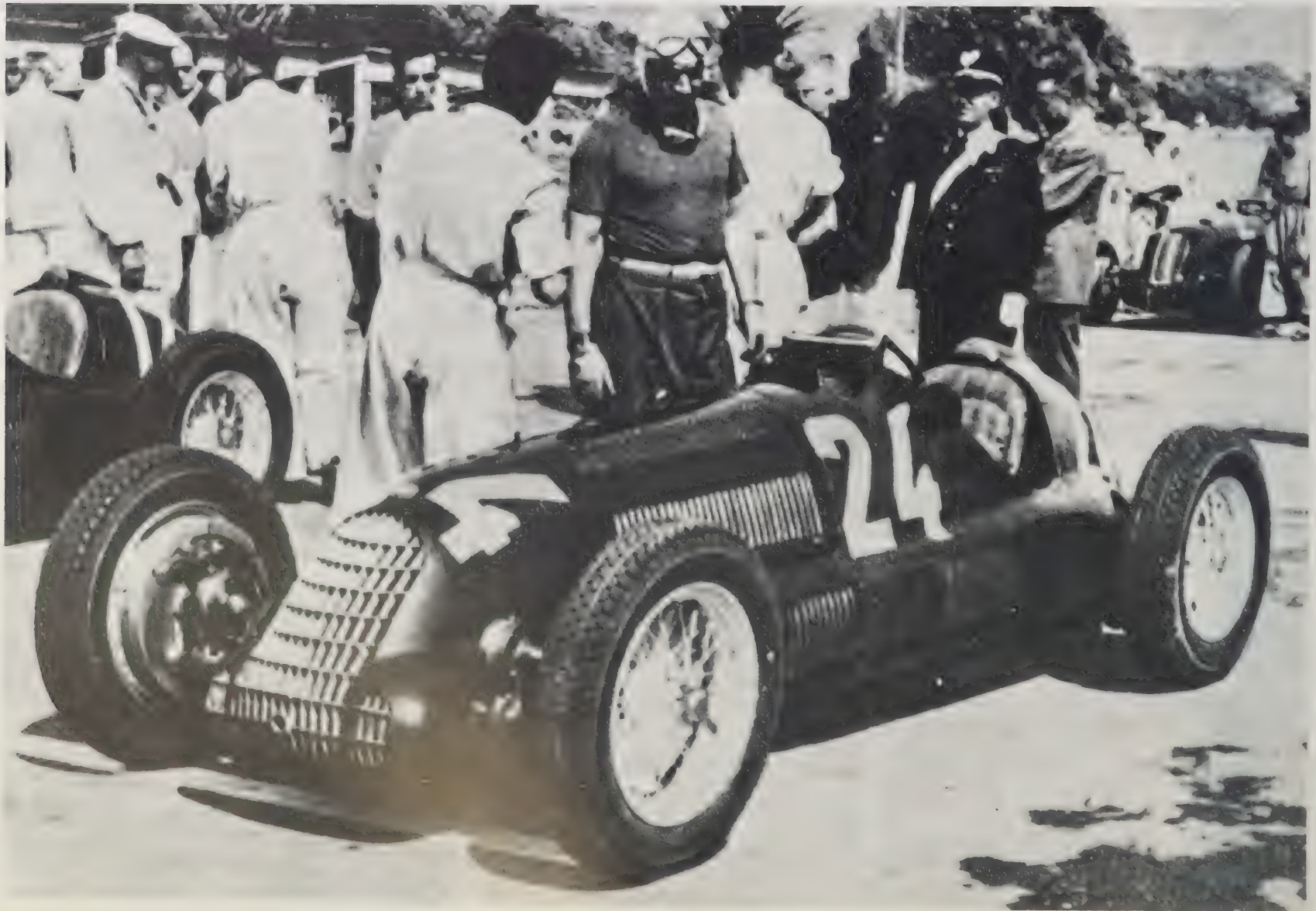


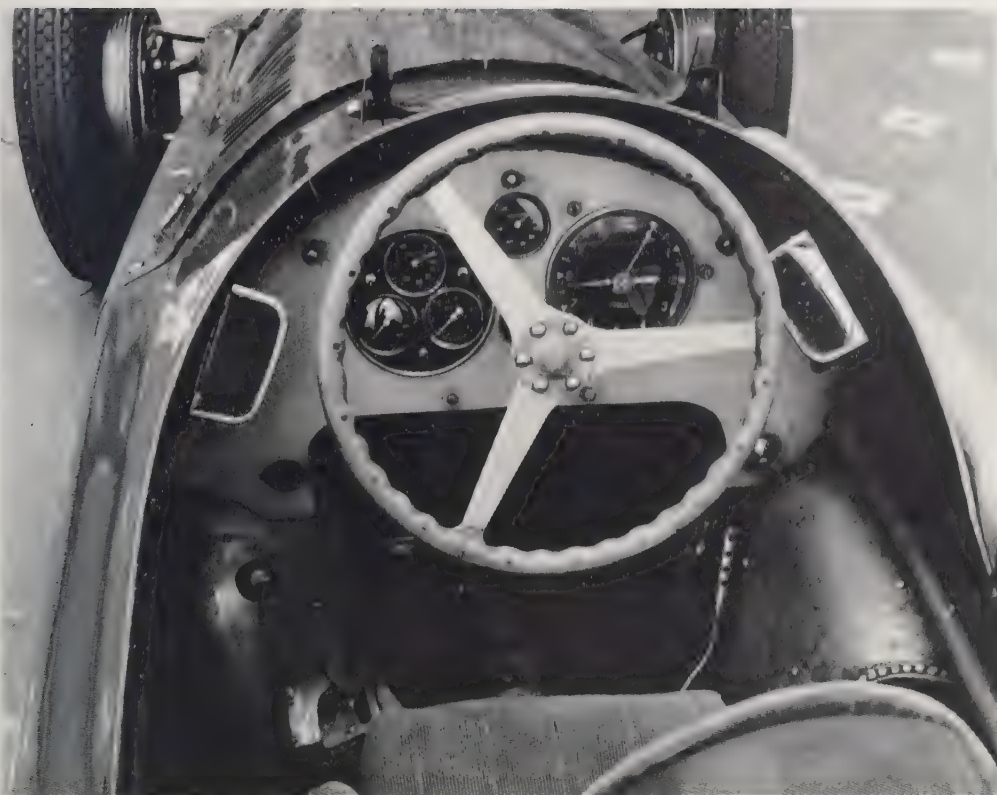
Alfetta



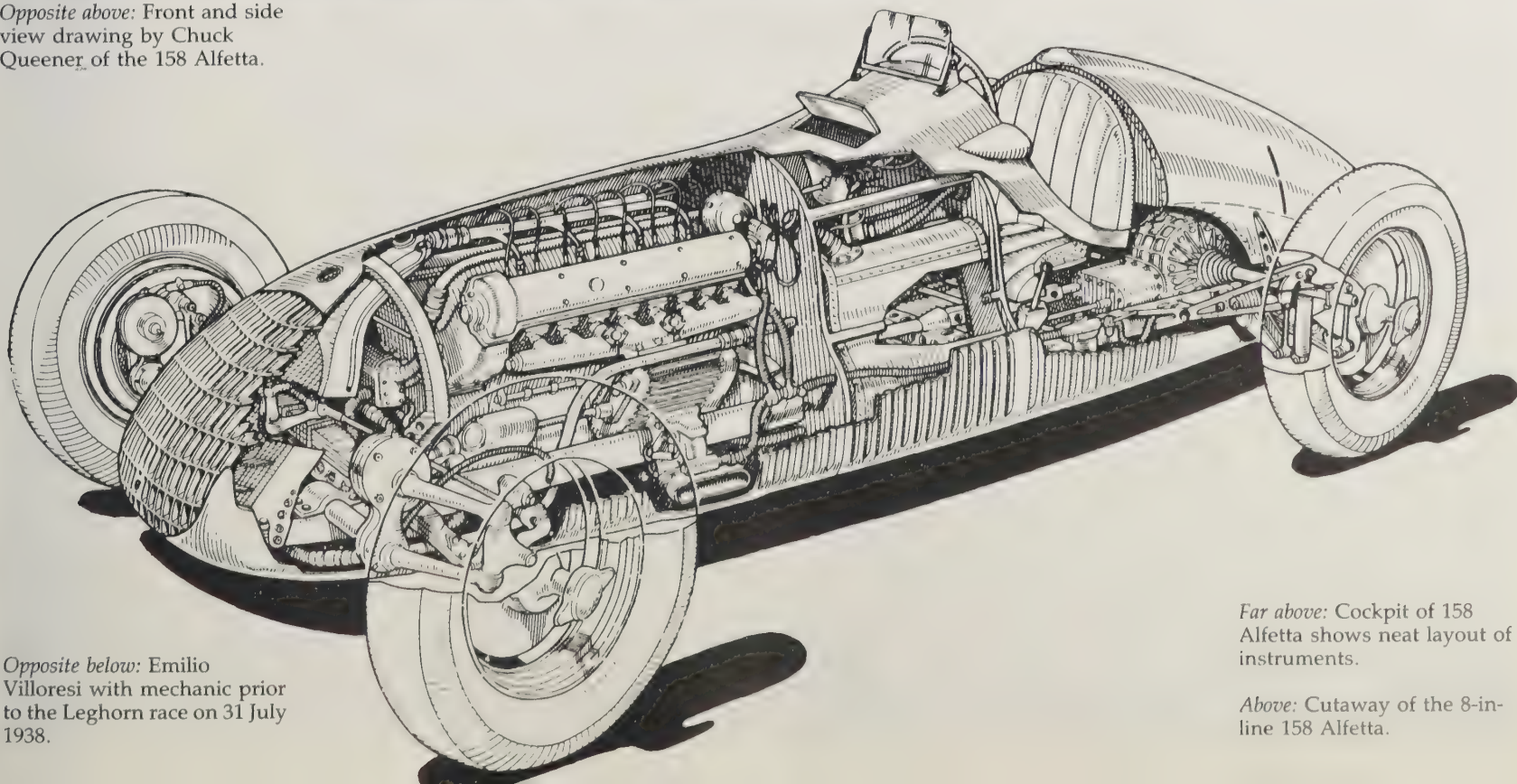
In 1938 the formula for grand prix racing was to be for 3-litre supercharged and 4.5-litre unsupercharged cars and in preparation for the change Alfa Romeo decided to 'lay down' 3 supercharged cars. At the same time, under pressure from the design department, the company took back control of their racing cars and set up their own team, calling it Alfa Corse. Ferrari was invited to become team manager and although he accepted, it was probably with some reluctance. This move left Scuderia Ferrari without any cars to race.

What to do? Resourceful as ever, Ferrari turned his thoughts to voiturette racing. This had been a very popular form of racing for some years, not only in its





Opposite above: Front and side view drawing by Chuck Queener of the 158 Alfetta.



Opposite below: Emilio Villorosi with mechanic prior to the Leghorn race on 31 July 1938.

own right but also as good entertainment for spectators as a curtain raiser to many grand prix events. The maximum capacity allowed was 1.5 litres, the engines being supercharged. Ferrari was permitted to build an initial 4 cars and to help him Alfa Romeo loaned Gioacchino Colombo. The work, however, was divided between Ferrari's own premises at Modena and the company's factory.

The engine was an 8-cylinder in-line with a bore/stroke of 58×70 mm giving a displacement of 1779 cc. A Roots-type blower delivered a boost of 17.6 psi and on the bench the engine gave 190 bhp at 6500 rpm.

By and large the Alfetta and the development cars from the original design gave a good account of themselves on the circuits, winning their first race at Leghorn on 31 July 1938 and, on the occasion of the Coppa Acerbo run at Pescara on 13 August 1939, taking the first 4 places.

It was the development of the Alfetta, designated initially Tipo 158 and finally Tipo 159, which was not only one of the most successful racing cars ever built but also the car which gave Ferrari so much trouble when he entered grand prix racing in 1948 with his own cars, the 1.5-litre V-12 Tipo 125s. In fact Ferrari had to wait until 1950 when the Lampredi-designed 4.5-litre V-12 Tipo 375 finally put paid to the then ageing Alfa Romeo which started out as his own inspiration when he was with the company.

Far above: Cockpit of 158 Alfetta shows neat layout of instruments.

Above: Cutaway of the 8-in-line 158 Alfetta.

Ferrari finally parted from Alfa Romeo in 1938 after being in constant conflict with the chief engineer, a Spaniard named Wilfredo Ricart. Under the severance terms Ferrari was forbidden to reconstitute Scuderia Ferrari and he was not allowed to build racing cars that would be in opposition to Alfa Romeo for a period of 4 years.

He returned to Modena with Bazzi and Massimino where they set up the firm Auto Avio Construzioni doing contract machine shop and design work.

However, Ferrari could not keep away from building racing cars and decided to enter 2 cars for a 1000 Km event over the Brescia-Cremona-Mantova-Brescia course in 1940. (Italy at that time had not entered World War II.) There wasn't much time to build 2 cars for the race, neither was there much cash, but Fiat were offering cash

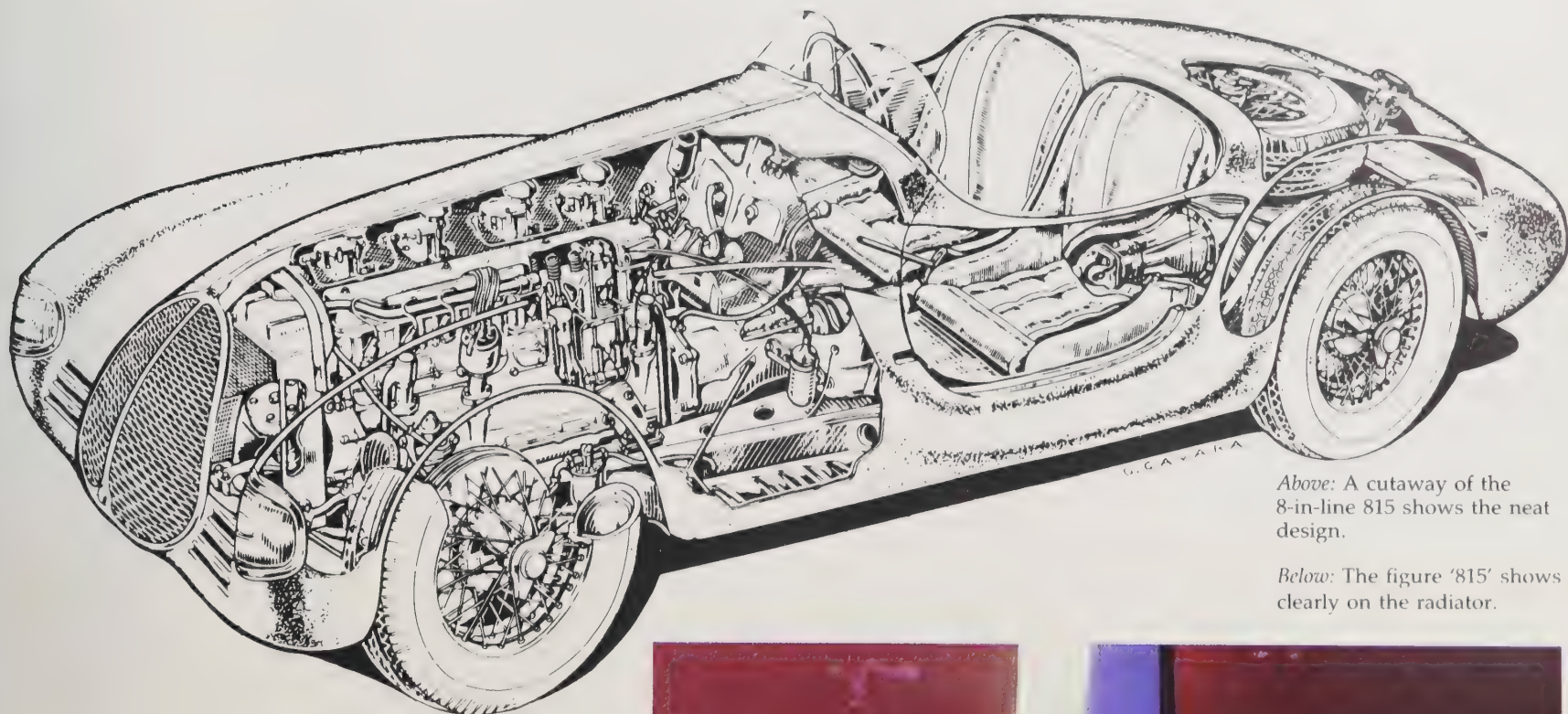
awards to any class winners using their components. The Marquis Lotario Rangoni Machiavelli, who lived locally and raced Fiats, tuned by Stanguellini, agreed to sponsor the project.

The 4-cylinder 1100 cc Fiat 508C was chosen as the basis for the cars and a 1-piece cylinder block and crankcase was cast by the Calzoni Foundry in Bologna while Massimino mated 2 Fiat 1100 cc aluminium cylinder heads together.

The 8-in-line cylinder cars had a bore/stroke of 63×60 mm giving a capacity of 1496 cc, and the main components were Fiat-based, including the chassis which was naturally reinforced. The camshafts, however, were specially designed by Massimino while Magneti Marelli provided an 8-cylinder distributor and fuel was fed via 4 downdraught Weber 30 DR 2 carburetors. The first car completed, number 020, was to be driven by the Marquis and the second, numbered 021, was for Alberto Ascari (son of the famous Antonio

Below: Ferrari's first 'home-built' car, the 815. Of 2 built for the 1940 Mille Miglia, this is the only survivor. Picture taken at the factory in 1983.





Above: A cutaway of the 8-in-line 815 shows the neat design.

Below: The figure '815' shows clearly on the radiator.

Ascari who was killed in 1925). The cars were designated 815 (8 for the number of cylinders and 15 for the capacity, i.e. 1.5 litres). So as not to be in breach of his severance agreement with Alfa Romeo, Ferrari 'put it about' that the 2 cars had been commissioned by customers.

The Brescia race was run on 28 April 1940 with Enrico Nardi, who was test driver and mechanic for the works, as riding passenger to the Marquis while Ascari had his nephew Minozzi as his passenger.

Both the 815s outclassed the opposition in the 1.5-litre class but after leading Ascari retired with either a broken valve or rocker arm. The Marquis then took over the lead and, when he was nearly home, with a lead of over 30 minutes, a timing chain broke. The cars had showed pace and the Marquis had lapped the 167 Km circuit at over 90 mph and been timed at 108 mph.

For many years it was believed that the 815s only competed in the 1940 Brescia race but one certainly took part in a race at Pescara in August 1948 driven by Beltracchini. Franco Cortese was in the same race driving a Ferrari 125 Sport. Both cars were on the front row of the grid.

It seems that the cars then disappeared, although perhaps only 1 was in existence (the other may have been broken up). The surviving car was found by a collector in Lucca in 1966. It has a plate on the bulkhead stamped 'Vettura 815 - A. Motore 815 - 021'. The car was almost intact and has now been restored to its original condition. This was the Alberto Ascari car.





Sports and GT Cars



1947 V-12/Sports racing

125C (125 Sport)

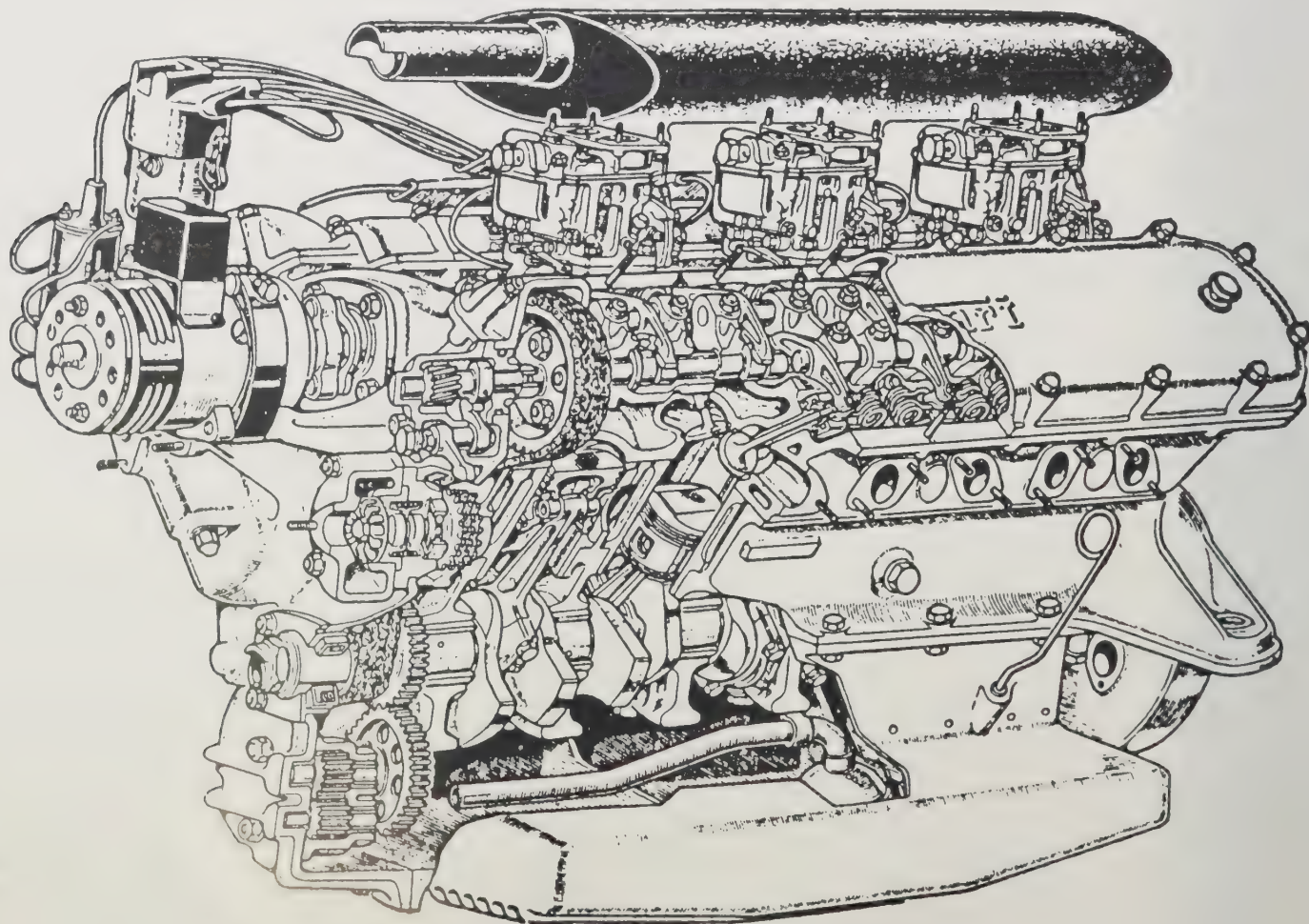
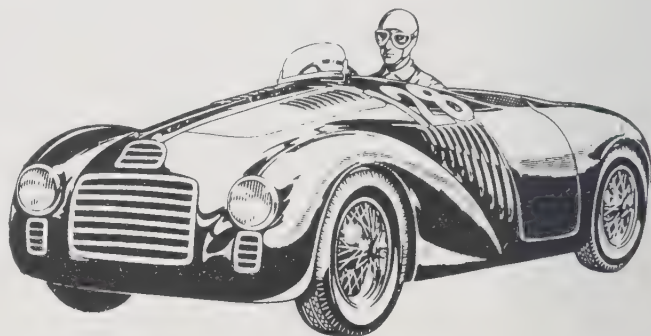
1496 cc, 55×52.5 mm, 72 bhp at 5600 rpm, CR 8.0:1, single ohc per bank, single plug per cylinder, 2 Marelli magnetos, 2×30 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic leaf springs. *Wheelbase:* 2420 mm. *Track:* Front and Rear 1240 mm.

After World War II it wasn't long before the racing fraternity got back into its stride. The world had been starved of its various leisure pursuits, as far as both participants and spectators were concerned, for too long. In 1946 it was, for motor racing, a case of dusting off and refurbishing the pre-1940 racing cars. Automobile manufacturers had as their first priority the building of cars for sale. There was little inclination to divert energy and scarce raw materials to cars for motor sport.

One man, though, had a different idea. He would build cars for motor racing and then commercialize his successes – if any. After all, Ettore Bugatti had shown the way several decades earlier.

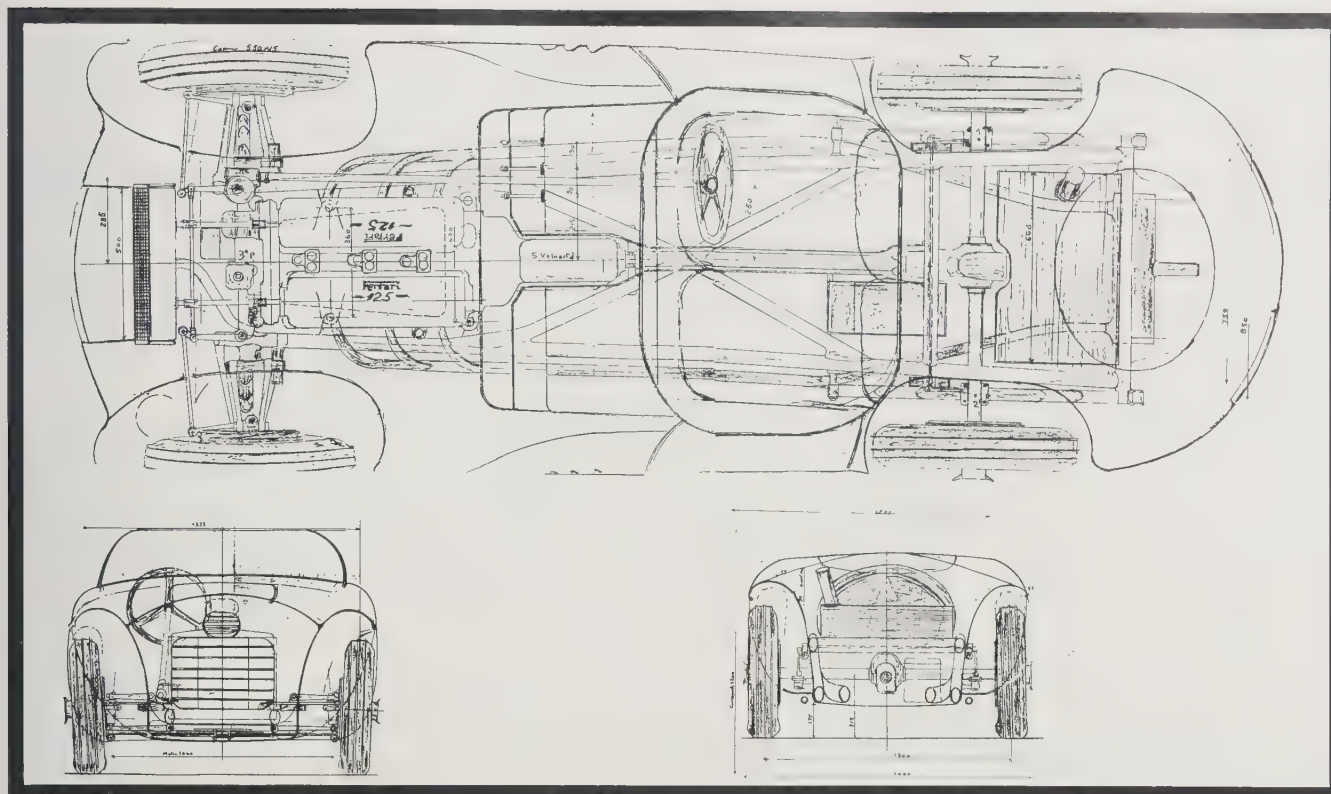
So it was that Enzo Ferrari embarked on his career as a constructor of some of the greatest racing, sports racing and gran turismo cars the automobile world has been privileged to see.



Previous pages: A fully restored 750 Monza.

Above right: Franco Cortese drove the 125 Sport in its competition debut at Piacenza on 11 May, 1947.

Right: Cut-away of one of the first series of V-12 engines for the Tipo 125S.



Left: Gioacchino Colombo's original drawings for the 125S.

Ferrari chose a V-12 engine for his first car because, it has been said, he admired the 1925 2-litre-engined GP Delage and the V-12 Packards. He retained Gioacchino Colombo as consultant designer and knew that his friend from the early twenties, Luigi Bazzi, would be on hand to oversee progress and develop the engines. Colombo had experience of multi-cylinder engines through having a hand in the design and building of Alfa Romeos that included the V-12-engined 12Cs and the V-16 Type 316.

The first car to bear Ferrari's name as such was the Type 125. Its specification was broadly as given above and details of Ferrari's intention to offer Sport, Competizione and Gran Premio versions of it had been given in the November-December 1946 issue of the Italian journal *Inter Auto*. No cars were built that year but early in 1947 2 125s (chassis numbers 1C and 2C) were completed. 2C had a full-width body by Touring of Milan and 1C a cycle-wing-style body that was probably made up locally. Their first race was at Piacenza on 11 May. Between then and the end of July they appeared in 10 races and gave a creditable account of themselves, but more power was needed. Increased engine capacity – one way of achieving it – looked to be a wise move as the pre-World War II voiturette class of racing was about to become Formula 2 for unsupercharged cars of up to 2-litre capacity.

Chassis numbers: 1C and 2C.

1947 V-12/Sports racing

159

Detail as 125C (125 Sport) except: 1902 cc, 59×58 mm, 125 bhp at 7000 rpm.

The 159 was an interim model on the way to Ferrari exploiting the full 2 litres of engine capacity under the new Formula 2 rules. Having accepted the need for more power and the wisdom of increased capacity as a means of achieving it, Ferrari left it to Bazzi to carry out the work. His solution was to increase the bore to 59 mm – by a change of liners and pistons – and lengthen the stroke to 58 mm by the use of a new crankshaft.

Two 159s were prepared. One was a new car, chassis number 3C; it had a full body width very similar to that of 2C. The second car was most likely an updating of the original cycle-fendered car, 1C. The cycle-wing feature was retained but as part of a rather more elegantly styled body.

Their first competition appearance was at Pescara on 15 August 1947 when Cortese drove 3C into a second overall place. It was also at Modena on 28 September – Cortese, DNF. As a final appearance for the type, Sommer won the Turin Grand Prix on 12 October with the updated 1C.

Chassis numbers: 2C and 3C.

1948 V-12/Sports racing/Formula 2

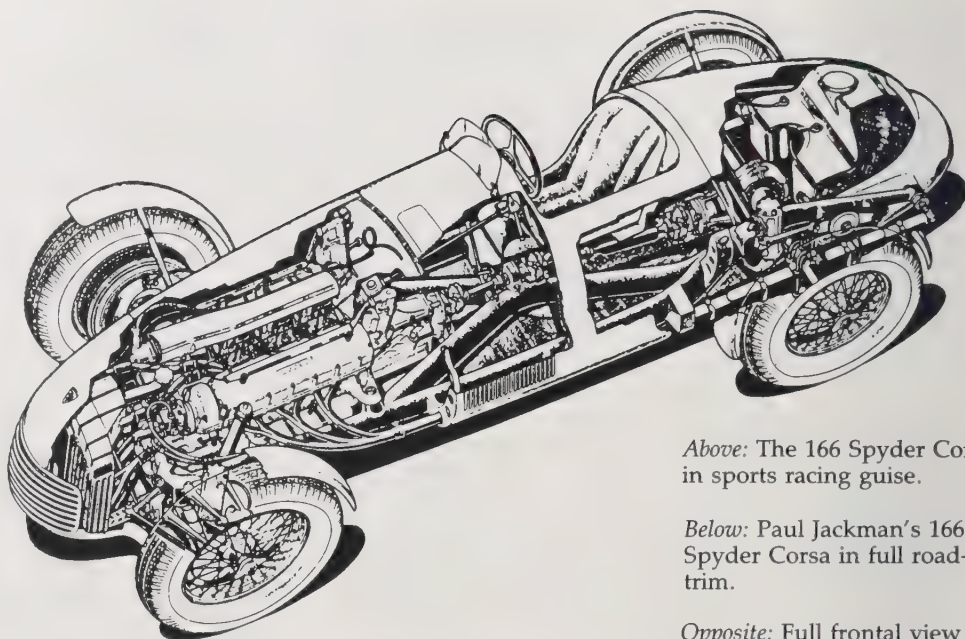
166 Spyder Corsa

1992 cc, 60×58/58.8 mm, 150-160 bhp at 7000 rpm, CR 8.0-10.0:1, single ohc per bank, single plug per cylinder, 2 magnetos, 3 Weber carburetors, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic leaf springs, anti-roll bar. *Wheelbase:* 2300 mm. *Track:* Front and Rear 1200 mm.

During the winter of 1948/9 there was a further increase in engine capacity. The bore was taken out to 60 mm but the stroke stayed at 58 mm to give a capacity of 1992 cc. After a few engines had been built, the stroke was increased to 58.8 mm for a final capacity of 1995 cc.

The first 166s were the cycle-wing Spyder Corsa version intended for use in either sports car or Formula 2 races. For the latter, the wings were removed. The development of Formula 2 soon meant that the more specialized single-seater type of car was essential so



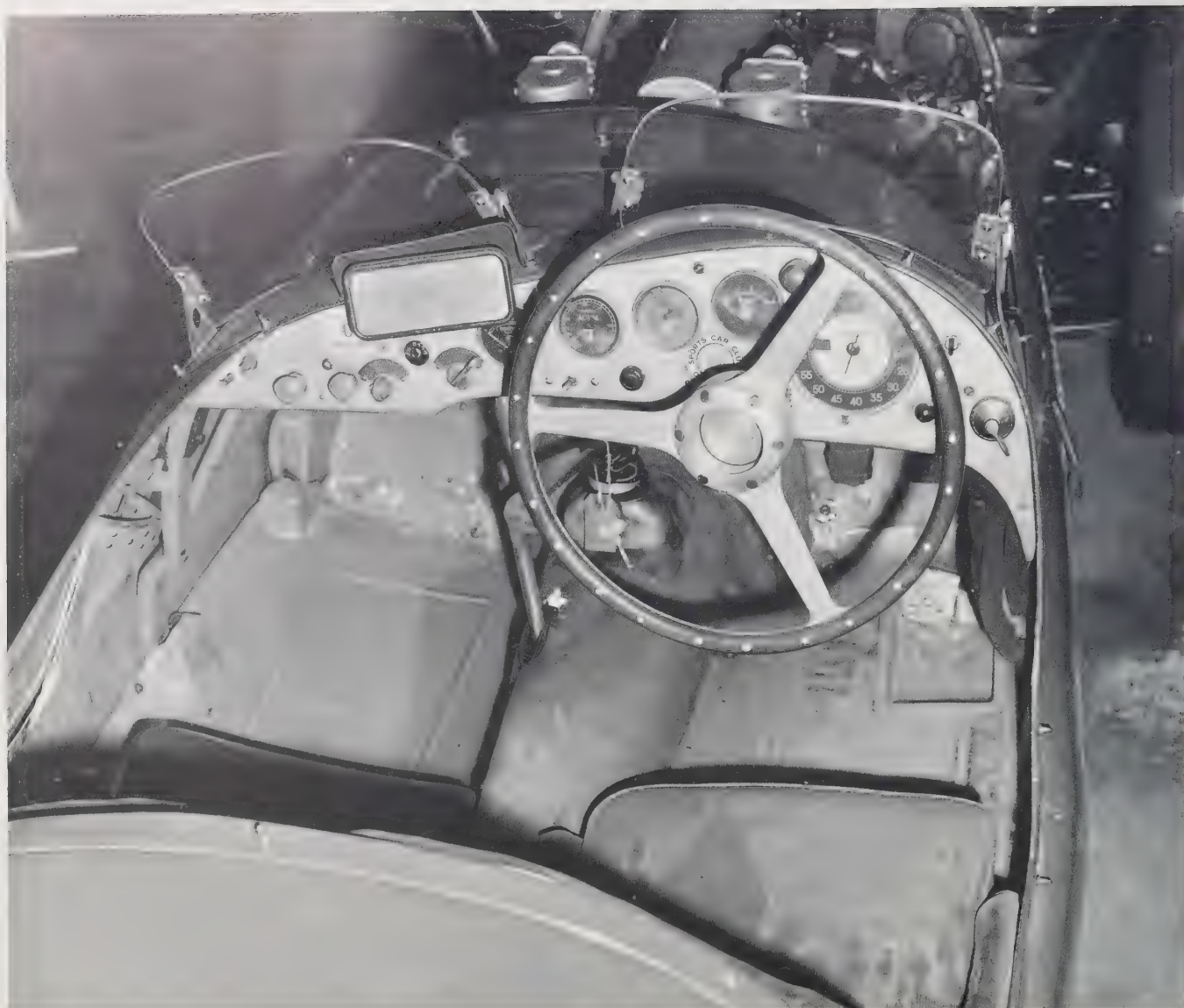
Above: The 166 Spyder Corsa in sports racing guise.

Below: Paul Jackman's 166 Spyder Corsa in full road-trim.

Opposite: Full frontal view of the 166 Spyder Corsa.

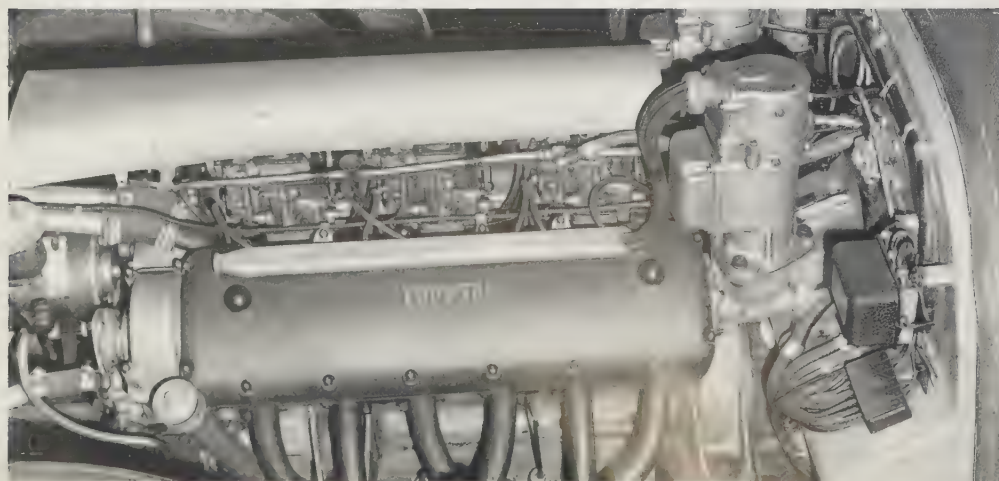






Right: Stark but impressive view of Briggs Cunningham's 166 Spyder Corsa (chassis number 0161).

Below: Engine layout of 0161.



only a handful of the Spyder Corsa cars – 9 in all – were built. Most of them probably had the 1995 cc engine.

The first 4 were chassis numbered 002C, 004C, 006C and 008C. After that point the 'C' for 'Corsa' suffix was dropped and replaced by an 'I' for 'Inter' (not to be confused with the later road-going 'Inter' version) and the chassis numbering continued in an even-number sequence out to 0181, the last of the series.

Chassis numbers: 002C, 004C, 006C, 008C, 010I, 012I, 014I, 016I, 018I.

For this and other 166s in the sports and GT category reference should be made to *Ferrari Tipo 166* by Gianni Rogliatti and Lorenzo Boscarelli (Edizione della Libreria dell'Automobile, Milano, 1984). At present in Italian only: English version promised.

See also 'The First Ferraris' by Stanley Nowak in *Cavallino*, Nos. 19 and 22, for details about 002C and 004C.

1948 V-12/Sports racing

166 Sport

1995 cc, 60×58.8 mm, 90 bhp at 5600 rpm, CR 6.8:1, single ohc per bank, single plug per cylinder, 2 distributors, 2×32 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic leaf springs. *Wheelbase:* 2620 mm. *Track:* Front 1250 mm Rear 1200 mm.

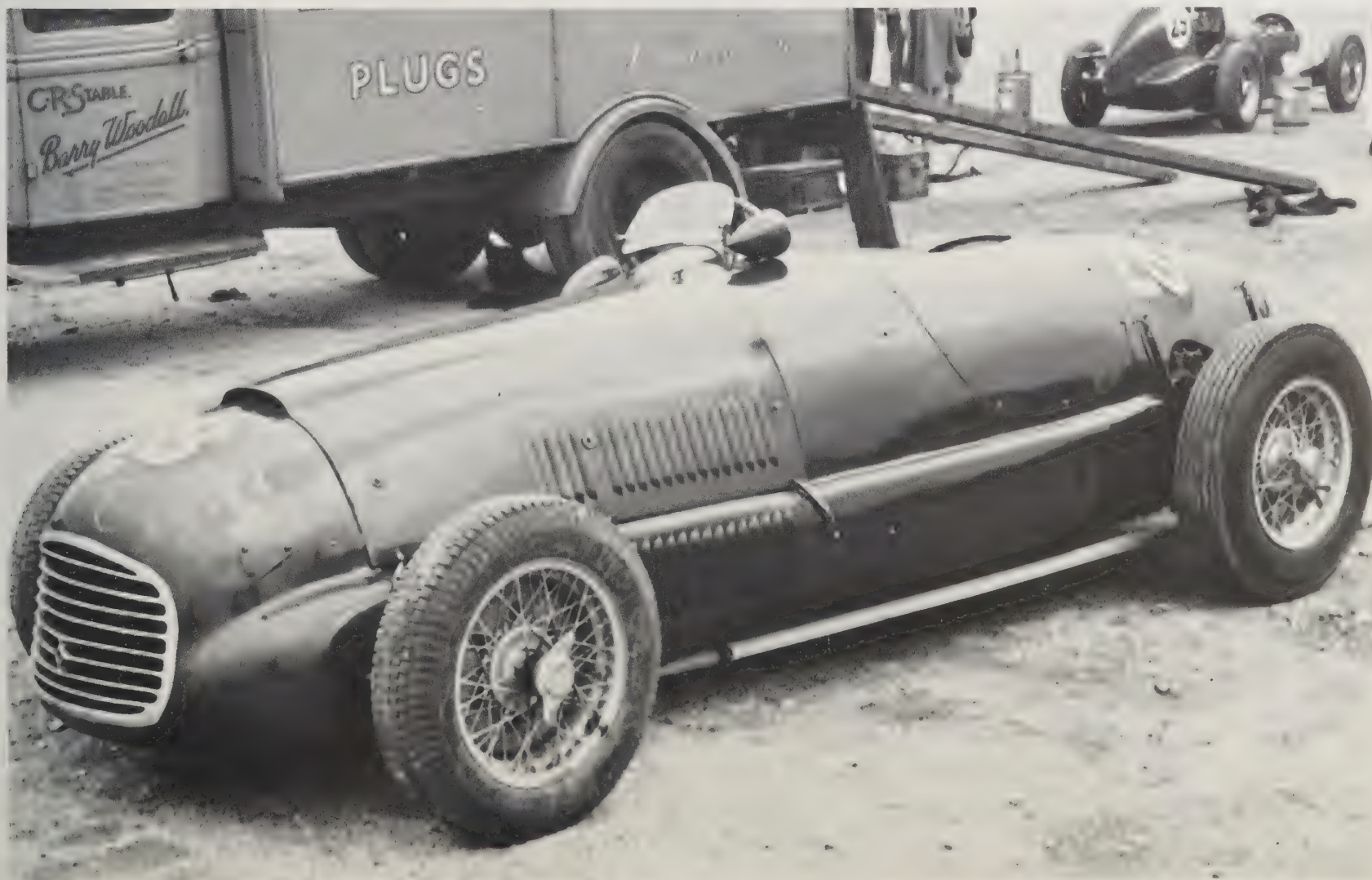
There is much that remains ambiguous and confusing about the early Ferrari production, in particular the sports cars and those intended for normal road use. A brochure issued towards the end of 1947 lists the 166 Sport with a 1992 cc engine and an output of 90 bhp at 6000 rpm. It also featured in a brochure that was issued

late in 1948 or early 1949. Engine capacity was given as 1995 cc. Power was still 90 bhp but at the lower figure of 5600 rpm. There is a suggestion that the 166 Sport was intended for 'fast grand touring' and the 166 Inter for 'International Sport Formula'. Somewhere along the line there seems to have been a change of heart as the 166 Inter became the touring car with the 166 Sport dropped in favour of the 166MM becoming the sports car version.

It looks as if there were possibly no more than 2 of the 166 Sport built, chassis numbers 001S and 003S. Both had bodies by Allemano, 001S a spyder and 003S a coupé. Car number 001S is reputed to have won the 1948 Targa Florio/Tour of Sicily Race driven by Biondetti and Prince Igor Troubetzkoy and number 003S the Mille Miglia of that year in the hands of Biondetti and Navone.

Chassis numbers: 001S and 003S.

Below: 166 raced by Dudley Folland at Goodwood (England).



1948-53 V-12/Sports racing/GT

166MM

1995 cc, 60×58.8 mm, 140 bhp at 6600 rpm, CR 10:1, single ohc per bank, single plug per cylinder, magneto ignition, 3×32 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic leaf springs. *Wheelbase:* 2200 mm. *Track:* Front 1250 mm Rear 1200 mm.

The 166MM was first shown to the public at the Turin Salon in November of 1948. The car displayed was by Carrozzeria Touring of Milan and built using that company's patented 'Superleggera' method of construction. (See 166 Inter.) Its simple but very effective 'barchetta' – literally 'little boat' – styling became greatly admired and many times copied. The suffix 'MM' recognizes Biondetti's and Navone's victory with a 166 Sport in the 1948 Mille Miglia.

The cars were intended for serious racing and, all told, about 46 examples were built in one or other of two series. The Series I cars, about 33 in number, were built through into late 1951. Recent listings suggest that some 25 of them were barchettas. Amongst the remainder were 5 berlinettas, also by Touring, along with a spyder and a coupé by Vignale. Typical of all Ferraris of the period, there were minor variations in styling between individual cars. For the cockpit there was a choice

between the stark competition type or, for touring use, a fully trimmed 'lusso' version. The Series II cars, about 13 in all, were built from late 1952 on into 1953. Most were Vignale spyders, but at the end of the run there was a berlinetta by Pinin Farina.

Starting with the 166MMs Ferrari instituted a new series of 4-digit chassis numbers commencing with 0002M. For the first dozen cars made, the engine number was 2 less than the chassis number, i.e. chassis number 0004M had engine 0002M. From 0026M on, chassis and engine number were identical. The cars in Series I ran from number 0002M through to 0072E, while those in Series II ran from number 0244M to 0346M.

Chassis numbers

Series I

Touring barchettas: 0002M, 0004M, 0006M, 0008M, 0010M, 0012M, 0014M, 0016M, 0020M, 0022M, 0024M, 0028M, 0034M, 0036M, 0038M, 0040M, 0044M, 0046M, 0050M, 0052M, 0054M, 0056M, 0058M, 0064M, 0068M.

Touring 'Le Mans' berlinettas: 0026M, 0042M, 0048M, 0060M, 0066M.

Vignale coupé: 0062M.

Vignale spyder: 0072E.

Zagato 'Panoramica' berlinetta: believed to be 0018M.

Series II

Vignale spyders: 0264M, 0266M, 0272M, 0278M, 0290M, 0314M, 0328M, 0342M.

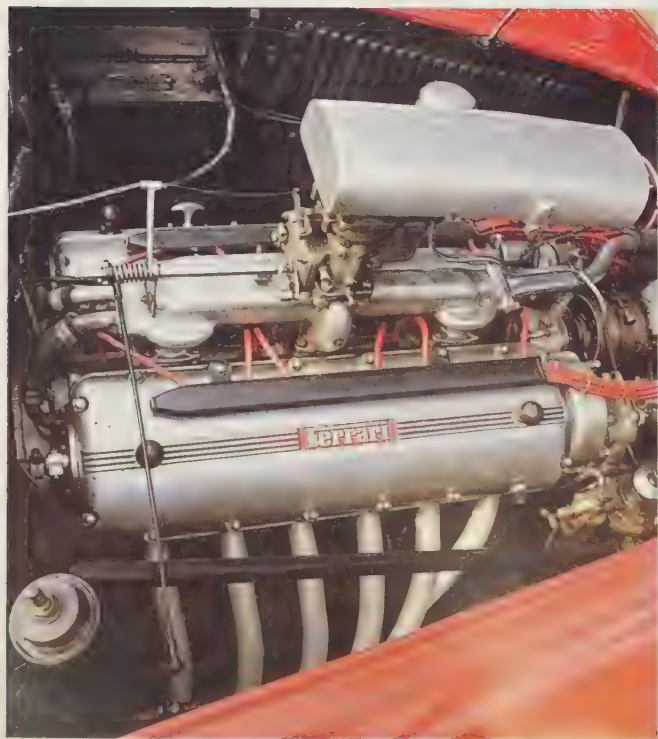
Vignale berlinettas: 0244M, 0300M, 0308M.

Pinin Farina berlinetta: 0346M.

Below left: The 2-litre single-overhead-camshaft engine of the 166MM.

Below right: This side view shows the 166 Touring-bodied barchetta.

Opposite: The neat and somewhat voluptuous head-on view of a 166 Touring barchetta.





1945-51 V-12/GI

166 Inter

1995 cc, 60×58.5 mm, 110 bhp at 6000, CR 7.5:1, single ohc per bank, single plug per cylinder, 2 distributors, 3×32 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic leaf springs. *Wheelbase:* 2420 mm. *Track:* Front and Rear 1250 mm.

The first motor show in which Ferrari participated was at Turin in November 1948, where he displayed a 166 Mille Miglia and a 166 Inter coupé, the latter being the first of his road-going cars. Touring of Milan had designed and built the bodies for both cars. They used

their patented 'Superleggera' – literally 'superlight' – method of construction consisting of a framework of lightweight steel tubes to which previously formed body panels were attached. It offered a considerable weight advantage over the wooden framework that had been used by many of the pre-World War II body builders.

The Inter shown was a 4-window coupé. It had a long bonnet set above the front wheel arches which were slightly detached from the bonnet and faded out on the doors. The rear arches starting in the door faded into the boot with its very rounded lines. The front grille, sloped back slightly, was almost rectangular and had horizontal bars.

At that time it was the practice for Ferrari to provide a base chassis and a matter of individual customer or dealer choice as to what body was made for it.

All told, some 38 Inters were built in the chassis

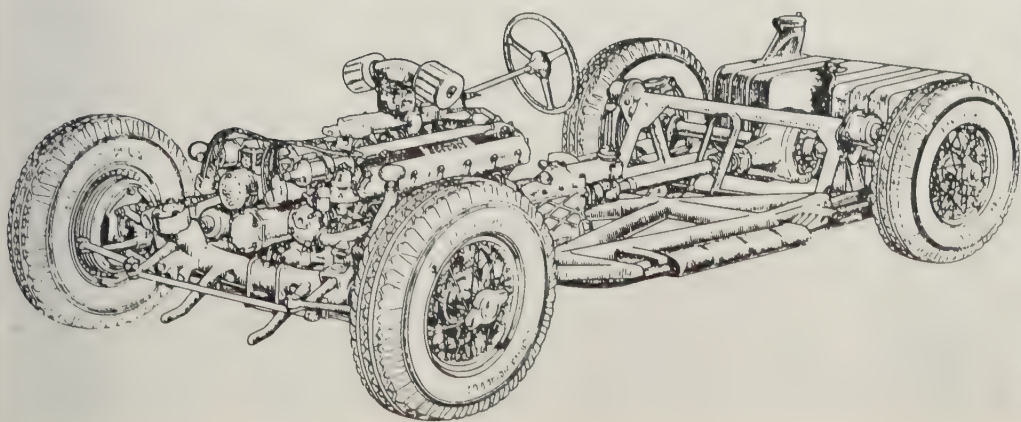
Opposite above: 166 Inter convertible by Stabilimenti Farina.

Opposite below left: 166 Inter chassis with transverse leaf spring independent front suspension.

Opposite below right: 166 Inter with Touring coachwork (chassis number 0775).

Below: 166 at Le Mans, 1950.





number range 000S out to 000S and 5 carrozzeria were involved. Touring made the largest single contribution with 19 or 20 coupés. They were not all like the original Turin car as, apart from minor variations that could be found on individual cars, the basic design was further modified and refined.

The first noticeable change came towards the end of 1949 and was typified by the car shown at Paris that year. The front and rear wings were no longer separated and a moulded line which started at the front wheel arch ran without interruption along the length of the body. Also to be seen was the 'Aerlux' translucent roof which could if so desired be rendered opaque by the use of an interior screen. A small group of cars were built to the general style of this car.

At Turin in 1950 there was a further development in the form of a 'fast-back' rear that was modelled on the so-called 'Le Mans' berlinetta style by Touring for some of the 166MM cars. As previously a small group of cars were built to the general style of this car.

Stabilimenti Farina made 4 fast-back coupés and were also responsible for the first Ferrari cabriolet (011S) and two others (033S and 066S) that were built on the Inter chassis. Other cabriolets came from Bertone and Vignale. The latter also built 9 coupés.

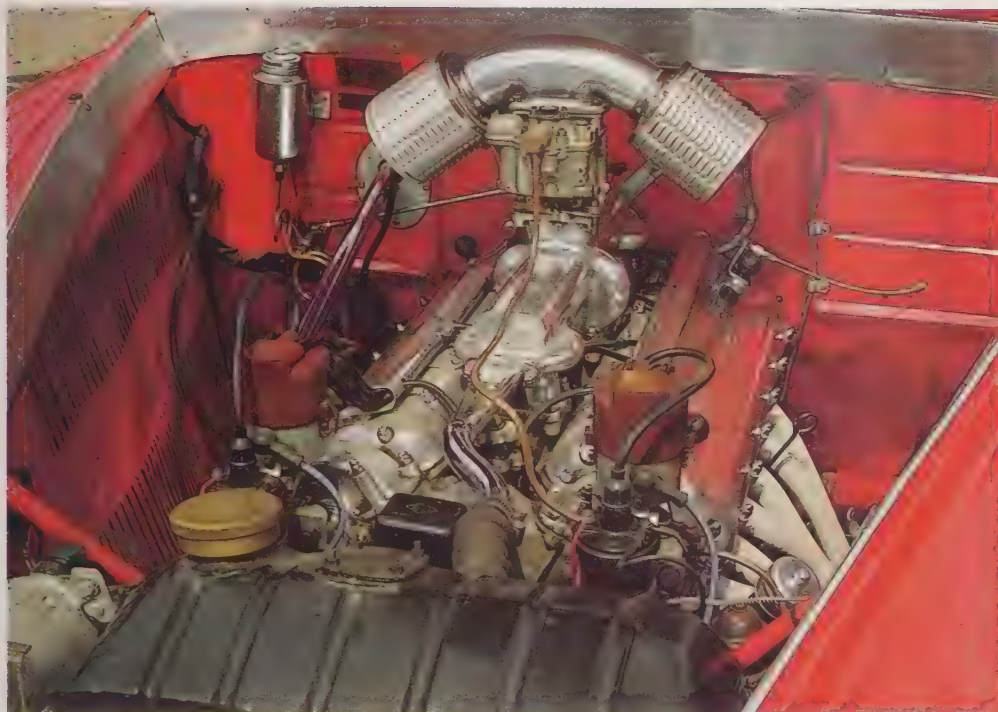


Left and below: 166 Inter coupé with coachwork by Touring of Milan. There were 4 windows and the bonnet was set higher than the wings.

Opposite above: 2-litre V-12 engine of a 166 Inter.

Opposite below: A Touring-bodied 166 Inter.





It was a mix of designers and styles typical of Ferrari at the time and illustrating the difficulty of generalizing about the early production.

It is interesting to note that, although they were basically road cars, 3 166 Inters were entered for the Coppa Europa at Monza on 29 May 1949. They took the first 3 places and in doing so established the beginning of a long sequence of Ferrari participation in gran turismo racing.

Chassis numbers

Touring coupés

005S, 007S, 015S, 017S, 018S, 019S, 023S, 025S, 027S, 029S, 035S, 041S, 043S, 047S, 053S, 055S, 057S, 073S, 075S, 077S, 079S.

Stabilimenti Farina coupés

009S, 021S, 031S, 037S.

Stabilimenti Farina cabriolets

011S, 033S, 063S.

Vignale coupés

039S, 045S, 051S, 059S, 061S, 065S, 067S, 069S, 071S.

Ghia coupés

049S.

Bertone cabriolet

One made. Chassis number not known.



1950 V-12/Sports racing

275S

3322 cc, 72×68 mm, 270 bhp at 7200 rpm, CR 8.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCF Webers, 4- or 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2250 mm. *Track:* Front 1270 mm Rear 1250 mm.

In sizing up the problem of beating the 1.5-litre supercharged Type 158 Alfa Romeo cars in grand prix racing, Ferrari had noted the threat posed at times by the 4.5-litre unblown Talbot-Lago with its ability to run through a race without having to refuel. In spite of the fact that the latest – 2-stage supercharged – version of the Type 125GP had won the Italian Grand Prix in September 1949 at Monza, Ferrari became convinced that supercharging, at the level necessary to ensure victory, was not the right road to follow. By that time Colombo had virtually severed his connection with Ferrari, and Aurelio Lampredi, who had already had one spell with Ferrari, was back again. He had worked

work but, apparently unhappy under Colombo, left early in 1947. Later that year he was persuaded to rejoin and became deeply involved in the development of Colombo's engines, including the 2-stage supercharged version. In spite of that, he shared with Ferrari the view that supercharging was not worth pursuing further and was given the job of designing an engine to exploit the 4.5-litre capacity limit allowed under Formula 1 regulations for unsupercharged engines.

The first single-seater car with a Lampredi-designed engine appeared at the Belgian Grand Prix at Spa-Francorchamps on 18 June 1950. At that stage it had a capacity of 3322 cc. By the time of the Grand Prix des Nations at Geneva on 30 July a 4101 cc version was available, and for the Italian Grand Prix at Monza on 3 September the final 4493 cc version was ready.

Preceding that development sequence 3.3-litre engines had been installed in two sports cars entered for the Mille Miglia in April. These Type 275S cars, chassis numbers 0030MT and 0032MT, both Touring barchettas, were in the hands of Villoresi/Cassani and Ascari/Nicolini. In the race they retired with clutch problems. Not raced again, they were subsequently re-engined into the 4.1-litre Type 340 America series of cars.

Chassis numbers: 0030MT, 0032MT – both Touring barchettas.

Below: 195S. Coachwork by Touring of Milan.



1950 V-12/Sports racing

195 Sport

2431 cc, 65×58.8 mm, 160-180 bhp at 7000 rpm, CR 7.5:1, single ohc per bank, single plug per cylinder, 2×32 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2250 mm. *Track:* Front 1200 mm Rear 1250 mm.

The facts, whatever they may be, about the 195S are a casualty of the already noted confusion that surrounds some of the detail of early Ferrari production. The one certainty about the model is that the increase in engine capacity to 2341 cc was obtained by boring the previous 166 engine out to 65 mm. There was a resultant increase in power to 170 bhp at 7000 and, whilst it is likely that the process was aimed at competition, estimates are that probably no more than 1 – chassis 0060 – and certainly no more than 3 of the 195S were built. Rather larger numbers figure in contemporary race reports but the possible explanation is that some 166MMs were fitted with the larger engine for racing, a simple enough process to account for the additional 195Ss noted. A 195S – a Touring berlinetta driven by Gianni Marzotto and Crozara – is said to have won the 1950 Mille Miglia, with a barchetta in the hands of Serafini and Salani coming second.

Chassis number: 0060 Touring berlinetta.



Above: Frontal aspect of the 195S expresses the power of this 2.5-litre V-12 car which was rated up to 180 bhp at 7000 rpm.



Left: Side view shows the elegant lines of the Touring-bodied 195S.



1950-2 V-12/GT

195 Inter

Detail generally as for 195 Sport except: 135 bhp at 7000 rpm, CR 7.5:1, 1×36 DCF Weber. *Wheelbase:* 2500 mm.

This touring version of the 195 first appeared during the latter half of 1950 although apparently having to wait until Brussels in January 1951 for a Salon showing. In terms of general mechanical specification, the 195 Inters were, apart from their larger engine, very similar to the 166 Inter. Revised cylinder heads lowered the CR to 7.5:1 and a Weber 36 DCF carburettor replaced the 32 mm version of the earlier model. Three double-choke carburettors were available as an option. With the standard layout the power was increased to 135 bhp at 7000 rpm. The majority of the 195 Inters were on a 2500 mm wheelbase chassis. All told, it would seem that about 25 examples were built in a production run which lasted for less than a year. The chassis number range was 058S out to 0195EL. Undoubtedly the reason for

such a short life was the fact that Ferrari had announced at the 1951 Brussels Salon both the 2.56-litre Type 212 and the 4.1-litre 340 America.

There were 4 principal coachbuilders involved, Ghia, Touring, Vignale and Ghia-Aigle. Ghia were responsible for around 10 coupés and Vignale produced about 8. Touring seems to have made 3 examples of a design derived from the Le Mans berlinetta that they had undertaken for the 166 Inter. The fourth main coachbuilder, Ghia-Aigle, a Swiss firm located in Aigle in the canton of Valais, had no connection with Ghia of Turin. Its designs, however, were the work of Giovanni Michelotti and, as was to be expected, bore some relationship to those from Vignale which were the work of the same designer.

Chassis numbers

Vignale coupés: 0083S, 0091S, 0095S, 097S, 0103S, 0119S, 0151S.

Ghia coupés: 0087S, 0089S, 0093S, 0101S, 0105S, 0109S, 0113S, 0121S, 0133S.

Touring coupés: 0081S, 0085S, 0123S.

Ghia-Aigle coupés: no details available.

Opposite: Drophead coupé designed and built by Vignale.

Below: Vignale's 195 Inter coupé.



212 Export and Inter

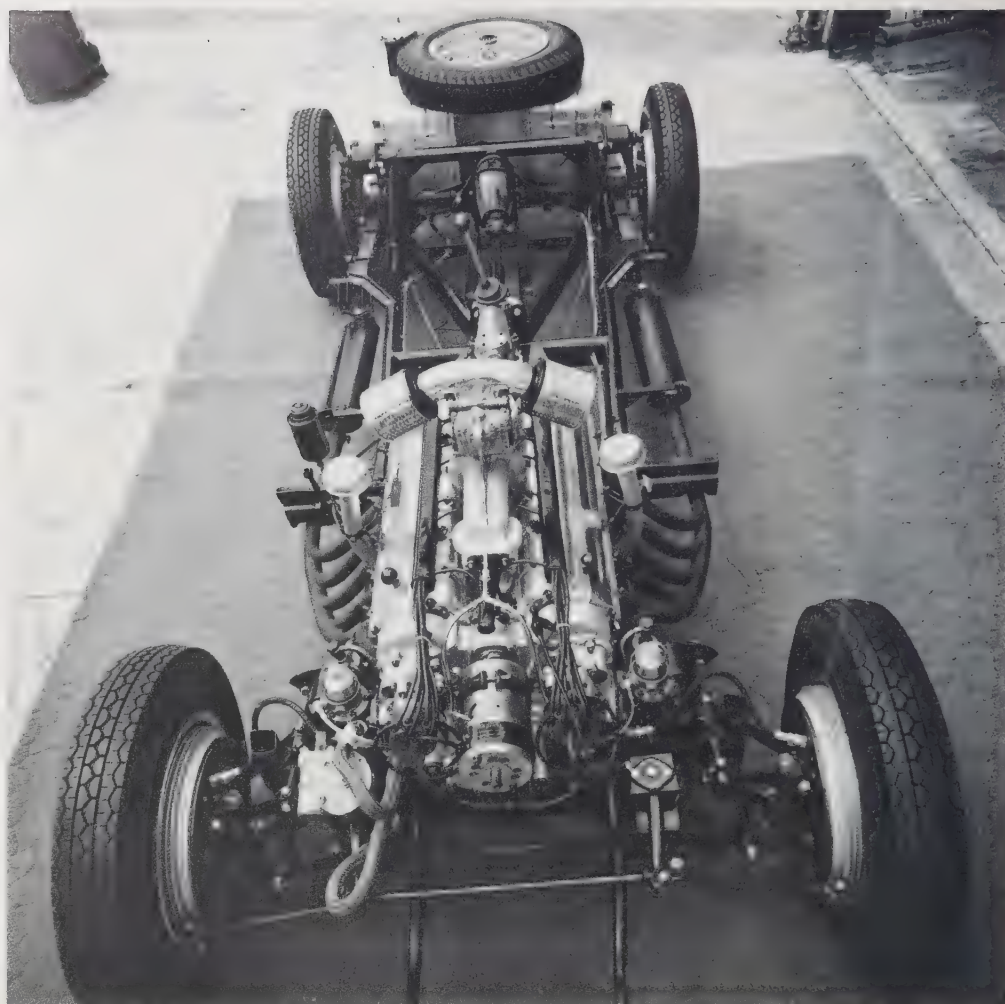
Export

2562 cc, 68×58.5 mm, 160 bhp at 6500 rpm. CR 8.0:1, single ohc per bank, single plug per cylinder, 3×32 or 36 DCF Webers, 5-speed gearbox integral with engine. *Front suspension:* independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2250 mm. *Track:* Front 1270 mm Rear 1250 mm.

Inter

Essentially the same as for the Export except for a longer wheelbase (2600 mm) and possible a slightly wider front track (1278 mm). Power output was initially at the lower figure of 130 bhp at 6500 rpm from a 7.5:1 CR and 1×36 DCF Weber. However, in line with the Export, 3×36 DCF Webers were later used and the power is said to have been increased to 170 bhp.

Continuing the process of gradually increasing the capacity of the original Colombo-designed engines, the 2.56-litre Type 212 became available in 1951. There were 2 versions, i.e. Export and Inter. Of the 2 the Export was intended for competition use. Its engine, generally with 3 double-choke Weber 32 DCF or 36 DCF carburettors, was the more powerful and it was mounted in a 2250 mm wheelbase chassis. The Inter, with generally a single 36 DCF Weber carburettor, was slightly less powerful – at least initially so – and used a 2600 mm wheelbase chassis. From there on it is difficult to be precise about the range. There were the usual differences in specification between individual cars and to compound the



Above: Chassis and engine of a 212 Export in the process of restoration.

Left: An early road 212 Inter 2+2 with coachwork by Ghia.



Opposite above: 212 Export – a Vignale berlinetta – driven here by 'Palfar' on an airfield circuit near Zurich.

Opposite below: Phil Hill racing his 212 barchetta.





problem the Export designation was given to a number of cars that were clearly Inter by nature.

All told, it would appear that some 110 cars were built, and accepting – with some reservation – that even numbers generally meant cars that were intended for competition, there were probably no more than 26 of the Export built in the chassis number range 0070M out to 0214ED. The bulk of them were bodied by either Touring or Vignale. Whilst the Export was seen in many races it was often up against the 4.1-litre 340MM model which had been introduced at the same time.

It would seem that around 84 examples of the Inter were built in the chassis number range 0067S out to 0297EU. The variety amongst them is beyond detailed description here. As a typical example, Vignale produced about half-a-dozen different designs for his coupés and built each design in small batches ranging from a couple of cars out to 7 or 8. Other bodies came from Ghia, Touring, Stabilimenti Farina and Pinin Farina, the last starting a collaboration with Ferrari that has lasted through to the present and resulted in that establishment becoming almost the sole arbiter of styling for Ferrari.

Chassis numbers

212 Export

Motto spyder: 0094E.

Touring barchettas: 0078E, 0084E, 0092E, 0100E, 0134E,

0136E, 0158ED.

Touring berlinettas: 0088E, 0108E.

Vignale cabriolets: 0106E, 0110E.

Vignale berlinettas: 0070M, 0074E, 0080E, 0096E, 0104ED, 0128E, 0190ET.

Vignale spyders: 0076E, 0090E, 0098E, 0214ED.

Reggiani spyder: 0086E.

212 Inter

Abbott cabriolet: 0165EL.

Ghia cabriolets: 0191E, 0233E.

Ghia coupés: 0149E, 0153EL, 0155EL, 0169EL, 0183EL, 0185EL, 0189EL, 0201EL, 0205EL, 0213EL.

Ghia coupé 2+2s: 0193EL, 0199EL.

Pinin Farina cabriolets: 0146EL, 0231EU, 0235EU.

Pinin Farina coupés: 0229EU, 0245EU, 0246EU, 0249EU, 0261EU, 0263EU, 0265EU, 0275EU, 0277EU, 0279EU, 0281EU, 0283EU, 0291EU, 0297EU.

Stabilimenti Farina coupé: 0107E.

Touring barchetta: 0253EA.

Touring 'Aerlux' coupés: 0067S, 0143EU, 0167EU, 0115EL, 0251EU, 0259EU.

Vignale cabriolets: 0125E, 0159E, 0177E, 0227EL, 0255EL.

Vignale coupés: 0111ES, 0127S, 0131E, 0135E, 0139E, 0157E, 0161EL, 0163EL, 0171EL, 0175EL, 0179EL, 0197EL, 0203E, 0211EL, 0217EL, 0219EL, 0221EL, 0223EL, 0225EU, 0237EU, 0239EU, 0243EU, 0257E, 0267EU, 0269EU, 0271EU, 0285EU, 0287EU, 0289EU.

Vignale spyders: 0207EL, 0209EL.

Above: Drophead coupé 212 with beautiful body line by Vignale.

Opposite: A very pretty 212 barchetta designed and built by Touring of Milan.



1951 V-12/Sports racing/GT

340 America

4101 cc, 70×68 mm, 220 bhp at 6000 rpm, CR 8.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2420 mm. *Track:* Front 1278 mm Rear 1250 mm.

In developing his engine for the 4.5-litre GP cars, Lampredi had been forced to enlarge the cylinder block. On the original Colombo-designed V-12s, the so-called 'short-block' engines, the distance between the centre lines of adjacent cylinder bores had been set at 90 mm but this was insufficient for the bore size that Lampredi wanted. The dimension was increased to 108 mm, thereby giving rise to the 'long-block' engines associated with his name. Concerned primarily with competition, Lampredi introduced a number of features that he considered essential for relatively trouble-free running. Instead of wet cylinder liners pressed into the block, the new engines had wet liners that screwed into the cylinder head to eliminate the possibility of blown gaskets. External oil and water pipes were used where possible instead of cast-in passages. Roller cam followers replaced the finger type. There were 12 intake ports and the con rods were split perpendicularly at the big end.

With the realization of the 4.5-litre Type 375F1 car there had been developed an engine which in the manner of Ferrari quickly became available – in the slightly smaller capacity of 4.1 litres – to power a range

of sports and GT cars. The first of these was the 340 America shown to the general public at the Paris Salon in October 1950, just about a month after the Type 375 F1 car had run at Monza in the Italian Grand Prix.

No one seems certain quite why it was called 'America' unless, with its much larger engine, it was aimed at a potential market in that country. Of the approximate 25 examples built, the accent was on competition, a purpose underlined by the allocation of even chassis numbers throughout the series.

If the 2 275 Sport cars that were re-engined with the 4.1-litre units are included, Touring bodied 9 cars, 7 of which were barchettas. The other 2 were berlinettas. At least 6 of Touring's cars had dry-sump engines. Vignale made 11 cars – 5 spyders, 4 berlinettas, a coupé and a cabriolet. Ghia produced 5 bodies, 1 of which was a 2+2. Including the re-engined 275Ss, the chassis number range was from 0030MT out to 0232A, with 0082A the lowest original 340 America chassis.

Following this mixed bag of competition and touring cars, the 4.1-litre-engined cars settled out into the 342 America as the GT version and the 340MM as the sport.

Chassis numbers

(Chassis numbers for dry-sump-engined cars are in *italics*)

Ghia berlinettas: 0142A, 0144A, 0148A, 0150A.

Ghia coupé 2+2: 0130AL.

Touring barchettas: 0030MT, 0032MT, 0114A, 0116A, 0118A, 0120A, 0124A.

Touring berlinettas: 0122A, 0126A.

Vignale berlinettas: 0082A, 0174A, 0196A, 0212A.

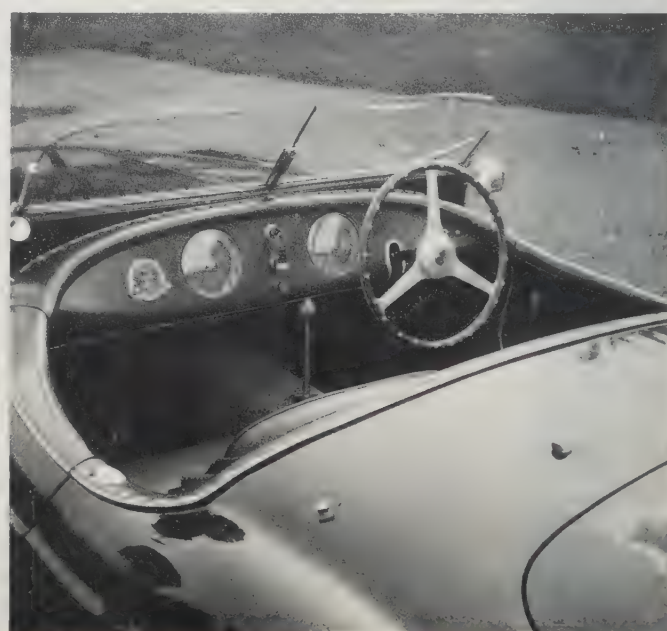
Vignale spyders: 0140A, 0202A, 0204A, 0206A, 0238A.

Vignale coupé: 0132A.

Vignale cabriolet: 0138A.

Below left: 340 America barchetta with Otto Wild at the wheel when he owned it in 1951.

Below right: Cockpit of the same 340 America by Touring. Note the simple layout of the instruments.



1952 V-12/Sports racing

225S

2715 cc, 70×58.8 mm, 210 bhp at 7200 rpm, CR 8.5:1, single ohc per bank, single plug per cylinder, 3×36 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2250 mm. *Track:* Front 1278 mm Rear 1250 mm.

For the Type 225S the capacity of the Colombo 'short-block' engine was further increased to 2715 cc by taking the bore out to 70 mm. Whilst the engine remained basically Colombo, use was made of the roller-type cam followers introduced by Lampredi and, as a further concession to his design, most engines had the 12 intake port heads. Power was rated 210 bhp at 7200 rpm.

Made only in 1952, and used with much success in competition that year, the 225S is looked upon as an interim model and final link between the beginnings of Ferrari as a constructor and the established future

following the introduction of the 3-litre 250 series of cars.

All told, about 20 cars were made in the chassis number range 0152EL out to 0220ED. Nineteen of them – 12 spyders and 7 berlinettas – were by Vignale. Of those around half-a-dozen had the 'Tuboscocca' form of chassis/frame with double outer frame tubes, one above the other joined by a truss-like arrangement. Additional tubing formed a skeleton outline of the body shape for mounting the body panels. Suspension at the rear was by twin leaf springs on either side.

Chassis numbers

Vignale spyders: 0154ED, 0160ED, 0164ED, 0168ED, 0170ET, 0176ED, 0180ED, 0182ED, 0192ET, 0198ET, 0218ET, 0220ED.

Vignale berlinettas: 0152EL, 0156ET, 0164ED, 0168ED, 0170ET, 0175, 0178ED.

Touring barchetta: 0166ED.

No details available: 0200ED, 0216.

Reference should be made to '225 Sport' by Edwin K. Niles in *Cavallino*, No. 1, for an account of the model and details as then known about individual cars in the series.

Below: Le Mans, 1952. Stagnoli's 2.7-litre 225 Sport with unusual coachwork. The front fender line was carried in a ridge down the side.

Following pages: 225 Sport.







250S

2953 cc, 73×58.8 mm, 230 bhp at 7500 rpm, CR 9:1, single ohc per bank, single plug per cylinder, coil ignition, 3×36 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2400 mm. *Track:* Front 1300 mm Rear 1320 mm.

It can be said without exaggeration that the 3-litre-engined 250 series of cars put the name of Ferrari firmly to the forefront of those making high-performance cars, opened up production and established beyond question the future of the marque and its reputation.

The total production of Ferrari cars during the first five years as an independent constructor stood around the 200 mark. Eleven years later, when the 250 series came to an end, that figure had risen to between 3000 and 3500. Many other models had been introduced but most of that increase was due to the 250 series.

It began with the appearance of the 250S which was

to be seen on the roads around Maranello at the beginning of March 1952. That car, chassis number 0156ET, had started life as a 225S before being fitted with a 3-litre engine – once again the Colombo engine had been revised. The bore size was up to 73 mm but the stroke stayed at 58.8 mm where it had been since the winter of 1947/8. Those dimensions, along with the associated capacity of 2953 cc, became a hallmark of the 250 series cars.

Driven by Giovanni Bracco with co-driver Rolfo, the 250S won the 1952 Mille Miglia. In doing so it defeated the 300SL Mercedes team of Kling who came second; Lang retired on the first leg and Caracciola, fourth. It has been said of the drive that at times there was little to distinguish between madness and genius on the part of Bracco. There were three more appearances for the car that year. It was at Le Mans, driven by Ascari/Villoresi, but failed to finish although at one time it had been in the lead. It won the 12-hour race at Pescara with Bracco driving and took part in the Mexican Road Race with Bracco again at the wheel. There it held the overall lead from the second leg through the sixth before retiring on the seventh with transmission failure.

Chassis number: 0156 ET.

Below: The 3-litre V-12 250S at the 1952 Mille Miglia.



1952 V-12/Sports racing

340 Mexico

4101 cc, 80×68 mm, 280 bhp at 6600 rpm, CR 8.5:1, single ohc per bank, single plug per cylinder, coil ignition, 3 DCF3 Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1278 mm Rear 1250 mm.

For many years Ferrari used racing as a proving ground for development and a means of dramatically publicizing his cars to stimulate demand in a specialist but hopefully growing market. A number of the 340 Americas had been sold to American customers and although production of the type was limited there was the future to consider.

Insofar as that American market was concerned, an obvious choice of shop window was the Carrera Panamericana, a race which lasted several days and covered the best part of 2000 miles in the course of running from the south to the north of Mexico.

In 1951, the second running of the event, Ferrari sent over 2 Vignale-bodied Type 212 coupés. The car driven by Piero Taruffi/Luigi Chinetti came first and that of Ascari/Villoresi second.

Although the 340 America did not show as strongly in racing as might have been expected, Ferrari maintained his faith in the larger engine and for the 1952 Carrera built 4 rather more powerful cars – 340 Mexicos. Mechanically they were close to the 340 America in specification, even staying with the 5-speed drive train of that model in spite of the fact that the 342 America – the GT car of the 4.1 series – had a rather more sturdy 4-speed transmission that could be used.

Vignale built the cars, 3 berlinettas and a spyder, to a very striking design by Michelotti. The berlinettas, chassis numbers 0222AT, 0224AT and 0226AT, were, it is believed, assigned to Villoresi/Cornacchia, Chinetti/Lucas and Ascari/Scotuzzi respectively. The spyder, 0228AT, down to be driven by American Bill Spear, did not start. In the race the Ascari/Scotuzzi car failed to complete the first leg as the result of a crash after getting on to some dirt; that of Villoresi/Cornacchia was retired with transmission trouble towards the end of the third day; but the Chinetti/Lucas car ran through to finish third overall. Ironically the spyder, which did not compete, had a very active racing career later in the USA in the hands of Bill Spear.

Chassis numbers

Vignale berlinettas: 0222AT, 0224AT, 0226AT.

Vignale spyder: 0228AT.

See also '1952 Ferrari Type 340 Mexico Berlinetta' by Warren W. Fitzgerald in *Road & Track*, May 1969.



Left: Front view of the 4.1-litre 340 Mexico.

Below: Vignale-bodied 340 Mexico.



1952-3 V-12/Sports racing/GT

250MM

2953 cc, 73×58.8 mm, 240 bhp at 7200 rpm, CR 9.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×361F4C Webers (might be 3×401F4C or 3×36 DCF), 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2400 mm. *Track:* Front 1300 mm Rear 1320 mm.

The 250MM developed from the 250S was shown in chassis form – chassis 0230MM – at the 1952 Paris Show. The engine used throughout the series was the Colombo short-block type modified to roller-bearing cam followers and 12-port induction. Power was rated 240 bhp at 7200 rpm.

The cars were occasionally entered by the works in long-distance races but as such did not achieve much in the way of success. The 3 works entries in the Mille Miglia failed to finish. There was, though, a first for Villoresi in the Gran Premio dell'Autodroma at Monza

on 29 June and the Castellotti/Musitelli and Bracco/Cornacchia 250MMs were placed first and second in the Messina 10-Hour Race on 26 July. In the hands of private entrants they fared rather better. Between 32 and 36 were produced in the chassis number range 0230MM out to 0390MM.

Chassis numbers

Pinin Farina berlinettas: 0236MM, 0250MM, 0252MM, 0254MM, 0256MM, 0258MM, 0270MM, 0276MM, 0298MM, 0310MM, 0312MM, 0316MM, 0388MM, 0340MM, 0344MM, 0354MM, 0356MM.

Vignale spyders: 0230MM, 0260MM, 0274MM, 0282MM, 0288MM, 0296MM, 0326MM, 0330MM, 0332MM, 0336MM, 0348MM, 0352MM, 0390MM.

Vignale coupé: 0344MM. There is some doubt about the body builder for this car. Some think it may have been the work of Viotti, others that it perhaps came from the Switzerland-based Ghia-Aigle who used the service of Michelotti who had been responsible for many of Vignale's bodies.

For a detailed listing of these cars and some history of each refer to '250 Mille Miglia' by Stanley Nowak in *Cavallino*, November/December 1978.

Below: 1952 2.9-litre 250MM. The spyder-bodied cars were built by Vignale but this one appears to have been rebodied at a later date by Scaglietti.



1952-3 V-12/GT

342 America

4101 cc, 80×68 mm, 200 bhp at 5000 rpm, CR 8.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCF Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2650 mm. *Track:* Front 1325 mm Rear 1320 mm.

Although the 340 America had provided an example of the first road-going car to use the 4.1-litre Lampredi-developed engine, it was closely related to the competition-oriented cars that made up the bulk of that type and left Ferrari still looking for a car that would take full advantage of the Lampredi engine whilst remaining a refined GT car. With the 342 America he took the first step along a line which led ultimately to the 500 Superfast more than a decade later.

The 342 America retained the essential mechanical features of the 340 model but with a 4-speed gearbox instead of the previous 5-speed version. It was on a longer chassis – 2650 mm – and had wider front and rear track dimensions – 1325 and 1320 mm respectively: changes that made for a much improved ride. The dry weight has been noted as having gone up to 1200 kg, 300 kg more than that of the 340 America and, since the power was rated some 20 bhp lower, it was not exactly fleet of foot.

It is said to have been introduced in chassis form in January 1951 but it seems that the production of complete cars did not get under way until late 1952, and then it was extremely limited. Only 6 examples were built in the chassis number range 0232AL to 0248AL.

Pinin Farina was responsible for 5 out of 6 of the bodies on these cars. It has to be said that they were not the most alluring styling for a Ferrari as not only was the



Above: Paris Show car (1951): the 342 America.

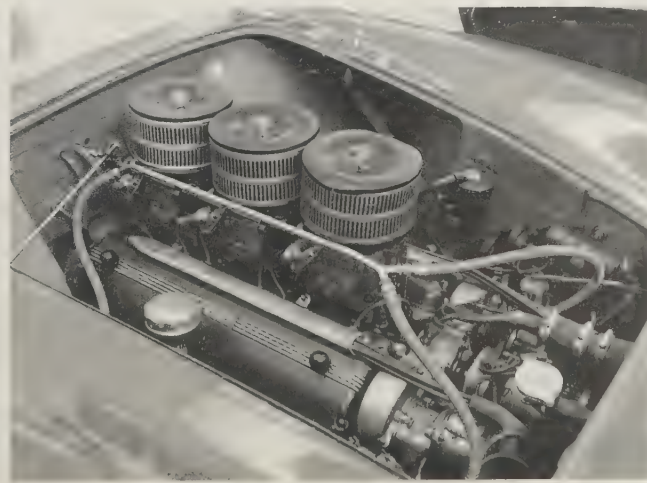
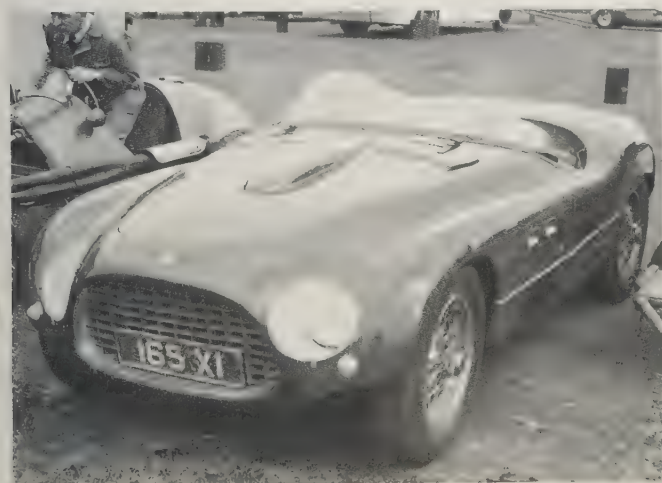
grille far forward of the front wheels, it was also very large and heavy in appearance. The double air scoops on the bonnet of 4 of the cars did not improve their looks. The last example built, 0248AL, had a 4.5-litre engine.

Chassis numbers

Pinin Farina coupés: 0240AL, 0242AL, 0246AL.

Pinin Farina cabriolets: 0234AL, 0248AL.

Vignale cabriolet: 0232AL.



Far left: Vignale spyder 250MM photographed at Silverstone.

Left: The works of a 250MM.

1953-4 V-12/GT

250 Europa

2963 cc, 68×68 mm, 200 bhp at 6000 rpm, CR 8.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×36 DCF Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2800 mm. *Track: Front and Rear* 1320 mm.

In the autumn of 1953 at the Paris Salon, 2 new GT cars were shown. Of differing engine capacities, 3 and 4.5 litres, they were built on a common – 2800 mm – wheelbase chassis which was a new and much stronger version of the basic ladder type previously used. The wheelbase was the longest ever used by Ferrari. It was probably the larger-capacity car that dictated a chassis which was perhaps not strictly necessary for the more modest aims of the 3-litre cars. Intentionally or otherwise, it seemed to impose a degree of standardization

Below: The 250 Europa coupé, a well-proportioned and lovely bodied car by Pinin Farina, had the same chassis as the 375 America.

on the principal bodybuilder.

The engines for both cars were of the Lampredi long-block variety. For the 3-litre version the bore at 68 mm was the same as the stroke and gave rise to one of the very rare 'square' engines produced by Ferrari.

The car on show at Paris was a Vignale coupé – possibly chassis 0301EU. It was an aggressive-looking car but had a very high waist that reduced the window area and it was spoilt by an excess of chrome. In general appearance it was reminiscent of the 340 Mexico coupés that Michelotti had designed for Vignale. Of around 18 cars built in the chassis number range 0299EU out to 0351EU, at least 15 were by Pinin Farina. Fourteen of them were 4-place coupés and there was 1 cabriolet – 0311EU – to a special order. The latter is sometimes referred to by the name of its first owner, 'Ariowitch'.

Chassis numbers

Pinin Farina coupés: 0299EU, 0305EU, 0309EU, 0321EU, 0323EU, 0325EU, 0331EU, 0333EU, 0335EU, 0341EU, 0343EU, 0345EU, 0349EU, 0351EU.

Pinin Farina cabriolet: 0311EU.

Vignale coupés: 0301EU, 0313EU.



1953-5 V-12/GT

375 America

4523 cc, 84×68 mm, 300 bhp at 6300 rpm, CR 8.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCF Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2800 mm. *Track:* Front 1325 mm Rear 1320 mm.

The 4.5-litre-engined 375 America first shown at the Paris Salon in 1953 was a very large and powerful – 300 bhp at 6300 rpm – gran turismo car and the next stage in Ferrari's penetration of the American market. For all the potential of that market, though, the total production – some 12 or 13 examples – was not great. The chassis number range is said to be 0293AL out to 0355AL. 'AL' stood for 'America and lungo' (long). The majority, designed and built by Pinin Farina, were very similar to the 250 Europa. The nature of the chassis may have determined a degree of standardization over the two models. There were the inevitable differences in detail between individual cars, mostly over such items as wrap-around rear windows and single side windows

on some, normal rear windows and rear quarter lights on others. Apart from Pinin Farina, Vignale also made 2 or 3 bodies for 375 Americas. One, a bright yellow coupé, 0327AL, shown at Turin in 1954, was very similar to a design shown in New York on a 250 Europa. It was noticeable for the profusion of air vents that did not help its appearance very much. Another was a cabriolet, 0353AL, a car that would not be out of place today in spite of the wrap-round windshield and forward lean of the windscreen pillars. Ghia, on the other hand, produced what might have been a reasonably good-looking, 'short-coupled', sporty body that was ruined by a somewhat ugly front and made even less desirable by its 3-tone colour scheme. At the end of the run, Pinin Farina produced, to the special order of Giovanni Agnelli, the future president of Fiat, a 2-place coupé, 0355AL, with an inset rear window very reminiscent of the special 375MM prepared for the actress Ingrid Bergman. It also had a very deep, rather square-shaped radiator.

Chassis numbers

Pinin Farina coupés: 0293AL, 0303AL, 0307AL, 0315AL, 0317AL, 0319AL, 0329AL, 0339AL, 0355AL.

Vignale coupés: 0327AL, 0337AL.

Vignale cabriolet: 0353AL.

Ghia coupé: 0347AL.

Below: The 4.5-litre V-12 375 America was aimed at the American market.



V-12/Sports racing

340MM

4101 cc, 80×68 mm, 300 bhp at 6600 rpm, CR 8.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2500 mm. *Track:* Front 1325 mm Rear 1320 mm.

Introduced in 1953 and in essence simply a more powerful version of the 340 America, the 340MM coincided with the inauguration of the World Sports Car Championship so that it formed part of Ferrari's armoury for tackling the 7 qualifying events of the new championship. Aimed at the Mille Miglia, the second event in the series, the 340MM was first seen in competition in the Tour of Sicily which took place on 12 April. The car entered there, a Vignale spyder for Luigi Villorresi, had no difficulty in winning.

For the Mille Miglia a few days later, 4 340MMs were to hand. Two, Touring spyders, were for Villorresi/Cassani and Farina/Parenti. The remaining pair were the Vignale spyders of G. Marzotto/Crozara and Tom Cole/Vandell, the latter car carrying the blue and white racing colours of America. The 340MMs backed up by numerous 250MMs, etc., were up against 5 2.9-litre Lancias and 3 3.6-litre Type 6C300CM (Disco Volante) Alfa Romeos as well as teams from Aston Martin and Jaguar. At the end of the day it was the 340MM of Marzotto/Crozara which came through to take the chequered flag some 11 minutes ahead of the Alfa Romeo driven by Fangio who, in the final stages of the race, had to cope with steering which operated on the right side front wheels only.

Le Mans seems to have been the beginning of the end for the 340MM. Ferrari, moving up the capacity league,



Above: 340MM at Le Mans. The berlinetta bodies were built by Pinin Farina.

used the 340MMs as a jump-off point towards the 375MM, the first of which had its 4.5-litre engine placed in a 340MM, chassis 0318AM. At Le Mans that car was supported by 2 340MMs, chassis 0320AM and 0322AM. All 3 cars had berlinetta bodies by Pinin Farina which resembled the 250MMs of the period and it is believed that the 340MMs had lengthened – by 100 mm – wheel-base chassis. The only completely honest 340MM present seems to have been the Vignale spyder of Tom Cole and Luigi Chinetti. Unfortunately, that car crashed during the race and Tom Cole was killed. It was a somewhat disappointing race for Ferrari: they could only manage a fifth place through the Marzotto brothers' car. Following Le Mans, the 2 340MMs that had been entered were brought up to full 4.5 litres and it can be said that the racing career of the 340MM was by then virtually ended.

It would seem that only 10 were built. There were 7 spyders, i.e. 2 from Touring and 5 from Vignale, and 3 berlinettas from Pinin Farina.

Chassis numbers

Touring spyders: 0268AM, 0294AM.

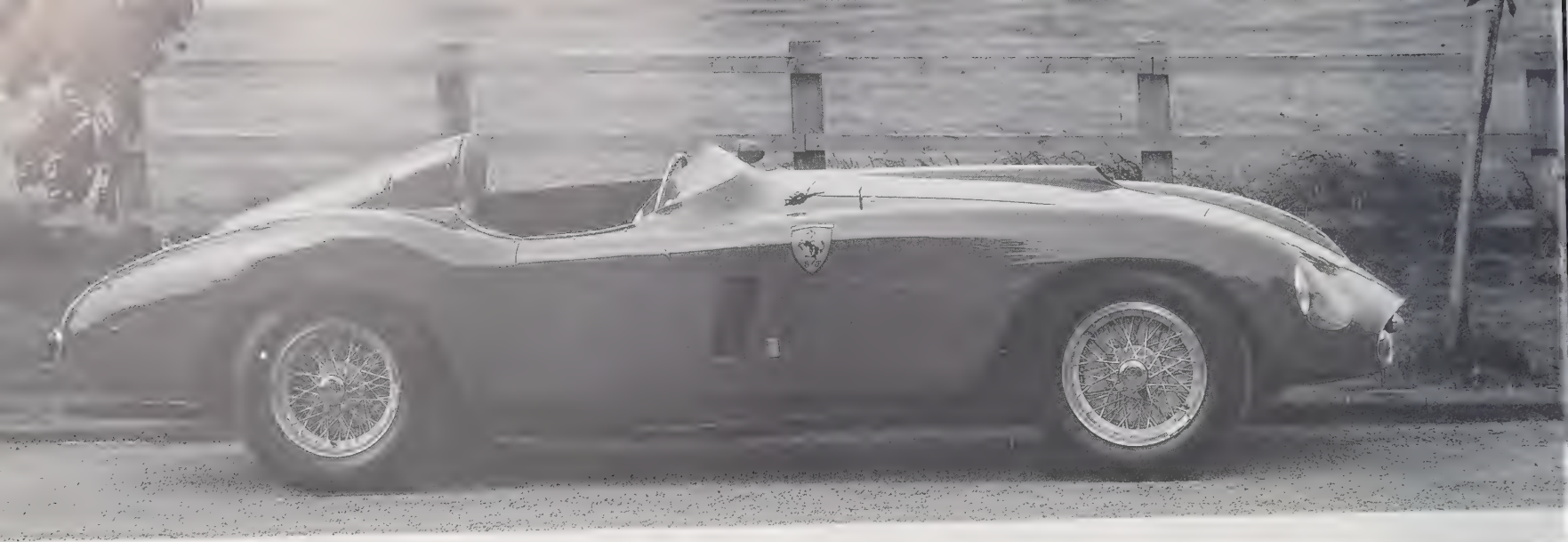
Vignale spyders: 0280AM, 0284AM, 0286AM, 0324AM, 0350AM.

Pinin Farina berlinettas: 0318AM, 0320AM, 0322AM.

Opposite and below: Tom Cole's Vignale-bodied 340MM spyder, in which he was tragically killed at Le Mans, has now been fully restored.







1954 V-12/Sports racing

375MM

4522 cc, 84×68 mm, 340 bhp at 7000 rpm, CR 9.0:1, single ohc per bank, single plug per cylinder, magneto ignition, 3×40 IF/4C or 42 DCZ Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1325 mm Rear 1320 mm.

Opposite above: 375MM spyder with Scagletti-built body.

Below: Gavin Bairn's 375MM Pininfarina spyder (chassis number 0370AM) seen at speed in New Zealand.

In the development of the 4.5-litre engine for GP use it took no longer than 3 months to move from 3.3 litres to the full 4.5 litres allowed at the time. In sports car racing it took, via the 340 America, 340MM and 340 Mexico cars, all of which remained at 4.1 litres, the best part of 3 years. The first 4.5-litre sports car, a 375MM, was seen

at Le Mans in 1953, driven by Ascari/Villoresi. It was based on a 340MM chassis, 0318AM, and was rumoured to have a version of the 4.5-litre GP engine that had been prepared for the Indianapolis 500 race of 1952. For the race it was joined by 2 340MM berlinettas, 0321AM and 0322AM. All three cars looked very much like 250MMs. In the race the 375MM was very fast and set a new lap record but retired after 10 hours with clutch failure. In mid-July the 2 340MM berlinettas were brought up to 4.5 litres and, along with the original 375MM, given a new front end treatment with lowered radiator intakes, and flush plastic headlight covers. At the back the full curved round windows were replaced by smaller flat glass ones. In that configuration they were raced by the factory for the rest of the season.

The capacity of these 'works' 375MMs was obtained by combining the 80 mm bore of the 4.1 units with the 74.5 mm stroke of the GP engines to give an actual figure of 4494 cc.

Later in the year, possibly at the 12 Hours of Casablanca in December, a 'customer' version 375MM appeared. Its capacity was 4523 cc derived from bore and stroke dimensions of 84×68 mm.

The 375MMs performed fairly well in racing in the hands of both the works and private entrants.

All told, there seem to have been some 30 375MMs built if the 340MM-based berlinettas used by the factory are included.

Chassis numbers

Pinin Farina berlinettas: Works cars: 0318AM, 0320AM, 0322AM. Customer cars: 0358AM, 0368AM, 0380AM, 0416AM, 0472AM, 0490AM, 0512AM.

Pinin Farina spyders: Customer and occasionally works cars: 0360AM, 0362AM, 0364AM, 0366AM, 0370AM, 0372AM, 0374AM, 0376AM, 0378AM, 0382AM, 0384AM, 0400AM, 0402AM, 0412AM, 0450AM, 0460AM.

Pinin Farina special coupé: 0456AM. This car was built for Ingrid Bergman who, however, never took delivery. It was an important styling exercise for Pinin Farina as it contained the elements of many features to be found on future Ferraris both in the sports and GT categories.

Pinin Farina special cabriolet: 0488AM. Built for the King of Belgium. It does not fit quite into the range of 375MM cars as it seems to have been on a special chassis (though how special is not clear) and also to have been fitted with a 4.9-litre engine of the type used with the 375 Plus cars raced by the works in 1954.

Ghia special coupé: 0476AM. This car seems to be something of a mystery beyond that it is supposed to have been shown at Turin in 1955 and has the name Wilke associated with it.

Vignale spyder: 0286AM. Another mystery and, as will be noted, outside the general range of chassis numbers listed for these cars.

For details of these and the 375 Plus, refer to 'Four Fives' in *Ferrari Album No 1* and 'Four Nines' in *Ferrari Album No 2*







Far left and below: 375MM (chassis number 0366AM). Originally a Pinin Farina spyder but later rebodied by Scaglietti.

Left: Pinin Farina 375MM berlinetta (chassis number 0358AM).



1954 V-12/Sports racing

375 Plus

4954 cc, 84×74.5 mm, 330 bhp at 6000 rpm, CR 9.2:1, single ohc per bank, single plug per cylinder, magneto ignition, 3×46 DCF/3 Webers, 4-speed gearbox integral with final drive.

Front suspension: independent double wishbones, transleaf spring. *Rear suspension:* de Dion, transleaf spring. *Wheelbase:* 2600 mm. *Track:* Front 1325 mm Rear 1284 mm.

Although finishing off the 1953 season at Casablanca in December and starting 1954 at Buenos Aires in January with the 4.5-litre 375MM, Ferrari had decided that the works cars should be stretched to 4.9 litres through the introduction of the 375 Plus version as a logical development of the 375MM. The GP-type crankshafts and hence the 74.5 mm stroke remained but new

cylinder liners took the bore size up to 84 mm. Strictly speaking by the rules of type designation then being operated, they should, based on individual cylinders have been called '412'. But for whatever reason Ferrari decided to stay with the designation that continued for his customer cars. The new car was first seen in competition at Agadir in February 1954 where, driven by G. Farina, it won.

Five examples were campaigned by the factory throughout 1954 and they were successful at Le Mans – Gonzales/Trintignant – and in the Carrera Panamericana road race – Maglioli. A sixth car built for the well known American owner/entrant Tony Parravano was the only Scaglietti spyder in the series.

Chassis numbers

Pinin Farina spyders: 0386AM, 0392AM, 0394AM, 0396AM, 0398AM.

Scaglietti spyder: 0478AM.

For additional material see note under 375MM.

Below: Gonzales at Silverstone with the 375 Plus.



1954-5 V-12/GT

250GT Europa

2953 cc, 73×58.8 mm, 220 bhp at 7000 rpm, CR 9.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×36 DCF Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1349 mm.

These are sometimes referred to as 'Second' or 'Series II' Europas. In appearance the example shown in Paris in October 1954 was not a lot different from the Pinin Farina-designed and built bodies made for the earlier Europa. Although an early catalogue for the new car continued to use the designation '250 Europa', closer examination revealed a significantly different car.

The Europa had used the Lampredi 'long-block' engine brought down to 3-litres capacity through bore and stroke dimensions of 68×68 mm. For the first 250GT, Ferrari returned to the Colombo-designed 'short-block' unit and produced what was in effect a mild-tune version – Type 112 – of the engines used for the 250MM series of sports racing cars.

The chassis – Type 506 – was a new design. At the rear the principal side members passed above the rear axle. At the front the traditional transverse leaf spring

was replaced by coil springs and the wheelbase was brought down to 2600 mm compared to the 2800 mm of the previous model.

These changes gave the new 250 improved road holding and the amount of interior room was, in spite of the shorter wheelbase, increased from space gained at the front through the shorter engine.

The 1954 Paris car, 0375GT, was the first of the series which extended over about 36 vehicles to finish up at 0427GT, a car delivered shortly after being shown in Brussels in January 1956. About 26 were to a more or less standard configuration by Pinin Farina. The remainder, with 1 exception, 0359GT, a special coupé by Vignale for the Belgian Royal Family, were also by Pinin Farina but to rather more special design. Four of them, 0369GT, 0383GT, 0385GT and 0415GT, are looked upon as providing the link between the final development of the 250MM series and the start of the 'competition' berlinettas in the 250GT series of cars. Nos 0393GT to 0425GT were forerunners of the first group of the 'Tour de France' series of long-wheelbase berlinettas.

Chassis numbers

Pinin Farina coupés: 0357GT, 0361GT, 0365GT, 0367GT, 0369GT, 0371GT, 0373GT, 0375GT, 0379GT, 0381GT, 0383GT, 0385GT, 0387GT, 0389GT, 0391GT, 0393GT, 0395GT, 0397GT, 0399GT, 0401GT, 0405GT, 0407GT, 0409GT, 0411GT, 0413GT, 0415GT, 0417GT, 0419GT, 0421GT, 0425GT, 0427GT.

Vignale special coupé: 0359GT.

Below: The 250GT Europa used a scaled-down Lampredi engine of 3 litres.



250 Monza

There is not much that can be said about these cars beyond that they were something of a hybrid lot with 250MM-type engines installed in chassis that were common to the 500 Mondial/750 Monza series. Their rear suspension was a de Dion layout and the 4-speed gearboxes used were in unit with the engine.

Only 4 were made – 2 Pinin Farina spyders and 2 Scaglietti spyders. The latter were sold direct to Franco Cornacchia for his Scuderia Guastalla and actively campaigned by that organization.

Quite why they came about is not known. It can be surmised that, having decided that 1955 should be devoted to 4- and 6-cylinder-engined cars rather than V-12s, Ferrari was either reluctant or careful not to abandon entirely the building of V-12-engined sports cars. Perhaps they were simply a part of that general, sometimes long-term, research that goes on by design or chance in an organization such as Ferrari was at that point in its development.

Chassis numbers

Pinin Farina spyders: 0420M, 0432M.

Scaglietti spyders: 0442M, 0446M.

The In-line 4-cylinder Sports Racing Cars

625TF and 735S

Although in 1950 the V-12-engined Type 166 cars that Ferrari entered in Formula 2 racing were almost unbeatable, they had on a number of occasions been harried by the 4-cylinder Alta-engined HWM cars of John Heath, and Ferrari was impressed by both the strength and nature of that opposition. Together with Lampredi he reasoned that on short twisty circuits superior low-speed torque combined with lightness and far fewer moving parts put the 4-cylinder engine at a considerable advantage.

Possibly in mind at the time was the future of Formula 1 racing. Ferrari would have been aware that the FIA intended to extend the existing regulations to December 1953 and in 1954 introduce a new formula – 2.5 litres unsupercharged. Having regard to the state of Formula 1 at the time, it was unlikely that any constructor would build or further develop cars that would be obsolete in 2 years. It made sense, though, to continue in Formula 2 using its 2-litre limit as a proving ground towards developing engines suitable for the 1954 F1 regulations. Lampredi was given the job of designing engines aimed at keeping Ferrari ahead in Formula 2 and laying the foundations for success in the new Formula 1. Accordingly, he developed 4-cylinder engines of 2 and 2.5

litres respectively.

The 2.5-litre Type 625 version was the first to appear – Bari Grand Prix, 2 September 1951 – followed 2 weeks later by the 2-litre Type 500 – Modena Grand Prix, 16 September. The Type 500 dominated grand prix racing during 1952/3 and therefore it was not surprising that Ferrari decided the 4-cylinder engine was suitable for sports cars, particularly in the hands of the private owner/entrant.

The outcome was the introduction in 1954 of the 2-litre Type 500 Mondial and the 3-litre Type 750 Monza. But, ahead of them, in 1953, Ferrari put a toe in the water with a couple of development models which appeared at the sixth Gran Premio Del Autodroma at Monza on 28 June – the 625TF and 735S.

1953 In-line 4-cylinder/Sports racing

625TF

The 625TF, driven into fourth place by Mike Hawthorn, was essentially a Series II 166MM Vignale spyder fitted with a 2.5-litre GP engine. It was one of only 3 made – 0302TF, 0304TF and 0306TF. By some accounts and photographs, one of these cars had a berlinetta body by Vignale. It has been suggested that the Suffix 'TF' stood for 'Targa Florio' and they had been intended to run in the race that year. They had a somewhat undistinguished and short racing career before being sold – 0302TF and 0306TF to Franco Cornacchia and 0304TF to Luis Milan. Cornacchia at the time was head of the Scuderia Guastalla which ran Ferrari cars in a number of events in the early 1950s.

1953 In-line 4-cylinder/Sports racing

735S

2491 cc, 102×90 mm, 225 bhp at 6800 rpm, CR 9.0:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 2×45 DCOA/3 Webers, 4-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* de Dion, transleaf springs. *Wheelbase:* 2250 mm. *Track:* Front 1278 mm Rear 1284 mm.

The nominally 3-litre Type 735S had a unique spyder body reputed to have been designed by Lampredi and built by Autodromo of Modena. The car led the race until it was in collision with another car and forced into retirement on the thirteenth lap as a result. On 9 August it appeared again, this time at Senagallia for Umberto Maglioli. It was well in contention but a rod failed and it had to retire.

It appears that only the one, possible chassis number 0428, was built.

In-line 4-cylinder/Sports Racing

500 Mondial, 750 and 860 Monza, 500 Testa Rossa, 500TRC and 625LM

Following development work carried out through the 625TF and 735S experimental cars in 1953, Ferrari embarked upon the construction of a group of in-line 4-cylinder-engined cars – 500 Mondial, 750 and 860 Monza, 500 Testa Rossa and 500TRC, to be built in limited number series. In the main they were intended for use by private entrants but on occasions some of them were driven by works drivers.

In addition to the types listed above, the 625LM, made up specially for the 1956 Le Mans 24-Hour Race, should also be included.

In some respects the 4-cylinder cars are the least well known Ferraris and because of this considerable confusion still surrounds their appearance in competition and details of ownership. Much of the latter is not relevant here, but the reader should be aware that almost all accounts of these cars contain contradictions, making it difficult to ascertain the truth.

The first 2 of the range to appear were the 2-litre Type 500 Mondial and the 3-litre Type 750 Monza.

The engines for both were designed by Lampredi and whilst being distinct – those for the Mondial were based originally upon that of the Type 500F2 car and those for the 750 Monza upon the F1 Type 555 Super Squalo – were similar in general layout. The basic design was twin overhead camshafts with 2 inclined valves and 2 spark plugs per cylinder. The angle between the valves was for most Mondials 60 degrees and for all Monzas 85 degrees.

Reflecting Lampredi's concern for the maintenance of

the compression seal in high-performance engines, the cylinder head and block were cast in one and cast-iron wet cylinder liners screwed into it. The water seal at the lower end of the liners was effected by rubber O-rings. In the Mondial engines the piston crowns were nearly flat. Their solid skirts were relieved by flats front and rear and they carried 2 compression rings and an oil-control ring all set above the gudgeon pin. The Monza pistons were domed with relief for valve clearance. They had 2 compression rings and 2 oil-control rings – 1 of the latter was below the gudgeon pin. As with all Lampredi engines, the con-rods were split conventionally at right angles to their centre lines.

A train of $\frac{3}{8}$ -in. wide spur gears contained within a separate light-alloy housing was bolted on to the front of the cylinder block. The upper gears drove the camshafts and those at the lower end took care of the dry-sump lubrication system pressure and scavenge pumps in the bottom of the housing.

The valves were closed by hairpin-type springs. The tappets were of inverted piston type, the upper ends of which housed hardened-steel rollers that were kept in contact with the cam lobes by light springs. Into the lower ends of the tappets hardened-steel buttons pressed in on shims maintained the necessary clearance.

The chassis for both were very similar and in the tradition of Ferrari at the time, i.e. a welded assembly made up of large-section main frame tubes strengthened by a modest network of smaller tubes that also provided various mounting points. Rear suspension was of the de Dion type with a single transverse leaf spring. Front suspension, at first by leaf springs, was changed later to coils.

Below: 4-cylinder 2-litre 500 Mondial.





1954-6 In-line 4-cylinder/Sports racing

500 Mondial

1985 cc, 90×78 mm, 160 bhp at 7000 rpm, CR 9.2:1, double ohc, 2 plugs per cylinder, coil ignition, 2×40 DCOA/3 Webers, 4-speed gearbox in unit with differential.

Front suspension: independent double wishbones, transleaf springs. *Rear suspension:* de Dion, transleaf springs. *Wheelbase:* 2250 mm. *Track:* Front 1278 mm Rear 1284 mm.

The 500 Mondial made its first competition appearance in the 12 Hours of Casablanca on 20 December 1953. In the hands of Ascari/Villoresi it finished second overall to the winning 375MM of Farina and Scotti and won its class.

The majority of what have come to be looked upon as the Series I Mondials were given spyder bodies by Pinin Farina closely resembling those of the 4.5-litre 375MMs. Towards the end of the series Farina built a 'one-off' with a much longer nose as a prototype design for the Series II cars. Ferrari, however, preferred a Scaglietti version said to have been the work of Dino Ferrari.

The bodies for the Series II cars differed little from those of the 750 Monza. Their only distinguishing feature was the side panels which were rolled under to meet the chassis frame instead of being brought down to hide it completely.

For the engine, the Type 553F2 block replaced that from the Type 500.

Dimensions and capacity along with the compression ratio remained the same but power was increased.



At the front the suspension went over to coil springs in place of the original transverse leaf type.

The first of the Series II cars made its appearance at the Bolzano-Mendola hill climb in 1955 in the hands of Castellotti.

Above and overleaf: John Robinson's well restored 500 Mondial.

Opposite: Rear view of 1955 500 Mondial.

Chassis numbers

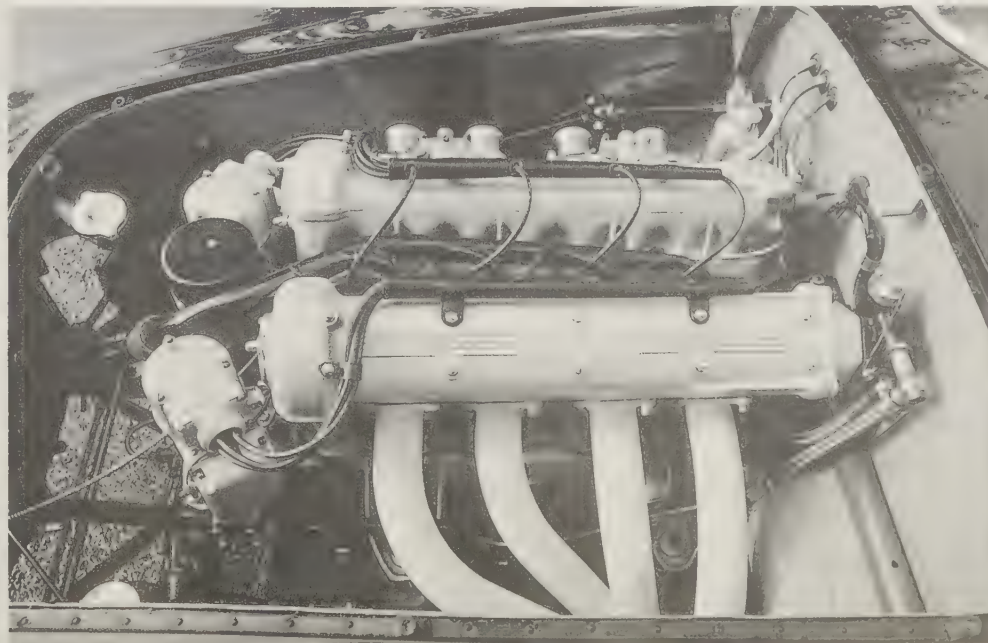
Pinin Farina berlinettas: 0422MD, 0452MD, 0512MD.

Pinin Farina spyders: 0404MD, 0410MD, 0414MD, 0418MD, 0424MD, 0426MD, 0430MD, 0434MD, 0438MD, 0448MD, 0458MD.

Scaglietti spyders: 0406MD, 0428MD, 0440MD, 0446MD, 0454MD, 0464MD, 0468MD, 0474MD, 0480MD, 0506MD, 0528MD, 0534MD, 0536MD, 0560MD, 0564MD, 0572MD, 0574MD, 0576MD, 0640MD.

Below left: Spare wheel fits snugly over fuel tank.

Below: Neat layout of 4-cylinder engine.







1954-5 In-line 4-cylinder/Sports racing

750 Monza

2992 cc, 103×90 mm, 260 bhp at 6000 rpm, CR 8.6:1, double ohc, 2 plugs per cylinder, coil ignition, 2×58 DCOA/3 Webers, 5-speed gearbox in unit with differential.

Front suspension: independent wishbones, transleaf springs. *Rear suspension:* de Dion, transleaf springs. *Wheelbase:* 2250 mm. *Track:* Front 1278 mm Rear 1284 mm.

Whilst it has always been thought that their first appearance in competition was at the Supercortemaggiore 1000 Km Race held at Monza on 27 June 1954, further research suggests that the cars at that event were the 735S model and that the 750 Monza did not appear until the Reims 12-Hour Race on 3 July where it was driven by Maglio/Manzon. Whatever the truth of the matter Maglioli had no difficulty in disputing the lead with Moss's D-Type Jaguar until the twenty-fifth lap when the Ferrari was retired with a gearbox problem. Success, however, was to come the way of the 750 Monzas as they were raced by both the works and private entrants.

Along with the general uncertainty that surrounds

details on the 4-cylinder cars, an accurate count of the number built is not yet to hand. The best suggestion is that there were some 33 built in the chassis number range 0440M out to 0586M.

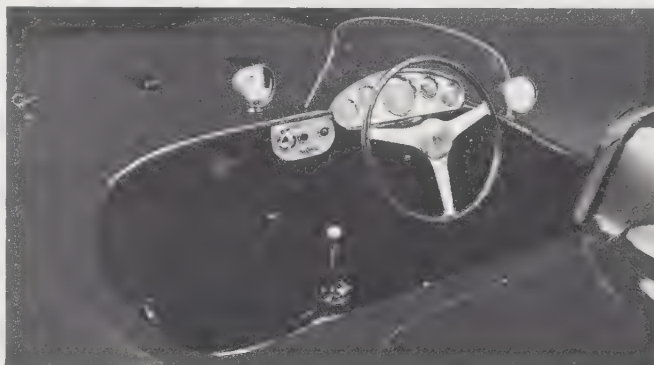
Chassis numbers

Pinin Farina spyder: 0486M.

Scaglietti spyders: 0462M, 0470M, 0492M, 0494M, 0496M, 0498M, 0500M, 0502M, 0504M, 0508M, 0514M, 0516M, 0518M, 0520M, 0522M, 0524M, 0526M, 0530M, 0538M, 0540M, 0548M, 0550M, 052M, 0554M, 0556M, 0562M, 0568M, 0580M, 0582M, 0586M.

Opposite above: 3.5-litre 860 Monza.

Opposite below: 860 Monza at Prescott hill climb.



Previous page: Twin-overhead-camshaft 4-cylinder 750 Monza engine.

Left: 750 Monza cockpit, perhaps a little over-restored!

Below: Andre Pillette's 3-litre 750 Monza at Silverstone (1956).



1955-6 In-line 4-cylinder/Sports racing

860 Monza

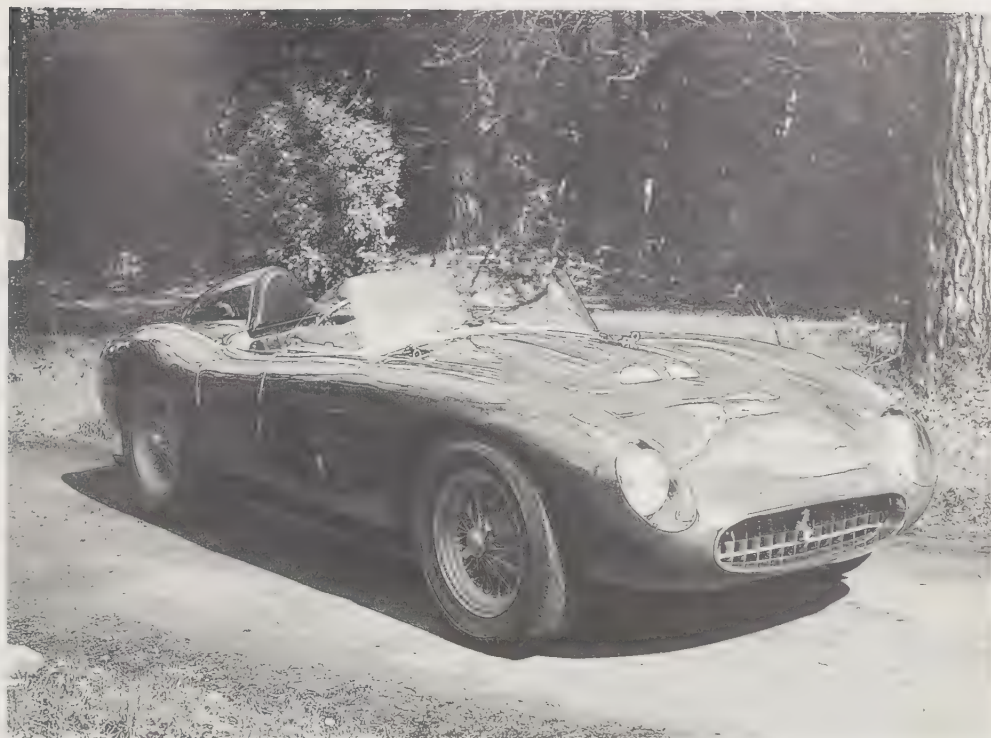
3431 cc, 102×105 mm, 310 bhp at 6200 rpm, CR 8.6:1, double ohc, 2 plugs per cylinder, coil ignition, 2×58 DCOA Webers, 4-speed gearbox in unit with differential.

Front suspension: independent wishbones, transleaf springs. *Rear suspension:* de Dion, transleaf springs. *Wheelbase:* 2350 mm. *Track:* Front 1316 mm Rear 1286 mm.

Introduced at the 1955 Tourist Trophy Race, the 860 Monza was driven by Castellotti/Taruffi, though never in serious contention. It was well placed in the Targa Florio held on 16 October but the car, driven by Castellotti/Manzon, dropped from second to third place when a flat tyre had to be changed out on the circuit. Success was finally achieved in the 1956 Sebring 12-Hour Race when 2 cars, driven by Fangio/Castellotti and Musso/Schell, finished first and second respectively.

Probably no more than 7 were built in the chassis number range 0570M out to 0604M.

Chassis numbers: 0570M, 0578M, 0584M, 0588M, 060M, 0640M.



1956 In-line 4-cylinder/Sports racing

500 Testa Rossa

1984 cc, 90×78 mm, 180 bhp at 7000 rpm, CR 8.5:1, double ohc, 2 plugs per cylinder, coil ignition, 2×40 DCO/3 Webers, 4-speed gearbox in unit with engine.

Front suspension: independent double wishbones, coil springs, *Rear suspension:* rigid axle, coil springs. *Wheelbase:* 2250 mm. *Track:* Front 1308 mm Rear 1250 mm.

The 500 Mondial was up against the very successful 2-litre Maserati A6GCS and it was clear from the results sheets that it was not capable of handling the situation. As a remedy Ferrari decided to bring out the 500 Testa Rossa – so named because the cam covers were painted red.

By that time Lampredi had finally left Ferrari so the new cars were the work of a design team consisting of Vittorio Jano, who had come over to Ferrari following their acquisition of Lancia, Alberto Massimino, who had worked for Maserati, Luigi Bellantini and Andrea Frascchetti.

The bore and stroke and hence capacity of the Type 131 engine remained the same as for the Mondial. However, instead though of being based upon the Type 553F2 engine, reversion had been made to a head very much like that of the Type 500 but with a different cam cover. It had also been strengthened at the lower end.

As far as the chassis – Type 518 – was concerned, the



Left: 4-cylinder 2-litre 500TR, popular for racing in the USA.

Below: 500TRC at a retrospective Mille Miglia (1984).

transaxle and de Dion rear suspension layout was dropped in favour of an engine-mounted transmission and a live rear axle located by parallel trailing arms and suspended by coil springs.

For bodies Ferrari went initially back to Touring who produced a design that was very similar to the general run of Scaglietti spyders except for the large cut-out-type front wheel arches. From then on most of the others were bodied by Scaglietti.

The 500 Testa Rossa was first shown in New York on 26 April 1956, an indication perhaps of where Ferrari felt the main sales would be found. The first race for the new model did not come until 24 June when the works put 3 cars into the fourth 1000 Km Supercortemaggiore Race at Monza. It turned out to be a good debut as the car of Collins/Hawthorn won, that of Fangio/Castellotti took third place and Gendebien/de Portago came in fourth.

Chassis numbers: 0600, 0608, 0610, 0614, 0618, 0620, 0624, 0634, 0636, 0638, 0648, 0650, 0652, 0654, 0672.



1956 In-line 4-cylinder/Sports racing

625LM

2498 cc, 94×90 mm, 225 bhp at 6200 rpm, CR 9.0:1, double ohc, 2 plugs per cylinder, magneto ignition, 2×42 DCOA Webers, 4-speed gearbox in unit with engine.

Front suspension: double wishbones, coil springs. *Rear suspension:* rigid axle, coil springs. *Wheelbase:* 2250 mm. *Track:* Front 1308 mm Rear 1250 mm.

As a result of the general uproar that followed from the accident at Le Mans in 1955, the AC de l'Ouest decided that manufacturers' prototypes would be restricted to a maximum capacity of 2.5 litres. Cars above that had to be series production with at least 100 examples built or laid down by mid-February 1956. This effectively took Le Mans out of the World Sports Car Championship series as the rules had not been laid down by the FIA.

For some while it was doubtful whether Ferrari would take part at Le Mans. However, just before the race he announced that he would be entering 3 625LMs.

Little is known about these cars beyond that they seem to have been based on 500TR chassis – possibly the 3 cars seen at Monza in June of that year – into which were dropped engines that were either derived from the 2.5-litre Formula 1 Type 625 cars or were simply detuned engines taken straight from the single-seater models.

In the race the cars were at a distinct disadvantage in a battle which included the 3-litre Aston Martins and the 3.4-litre D-Type Jaguars – both of the British manufacturers having apparently persuaded the organizers that they had built more than 50 of the type of car they were using. The 625LM of Gendebien and Trintignant finished third overall and won the prototype class.

Chassis numbers: 0632, 0642, 0644. All were Touring spyders.

Below: 4-cylinder 625 circulating at Silverstone.



1957 In-line 4-cylinder/Sports racing

500TRC

1984 cc, 90×78 mm, 180 bhp at 7000 rpm, CR 8.5:1, double ohc, 2 plugs per cylinder, coil ignition, 2×40 DCO/3 Webers, 4-speed gearbox in unit with engine.

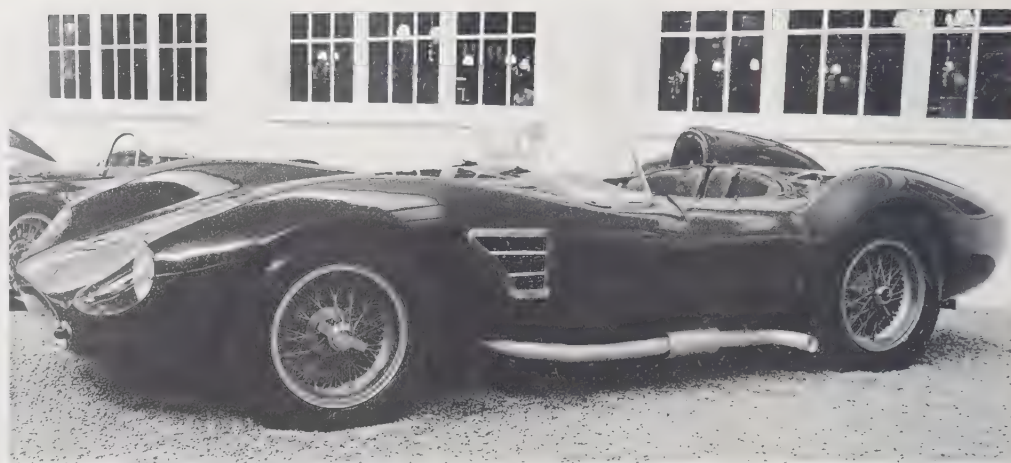
Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, coil springs. *Wheelbase:* 2250 mm. *Track:* Front 1308 mm Rear 1250 mm.

At the close of 1956 the Commission Sportive of the FIA announced their revised Appendix C – the regulations governing sports car racing. It was a lengthy and complex document that was almost a carbon copy of the 1956 Le Mans regulations. A lot of it was directed towards bodywork. Cars had to have at least 2 doors, hoods were obligatory, at least for scrutineering – a supplementary ruling allowed them to be removed for racing. Windscreens had to be full width, measuring at least 100 cm wide and 15 cm high. In sum it was an attempt to move sports racing cars closer to their road-going counterparts.

Ferrari set Scaglietti to design and build new bodies to meet the revised rules. The outcome was the 500TRC, the 'C' signifying compliance with the Appendix C regulations.

That there were no significant changes to the specification/build of the car is indicated by the fact that the engine and chassis type numbers merely became 131C and 518C.

The car was very popular in the USA where it was eligible for and dominated the 'Class E Modified' category. To meet the needs of those who wanted to go for overall wins, at least 2 and perhaps more were fitted



Above: 500TRC (chassis number 0692MD/TR).

with the 625 4-cylinder 2.5-litre engines that were left over from 625LMs built for the 1956 Le Mans race.

As a type the 500TRC had a short production life, for less than a year later it was replaced by the V-12-engined 250 Testa Rossa which soon became a favourite with both private and works teams.

Including the known 625 examples, it would appear that 20 examples of the TRC were built. To keep them competitive following the introduction of the 250 Testa Rossa, all sorts of engines were fitted into surviving cars. As a consequence very few original specification 500TRCs now exist.

Chassis numbers: 0658, 0660, 0662, 0664, 0668, 0670, 0672, 0678, 0680, 0682, 0686, 0688, 0690, 0692, 0694, 0696, 0698, 0702, 0706, 0708.

Most likely all numbers carried the suffix 'MD/TR'. 0672 and 0680 are known to have had the 2.5-litre Type 625 engines fitted.

Below: Phil Hill at Sebring with a 500TRC plus 860 Monza engine.



The In-line 6-cylinder Sports Racing Cars

306S, 118LM (376S), 121LM (446S)

Ferrari's interest in 6-cylinder in-line engines for sports car competition – along with the 4-cylinder versions – came at a time in the middle 1950s when for a while he seemed to lose interest in the V-12 as a serious work horse and started looking around for engines that would be more responsive to the demands of a variety of circuits, not all of which put a premium on flat-out speed. The re-entry of Mercedes Benz into sports car racing with the 300SLR suggested that 1955 might be an uphill struggle for Ferrari. His 4-cylinder cars might not win but hopefully 6s, if they could be developed, would. The 6-cylinder cars were almost certainly Lampredi's final designs for Ferrari. Apparently disenchanted with racing car work, he left Ferrari's employ in September 1955 to move over to Fiat.

Below: The 6-in-line cylinder 3.8-litre 118LM.



1955 In-line 6-cylinder/Sports racing **306S**

Very little is known about this car. In fact, by some accounts, it is not clear whether it was a car or simply a development engine on the way to the 118 and 121LMs raced during 1955. On balance it would appear to have been a prototype car – of the 118LM, perhaps, in particular – and to have used a Type 114 engine. It seems certain that it was never raced.

1955 In-line 6-cylinder/Sports racing **118LM (376S)**

3747 cc, 94×90 mm, 280 bhp at 6400 rpm, CR 8.9:1, single ohc per bank, 2 plugs per cylinder, magneto ignition, 3×45 DCOA or 58 DCOA/3 Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* de Dion, transleaf spring. *Wheelbase:* 2400 mm. *Track:* Front 1278 mm Rear 1284 mm.

This car's engine was based on the 4-cylinder 625GP engine with an additional 2 cylinders of the same bore and stroke dimensions. By changing the shape of the piston crowns, the compression ratio was brought down to 8.75:1 as the sports car engine was to run on pump gasoline. In its general construction and design the engine followed closely Lampredi's 4-cylinder engines. The chassis was lengthened to take the longer engine.

The first car, completed in December 1954, had a body by Scaglietti based upon the sharp-nosed style suggested by Dino Ferrari for the 750 Monza.

Its first competition appearance was in the Buenos Aires 1000 Km event on 13 January 1955 – a 1-car entry for Froilan Gonzales/Maurice Trintignant. In the race it was disqualified for – most accounts say – taking a short cut to the pits after the onset of fuel pump troubles. Whilst running it fought a strong battle with the eventual winner, a 375 Plus in the hands of 'locals' Saenz Valienta and Jose Ibanez. Two entered for the Tour of Sicily in April, driven by Taruffi and Maglioli, finished first and second respectively.

By the time of the Mille Miglia, the number of 118LMs had gone up to 4. Doubts have been expressed as to whether they all were 118LMs. The suggestion is that some, if not all, were powered by the 4.4-litre engines of the 121LM, 1 of which was entered. The 118s were in the hands of Taruffi, Maglioli, P. Marzotto and Sighinolfi, leaving the 121 for Castellotti. Of the 5, only the 118s of Maglioli and Sighinolfi finished the race – third and sixth respectively. That seems to have ended the career of the 118LM. There are no confirmed chassis numbers and apparently none has survived.

1955 In-line 6-cylinder/Sports racing

121LM (446S)

4412 cc, 102×90 mm, 330 bhp at 6000 rpm, CR 8.6:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 3×50 DCOA/3 Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* de Dion, transleaf spring. *Wheelbase:* 2400 mm. *Track:* Front 1278 mm Rear 1284 mm.

Whilst the engine of the 118LM had been based on that of the 625GP car, that of the 121LM was basically 750 Monza with 2 added cylinders. As already noted, its first appearance was in the Mille Miglia for Eugenio Castelotti. Though it was tremendously fast, it did not last the race, being retired for reasons variously reported as blown tyres and engine failure.

For Le Mans 3 121s were entered but all were out of the race fairly early on due to overheating problems.

The last major appearance for a 121LM was for Castelotti in the Sports Car Grand Prix of Sweden, where up against the 300SLRs of Fangio and Moss, it could do no better than finish third.

By then Ferrari had lost interest in his 6s and the 121s at least were all sold off to private owners. Two, those sold to Americans Jim Kimberley and Tony Parravano, were rebodied by Scaglietti. As a point of interest, Ferrari went to the trouble of printing – in Italian only – an owner's manual for these cars.

Chassis numbers: 0484 LM, 0532 LM, 0546 LM, 0558 LM.

1956-8 V-12/GT

250GT Boano/Ellena

2953 cc, 73×58.8 mm, 220-240 bhp at 7000 rpm, CR 8.5/8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×36 DCF Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1349 mm.

During 1955, Pinin Farina began work on a new design for the 250GT series and a prototype coupé, chassis 0429GT, was available by September of that year. The intention was that it would be built by Pinin Farina but there were snags. Their existing plant at Corso Trapani was overcrowded. Land had been acquired at Grugliasco on the outskirts of Turin and a new facility was in the course of construction but, as it could not be completed in time to take on the new model, the job was given to Carrozzeria Boano. Mario Boano had worked at Stabilimenti Farina, Pinin Farina and Ghia before setting up his own establishment in 1954 where he was joined by his son Gian Paolo. Prior to Boano commencing work on the new coupés their design was further refined by Pinin Farina through several additional prototypes. One was shown at Geneva in March 1956 where it was placed between a Boano-designed cabriolet and a Pinin Farina 410 Supramerica.

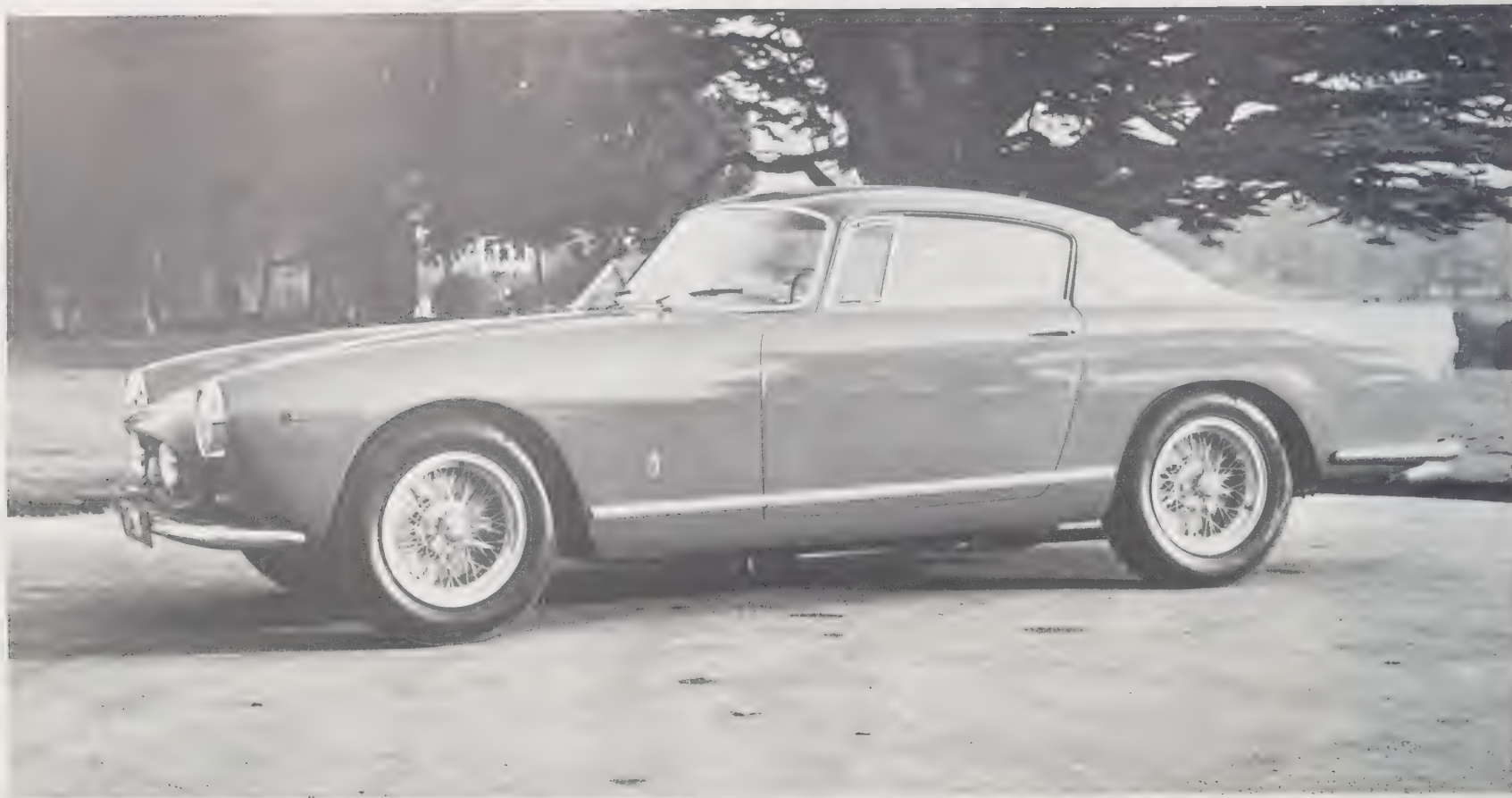
The mechanical base of the new car was very similar to that of the 250 Europa GTs, i.e. a Type 128 or perhaps in earlier examples a Type 112 engine and a Type 508

Below: A fully restored 6-cylinder 4.4-litre 121LM.

Opposite: The 250GT Boano-bodied car.







Above: Rare example of a Pinin Farina 250GT coupé built prior to Boano taking over the design.

Right: 250GT coupé built by Boano – rear view of the car shown on page 73.



chassis. On a number of the cars the shift pattern of the 4-speed gearbox had 1st ahead of 2nd over on the right and 3rd ahead of 4th on the left.

From its introduction in 1956 through until spring 1957, Boano built some 80 cars before moving on to Fiat to set up a central styling office. His business was handed over to his son-in-law Ezio Ellena and a partner, Luciano Pollo. The name of the firm changed to Carrozzeria Ellena and production of the 250GT coupés continued there in 1958 with a further 50 examples being completed.

There were a number of differences between the 2 productions. Some of these introduced on the Ellena coupés were mechanical in nature: e.g., single-distributor ignition became standard; the brake-lining area was increased; and a steering box by ZF introduced, etc. For the body, changes were aimed at improving comfort and visibility. To assist the latter, the roof was slightly raised through the use of deeper front and rear screens and windows. Because of that the Ellena coupés have become known as 'high-roof' and the earlier Boano cars as 'low-roof'.

Chassis numbers

Boano: in the range 0492GT to 0675GT.

Ellena: in the range 0679GT to 0889GT.

1955-6 V-12/Sports racing

410 Speciale

In the mid-1950s, Tony Parravano, an American customer of Ferrari, liked to have something special in the way of cars – something that no one else had. The result was a series of 'Parravano Specials' that, at the time, were a mystery, and even now do not seem to be all that well documented. With the advent of the 375 Plus, Parravano, looking for a car which was a little out of the ordinary in the 4.9-litre line, ended up with 2 cars – the 410 Speciales as they have become known. A third example was built for another of Ferrari's special customers, Frenchman Michel Paul Cavallier, who also had his own taste in Ferraris.

None of the 3 cars used the 4.9-litre engines that had powered the 375 Plus cars used by the works in 1954. Instead, they were fitted with the 4961 cc, 88 × 68 mm, single-ohc, single-plug engines that were being built for the 410 Superamerica series of GT cars. Modified to magneto ignition and equipped with 3 4-choke Weber carburettors, they were rated 345 bhp at 6800 rpm.

One of the 2 Parravano cars – 0590CM – was built on to a 2800 mm wheelbase chassis. It was given a body by Scaglietti that has been likened to a 'stretched Monza'. The other – 0592CM – was built on to a shorter (2350 mm) wheelbase chassis. The body, also by Scaglietti, was in the manner of the first car but lower and rounder. It had a very large air scoop on the engine cover and eggcrate-type air vents in the flanks.

The third car, that for Paul Cavallier (0594CM), seems to have started out as a Scaglietti spyder, presumably similar to the other 2. In 1956, however, it was rebodied by Scaglietti as a berlinetta in a style closely resembling the 250GTs of the day.

1956 V-12/Sports racing

410 Sport

4962 cc, 88×68 mm, 380 bhp at 7000 rpm, CR 8.6:1, single ohc per bank, 2 plugs per cylinder, 4 distributors, 3×46 DCF/3 Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* de Dion transleaf springs. *Wheelbase:* 2350 mm. *Track:* Front 1316 mm Rear 1286 mm.

It is related elsewhere that, following his relative disappointment with the 6-cylinder cars in 1955, Ferrari turned once again to the V-12s in the shape of the 290MM, etc., for 1956. Before the 290MM was ready, a final version of the 4.9-litre, the 410 Sport, was prepared. Its engine came from that of the 410 Superamerica series but with twin ignition – another row of spark plugs was put on the exhaust side of the cylinder



heads. The necessity to get at the lower and outer row of plugs during racing meant overlapping the engine cover into the wing panels and thereby providing at the same time a unique feature for the identification of these cars.

The 410 Sport was used by the works on one occasion only. Two were assigned to Peter Collins/Luigi Musso and Fangio/Castelotti for the 1000 Km of Buenos Aires, the first race in the 1956 Sports Car Championship. Although that of Collins/Musso with Collins at the wheel set a new lap record for the course at 102.5 mph, both cars were retired with transmission troubles. Following that race, they were both sold: one to the American John Edgar, the other to the Swedish driver Sture Vottorp.

Chassis numbers: 0596CM – the car sold to Vottorp; 0598CM – the car sold to John Edgar.

For a fuller history of these two cars, in particular that of John Edgar, reference should be made to 'It's a hog but it goes' in *Ferrari Album 3*.



Above: 410 Speciale (chassis number 0592 (CM)).

Below: 410 Sport at a USA vintage car event.

1955-9 V-12/GT

410 Superamerica

4962 cc, 88×68 mm, 340 bhp at 6000 rpm, CR 8.5:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCF Webers (360 bhp at 700 rpm, CR 9:1 with 3×42 DCF Webers for later engines used with Series III cars).

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* lwb version 2800 mm, swb version 2600 mm. *Track:* Front 1455 mm Rear 1450 mm.

The 410 Superamerica was a replacement for the 375 America. Shown in chassis/engine form at Paris in 1955, the complete car was displayed at Brussels in January 1956.

The chassis – Type 514 – at first retained the 2800 mm wheelbase of the 375 America, but a number of detail modifications were made, some of which reflected solutions already accepted for the 250GT series cars. At the front the single transverse leaf spring was replaced by coil springs, and at the rear the lever action shock absorbers were located beneath the side chassis members. The front and rear tracks were widened. The transmission was still 4-speed but on the majority of the cars the shift pattern was reversed, i.e. 1st gear was to the right and forward, 4th to the left and back. The engine used was the Type 126.

Series I (1955-6)

Seventeen cars were made, mostly on the 2800 mm wheelbase chassis. Pinin Farina were responsible for 14 of the bodies, amongst them the one-off Superfast. With the inevitable individual differences that are the hallmark of this type of Ferrari, the majority of the coupes by Pinin Farina were closely styled on the 1956 Brussels car. A coupé and a cabriolet came from Boano and there was a coupé from Ghia.

Series II (1956-7)

Eight cars were made, all on the short (2600 mm) wheelbase chassis. Seven of the bodies, including 4.9 Superfast, were by Pinin Farina. The eighth, chassis number 06715A, was a coupé by Scaglietti.

Series III (1958-9)

For the Series III cars a number of significant changes affecting both engine and chassis were introduced. On the engine the most easily noted was the relocation of the spark plugs from within the 'V' of the engine to a position on the outside above the exhaust manifolds. A hidden benefit of this change was an increase in power through a more efficient combustion chamber. To cope with the increased power the diameter of the brake drums was increased.

Because of the changes noted, the engine was

Right: 410 Superamerica
Series I. Each car had its
unique features.





advanced to Type 126/A and the chassis to Type 514/A.

Twelve cars were made to a more or less common design by Pinin Farina.

Chassis numbers

Series I

Pinin Farina coupés: 0423SA, 0471SA, 0475SA, 0479SA, 0481SA, 0483SA*, 0487SA, 0489SA, 0491SA, 0493SA, 0495SA, 0497SA, 0499SA, 0501SA.

* Used as chassis for Superfast.

Ghia coupé: 0473SA.

Boano coupé: 0477SA.

Boano cabriolet: 0485SA.

Series II

Pinin Farina coupés: 0499SA, 0501SA, 0713SA, 0715SA, 0717SA, 0719SA*, 0721SA.

* Chassis used for 4.9 Superfast.

Series III

1015SA, 1265SA, 1285SA, 1305SA, 1311SA, 1323SA, 1355SA, 1387SA, 1423SA, 1449SA, 1477SA, 1495SA.

All were Pinin Farina coupés.

For a detailed car-by-car specification and history of the Series III cars refer to *Ferrari 410 Superamerica Series III* by Dyke W. Ridgely.

Superfast Series

Cars in this group were to all intents and purposes 'one-offs' or styling/engineering exercises. An exception is the 500 Superfast which had a limited production life.

1956 V-12/GT

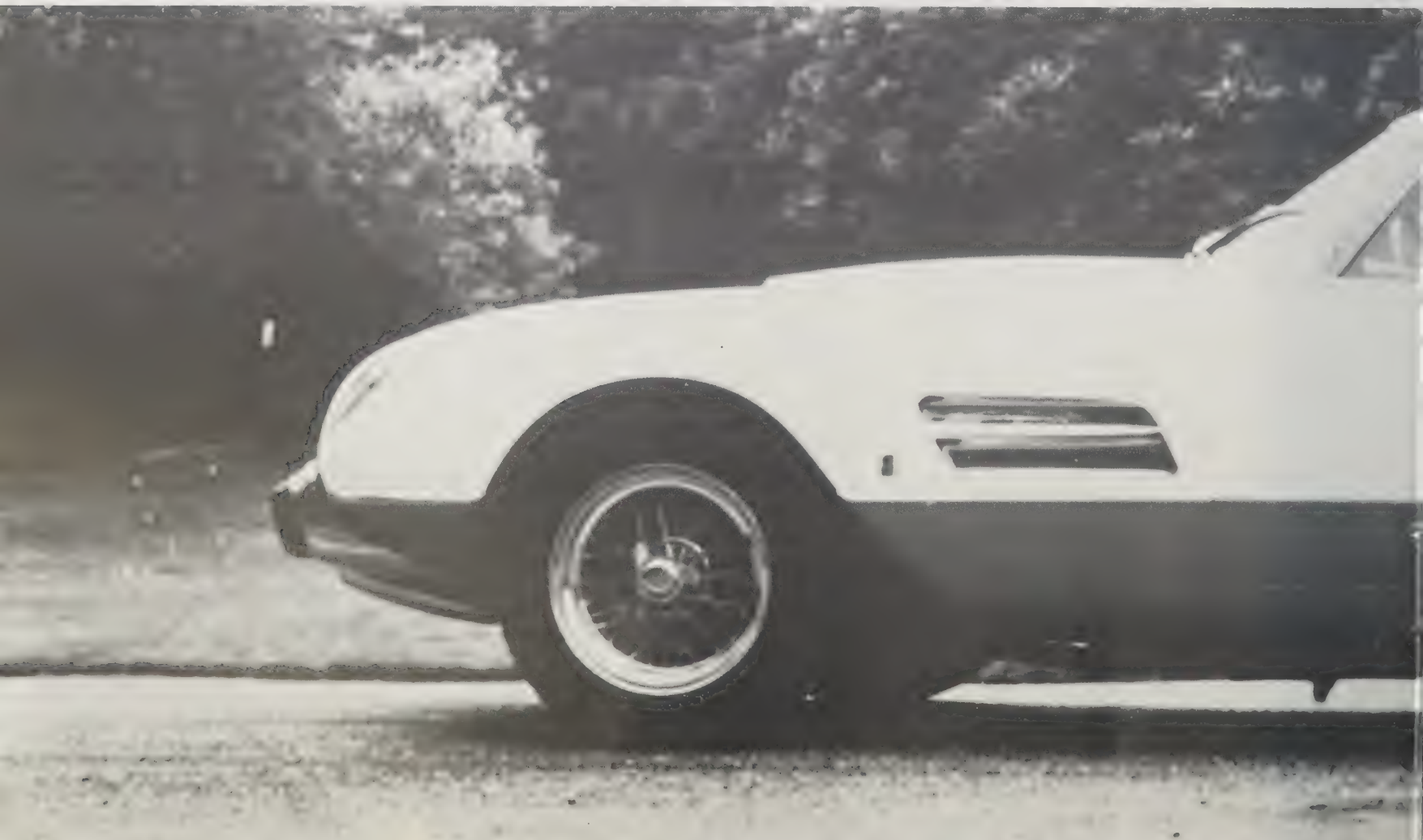
Superfast

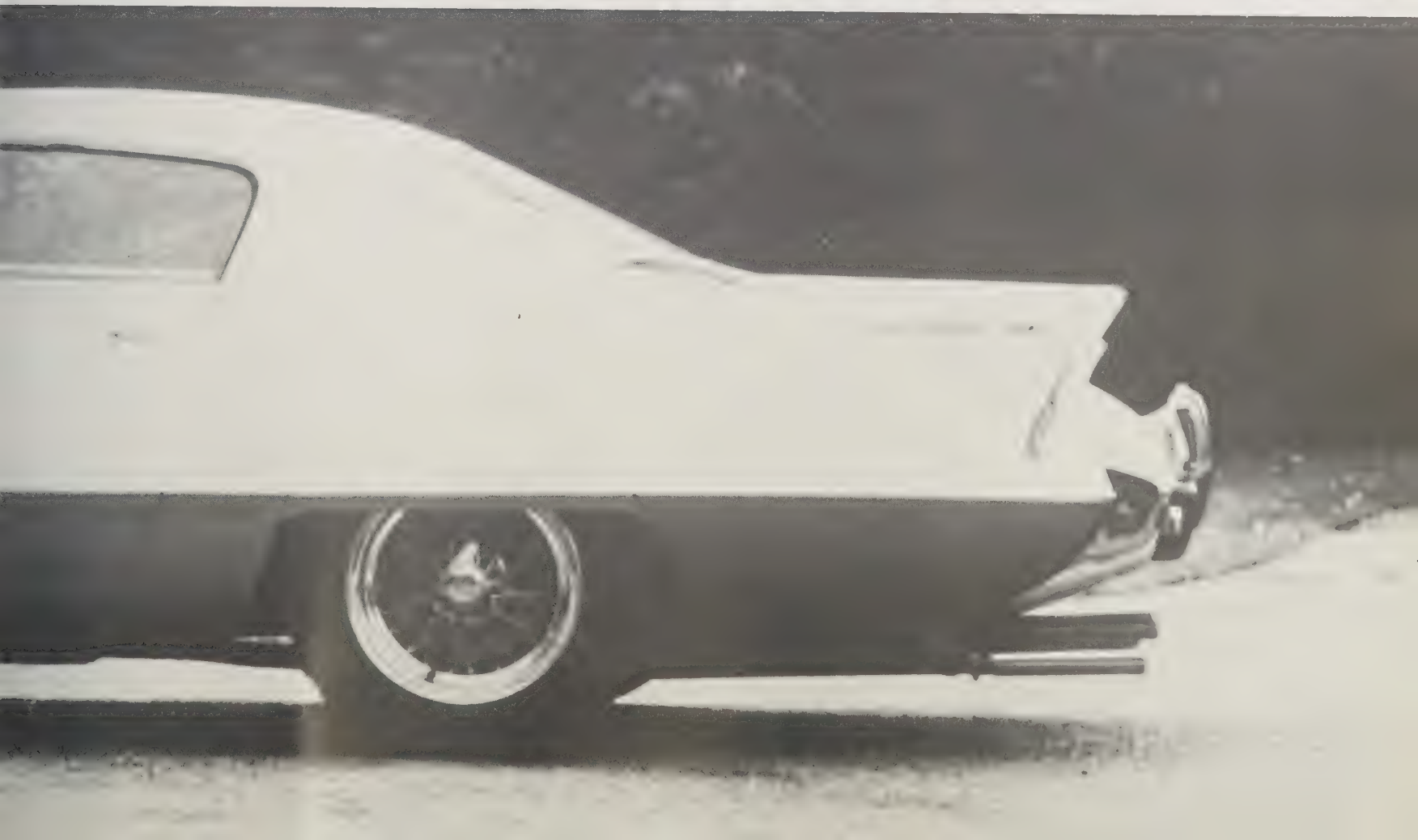
Shown at Paris in 1956, the Superfast was Pinin Farina-designed and built coupé, 0483SA, based on a short (2600 mm) wheelbase 410 Superamerica chassis. The engine was a wet sump version of the 4.9-litre 24-plug type used for the 410 Sport. The body design was specially noted for its cantilever roof which had no supporting pillars for the windscreen. It also had tailfins – not the first to be seen on a Ferrari – and a large but shallow elliptical grille. Following Paris it was seen at the principal European shows before being sold, by which time it had been deemed advisable to add supporting pillars for the screen.

Opposite above left: Borrani RW 3498 wire wheels were specially built for the massive front brakes of the Superamericas.

Opposite above right: Simple instruments of the Superamerica in full view of the driver.

Below: Superfast. The coachwork, with high tailfins, shows American influence.







1957 V-12/GT

4.9 Superfast

A Pinin Farina-designed and built coupé, 0719SA, on a 2600 mm wheelbase chassis, the 4.9 Superfast was shown at Turin in 1957. It was fitted with a 4.9-litre 12-plug engine. In appearance the car was very like the Superfast but did not have the cantilevered roof or tail fins.

1960 V-12/GT

Superfast II

Shown at Turin in 1960, the Superfast II was designed and built by Pinin Farina and said to be for his personal use. It was an 'Aerodinamica' coupé, 2207SA, built on a 400 Superamerica base. Particularly noticeable were the retractable headlights units, the partially skirted rear wheels and the very small elliptical grille. It was subsequently modified to include the addition of a large carburettor air scoop, vent windows at the front and removal of the rear wheel skirting.

1962 V-12/GT

Superfast III

Clearly derived from the Superfast II and also built on to a 400 Superamerica chassis, probably 3316SA, the Superfast III was shown at Geneva in 1962. It retained Superfast II's air scoop but had the unusual feature of a retractable grille cover. It was altogether lighter in appearance at the rear where very slender pillars were used. The rear wheels were partially covered and there was an air duct in the area behind the wheel on each of the rear arches.

1962 V-12/GT

Superfast IV

This car was also built in 1962. It was, it seems, a different body built on to the chassis used for the Superfast II. It was very much in the mould of the latter car and Superfast III but noticeably different from them by having 4 non-retractable headlights. There were no covers for the rear wheel arches.

Opposite: Superfast.

Below: The graceful rear lines of the 500 Superfast.



1964-6 V-12/GT

500 Superfast

4963 cc, 88×68 mm, 400 bhp to 6500 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, 3×40 DCZ6 Webers, 4-speed gearbox with overdrive or straight 5-speed.

Front suspension: independent coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2650 mm. *Track:* Front 1397 mm, 1964/5; 1405 mm, 1966. *Rear* 1389 mm, 1964/5; 1397 mm, 1966.

Introduced at Geneva 1964, the 500 Superfast was designed and built by Pininfarina. It was a natural evolution from the 410/400 Superamerica series cars as influenced by the previous 'Superfast' exercises. Its Type 208 engine was to remain unique to the 500 Superfast. It had the bore and stroke dimensions (88×68 mm) and cylinder bore centre spacing (108 mm) of the earlier 410 Lampredi V-12, but in construction, with its use of detachable cylinder heads, was in the manner of Colombo.

Its chassis, Type 578, was apparently based on the Type 571 of the 330GT 2 + 2 and, along with that car, the first 500 Superfasts had a 4-speed + overdrive transmission.

There has grown up a misconception that the production of this prestigious model can be split neatly into two separate series: the first, a group of 24 cars having the chassis features of the early 330 2 + 2s; and the remainder, a group of 12 cars having much the same details as the later 330s, i.e. 5-speed gearbox, suspended pedals, Borg and Beck clutches, power steering, etc. There is no such tidy link-up.

Thirty-six cars were built in the chassis number range 5951SF out to 8897SG; 8, a surprisingly high percentage, had right-hand drive.

Chassis numbers: 5951SF, 5977SF, 5979SF, 5981SF, 5983SF, 5985SF, 5989SF, 6033SF, 6039SF, 6041SF, 6043SF, 6049SF, 6303SF, 6305SF, 6307SF, 6309SF, 6345SF, 6351SF, 6605SF, 6615SF, 6659SF, 6661SF, 6673SF, 6679SF, 7817SF, 7975SF, 8019SF, 8083SF, 8253SF, 8273SF, 8299SF, 8459SF, 8565SF, 8739SF, 8817SF, 8897SF.

Italic numbers are of cars with right-hand drive.

Right: Neat wing vents and Pininfarina logo on the 500 Superfast.

Below: The flowing lines of the powerful 500 Superfast.

Opposite below: White 500 Superfast seen at Mas du Clos.



1956 V-12/Sports racing

290MM

3490 cc, 73×69.5 mm, 320 bhp at 7300 rpm, CR 9.9:1, single ohc per bank, 2 plugs per cylinder, coil ignition with 4 distributors, 3×40 DCF Webers, 4-speed gearbox integral with rear axle.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* de Dion, transleaf springs. *Wheelbase:* 2400 mm. *Track:* Front 1310 mm Rear 1286 mm.

In 1956 after the somewhat lack-lustre performance of his in-line 6-cylinder-engined cars, Ferrari returned to V-12-engined cars for competition. To give a bit of variety where necessary, he retained the services of the 4 in-line Monza in its 3.5-litre Type 860 form.

The departure of Lampredi from the Ferrari scene in 1955 along with the earlier – 1951 – departure of Colombo marked in a sense the end of a beginning. The achievements of both men became inextricably linked with their names. From 1955 on, although individuals continued to be mentioned, much more emphasis was to be laid on the design team approach to things.

When the Lancia racing department was transferred



Above: 3.5-litre V-12 290MM.

to Ferrari in 1955, the services of Vittorio Jano in a consultant capacity became available. Jano, who had joined Fiat at an early age, had been persuaded by Ferrari in 1923 to leave Fiat and join Alfa Romeo as head of its Racing Division. His stay with Alfa Romeo lasted until 1937 and undoubtedly during that time he became closely acquainted with Ferrari. When he 'came back' to Ferrari in 1955, his work was with the engine design team of Andrea Frascchetti and Vittorio Bellantani. For chassis design Ferrari brought in Alberto Massimino.

To power the first of the new V-12-engined cars, the



1904, Frascchetti and Lampredi produced the Type 1300 engine. It was at that point a single-overhead-camshaft-per-bank unit combining features reckoned to be the best of the previous Colombo and Lampredi designs. The cylinder liners were screwed into the head and the valve gear was operated by roller rocker followers and hairpin springs. The big-ends on the con-rods were split at an angle in the manner of Colombo. The greatest improvement over the previous V-12s was an increase in the intake valve throat diameter from 29.1 to 35 mm and from 26 mm to 29 mm for the exhaust valves. Lubrication was by dry sump.

The chassis details are as noted above. The spyder-type bodies built by Scaglietti closely resembled those of the 860 Monza but the Monza bodies had 2 parallel blisters on the engine cover whereas the 290MMs had either a large air scoop or a much larger blister feature.

Two of the cars appeared in the Tour of Sicily for Castellotti and Musso but neither finished. Two entered for the Mille Miglia and, driven by Castellotti and Fangio, finished first and fourth respectively. For the Nurburgring 1000 Km driver pairings for the 290MMs were Phil Hill/Ken Wharton and Musso/Trintignant. The car of Musso/Trintignant, failing to take the south bend on the fourth time round, landed upside down giving its driver, Musso, a broken arm in the process. The other was handed over to Gendebien/de Portago after their 860 Monza had been disqualified. For the final event of the 1956 Sports Car Championship held in Sweden, 3 290MMs were entered. The Trintignant/Hill car won with that of von Trips/Collins second.

It had been a good season for the new car. Backed up by the efforts of the 860 Monza, it had given Ferrari another championship win.

Chassis numbers: 0606MM, 0616MM, 0626MM, 0628MM, 0666MM.

1957 V-12/Sports racing

290 Sport

3400 cc, 73×69.5 mm, 330 bhp at 8000 rpm, CR 9.0:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 2 distributors, 3 Solex C40 PII or 6×42 DCN Webers, 4-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* de Dion, transleaf springs. *Wheelbase:* 2350 mm. *Track:* Front 1310 mm Rear 1286 mm.

Whilst Ferrari had won the 1956 Sports Car Championship, they had received what one writer called a 'prod from the trident' in the shape of Maserati finishing the series only 6 points behind. For practice in Sweden, Maserati had produced the 4.5-litre Type 450S. It was very fast, very noisy and more than a handful to control. The impression it left was a lasting one and Ferrari

started looking for more power to cope with the prods that might come in 1957 should Maserati get their latest device under control.

To counter the threat, Ferrari's engineers stayed for the time being with the bore and stroke dimensions of the 130S engine but developed twin-overhead-camshafts-per-bank heads which brought a change in designation to Type 136. For its debut into competition the revised engine was placed in what were most likely 290MM chassis, the resulting cars being designated 290 Sport. The body design had been revised to fall into line with the changed Appendix C regulations to feature the full-width screen which they demanded and were generally lower in appearance and rather more pointed front and rear.

The 1957 season began with the Buenos Aires 1000 Km Race, for which 2 of the new 290 Sports were entered. Driven by Castellotti/Musso and Hawthorn/Collins, they both retired, the former with ignition trouble and the latter with no oil pressure after only 3 laps.

This was the first and only race for the 290 Sport model.

Chassis number: Not known.

For additional material on this model, the 315 Sport and 335 Sport refer to 'The First Ferrari Four-Camshaft Sports Cars' by Michael Lynch in *The Prancing Horse*, No. 51; 'The Grand Sports' in *Cavallino*, No. 18.

1957 V-12/Sports racing

315 Sport

3783 cc, 76×69.5 mm, 360 bhp at 7200 rpm, CR 9.0:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 2 distributors, 6×42 DCN Webers or 3 Solex C40 PII. All other detail as per 290 Sport.

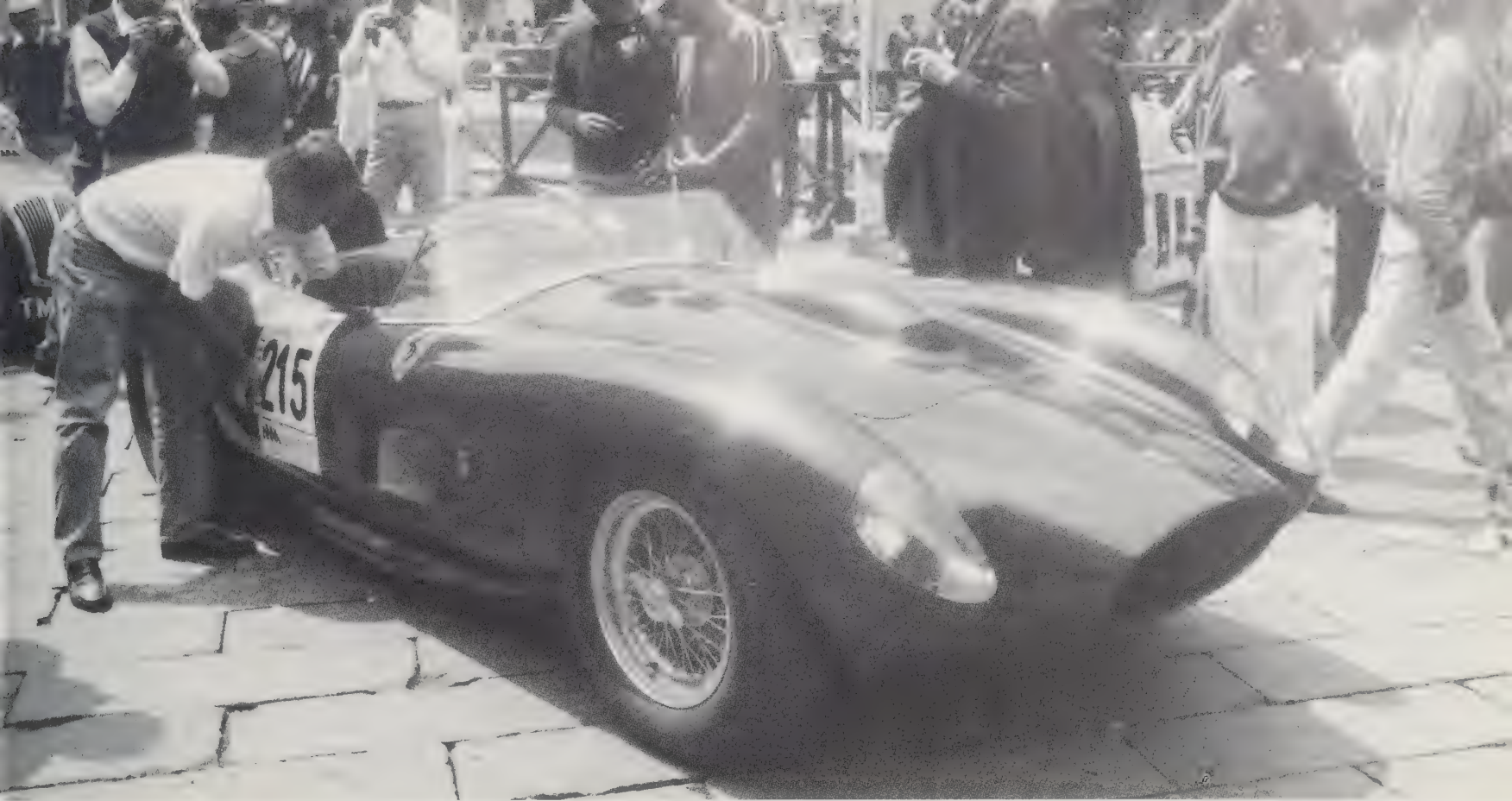
By Sebring the engines, having been bored out to 76 mm, had increased in capacity to 3.7 litres. Designated Type 140, the cars into which they were installed became the Type 315 Sport. Two were at Sebring for Collins/Trintignant and de Portago/Musso. Collins led the race for the first hour but when the car came under pressure from Behra's 450S Maserati, its brakes and tyres gave trouble and it could do no better than to finish sixth just ahead of the de Portago/Musso example. Two were entered for the Mille Miglia where that driven by Taruffi won and the other in the hands of von Trips came second. One was entered for Hawthorn/Trintignant in the Nurburgring 1000 Km and finished third overall. The next, and last, major international event for the 315S was at Le Mans where the Lewis Evans/Severi car finished fifth overall.

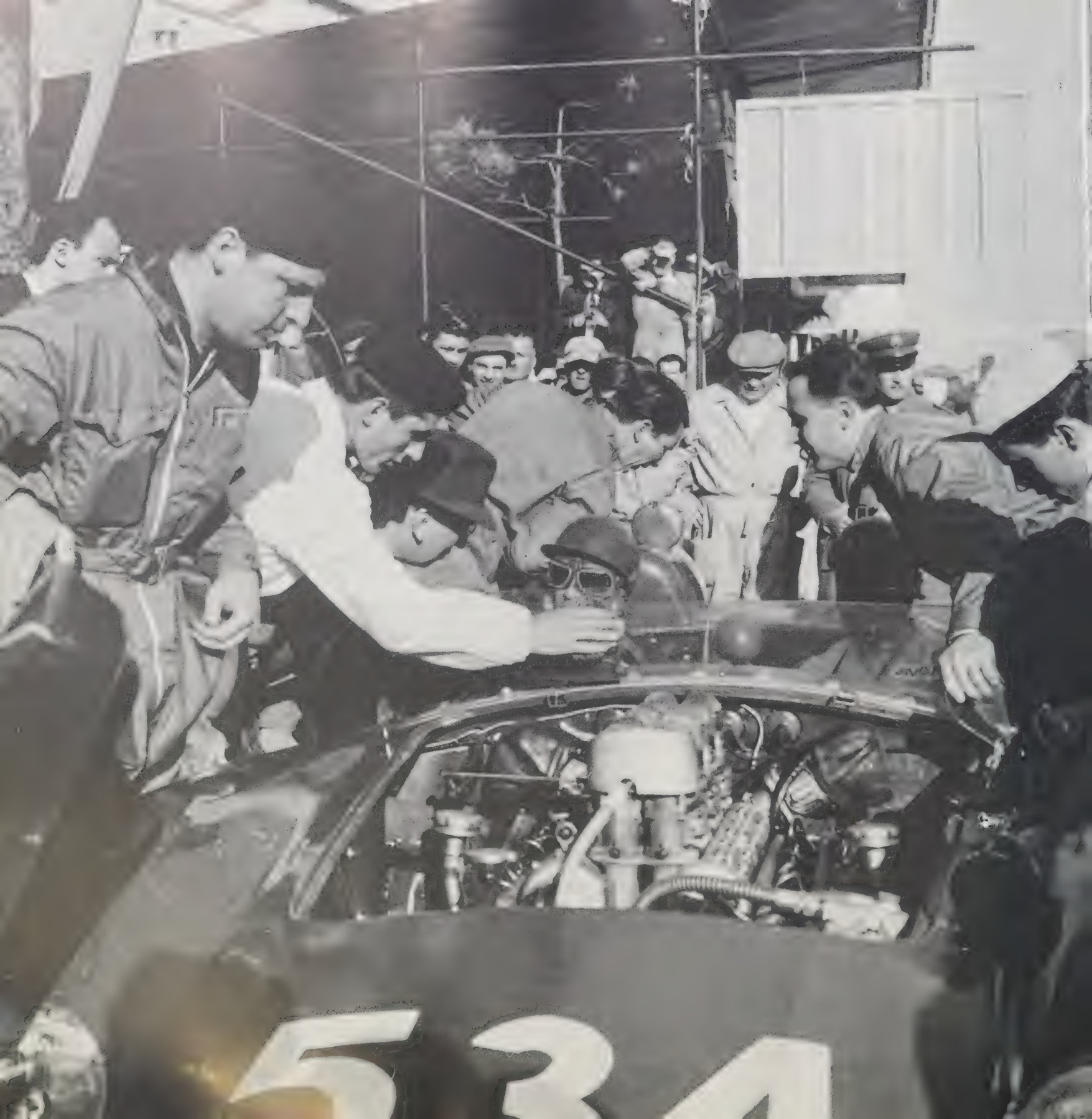
Chassis numbers: 0656, 0684.

Opposite above: 315S at a Mille Miglia anniversary run in 1984.

Below: 315S seen at the 1957 Mille Miglia.

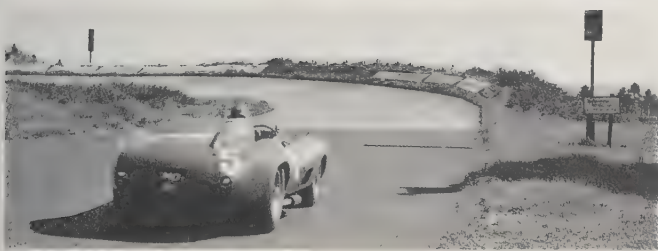








Above: 335S competing in America.



Left: Peter Collins driving a 335S at the Nurburgring 1000 Km Race in 1957.

Opposite: Peter Collins and Louis Klemantaski (335S) receive works attention during the 1957 Mille Miglia.

1957 V-12/Sports racing

335 Sport

4023 cc, 77×72 mm, 390 bhp at 7800 rpm, CR 9.2:1, 6×42 DCN Webers. All other detail as 290 Sport.

The final increase in capacity for the 4-camshaft cars was to 4023 cc, the bore and stroke dimensions of the Type 141 engine being 77×72 mm. Two were entered for the Mille Miglia and that of Collins/Klementaski led most of the way but, when it was only some 80 miles from the finish, the transmission gave out.

The other 335S for de Portago and Nelson was running third when not far from the finish it left the road in an accident which killed a number of spectators along with the driver and co-driver. Following that occurrence, the Mille Miglia was banned. For the rest of the season 335s were placed second overall (Collins/Gendebien at the Nurburgring); second and fourth overall in Sweden (Hawthorn/Musso, Collins/Hill respectively) and third overall at Spa (Gendebien). Earlier in the season both 335Ss entered for Le Mans retired.

Chassis numbers: 0674, 0676, 0700.

1958 V-12/Sports racing

312S (312LM)

2953 cc, 73×58.8 mm, 320 bhp at 8200 rpm, CR 9.5:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 6×38 DCN Webers, 4-speed gearbox integral with final drive.

Wheelbase: 2350 mm. Track: Front 1310 mm Rear 1300 mm.

The exact details of this car are still something of a mystery beyond that it was experimental and used by the factory for one race only – the Grand Prix of Spa, held on 18 May 1958. It is sometimes referred to as the '312LM' and occasionally as the 'Super Testa Rossa'.

The engine used seems to have been a de-stroked version of the 4-cam V-12 that powered the 290 Sport and to have employed a fairly radical cam profile as it has been reported that at Spa, whilst it would rev up to 9500 rpm, there was very little power available below 6000 rpm. Whether the engine was part of the development programme leading to or associated with the 250 Testa Rossa series remains a moot point.

The chassis was unique in that it had a new 4-speed transaxle with transverse shafts mounted to the left of the final drive. The clutch and starter motor were located at the rear of a small-diameter propeller shaft. The clutch was hydraulically operated and the starter was engaged by a direct push-down lever.

The body was not unlike the all-enveloping type given to the 250 Testa Rossa at the Targa Florio of 1958. At Spa it was driven by Gendebien but did not finish the race, having to retire with a gearbox problem.

Chassis number: 0744.



E LININGS
AND
HEAD

1957-62 V-12/Sports racing

250 Testa Rossa

2953 cc, 73×58.8 mm, 300 bhp at 7200 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, coil ignition, 6×38 DCN Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2350 mm. *Track:* Front 1308 mm Rear 1300 mm. The name 'Testa Rossa' (literally 'Red Head') came about from the distinctive finish applied to the cam covers.

The year 1957 saw the end of an era during which sports racing cars had become, in the eyes of many, powerful and potentially dangerous pieces of machinery far removed from anything acceptable for normal road use. Also the withdrawal of Mercedes Benz from the World Sports Car Championship at the end of the 1955 season meant that only Ferrari and Maserati were likely to contest the whole series. Jaguar, Aston Martin and Porsche would probably join in, but the English constructors were selective as to which races they entered and Porsche needed to become more competitive away from the tighter circuits.

Accordingly the CSI began to consider a displacement limit for 1956 – 3.0 to 3.5 litres was under discussion – in the hope of lowering speeds and attracting more manufacturers into racing.

Ferrari, either from foresight or having a strong voice at court, became interested in the 3-litre solution. Apart from works participation in future racing there was also to be considered his competition customer sales, particularly in the United States where there was a boom in sports car racing. The Sports Car Club of America (SCCA) operated along displacement lines with 'modifieds', i.e. anything other than production road cars, being grouped in a number of different classes. But races for the 'modifieds', which included at the time the 500 Testa Rossa and 750 Monza, were often split into two events, one for under-1500 cc cars, the other for those over 1500 cc. The 2-litre 500TRs often won their class in the 1500 cc-plus event but were rarely in line for an outright win. Since the SCCA tended to follow international rules, a 3-litre limit might mean that in America the 2000-3000 cc class could become prestigious. If that happened there was the prospect of considerable sales as the owners of 2-litre cars sought to upgrade them and owners of the now somewhat ageing 750 Monzas replaced them in order to stay competitive.

From the options open to him Ferrari decided to find out how much power could be reliably extracted from the type of engine then in use with the 250 series berlinettas. This was done through a lightweight berlinetta, 0677, entered for the Circuit of Sicily early in April, which it won, and the Mille Miglia where it finished third overall. Entered also for the Nurburgring 1000 Km, it was damaged in practice and did not take part. Ferrari was not unduly worried; his development work was about to be continued through the first



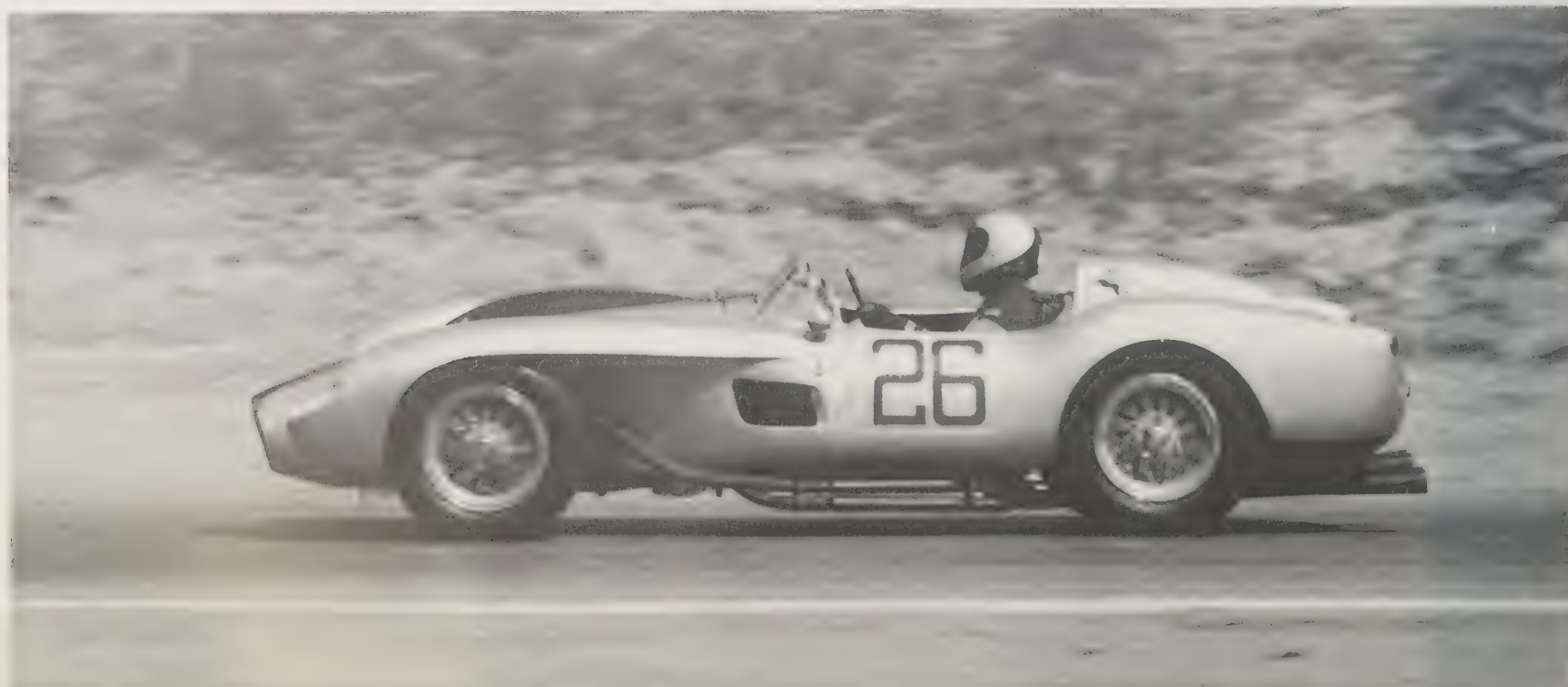
Left: Fully restored 250 Testa Rossa of 1959-60.

Opposite: 1958 250 Testa Rossa which originally had the pontoon-fendered body of a standard customer car.



Right: Sparse cockpit of the 250 Testa Rossa.

Below: Pontoon-fendered 1957 250TR for customer use (chassis number 0718).



prototype for his projected 3-litre sports car made up from a right-hand-drive 290MM chassis 0666, into which was fitted a 250GT engine/transmission package similar to that used in the special berlinetta.

It is said to have been entered by Temple Buell, an American privateer, perhaps to steer eyes away from it. Since all the works drivers took turns at the wheel, it must have occasioned more than a sidelong glance. In the race it was driven by Masten Gregory and Carlo Maroli – the latter a last-minute substitute – but could finish no better than tenth overall.

At Le Mans a second prototype, 0704, based on a lengthened 500TR chassis, appeared. The distinctive bodywork by Scaglietti with its long sloping nose separated from the cut-away front wheel arches soon became referred to as 'pontoon-fendered'.

Following further development, Ferrari was in a position to introduce his new car – the 250 Testa Rossa – at a press conference held on 22 November. He said that there would be 2 versions, 1 for the works team and another for his customers. The engine – 300 bhp at 7200 rpm – and 4-speed gearbox would be the same for both versions along with the 92.5 in. wheelbase chassis and coil-spring front suspension. At the rear the works cars would have either a de Dion/transverse leaf spring arrangement or a live rear axle – customer cars would have only the latter. Customer cars would all be built with left-hand drive. Those of the works might be right- or left-hand drive.

The car shown at the press conference, chassis 0710, was the first of the customer cars. The total production of the 'customer' version 250TR ran to 19 examples chassis numbered as follows: 0710, 0714, 0716, 0718, 0720, 0722, 0724, 0730, 0732, 0734, 0736, 0738, 0742, 0748, 0750, 0752, 0754, 0756, 0758. The final chassis was completed in July 1958.

The works cars which can conveniently be referred to as TR58, TR59, TR59/60, TRI60 and TR61 were as follows:

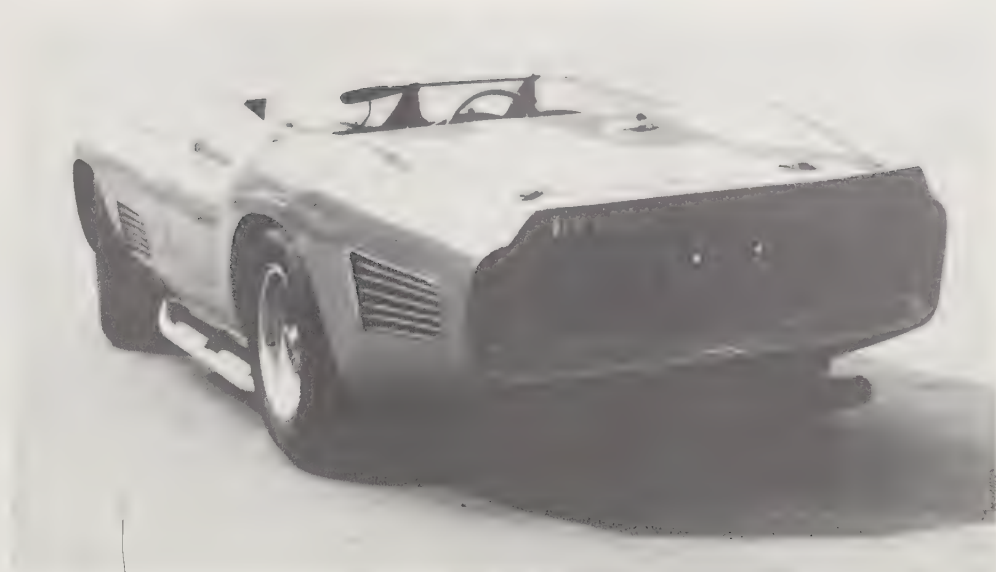
TR58

In definitive form this car was left-hand drive, had de Dion rear suspension, a 4-speed transaxle and the envelope-type body first seen on the Musso and Gendebien car in the Targa Florio. Chassis used by the works that year were the prototypes 0666TR and 0704TR.

The former kept the pontoon-fender-type body. The latter converted to TR58 specification but retained right-hand drive. To these were added 0726TR and 0728TR. Both started with pontoon-fender bodies but converted later to the envelope style. Also used, for one race, was 0746TR, a Dino chassis re-engined with a V-12 3-litre engine.

TR59

In developed form the TR59 was right-hand drive (subsequently used by all works cars) with engines



moved over towards the left to accept a new 5-speed gearbox integral with the engine. It had de Dion rear suspension and a body built by Fantuzzi to a Pinin Farina design. Chassis numbers: 0766TR, 0768TR, 0770TR, 0772TR and 0774TR.

Above: 250TR/61 (chassis number 0792TR).

TR59/60

The TR59/60 was an interim model made up using 1959 works cars 0770TR, 0772TR and 0774TR. The wheelbase was shortened to 2280 mm and there was de Dion rear suspension with experimental use of a 4- and 5-speed gearbox integral with the rear axle. The body was by Fantuzzi. The car was basically as the 1959 version but shorter, lower and fitted with high full-width windshields.

TRI60

This full-independent-suspension model was introduced at Le Mans on test day, 9 April 1960. The wheelbase was further shortened to 2250 mm. There was a revised 5-speed gearbox integral with the engine; IFS and IRS by double wishbones and coil-springs. Chassis numbers: 0780 and 0782.

TR61

The TR61 had a space-frame-type, all-independent-suspension chassis with a wheelbase increased to 2324 mm. The 5-speed gearbox was integral with the engine. The body style featured the twin-nostril-type nose devised by Chiti. The rear was very high behind the cockpit, sloping down to a full-width spoiler. Development work was carried out with the 0782TR. Two additional chassis were built: 0792TR and 0794TR.

For a detailed technical, competition and owner history of these cars reference should be made to: *Ferrari Testa Rossa V-12* by Joel Finn (Newport Press, 1979, in USA and Osprey Publishing Ltd, 1980, in UK).

1962 V-12/Sports racing

330TR/LM

3967 cc, 77×71 mm, 360 bhp at 7800 rpm, CR 8.5:1, single ohc per bank, single plug per cylinder, coil ignition, 6×42 DCN Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* independent double wishbones, coil springs. *Wheelbase:* 2420 mm. *Track:* Front 1354 mm Rear 1350 mm.

The CSI decision that the 1962 World Sports Car Championship, or to be technically correct the 'Championship of Makes', would be restricted to GT cars met with some criticism. In particular the organizers of Le Mans, Sebring and the Nurburgring 1000 Km doubted very much whether GT cars would attract the public in large numbers. From discussions that followed a Sports Car Cup was instituted. It would take place over 7 events and be restricted to up to 3-litre 'prototypes'. The rules would be generally as for the 1961 sports cars. The 'prototypes' could enter in some events alongside the GT cars but only the latter could take championship points. In addition the Automobile Club de l'Ouest responsible for promoting Le Mans led the way in establishing a new award, the Challenge Mondial de Vitesse et d'Endurance, or Organizers' Cup. It would embrace Sebring, the Nurburgring 1000 Km and Le Mans. The regulations for the competing cars would be the same as those for the Sports Car Cup except that the

capacity limit was increased to 4 litres and the cars were classified as experimental. Overall it was rather confusing, but there was plenty of room for manoeuvre and little chance that the spectacle would diminish.

Ferrari decided that he would build a car for entry into the 'experimental' category, although as it turned out it was not so much experimental as an assembly of tried and trusted components. It had a front-mounted engine – the last sports racing Ferrari to do so – and the chassis used, 0780, was from a TR61 with double wishbone-type suspension front and rear. The rear brakes were mounted inboard. The engine was a 'tuned' version of that used in the 400 Superamerica cars and, as it was some 4 ins. longer than the regular 250 engine, the chassis had to be lengthened to accept it. The standard 5-speed rear-mounted Testa Rossa transmission was retained, albeit with some strengthening of the internals to cope with the extra power. The body was similar to that of the TR61 model but a horizontal stabilizer was added just behind the cockpit. Its chassis number was 0808.

The car was raced by the factory only at Le Mans where, driven by Phil Hill and Olivier Gendebien, it won. After that it was sold to Luigi Chinetti in America to be driven in the main by the Rodriguez brothers. Its last race was at the 1963 Le Mans where it did not finish. It went back to the factory and was rebodied as a coupé before being returned to the USA. Since then it has been restored to its 1962 form by Pierre Bardinon.

For further details, competition history and assembly sheets, reference should be made to: *Ferrari Testa Rossa V-12* by Joel Finn (Newport Press, 1979, in USA and Osprey Publishing Ltd, 1980, in UK).

Opposite: 330TR/LM at Le Mans, 1962, driven by Phil Hill and Olivier Gendebien into first place.

Below: 1962 330TR/LM with owner Pierre Bardinon at the wheel.



ITAL TO

MARCHAL



1956-9 V-12/Competition GT

250GT Berlinetta Tour de France

2953 cc, 73×58.8 mm, 230-280 bhp at 7000 rpm, CR 8.8-9.5:1, single ohc per bank, single plug per cylinder, 3×36 DCL3 or 36 DCX3 Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1349 mm.

Whatever the semantics of the coachbuilder's vocabulary might suggest as proper usage, Ferrari was quick to arrive at a workable distinction between coupés and berlinettas. A coupé was to be a luxuriously appointed 2-passenger closed car for general road use. Berlinettas were also for 2 passengers and closed but designed to represent the marque in GT races. In some earlier instances they became little more than sports cars with a roof added. The accent was on lightness. Plastic might replace glass; bodies were more often than not aluminium and interiors were short on creature comforts. Such distinctions, though, were not always

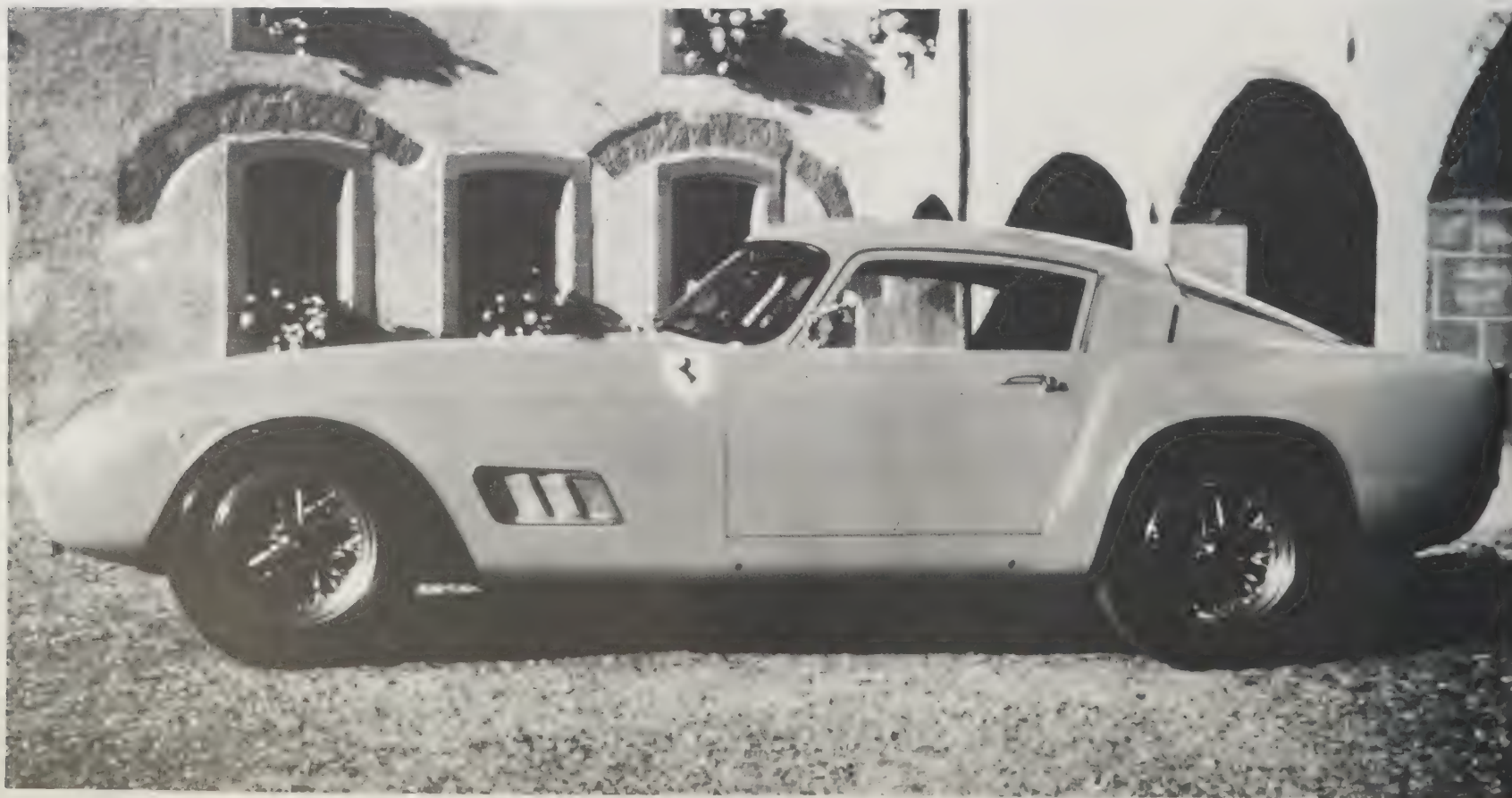
strictly observed or easy to discern. Also in the decades following the sixties, the demise of GT racing as it was then known and the fact that all Ferraris – with the obvious exception of the GP cars – are intended solely for normal road touring, has eliminated the need for any distinction. 'Berlinetta' is now simply used to distinguish a closed car from an open spyder or cabriolet model.

Within the 250GT series of cars, so called 'long-wheelbase berlinettas' had been available from 1954 on. They were a handful in number and not until de Portago's win in the 1956 Tour de France in 0557GT was it possible for subsequent production to be named in honour of that event. Although officially Ferrari never did so, it has become the custom to refer to the 1957, 1958 and 1959 long-wheelbase berlinettas as 'Tour de France'. Their successes were numerous and made it clear that Ferrari was the car to beat in GT racing. That category had been brought to the forefront following the disastrous accident at Le Mans in 1955 which was cited by many as convincing evidence that the sports cars of the period were getting out of hand and that it was time to go back to a breed of cars rather more dual-purpose in nature.

Without becoming involved in a detailed study of the development of the engines used for the 250GT series of berlinettas, it is possible to say that most of the Tour de

Opposite: Long-wheelbase 250GT Tour de France. Body by Scaglietti.

Below: 1958 250GT Tour de France (chassis number 0907GT).





1956 cars were powered by one or other version of the Type 128 engine introduced early in 1956 commencing apparently with the engine in 0503GT. Prior to that the 250 Berlinettas had used the Type 112 engine which was virtually identical to that of the 250MM series of cars, a noticeable feature of which had been its 12-port induction, but this was abandoned in favour of a 6-port system when the Type 128 came along. The 128 had a new block, new and shorter sump, new cylinder liners, new crankshaft, new timing chain casing and new cylinder heads with larger valves. As experience was gained, various modifications were made and the engine advanced in type through 128B, 128C, 128D, 128DF and 128F versions. As far as the Tour de France cars are concerned, most were equipped with the 128 through to 128D versions.

The chassis used was the Type 508. But not a lot can be said about it beyond that it comprised 2 strong oval section steel tubes as its main members that were braced and linked by a number of smaller tubular members. Like the engines it went through a number of minor revisions marked by changes in designation, i.e. 508B, 508C, 508D, 508G.

Including their immediate 1956 predecessors, and in terms of an easily recognizable feature, i.e. the numbers of louvres or outlets in the sail panels behind the doors, 4 versions can be distinguished: 1956 – no louvres; 1957, first version – 14 louvres decreasing in height towards the rear of the car; 1957, second version – 3 outlets; 1958 – single outlet. The 1959 cars had a single outlet but with a revised open headlight front.

Care should be taken in attempting to identify surviving cars today. Many changes have been wrought during the passing of the years. Also, at the time the cars were active in competition, body features were sometimes modified when cars were repaired after being involved in accidents and at other times modified to meet customer requirements for the latest features.

Leaving out the pre-1956 cars, a total of 77 were built in the chassis number range 0503GT out to 1401GT.

Chassis number ranges

1956 cars: 10 cars were built in the chassis number range 0503GT to 0537GT. Two of them, 0515GT and 0537GT, had bodies designed and built by Zagato. They were recognizable by the distinctive 'double-bubble' roof line. For the rest, the bodies were designed by Pinin Farina and built by Scaglietti.

1957 first version: 12 cars were built in the chassis number range 0585GT to 0707GT. Two, 0665GT and 0689GT, were by Zagato but only the former had the double-bubble roof feature.

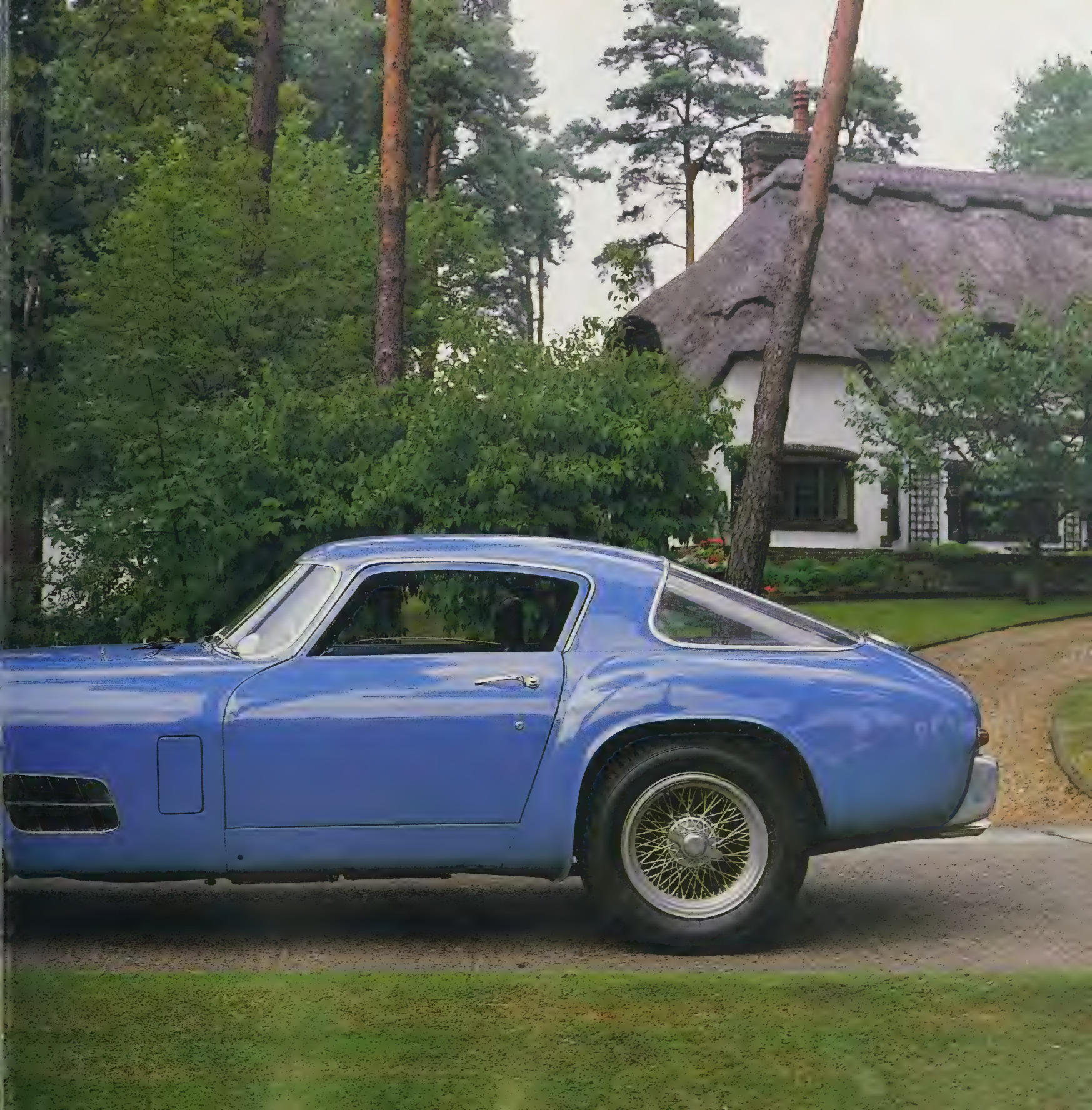
1957 second version: 14 cars were built in the chassis number range 0723GT to 0805GT.

1958: 30 cars were built in the chassis number range 0879GT to 1161GT.

1959: 11 cars were built in the chassis number range 1309GT to 1401GT.

Right: 1956 long-wheelbase 250GT. Note the absence of louvres on the sail panel.





1959 V-12/Competition 250GT

250GT Berlinetta – Interim version

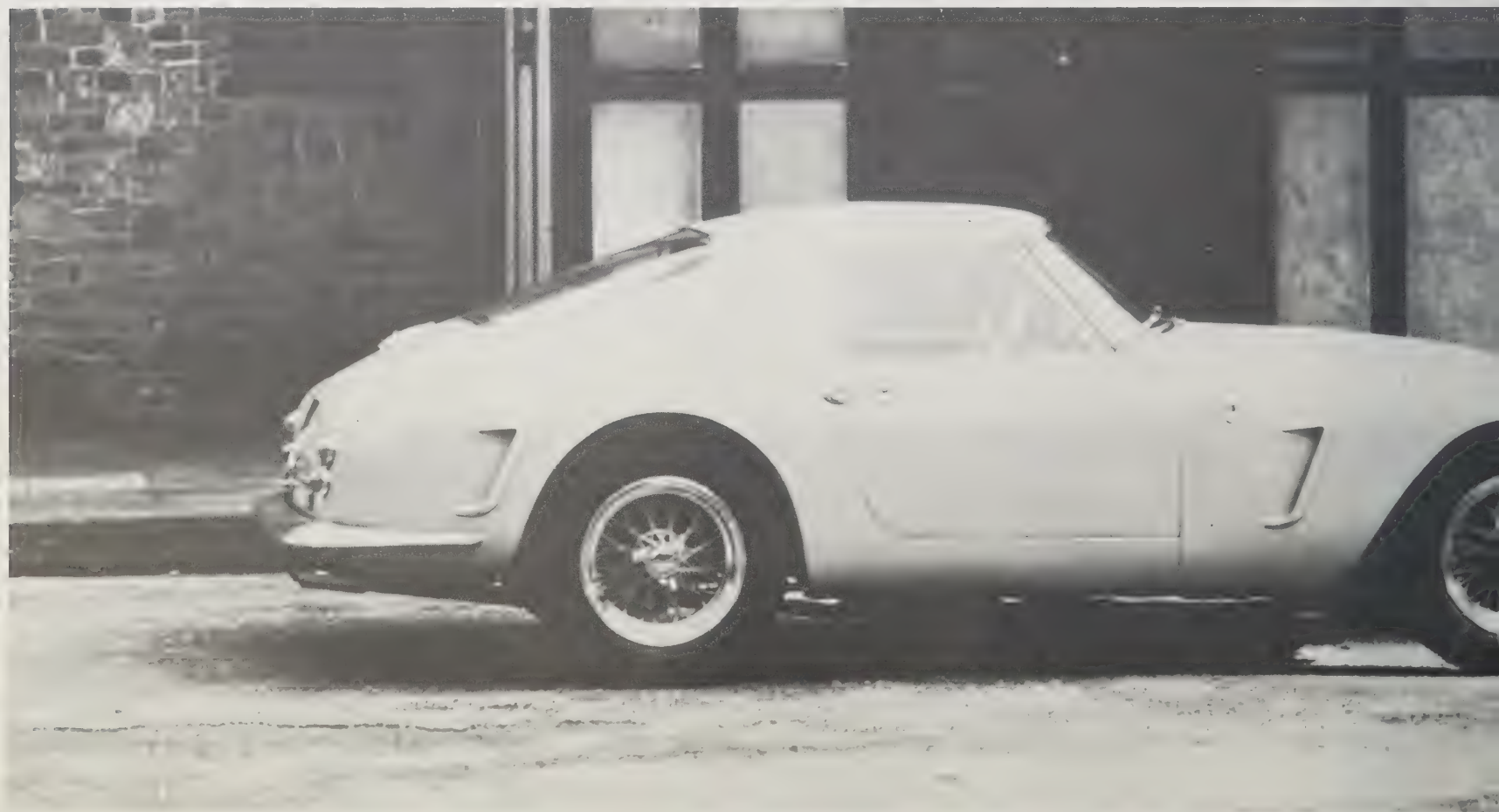
Details generally as for 250GT Tour de France berlinetta.

There were 7 of these. They were built right at the end of the production of the Tour de France berlinetta and were still on the long-wheelbase chassis of that model. Where they differed was in the body style which, small details excepted, was identical with that of the new short-wheelbase series of berlinettas that would be taking over from the earlier cars in 1960.

Two of them were entered for Le Mans in 1959, one a Pinin Farina-built car, the other from Scaglietti. It seemed that Ferrari wanted to test the new shape at high speed and there was no better place than Le Mans for that sort of trial.

An identification point is the fixed quarter light at the rear of the cockpit on each side.

Chassis numbers: 1377, 1461, 1465, 1509, 1519, 1521, 1523.



1959-62 V-12/Competition GT/GT

250GT Berlinetta – Short-Wheelbase Version

2953 cc, 73×58.8 mm, 220-240 bhp at 7000 rpm (road version), 260-280 bhp at 7000, CR 9.2:1–9.7:1 (comp.), single ohc per bank, single plug per cylinder, 3×40 DCL6 or 36 DCL3 Webers (road version), 3×40 DCL6 or 46 DCL3 Webers (comp.), 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle semi-elliptic springs. *Wheelbase:* 2400 mm. *Track:* Front 1354 mm Rear 1349 mm.

Following upon the 'interim' berlinettas the new short-wheelbase – 2400 mm – berlinettas were introduced at the Paris Salon in the autumn of 1959. They were a direct development from the previous Tour de France model and aimed at retaining Ferrari supremacy in GT racing, though still capable of being used for normal touring purposes. To enhance the 'dual purpose' aspect Ferrari took into account the expressed wish of some of his customers that a 'street' version be produced. As such, the cars had steel bodies, rather more luxurious interiors,

milder-tune engines and softer suspension. Because of its relative luxury this version has sometimes been described as a 'Lusso' version but care should then be taken not to confuse it with the more generally recognized Berlinetta Lusso introduced at the Paris Salon in 1962 when the short-wheelbase (swb) berlinettas were coming to the end of their career.

Like those of the previous Tour de France cars, the bodies for the swbs were designed by Pinin Farina and built by Scaglietti.

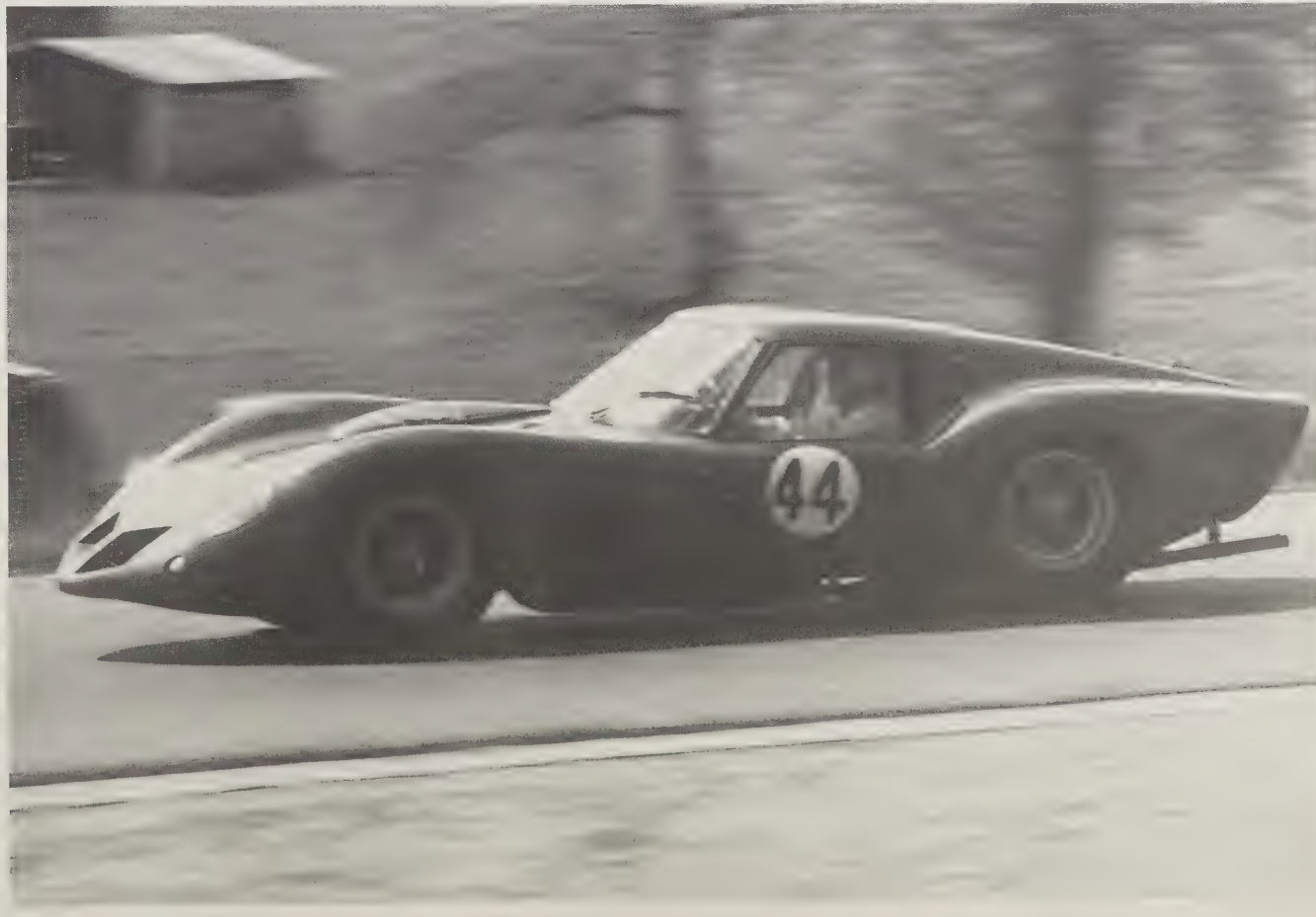
The Type 539 chassis was much the same in material and general construction as the Type 508 used for the Tour de France cars. Its most obvious difference was the shorter wheelbase dimension of 2400 mm against the 2600 mm of the previous model. Some additional tubing was built into the superstructures. Dunlop disc brakes were standard.

The engines – basically Type 168 – were a development from the Type 128 engines that in one form or another had been used with the previous Tour de France cars. During the production life of the short-wheelbase berlinettas progressively more power was extracted from the engines in order to meet the demands of competition. Compression ratios ranged from 9.2:1 up to 9.7:1 and power rose from 240 bhp up

Opposite above: 250GT interim berlinetta.

Below left: 250GT short wheelbase.

Below right: 250GT Drogo-bodied berlinetta in the Spa 500 Km (May 1963).





Left: Chiti-style nose on a 250GT swb (chassis number 2231GT).

Right: Ex-Rob Walker 250GT swb. One of the few Ferraris driven by Stirling Moss.

Below: Bird's-eye view of a 250GT swb.





Above: Another special-bodied 250GT swb (chassis number 2819). Nicknamed 'the Breadvan' for obvious reasons, its body was designed by Bizarrini.

to 295 bhp. Three Weber carburettors were used throughout, varying from 36 DCL3s and 40 DCL6s for the early street and competition cars and 46 DCL3 and 46 DCL3 units for the later competition cars. Generally it would be reasonable to expect that the road-going cars would have something like 220/240 bhp on tap and that the competition versions would for the most part have up to 280 bhp.

If one accepts that the aim of GT racing as then practised was that manufacturers should produce cars that were basically road-going but could, in the hands of a good driver, be put successfully into competition without extensive or costly modification, the short-wheelbase berlinettas were amongst the best ever designed for that role. Within the 250GT series of cars, the Tour de France berlinettas and their immediate predecessors were decidedly competition-orientated. The 250GTO which came after the short-wheelbase model was also aimed primarily at competition. Between these 2 designs the short-wheelbase berlinettas offered a build of car that, whilst superb in competition, could still be driven with pleasure at a rather more leisurely gait on

the road. It was the last of its kind. From then on the pace of competition design meant that only the purpose-designed car stood any chance of winning races.

The details of production have tended to vary as gaps in the history of the type have been filled in and previous details corrected. As things stand at present the production record runs at:

1959: 2 made, both competition cars. Chassis numbers: 1539GT and 1613GT.

1960: 60 made: 45 competition cars, 15 road cars. Chassis number range: 1741GT to 2389GT.

1961: 66 made: 25 competition cars, 41 road cars. Chassis number range: 2399GT to 3331GT.

1962: 35 made: 2 competition cars, 33 road cars. Chassis number range: 3337GT to 4065GT.

For a fully detailed technical, competition and owner history of these cars reference should be made to: *The Ferrari Legend - 250GT Competition* by Jess G. Pourret (John W. Barnes Jr Publishing Inc., 1977). For additional detail in this book see under '250GT Berlinetta - Tour de France'.



1958-63 V-12/GT

250GT California Spyder

2953 cc, 73×58.8 mm, 240 bhp (lwb), 280 bhp (swb) at 7000 rpm, CR 9.0:1 (lwb), 9.5:1 (swb), single ohc per bank, single plug per cylinder, coil ignition, 3×36 DCL3 or 40 DCL6 Webers (lwb), 40 DCL6 or 42 DCL3 Webers (swb), 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm (lwb), 2400 mm (swb). *Track:* Front 1354 mm (lwb and early swb), 1378 mm (late swb) Rear 1349 mm (lwb and early swb), 1378 mm (late swb).

If the exact origins of the 250GT California spyder are still a little doubtful, its purpose is not. It was intended to provide an open car more sporting both in looks and performance than the 250GT cabriolets – it would have more in common with the competition-orientated berlinettas than the road-going coupés.

The demand for such a Ferrari seems to have surfaced

in the USA where, it has been suggested, the company's principal importer at the time, Luigi Chinetti, put forward the idea. It has also been attributed to West Coast Ferrari dealer John von Neuman. Whatever the truth of the matter, the first prototype – 0769GT – was completed in December 1957. With its Type 128C engine installed in a Type 508C chassis, it was virtually identical in mechanical specification to the long-wheelbase Tour de France berlinettas then being built.

Some 7 months after the appearance of that prototype the first production long-wheelbase (2600 mm) California spyder – 0919GT – was completed. Following it, a further 6 were built to complete the initial batch and establish the type. Five more had been built before Ferrari officially released information about the new car at his press conference held on 9 December.

During the 14 months that followed that announcement, production continued until finally around 46 of the long-wheelbase version had been built. The last – 1715GT – was completed in February 1960.

During the year and a half or so that they were in production, the Type 128D and 128F engine variations

Above: 250 California spyder, long-wheelbase version (chassis number 0921).

had been introduced – the 128F brought the spark plugs on to the outside of the 'V'; adopted a 12-intake port head in place of the previous 6-port arrangement and used double coil springs in the operation of the valves instead of the previous hairpin-type springs. Some were fitted with the rather more powerful Type 168 engine.

With the introduction of the short-wheelbase – 2400 mm – berlinettas at Paris in the autumn of 1959 it was obvious that if the California spyder continued in production it would soon be based on that model.

The first short-wheelbase California – 1795GT – was completed on 5 May 1960. Unlike the remainder, which had Type 168 engines, it may have had a 128F unit. The chassis, Type 539, was the same as for the short-wheelbase berlinettas.

Production of the short-wheelbase version continued through until February 1963 when car number 4137GT, the last of the approximately 50 made, was completed.

There has always been a problem in identifying the California spyders from the 250 cabriolets. Without going into the matter at great length it is possible to give a few clues that can help. Covered headlights do not make a California nor do side vents in the front wings and, although the cabriolets were built by Pinin Farina and the spyders by Scaglietti, the absence of a Pinin Farina emblem is not conclusive.

At the front end the grille opening on the California was more rounded; the top was curved and the ends were more smoothly rounded. The cabriolet grille was more in the nature of a rectangle with rounded corners. The California hood was much shorter – its leading edge was further up the nose of the car. The windshield on the California was more steeply raked and had a more uniform curvature.

It seems almost certain that Californias did not have quarter light windows.

In overall profile the California was a much lower car and this, together with the rake of the windshield, gives the soft top on the California a rather distinctive appearance when erected. From the top of the windshield it has to angle up to give sufficient headroom.

Whilst on the early production of both models there were considerable differences at the rear, these became rather more subtle with later production. Both cars had a step or shelf in the body below the lower edge of the boot lid. But because of the different body heights, that on the California goes almost straight across from the bottom of the tail lights. On the cabriolet it drops down before going across. With the relative shallowness of the California boot lid, the licence plate ended up by being mounted on the step below the lid and the lights illuminating it on the bumper bar. On the California the boot lock and handle are on the boot lid instead of below it as on the cabriolet.

With regard to instrumentation, whilst it is not an infallible guide, on the California the speedometer and rev counter were directly in front of the driver, each



with its own hood. The rest of the instruments were spread in a single row across the dash. On the cabriolet they were all grouped under a single hood in front of the driver.

Chassis numbers

Long-wheelbase version: 0769, 0919, 0923, 0927, 0929, 0935, 0937, 0939, 0965, 1011, 1055, 1057, 1073, 1077, 1085, 1203, 1215, 1217, 1235, 1283, 1307, 1379, 1411, 1413, 1425, 1431, 1451, 1459, 1487, 1489, 1497, 1501, 1505, 1525, 1527, 1575, 1603, 1615, 1627, 1639, 1641, 1663, 1699, 1713, 1715.

Short-wheelbase version: 1795, 1883, 1915, 1951, 1957, 1963, 2015, 2161, 2167, 2175, 2249, 2277, 2283, 2291, 2311, 2345, 2365, 2377, 2383, 2407, 2467, 2469, 2505, 2537, 2461, 2891, 2903, 2955, 2987, 3007, 3021, 3053, 3077, 3095, 3099, 3119, 3163, 3185, 3195, 3245, 3269, 3293, 3295, 3301, 3395, 3665, 3677, 3867, 3923, 4013, 4083, 4095, 4103, 4107, 4121, 4131, 4137.

For a detailed history of these cars reference should be made to: *The Spyder California* by George M. Carrick (John W. Barnes Jr Publishing Inc., 1976). Detailed engine and chassis specifications are given for a number of cars.

The chassis number listing given above was compiled for *The Spyder California* but at the time the author noted that a number of the short-wheelbase cars – those in italics – had not been positively identified as California spyders.

Above: 1963 250 California spyder, short-wheelbase version.

Opposite above and below: 1961 250GT California spyder.



1957-62 V-12/GT

250GT Cabriolet

Series I

2953 cc, 73×58.8 mm, 240 bhp at 7000 rpm, CR 9.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×36 DCF Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1394 mm.

If the 250 Europas with their Lampredi-based engines are accepted as being the start of the 3-litre 250GT series Ferraris, then 0311EU with its Pinin Farina-designed body is the first 250 cabriolet. If an alternative view is taken that it was not until the Colombo-engined 250GT Europa came along that the 250GT series started, the Boano-designed and built cabriolet, 0461GT, has that honour. Exhibited at Geneva in 1956, it was an imposing

design but rather spoilt by the use of outward-curving tailfins and a bumper arrangement, which, acceptable at the front, only added to clutter at the rear.

Exhibited by Pinin Farina at Geneva in 1957, a different animal came into view. In looks it was almost too sporty for a cabriolet – in fact, in the Pinin Farina records it is identified as ‘Spyder 2 posti’. It had covered headlights faired into the front wings, bumperettes at the front and a full wrap-round bumper at the rear. The driver’s door on the left-hand side, deeply notched in what was considered to be the English fashion, gave rise to a story that it had been built for Peter Collins. Whether that is true or not, the car was much used by him and the colour, originally red, was changed to a dark green. It was also eventually – a first for Ferrari – given Dunlop disc brakes. The chassis number, often said to have been 0669, was in fact 0655.

It was followed by 0663GT described by Pinin Farina as ‘Spyder Competizione’. With its metal tonneau-covered passenger seat, small racing windscreen and faired-in headrest, it looked every inch a sports racing-type car.

Below and opposite: 1960 250GT cabriolet.





Two more prototypes, 0705GT and 0709GT, followed before Pinin Farina embarked upon production of the very limited – 36 in all – Series I cabriolets. Rather than being treated as an identical batch they should be looked upon as a series of 'one-offs' or as an extended prototype range. Production lasted from July 1957 through to July 1959.

Chassis numbers: 0729, 0735, 0737, 0759, 0775, 0777, 0779, 0783, 0789, 0791, 0795, 0799, 0801, 0809, 0811, 0813, 0829, 0845, 0849, 0873, 0913, 0915, 0917, 0921, 0961, 0963, 0979, 0981, 1075, 1079, 1181, 1193, 1211, 1439, 1475. All would have had the suffix 'GT'.

For a fuller discussion of these refer to '250GT Pinin Farina Spyder and Cabriolets Series I' by Gerald Roush and Hilary Raab in *Ferrari Market Letter*, Vol. 6, No. 20.

Series II

Details generally as for Series I.

Before the last of the Series I cabriolets was delivered, steps had been taken towards a second series. Almost coincidental with the introduction of the Series I cars, a

second open car, the 250GT California spyder, made its appearance. That there was room for 2 such models came about because of their differing nature. The cabriolets were intended to be open versions of the more luxuriously appointed coupés of the day. The spyders, on the other hand, were to be open versions of the berlinettas and as such would be more sporting in appearance and behaviour. However, as far as appearances were concerned rather the opposite occurred with the first production runs of each type. To overcome this the Series II cabriolets were given a rather sober appearance and there was no doubt about their having originated from the coupés of the time.

The Series II cabriolet was seen at Paris in October 1959 where, to emphasize the link, it shared the stand with a 1959 coupé. The 2 cars had the same build of engine, i.e. outside-the-'V' plugs, coil-type valve springs and twin distributors, and the same chassis.

Production got under way in 1960 and continued through until the end of 1962. Approximately 200 of the Series II cars were made.

Chassis number range: 1537 out to approximately 3803.

Below: 250GT coupé.





Above: A further example of a 250GT coupé.

1958-60 V-12/GT

250GT Coupé

2953 cc, 73×58.8 mm, 240 bhp at 7000 rpm, CR 9.0:1, single ohc per bank, single plug per cylinder, coil ignition, 3×36 DCF Webers, 4-speed gearbox integral with engine. Later production had an overdrive 5th.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1349 mm.

Towards the end of 1957, whilst production of the 250GT coupé by Ellena continued, Pinin Farina was working on the design for a new coupé which, with the completion of the facility at Grugliasco, would be built there. The first prototype, 0843GT, gave a clear indication of the way Pinin Farina's mind was working. The principal change was a lowered waistline which greatly increased the window area and gave an overall impression of greater length, although in actuality the car was just over 2 ins. shorter than the previous coupés. Also featured was the large but shallow rectangular grille already seen on the cabriolets. Above the horizontal body line a generous wrap-round rear window with

roof supports angled towards the rear of the car was a hangover from the Ellena coupés. A second prototype, 0853GT, had the same basic body shape but the top structure was markedly changed through a less generous rear window which allowed the fitting of small supplementary windows in the sail panels. On both designs commencement of the rear wheel wing area had been marked by a slight kick-up in the body line. On what was probably the first pre-production prototype, that feature was lost along with the supplementary windows. The final pre-production prototype was very similar and it was that car which officially introduced the new model at a press conference held in Milan on 25 June 1958. Paris that year was the first motor show for the car.

On the mechanical side the new coupés retained the essential features of the 250 series of cars. The first group of cars had the Type 128C engine, most of them with a single distributor. The 128D engine soon became available and then later the 128F version with its outside spark plugs. Along with the latter a new gearbox with an electrically operated overdrive was introduced.

Production continued for almost 3 years, during which time about 350 were built.

Chassis number range: 0851 out to 2081.

V-6 Front-engined Sports Cars 1958-60

206S, 296S, 196S, 246S

When the CSI announced that new regulations governing Formula 2 racing were to come into effect in 1957, it was to be expected that Ferrari, with his past record of participation in that category, would be interested in meeting the challenge.

In brief, the new regulations set an upper limit of 1500 cc for engines that were to be unsupercharged and stipulated that commercial fuel would be used in 1957 and aviation fuel in 1958 and 1959.

After a series of design studies and discussions, Ferrari chose to adopt a V-6 layout for a new range of engines, and the first Formula 2 Ferrari complying with the new rules was seen in the hands of Luigi Musso at the Naples Grand Prix held on 28 April 1957. It finished third overall.

There have been 3 quite distinct series of V-6 engines used to power a range of Formula 1, Formula 2, sports racing and GT cars. Vittorio Jano, whose services became available when the Lancia racing department was transferred to Ferrari in 1955, was responsible for the first 2 and Franco Rocchi for the third.

The influence of Ferrari's son Dino in the early discussions leading to the acceptance of the V-6 layout has been marked by associating his name with the first of the engines and then later with many of the cars which made use of them.

The first of the Jano engines, introduced in 1957, set the angle of the 'V' at 65 degrees. It had 2 overhead camshafts per bank, 2 plugs per cylinder and dry-sump lubrication. Ferrari thought that this was too complicated to place in the hands of private entrants so for 1959 Jano produced his second design. The angle of the 'V' was changed to 60 degrees and it had a single overhead camshaft per bank, a single plug per cylinder and wet-sump lubrication.

The third design, that of Rocchi, came much later in 1965 when Ferrari, once again interested in Formula 2 racing, was looking for a design that could be used in a production application to meet the requirement that engines must be derived from a series production car of which not less than 500 had been built.

For his design, Rocchi went back to the 65 degree, twin overhead camshafts, twin ignition layout. In a variety of builds the engines were used to power the Fiat Dino which provided the production car basis for the Formula 2 cars, a range of sports prototypes and the Dino 206GT and 246GT/GTS cars. For good measure they were also used in the Lancia Stratos.

Up to and including 1960 the sports racing cars in the Dino range were all front-engined. In 1961, to line up with GP cars becoming mid-engined, the sports racing cars followed suit. That policy was carried over to the GT cars that came along later.

1958 V-6/Sports racing

Dino 206S

1983 cc, 77×71 mm, 220-5 bhp at 8500 rpm, CR 9.8:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 3:42 DCN Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, coil springs. *Wheelbase:* 2200 mm. *Track:* Front 1240 mm Rear 1200 mm.

Seen at Goodwood on Easter Monday (7 April) 1958, the Dino 206S was driven by Peter Collins in the Sussex Trophy Race, finishing second. The car was fitted with a Scaglietti body that was very similar to the 'envelope' type used on the works 250 Testa Rossas following Sebring. It was seen again the following weekend, at Monza, driven by G. Munaron in the Trofeo Shell where it led the 2-litre race until a UJ failed. It was at Naples on 27 April where it was driven by Musso in a 40-lap 2-litre event. Unfortunately Musso had it off the road but it finally succumbed to clutch failure around half-distance. That seems to have been the end of its career as a 206S.

Chassis number : 0740.



Right above: Peter Collins driving the 206S at a 1958 Goodwood meeting.

Right below: Cockpit of the 206S.

1958 V-6/Sports racing

Dino 296S

2962 cc, 85×87 mm, 300 bhp at 8000 rpm, CR 9.0:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 3×46 DCN Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* independent de Dion, transleaf springs. *Wheelbase:* 2280 mm. *Track:* Front and Rear not known.

The Dino 296S was seen at Silverstone, at an International Trophy meeting. Driven by Mike Hawthorn in the 25-lap 1500 cc plus sports car race, it finished third. This was its only appearance as a Dino 296S. Following Silverstone it went back to the works where, through the magic of the racing department, it re-emerged as a 250 Testa Rossa in time, it is believed, to take part in the Nurburgring 1000 Km Race on 1 June.

Chassis number: 0746.

1959 V-6/Sports racing

Dino 196S

1983 cc, 77×71 mm, 195-200 bhp at 7800 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×42 DCN Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, coil springs. *Wheelbase:* 2250 mm. *Track:* Front 1250 mm Rear 1225 mm.

The Dino 196S was a Fantuzzi-bodied re-incarnation of the Dino 206S that had appeared for Collins at Goodwood in 1958. It was first seen in competition at Monza on 3 May 1959 in the Coppa Sant'Ambroeus. It was entered by Scuderia Eugenio Castellotti for G. Cagianca and finished first. It was driven by Cagianca/Scarlatti in the Targa Florio, the Nurburgring 1000 Km and Le Mans 24 Hours but failed to finish on each occasion. With Cagianca at the wheel, it came second in the Messina 300 Km in August but reverted to its old trick of failing to finish for Scarlatti/Scarfioffi in the Tourist Trophy at Goodwood. Its racing career appears to have come to an end when Scarlatti took second place in the Pontedecimo-Giavi hill climb towards the end of September in the same year.

A second example was built but that did not become available until the latter part of 1959. This meant that it was in time to be entered for the Rodriguez brothers in the Nassau races.

Chassis numbers: 0740, 0746.

1960 V-6/Sports racing

Dino 246S

2417 cc, 85×71 mm, 248 bhp at 7500 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, coil ignition, carburettor details not known, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2160 mm. *Track:* Front 1245 mm Rear 1205 mm.

First seen in competition in the Buenos Aires 1000 Km Race on 31 January 1960, the Dino 246S, driven by L. Scarfioffi and F. Gonzales, was at one time running fourth but failed to finish, having retired after 39 laps with an ignition problem. A second example, 0784, which had a coil spring and wishbone independent rear suspension, was available for the Targa Florio held on 8 May. Driven by Phil Hill and von Trips, it finished second. The original car was also present and was driven by Mairesse/Scarfioffi/Cabianca into fourth. Both cars were at the Nurburgring 1000 Km where the original car, driven by Scarlatti/Cabianca, was 'destroyed' in a refuelling fire. In the hands of Ginther and Scarfioffi, 0784 failed to finish. There was no entry for the Dinos at Le Mans – Ferrari was concentrating on the 250 Testa Rossa – so their career as works car ended after the Nurburgring race.

Chassis numbers: 0778, 0784.

1959-64 V-12/GT

400 Superamerica

3967 cc, 77×71 mm, 340 bhp at 7000 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×42 DCW Webers (on some the larger 46 DCF version and occasionally Solex were used).

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2420 mm lwb, introduced approx. mid-1982. *Track:* Front 1359 mm swb, 1395 mm lwb Rear 1350 mm swb, 1387 mm lwb.

Because of a similarity in their designation it has often been assumed that the 400 Superamerica was but a continuation of the 410 Superamerica under a different guise. In reality, whilst it was aimed at the same section of the market, the 400 Superamerica was a completely new design.

The Type 163 engine used was a development of the original Colombo 'short-block' design which incorporated changes suggested by the very considerable working experience that had been gained with that engine. They included the use of coil-type valve springs

in place of the hairpin type originally used and the location of the spark plugs on the outside of the 'V'.

Single cylinder displacement was 330.62 cc which should have led to the cars being designated '330', but Ferrari chose to use '400' as indicative of the total displacement of 3967 cc. It was the first time in the history of the GT cars that this had been done and, although some have wanted to read into the designation a statement of the power developed, it was not so.

Most of the specifications published for the type state that the gearbox was 4-speed with electrically operated

overdrive, though some did not have the latter.

The exact wheelbase dimension is in dispute. It has been variously given as 2400 mm, 2420 mm and 2440 mm and, to add to the confusion, factory data sheets have quoted 2600 mm and 2740 mm. Actual measurement suggests that the figure of 2440 mm is the correct aiming point.

The first example built, 1517SA, very closely resembled the 4-headlight, square-radiator coupé exhibited at Turin in 1959, the exact designation of which remains a mystery, though it is thought that 1517SA and that car

*Opposite: 400 Superamerica
Pininfarina Cabriolet.*

*Below: 400 Superamerica
Pininfarina 'Aerodynamica'
coupé.*







are one and the same. That apart, the official presentation of the 400 Superamerica was at Brussels in January 1960 in the shape of a Pininfarina cabriolet, 1611SA. It was followed by 2 more cabriolets and then 'Superfast II'. The last car set the styling line for the so-called 'Aerodinamica' coupé seen at Geneva a short time afterwards.

The cars were produced in 2 series, Series I on a 2440 mm wheelbase chassis and Series II on the longer 2600 mm wheelbase chassis. Most of the cars in both series were 'Aerodinamica' coupés but there was a sprinkling of cabriolets and others amongst them.

Chassis numbers

Series I

Pininfarina special coupé: 1517SA.

Pininfarina cabriolets: 1611SA, 1885SA, 2331SA, 2407SA, 3309SA.

Pininfarina 'Aerodinamica' coupés: 2373SA, 2631SA, 2809SA, 2841SA, 2861A, 2879SA, 2893SA, 3221SA, 3513SA, 3559SA, 3621SA, 3747SA.

Pininfarina Superfast II and IV: 2207SA.

Pininfarina Superfast III: 3361SA.

Pininfarina coupé 2+2: 2257SA.

Scaglietti spyder: 2311SA.

Scaglietti berlinetta: 3673SA.

Series II

Pininfarina cabriolets: 4241SA, 4423SA, 4781SA, 5093SA.

Pininfarina 'Aerodinamica' coupés: 3931SA, 3949SA, 4031SA, 4059SA, 4109SA, 4111SA, 4113SA, 4251SA, 4271SA, 4729SA, 4443SA, 4465SA, 4651SA, 4679SA, 5021SA, 5029SA, 5115SA, 5131SA, 5139SA.

This list is based on that appearing in *The Ferrari Legend – The Road Cars* by Antoine Prunet.

1960-3 V-12/GT

250GT 2 + 2 (250GTE)

2953 cc, 73×58.8 mm, 240 bhp at 7000 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCL6 Webers, 4-speed gearbox with 5th overdrive integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1394 mm.

Ferrari were not total strangers to the concept of a high-performance GT car that would accommodate more than 2 people. A number had been built since the earliest days of the marque by such as Touring and Ghia but they had been few and far between and as a general rule the extra accommodation provided had been minimal and more suited to the carrying of hand luggage rather than people.

As time went by and Ferrari, through the success of the 250GT coupés, became increasingly aware of a wider market for his products, he would have noted that manufacturers such as Aston Martin and Maserati had managed to introduce acceptable 2 + 2s into their catalogues. With these as a spur, Ferrari and Pininfarina set out to design a genuine 4-seater version of the 250GT on the existing 2600 mm wheelbase. To do this and open up the interior of the car, the engine was moved forward some 8 ins.

Pininfarina stylists managed to produce a body which retained the compactness associated with the coupés, was clean, simple, had the minimum of styling embellishments and is still today a classic of its type.

Opposite: 400 Superamerica cabriolet.

Below: The first real 'family' car – the 250GTE 2+2.



A pre-production prototype, chassis 1287GT, was running by the spring of 1959 and underwent a full year of evaluation until the decision was made to go ahead with more production prototypes. The first and second of these were completed early in June 1960. Normally new models were shown to the public for the first time at one of the major international motor shows, but for his first serious 2 + 2 Ferrari had another venue in mind, the Le Mans 24-Hour Race where no fewer than 12 of his cars were taking part, all of them powered by one or other version of the 3-litre engine that would be used for the new 2 + 2. The first of the 2 production prototypes to be completed, chassis 1895GT, finished in rosso rubino and with natural leather trim, was put at the disposal of the course marshalls for the event.

The engine used was the Type 128E which, by contrast with the earlier versions of the 128, had new cylinder heads with 'outside-the-V' plugs and coil-type valve springs.

It is apparently the 'E' suffix to the engine type designation that has given rise to a general tendency to refer to the car as '250GTE'.

The car was in production for the best part of 3 years during which time some 955 examples were built in what are considered to be 3 series. The Series I cars were very much like the Le Mans prototype, the only noticeable difference being the introduction of vents into the side panels just behind the front wheel arches. On a few cars these were cut direct into the panel, but the more normal method seems to have been to cut them into a separate panel which was then inserted into the wing. At the rear all were fitted with the 'triple round'-type tail lights.

The Series II cars were introduced for 1962. Most of the changes were internal, consisting in the main of a revised dashboard layout.

The Series III cars came in 1963. On these the foglights were removed from inside the radiator grille and placed just outside it. The headlights were brought further forward and at the rear the wings were lengthened and the tail lights became a single unit.

Chassis number ranges

Series I cars – 299 built

Following upon 1287GT, 1895GT and 1903GT, which were the pre-production, first and second production prototypes respectively, the main run of cars in this series was from chassis 2031GT out to 3081GT.

Series II cars – 356 built

Following upon 2677GT, 2711GT, 2713GT and 2929GT, the main run of cars in this series was from 3083GT out to 4089GT.

Series III cars – 300 built

Production of these started at 4093GT and continued through to 4961GT.

For a fuller discussion of this car, together with a complete chassis number listing, refer to '250 GTE Coupé Pininfarina 2 + 2' by Gerald Roush and Hilary Raab in a special issue of *Ferrari Market Letter*.

1962-4 V-12/Competition GT

250GTO

2953 cc, 73×58.8 mm, 280 bhp at 7500 rpm, CR 9.6:1, single ohc per bank, single plug per cylinder, 6×36 DCN Webers, 5-speed gearbox integral with engine. *Front suspension:* independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1349 mm.

When in 1961 the CSI announced that, starting in 1962, the so-called 'World Sports Car Championship' would be run for GT cars, Ferrari was not unprepared. Already deeply committed to the GT concept through the Tour de France and short-wheelbase series of berlinettas, he had started development work on a successor to the latter cars at the back end of 1960. By that time his engineers were looking to something in the region of 180 mph as the speed necessary to take care of future opposition and they would also have been aware of the shortcomings of the berlinettas in that direction.

The problem was not with the engines: with the normal sort of detail improvements that could be expected these would be more than adequate. What had to change was the shape of the body. The main drawback with the short-wheelbase cars in terms of future requirements was that their short and rather blunt nose shape was limiting speed to around 155 mph. It was a shape that generated high-speed lift at the front, and the tail too was not the best form to ensure that the rear stayed firmly in contact with the road.

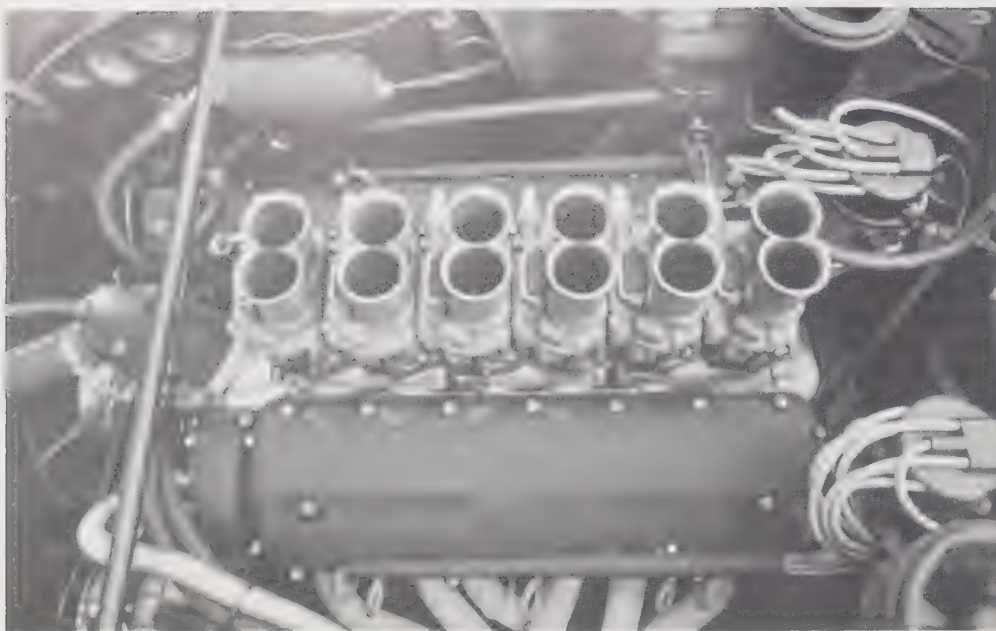
Up to that point Ferrari had not been overly concerned with the niceties of aerodynamics. Generally speaking, his engines were strong enough to push surrounding bodywork through the air without undue effort. But as a competitor of long standing at Le Mans, he must have been aware of the speeds being achieved by much smaller-engined cars – around 1 litre – through the attention paid to aerodynamics by their designers.

Development of the new car was entrusted to the works racing department under the supervision of Ing Bizzarini. With the help of the University of Pisa wind tunnel and experiments with a number of berlinettas into drag, lift, adhesion, penetration, etc., an entirely new body shape was evolved by the racing department engineers. One of the cars noted in the development of the body and often referred to as a prototype GTO – although that may be going a bit far – is short-wheelbase berlinetta chassis 2643 on to which was placed a body obviously derived from a 400 Superamerica 'Aerodinamica' coupé. Driven by Tavano and Baghetti, it was entered by the works at Le Mans in 1961. Although at one time running seventh, it retired with engine trouble.

By September 1961 the first real GTO prototype was running at Monza with Stirling Moss in attendance to carry out initial testing. The car, based possibly on

Opposite: 250GTO (chassis number 3757). This car, now owned by Nick Mason, has often been featured in motor magazines.





Above: Works of the 3-litre V-12 250GTO.

short-wheelbase berlinetta chassis 2053, was very crudely finished but in the light of the final product yet to come was unmistakably a GTO. Its greatest departure from the final form was at the rear where it was more in the nature of an elongated short-wheelbase berlinetta than a GTO.

In what was very nearly the final form, the first production example – chassis 3223 – was conclusively demonstrated to Ferrari in person by Willy Mairesse at the Modena Autodromo early in December 1961 before being shown to the world at large at the Ferrari press conference held on 24 February 1962. There the car was finished in racing red with an Italian national colours stripe running centrally over the body from nose to tail. The most noticeable feature still missing was the rear end spoiler. This was soon added. It would appear that



Right: Sparse but well appointed 250GTO cockpit.

for all the cars built in 1962 the spoiler was a riveted-on addition. On the 1963 cars it was an integral part of the body.

The engine used was the Type 168/62 Competition which in effect was a full Testa Rossa type albeit with a number of modifications including larger valves.

The chassis, Type 539/62 Competition, was basically short-wheelbase berlinetta. Some of the tubing used was smaller and the position of many of the bracing members was different as well as a number of the mounting points. The semi-elliptic springs at the rear were stiffer. A brand new 5-speed all-synchromesh gearbox – in unit with the engine – was part of the specification.

The body shape was maintained until 1964 by which time it had become necessary to find more speed and to be able to use the wider wheels and tyres that were becoming an essential part of competition cars. To achieve what was wanted, a newer and wider body was built. It was also much lower than the original. The improvement in terms of performance was at best marginal. The real successor to the 1962/3 GTO was the 250LM but that unfortunately had fallen foul of the more stringent homologation procedure that was being operated by the FIA at the time.

The result was that the GTO, which had won the GT Championship for Ferrari in 1962 and 1963, carried on into 1964 – when it again won the championship. It was still around in 1965, but by then it was in no real position to stave off devices American in the shape of the Shelby Cobra.

All told, 39 250GTos were built. Thirty-six of them had 3-litre engines. The remaining 3 were equipped with 4-litre engines of the type used in the 400 Superamerica model.

Chassis numbers (all unless otherwise noted had the suffix 'GT'): 3223, 3387, 3413*, 3445, 3451, 3505, 3527, 3589, 3607, 3647, 3673SA**, 3705, 3729, 3757, 3765LM**, 3767, 3769, 3809, 3851, 3869, 3909, 3943, 3987, 4091, 4115, 4153, 4219, 4293, 4399*, 4491, 4561SA**, 4675, 4713, 4757, 5095, 5111, 5571***, 5573***, 5575***.

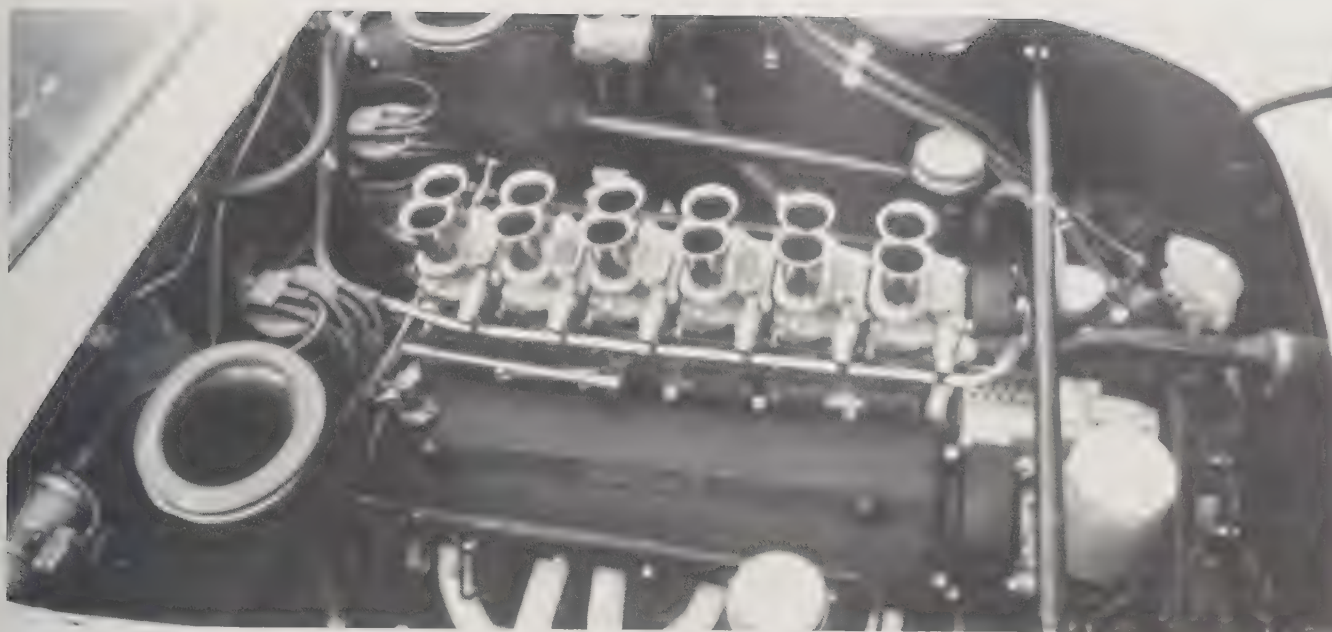
* Re-bodied with 1964-style body.

** Cars with 4-litre engines.

*** Built as original with 1964-style body.

A survey published in 1982 – 'The Ferrari 250GTO' by Alan Boe, *Car Collector*, October 1982 – showed that, in terms of original delivery destination, 11 cars went to Italy; 8 to the UK; 7 each to the USA and France; 2 each to Belgium and Switzerland and 1 each to Austria and Germany. At the time of the survey the distribution was 18 in the USA; 11 in the UK; 6 in France; and 1 each in Switzerland, Germany and Japan.

For detailed technical, competition and owner histories reference should be made to *The Ferrari Legend – 250GT Competition* by Jess Pourret; and for a personal as well as technical account to *Ferrari 250GTO* by David Clarke (Osprey Publishing Ltd, 1983).



Left: Engine of a 4-litre V-12 GTO.

Below: View most motorists see of the 4-litre GTO.





The SP Cars – Sports Prototypes

246SP, 196SP, 248SP, 268SP and 286SP.

During the years 1961-2, Ferrari introduced a small series of cars (there were 6 examples of 5 models built) often referred to as the 'SPs' – 'SP' being short for 'sports prototype'. Because they are closely related it is convenient to consider them together at this point.

1961 V-6/Sports prototype

246SP

V-6, 65 deg, 2417 cc, 85×71 mm, 270 bhp at 8000 rpm, CR 9.8:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 3×42 DCN special Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* independent double wishbones, coil springs. *Wheelbase:* 2320 mm. *Track:* Front 1310 mm Rear 1300 mm.

Because Ferrari had experimented during 1960 with a rear- or mid-engined layout for the Formula 2 cars, it was to be expected that, if approved, the principle would very quickly be taken up by Formula 1 and sports cars. It was more likely to happen to the single-seaters first because the rules governing Formula 1, due to change at the start of the 1961 season, introduced a

capacity limit of 1.5 litres – precisely that of the Formula 2 cars in 1960. In the case of sports cars, there was less urgency: the limit, still set at 3 litres, was adequately covered for the time being by the 250 Testa Rossa.

At his press conference held on 13 February 1961, Ferrari gave his approval of the mid-engine layout. On show was a mid-engined 1.5-litre Type 156 Formula 1 car along with a startling-looking mid-engined sports car, the 2.4-litre 246SP.

The engine used in the sports car was one of the first series – 4 cam, 65 degree – Dino engines. The final drive and gearbox was bolted direct on to the rear of the engine with the clutch in a overhung position on the back of the box. The drive line passing under the crown wheel and pinion housing to the clutch was fed back through the box to the final drive.

It was the body styling that caused the greatest interest. Carlo Chiti, Ferrari's chief engineer at the time, had persuaded Ferrari to install a wind tunnel and from the study of models in it had developed a high-tailed body form in which the headrest faired back to provide a sharp-edged fin. The bulkhead behind the cockpit was at head height. The resulting high rear deck curved down to a Kamm-form tail, the top lip of which was about level with the top of the front wheel arches. The cockpit, enclosed by a high wrap-around Perspex screen, gave the car a Targa top appearance. The twin-inlet nostril nose was a trade mark of Chiti's designs for Ferrari – it was on the new GP car and the 1961 version of the 250 Testa Rossa.

Two days after the press showing the car was rolled by von Trips following brake failure during testing at

Opposite: A classic for all time – the 4-litre GTO.

Below: 246SP (chassis 0790) driven by Olivier Gendebien at the 1962 Nurburgring 1000 Km which it won.



Modena. Von Trips was unhurt and the damage to the car was confined to the bodywork and front suspension. In mid-March Ritchie Ginther, while testing the prototype sports cars, concluded that they were aerodynamically unstable through back-end lift. To cure the problem he came up with the idea of a vertical fence tacked across the upper lip of the tail. This brought about the necessary degree of correction through damping down the lift that developed at high speed. The tailfin, which had served no useful purpose, was removed.

The new car – 0790 – had its first race at Sebring for von Trips/Ginther. It was very fast, handled well and led until, bounced rather hard over a curb by von Trips, it retired with steering damage. Two cars – 0790 and 0796 – were available for the Targa Florio where 0790, with von Trips and Gendebien at the wheel, scored the first and only win for 246SP during the season. The second of the two cars built, 0796, was retained for use in 1962, having been rebodied following a crash in the Targa Florio. It was subsequently used as the 'mount' for Ferrari's first try at a mid-engined V-12.

Chassis numbers: 0790, 0796.

1962 V-6/Sports prototype

196SP

60 deg, 1983 cc, 77×71 mm, 210 bhp at 7500 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×42 DCN Webers, 5-speed gearbox in unit with differential.

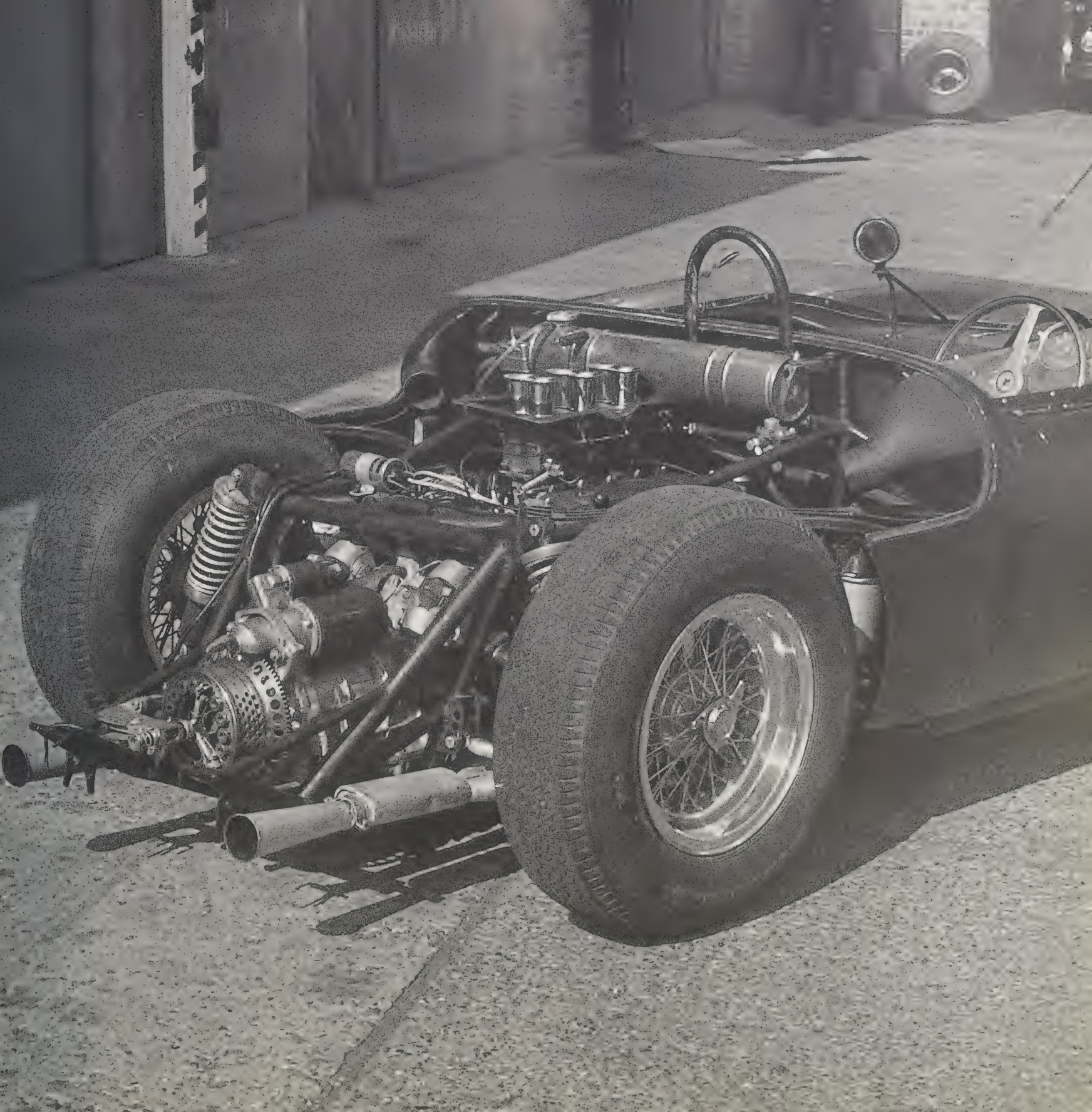
Front suspension: independent double wishbones, coil springs. *Rear suspension:* independent double wishbones, coil springs. *Wheelbase:* 2320 mm. *Track:* Front 1240 mm Rear 1200 mm.

At his press conference held on 24 February 1962, Ferrari had on display 3 new mid-engined sports cars – the 2-litre V-6-engined 196SP; the 2.8-litre V-6-engined 286SP and a V-8-engined car in the shape of the 2.4-litre 284SP. All were very similar in appearance. The new bodies had been tailored to meet the FIA's climb-down over windscreen height ruling applied during 1961. With that out of the way, it was possible to lower the rear bodywork considerably and get rid of the hunched appearance of the previous 246SP. The twin-nostril nose continued as before but with a wide shallow air inlet

Opposite: This 'cover off' rear view of a 196SP is typical of the 'SP' group of cars.

Below: Von Trips at speed in the 246SP.





roll on to the upper surface of the nose in each case.

The engine used for the 196SP was a second series V6, i.e. 60 degree angle, single overhead camshaft per block, single ignition.

The car's competition debut came with an entry for Bandini/Baghetti into the 2-litre class in the Targa Florio where, although somewhat battered and bent, it finished second overall and won its class. It appeared once more for the factory – at the Nurburgring 1000 Km where it failed to finish – before being handed over to the Scuderia Sant'Ambroeus which at the time had as its team manager and one of its directors Eugenio Dragoni, who was also team manager for Ferrari. The car was to be driven by Ludovico Scarfiotti in the European Mountain Championship and with its substantial factory 'assistance' was in effect a works entry. The champion-

ship consisted of 7 climbs and, by winning 4 of them and coming second in a fifth, Scarfiotti and the 196SP secured the championship for Ferrari. Following this, the car was sold to Chinetti and went to America where it stayed for a while before eventually finding its way to the UK. It is in good health and was recently driven by long-time owner John Godfrey during a FOC test day held at Donington. During 1963 2 more '196SPs' appeared: one of them, the car entered for Scarfiotti/Mairesse in the Targa Florio, is thought to have been a resurrection of the 268SP crashed by Phil Hill in the 1962 Targa; the other, also entered in the 1963 Targa Florio, used the original 246SP as its basis.

Chassis numbers: 0802 (re-work of 268SP), 0804 (original), 0806 (re-work of 248/268SP).

Below: 196SP. The 286SP and 248SP produced at Ferrari's 1962 press conference all had similar bodywork.



1962 V-6/Sports prototype

286SP

60 deg, 2862 cc, 90×75 mm, 260 bhp at 6800 rpm, CR 9.5:1, single ohc per bank, single plug per cylinder, coil ignition, 3×46 DCN Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil-springs. *Rear suspension:* independent double wishbones, coil springs. *Wheelbase:* 2320 mm. *Track:* Front 1310 mm Rear 1300 mm.

This was the third of the cars at the February 1962 press conference. It was identical – except for capacity and carburettors – to the 196SP. As already noted, it was not proceeded with following introduction of the 2.6-litre V-8 into the original 248SP cars.

For further details of these cars and their competition histories reference should be made to *Dino – The Little Ferrari* by Doug Nye (Osprey Publishing Ltd, 1979).

1962 V-8/Sports prototype

248SP

90 deg V-8, 2458 cc, 77×66 mm, 250 bhp at 7400 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, coil ignition, 4×40 IF2C Webers, 5-speed gearbox in unit with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 232 mm. *Track:* Front and Rear 1310 mm.

This 2.4-litre, V-8-engined car was one of those shown at the Ferrari press conference held on 24 February 1962. Its engine is said to have been developed from a study

that Chiti had made of a '248GT' car. Its debut in competition came at Sebring where it should have been driven by Stirling Moss/Innes Ireland, but after trying it in practice they opted for the V-12-engined 250TR/61. The 248SP was then taken over by Buck Fulp and Peter Ryan. They finished a very poor thirteenth some 30 laps down on the winning car.

In view of its very disappointing showing at Sebring, the 2.4-litre engine was removed and a 2.6 unit substituted for subsequent racing.

Below and far below: Front and side views of the 196SP.



1962 V-8/Sports prototype

268SP

The only changes in detail between this and the 248SP are: 2644 cc, 77×71 mm, 260 bhp at 7500 rpm, CR 9.6:1.

As noted above, following upon Sebring the 248SP was dropped in favour of this 2.6-litre model. Except for the change of bore dimension to obtain the extra capacity, the engine was to all intents and purposes identical with the smaller-capacity 2.4-litre unit. With the appearance of this model, the 2.8-litre, V-6-engined 286SP which had been on show at the press conference was dropped as presumably the V-8 unit gave as much power as the 6-cylinder unit and with a greater degree of reliability and interchangeability of components.

All told, there were 3 of these cars in use at one time or another during the 1962 season. Chassis numbers were 0806 – which started life as a 248SP and was re-engined after Sebring; 0802 – which seems to have been the 286SP shown at the February press conference and then, as noted above, not proceeded with following the introduction of the 268SP; and finally 0798 which appeared at Le Mans where it was driven by Scarfiotti/Baghetti. It retired during the seventeenth hour with gearbox problems when lying second overall.

Chassis numbers: 0798, 0802, 0806.

Opposite: 250GT berlinetta Lusso (chassis number 5677). Pininfarina considered it to be one of his best designs.

Below: 268SP driven by Phil Hill in the 1962 Targa Florio.



1962-4 V-12/GT

250GT Berlinetta Lusso

2953 cc, 73×58.8 mm, 250 bhp at 7000 rpm, CR 9.2:1, single ohc per bank, single plug per cylinder, coil ignition, 3 DCZ Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2400 mm. *Track:* Front 1395 mm Rear 1387 mm.

Coincidental with the introduction of the 250GT 2+2, production of the 250GT coupés ceased. For a while their place was taken by the steel-bodied version of the 250GT short-wheelbase berlinettas. When in due course the role of the latter in competition was taken over by the 250GTO, there was never any intention to build that car in quantity nor was there any desire to continue production of the steel-bodied short-wheelbase berlinettas, so they were phased out and a new, more luxuriously appointed berlinetta brought in.

The new car was exhibited in prototype form, chassis 3849GT, at Paris in 1962, actually arriving on the last Saturday of the show. Designed and built by Pininfarina, it was followed shortly after by a Scaglietti-built prototype, 4053GT, which set out some of the changes that might be needed to make the car more suited to production. They were minor and in no way detracted from the Pininfarina styling which had drawn its inspiration from the short-wheelbase berlinettas for the forward portion of the car and from the GTOs, aft of the windscreen.

A new chassis, Type 539/U, allowed the engine to be moved several inches further forward to increase passenger space. Although derived from the chassis of the 250GTO, its only direct contribution was the use of Watts-type linkage to locate the rear axle.

The Type 168/U engine was something of an amalgam of components to be found in the engines in use with the short-wheelbase berlinettas and 2+2 models.

The body was steel but the doors, bonnet and boot lid were aluminium, as were the floor panel, the underpan, flooring, firewall, grille and various interior panels in the footwell area. Because of the existence of all-aluminium front and rear body sections, there has been speculation that some all-aluminium cars may have been built, or, if not built, at least planned. The two seats were bucket-type and extremely comfortable. Whilst they were adjustable fore and aft, there was no means of altering the back rake. Instrumentation was good with a centrally located speedometer and rev counter angled towards the driver. Five smaller gauges were directly in front of the driver.

The production run was of fairly short duration with cars being consigned from January 1963 through to about August 1964. It would appear that the first





Above: Frontal aspect of the 250GT berlinetta Lusso.

Opposite: The Parkes/Maglioli 250P (chassis number 0810) at Le Mans in 1963.

production Lusso was 4103GT and the last 5955GT for a total of 350 built.

The Lusso brought to an end the 250GT series of Ferraris, the first of which had made its appearance back in 1954.

Chassis numbers: Within the range 4103GT out to 5955GT for the production run.

For complete coverage of this model refer to *The Berlinetta Lusso – a Ferrari of Unusual Elegance* by Kurt H. Miska (John W. Barnes Jr Publishing Inc., Scarsdale, New York, 1978).

1963 V-12/Sports prototype

250P

2953 cc, 73×58.8 mm, 300 bhp at 7800 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, coil ignition, 6×38 DCN Webers, 5-speed gearbox integral with rear-mounted engine and final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension.

Wheelbase: 2400 mm. *Track:* Front 1350 mm Rear 1340 mm.

The origins of the 250P lie in a decision by the FIA that in 1962 the World Sports Car Championship would get away from thinly disguised racing cars and be run instead for GT cars in up to 1000 cc, 1001-2000 cc and over 2000 cc classes.

The AC de l'Ouest, the organizers of the Le Mans 24-Hour Race, saw the situation differently and decided to retain spectator interest by running a class for 'experimental prototype sports cars' which would allow all the old favourites to run. They persuaded the organizers at Sebring, the Targa Florio and the Nurburgring to do likewise, thereby creating a sports-prototype championship within 'The Championship'.

Ferrari decided to leave the GT side to his 'customer' entrants. They had to hand for the purpose an excellent weapon in the shape of the 250GTO. For the potentially more serious business of 'prototypes' Ferrari decided that it was time to get a 12-cylinder engine into a mid-engined car. The practicality of doing so had been demonstrated by Maserati with their V-12 Type 63s in 1961.

During the latter part of 1962 Ferrari engineers inserted a V-12 3-litre Testa Rossa engine into one of the 246SP cars – probably chassis 0796 – and began testing at Monza. Earlier reports had it that the chassis of the 246 had to be lengthened, but it seems possible that some internal rearrangement of existing chassis tubing was sufficient. The fully developed prototype with its own Pininfarina-designed body was at Monza for the Ferrari press conference on 4 March 1963.

To some, the body appeared stark after the SP cars. At the front there was only a narrow radiator grille flanked by 2 rectangular headlamps. A forward-facing air intake had been built into each of the rear wings and a spoiler had been incorporated into the rear deck with an aerofoil 'basket handle' stabilizer just behind the cockpit.

Three weeks later the first 2 of 4 to be built were at Sebring where they finished first and second. In the Targa Florio both retired and at the Nurburgring 1 crashed but the other won. Three were entered for Le Mans where they came first and third. But having performed very well in Europe they were not successful on their foray into America and Canada later in the year.

Chassis numbers: 0812, 0814, 0816.



1968 V-12/Styling exercise

250P5

2990 cc, 77×53.5 mm, 400 bhp at 9200 rpm, CR 11.0:1, double ohc per bank, 2 plugs per cylinder, coil ignition, Lucas fuel injection, 5-speed gearbox integral with rear-mounted engine and final drive.

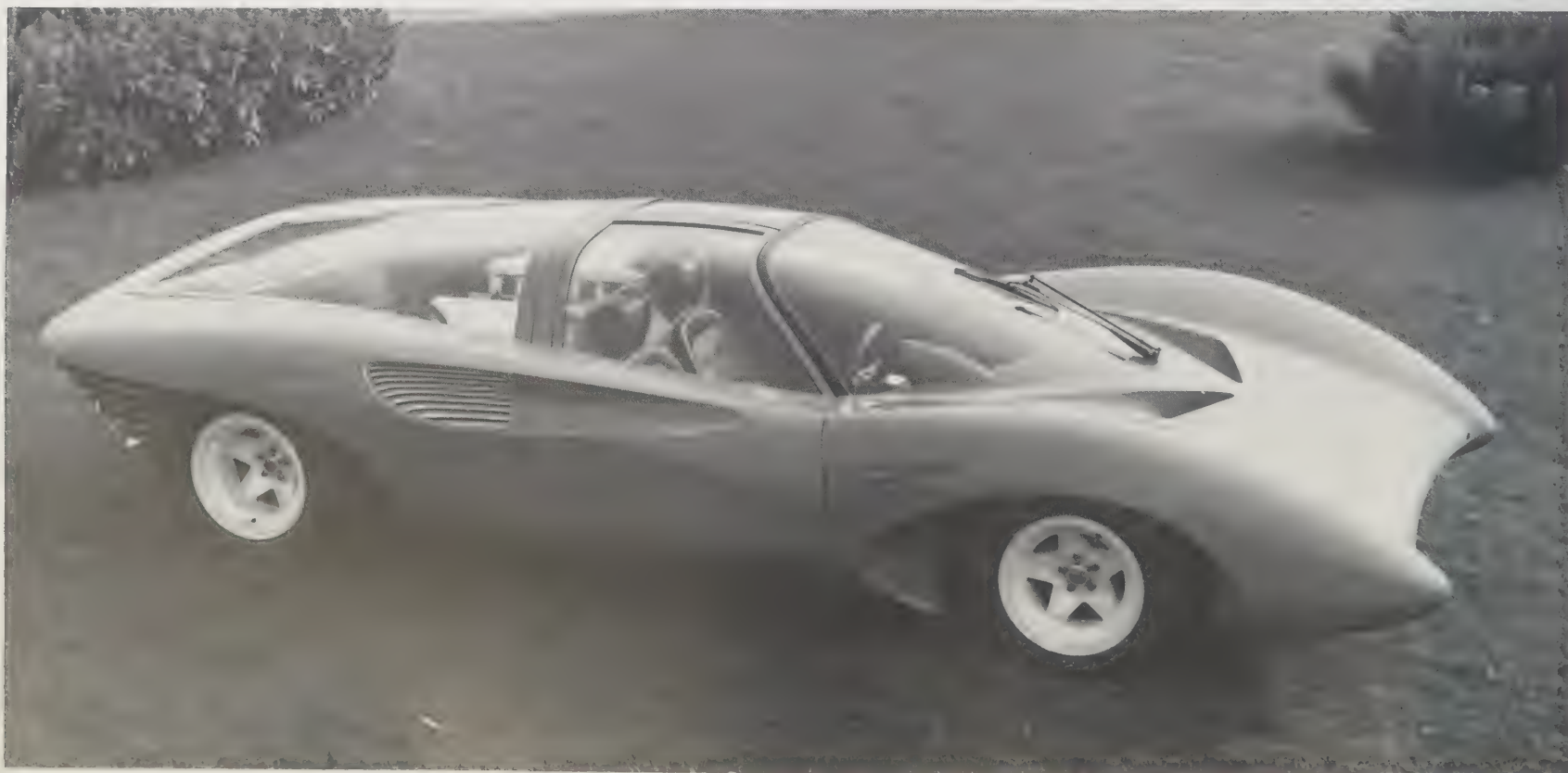
Front suspension: independent double wishbones,

coil springs. Rear suspension: as front suspension.

Wheelbase: 2380 mm. *Track:* Front 1400 mm Rear 1430 mm.

During the 1967 Le Mans a decision was taken that, as from January 1968, the capacity limit for prototypes would be 3 litres and that for sports cars 5 litres. Displeased at the suddenness of the change, Ferrari indicated to the authorities that he would not be building to the new regulations. However, perhaps to show that he could, if he so desired, construct a 3-litre prototype, he put into Geneva in 1968 the 3-litre 250P5. Hopes were raised that he had changed his mind about the new regulations but it turned out that the car was an exercise in styling rather than any serious statement of intent to race at that time. It is for speculation what its contribution might have been towards the 312P introduced for the 1969 season.

Chassis number: Not known.





1963 V-12/Competition Prototype GT

330LMB

3967 cc, 77×71 mm, 390 bhp at 7500 rpm, CR 8.7:1 1962 car, 9.0:1 1963 cars, single ohc per bank, single plug per cylinder, coil ignition, 6×42 DCN Webers, 4-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2500 mm. *Track:* Front 1422 mm Rear 1414 mm.

It is an interesting aside that the true title of the so-called World Sports Car Championship instituted in 1953 was the *Championnat des Marques* (literally 'Championship of Makes'). In view of that it was not entirely illogical that for 1962 the championship was given over to GT cars. Unfortunately, as is often the case, the change was made without too much consultation with those likely to be most affected. The organizers of such events as Sebring, Nurburgring and Le Mans were doubtful whether GT cars would draw the crowds and after discussion managed to get a Sports Car Cup going. It would be held over 7 events and could be contested by up to 3-litre 'prototypes'. They also went one stage further and instituted the Challenge Mondial de Vitesse et Endurance, commonly known as the Organizers' Cup.

They muddled the waters a bit by laying down that the regulations would be the same as those for the Sports Car Cup but the capacity limit would be increased to 4 litres. The cars did not have to be sports cars in the generally understood sense – they could be GT cars.

Ferrari, although primarily interested in 3 litres in his commitment to GT racing, lost no time in sorting out suitable machinery, but there appear to be doubt amongst those responsible for recording Ferrari activities about just what to call the cars entered at the Nurburgring and Le Mans in 1962. They are variously referred to as 330GT or 330LMB, whereas it seems that 3673SA, driven by Parkes and Mairesse into second overall at the Nurburgring, and 3765LM, which in the hands of Parkes and Bandini was DNF at Le Mans, were both 4-litre GTOs although that in itself is something of a contradiction in nomenclature.

The 'real' 330LMBs – 4 of them were constructed – were not seen in public until a special Ferrari press showing at Monza early in 1963. In appearance they were much closer to the 250GT Lusso berlinetta than to any GTO, except for the nose which was very much GTO. There were side vents in the front wheel arches and behind the rear arches there were 3 vents. Above the rear wheels raised sheet-metal covers, open fore and aft, allowed greater tyre clearance as well as effecting some cooling – it was a feature last seen on the 250MM and the works 375MMs of the early fifties.

Above and opposite below: 250P5, a Pininfarina styling exercise showing what a 1968 3-litre 'P' might have looked like. The car was shown at the 1968 Geneva Salon.



Right: 4 330LMBs were produced. Note the modification of the rear wheel arches to allow for greater tyre clearance and air cooling.





Above: 330LMB at Le Mans in 1963. The drivers are Sears/Salmon.

Opposite below: 330LMB (chassis number 4619) owned by Joe Marchetti.

Above right: Head-on view of 330LMB.

The engines used were dry-sump versions of the 4-litre Type 163s that had powered the 400 Superamerica series of GT cars and were probably identical to that used for the 4-litre 330TR/LM Testa Rossa that had won Le Mans in 1962.

Their first competition appearance was at Sebring where 4381GT in the hands of Parkes/Bandini was retired after some 72 laps with a cracked fuel tank.

Three of them were entered at Le Mans: 4381GT on race number 9 for Noblet/Guichet – retired after 75 laps because of loss of oil; 4453GT on race number 11, a NART entry for Gurney and Hall – retired after 126 laps with tyre problems; and 4725GT on race number 12, a Maranello Concessionaires entry for Sears and Salmon which finished fifth overall.

To add a little confusion a fourth car identical in appearance to the 330LMBs was at Le Mans on race number 126. It was entered by NART for Masten Gregory and David Piper but was under the body shell a regular 250GTO, chassis 4713. It came in sixth overall.

After Le Mans there were minor events only for the cars. Of the 4 built it seems that 4169 was the only one not to get involved in competition. It would seem that, with a wet-sump engine, it was not originally built with racing in mind.

Chassis numbers: 4381GT, 4453GT, 4619GT, 4725GT.

The cars are discussed and illustrated in *The Berlinetta Lusso – a Ferrari of Unusual Elegance* by Kurt H. Miska (John W. Barnes Jr Publishing Inc., Scarsdale, New York, 1978).

1964 V-12/GT

330 America

3967 cc, 77×71 mm, 300 bhp at 6600 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCZ6 Webers, 4-speed gearbox plus overdrive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2600 mm. *Track:* Front 1354 mm Rear 1394 mm.

When Ferrari announced his new 2 + 2, the 330GT 2 + 2, at the round of international motor shows in the autumn of 1963, the cars displayed as such, but outwardly identical to late production 250GTEs were the rather neglected 330 America model of which only some 50 examples were made.

There has never been a completely satisfactory reason given for the appearance of this 'interim' model. Speculation has ranged around that Pininfarina was not ready to produce the new 330GT; that he insisted Ferrari take up the full 1000 agreed production of the 250GTE bodies; that it was built at the insistence of Ferrari's American distributor, Luigi Chinetti – hence its name



and the fact that most of those built ended up in the USA.

Whatever the reason, it was not simply a matter of putting the larger-capacity engine of the 330 series into an existing chassis. To meet the increased capacity the traditional 90 mm between bore centre lines of the Colombo short-block engine had to be extended to 94 mm for the Type 209 engine of the 330s. So there was an installation problem with the longer engine although in retrospect it was apparently not too difficult to overcome. The Type 209 engine in its early examples retained the timing case of the Type 163 engine which had been used for the 400 Superamerica. Because of this it has been concluded by some that the 330 America was powered by that engine, but this was not in fact the case.

Production which began late in 1963 may have just edged into 1964 before coming to a stop.

Chassis numbers: 4953, 4969, 4973, 4975, 4981, 4983, 4987, 4989, 4991, 4993, 4995, 4997, 4999, 5001, 5005, 5007, 5009, 5011, 5013, 5015, 5019, 5023, 5025, 5027, 5033, 5035, 5037, 5039, 5041, 5047, 5049, 5051, 5053, 5055, 5059, 5061, 5065, 5069, 5071, 5075, 5077, 5079, 5083, 5103, 5105, 5107, 5109, 5113, 5121, 5125.



VUT 21

1963 V-12/GT

330GT 2 + 2

3967 cc, 77×71 mm, 300 bhp at 6600 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCZ/6 Webers, 4-speed gearbox with 5th overdrive integral with engine – later production cars had a 5-speed box.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* live axle with semi-elliptic springs. *Wheelbase:* 2650 mm. *Track:* Front 1397 mm Rear 1389 mm.

Although 'introduced' at the autumn round of shows in 1963 – see under 330 America – the 330GT 2 + 2 was not officially presented until the Ferrari press conference on 11 January 1964. Its first 'show' was at Brussels a few days later.

Its engine – Type 209 – was a 'stretched' version – 94 mm bore centres – of the Colombo short-block series. There was a substantial increase in power over the 250GTE and to take care of that there was some strengthening of the transmission.

The chassis, typical Ferrari with its welded oval tubes, offered the usual 4-point engine mounting. The wheelbase was about 2 ins. longer than that on the 250 model and Koni adjustable shock absorbers were used.

The most noticeable feature of the Pininfarina body design was the adoption from Superfast IV of the 4 – grouped by 2 – headlight arrangement. It was a feature that met with somewhat mixed reviews and, together with a somewhat bulbous rear, took away the sharpness

of line that was so attractive on the 3-litre cars. But there was much more room in the back – some 4 ins. of additional leg room being available.

Around the middle of 1965 the Mk I with its 4-headlight arrangement gave way to the 2-headlight styling of the Mk II version, and it is this change of headlights that has become the easily recognizable boundary between the 2 versions.

It has also become part of the 'folklore' of the model that at the same time a number of changes to the mechanical build were introduced, such as the 4-speed plus overdrive gearboxes giving way to a 5-speed box. It seems, though, that in the manner of Ferrari there were a number of cars that had 4 headlights and 5-speed boxes. Also, whilst the car might appear to be unchanged, there were some 27 changes of one sort or another brought into effect during the production run. Those changes were supplemented by numerous mechanical ones. Add to these the range of options made available and it can be seen that there was no definitive 330GT 2 + 2. About the best that can be said is that cars from a particular period of production should have certain general characteristics.

Production finished at the end of 1967 after the 365GT 2 + 2 was introduced at Paris as the 330's successor. During the 4-year run just under 1100 examples had been made.

Chassis number ranges

4-headlight, 4-speed + overdrive: 500 made. Chassis range 4963-6937.

4-headlight, 4-speed: 125 made. Chassis range 6939-7547.

2-headlight, 5-speed: 455 made. Chassis range 7553-10193.

Opposite: 330 GT 2+2 Mk I. The 4-headlight arrangement picked up from the Superfast IV was not very well liked.

Below left: Comfortable front interior of a 330GT 2 + 2.

Below right: A revised 330GT. The Pininfarina badge is now located behind the door.



1963-6 V-12/Prototype Competition GT

250LM

3286 cc, 77×58.8 mm, 320 bhp at 7500 rpm, (2953 cc, 73×58.8 mm, 300 bhp at 7500 rpm for first car only), CR 9.7:1, single ohc per bank, single plug per cylinder, coil ignition, 6×38 DCN Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1350 mm Rear 1340 mm.

Those who had doubted or questioned just what the 250P was a prototype of received something of a setback when the 250LM was introduced as a catalogue model at Paris in the autumn of 1963. The new car was

in effect a 250P with a roof. Although a catalogue model, it would be available only in a limited quantity and it was obvious from the start that it was strongly slanted towards competition. It was in fact a logical successor to the 250GTO which by then was beginning to show signs of its age in both performance and concept. If Ferrari were to cut any ice in future GT racing, his cars would have to be mid-engined.

The official factory designation '250 Le Mans Berlinetta' was on the sales brochure for the car. Although the first car, chassis 5149, had a 3-litre engine, all others had 3.3-litre engines. This at times led to the car being referred to as '275LM' but not by the factory as Ferrari hoped that retention of the 250LM designation might help to simplify homologation. In April 1964 the factory asked for homologation. The application was not discussed until July and then the FIA refused to

Opposite: The elegant lines of a 250LM.

Below: The Gregory/Rindt NART 250LM (Le Mans, 1965).







homologate it as a GT car. There had been trouble when previously Carroll Shelby had protested against homologation of the GTO. Ferrari had at that time successfully defended the act on the grounds that the GTO was a modification of the 250GT of which more than a 100 cars had certainly left the factory. The LM, with its mid-mounted 3.3-litre engine and very much revised body, was obviously difficult to accept as a development of the 250GT/GTO series. Also, the FIA could not be convinced that 100 cars were planned. The LM therefore had to race in the prototype class in which Ferrari already had more powerful cars. To ease the situation the Italian Automobile Club created a separate class for LMs but that was on a national championship basis only.

The 250LM, with its Type 210 engine placed in a Type 577 chassis, was the first example of a mid-engined series production Ferrari. Although by that time Ferrari had already used monocoque construction for his Formula 1 cars, the chassis of the 250LM was traditional Ferrari in being made up from round-section tubes. The oil-cooler radiator and dry-sump oil tank were located at the front of the car. Behind the front suspension mounts the chassis frame widened out to the full width of the car. The fuel tanks were placed either side of the engine.

Behind the engine the frame narrowed to enclose the 5-speed transaxle unit bolted on to the rear of the engine. The rear brakes were mounted inboard. The clutch was placed ahead of the transaxle unit rather than being hung on to the back of it.

The LM was not raced by the factory as all production went either to Ferrari's concessionaire teams or to private individuals for racing.

It is a difficult car to sum up. It covered many racing miles and had many successes, but because it was not homologated into the class for which it was intended, i.e. GT, it was always somewhat overshadowed by the much more sophisticated and more powerful cars of the prototype class in which it was forced to run. It provided numbers on the ground, though, and that was very often an important factor in mid-sixties racing.

Chassis numbers: 5149, 5841, 5843, 5845, 5891, 5893, 5895, 5897, 5899, 5901, 5903, 5905, 5907, 5909, 5975, 5995, 6023, 6025, 6045, 6047, 6051, 6053, 6105, 6107, 6119, 6167, 6173, 6217, 6233, 6313, 6321, 8165.

For a fully detailed technical, competition and owner history of these cars reference should be made to *Ferrari 250LM* by Marcel Massini and Rob de la Rive Box (Osprey Publishing Ltd, 1983).

Above: Padded cockpit of a 250LM.

Opposite: 5-speed transaxle unit bolted to rear of 250LM engine.

The P Cars – Prototypes

275P, 330P, 330P2, 275P2, 365P, 330P3, 365P2/3, 330P4, 330P3/4 (412P).

During the period 1964 through 1967 Ferrari faced a formidable challenge to his chances of dominating sports car racing when Ford of America decided that their image as a constructor needed a motor sporting edge and as a result launched their Total Performance programme. This was designed to put the name of Ford at the top of what they considered to be the more important branches of motor sport. Interestingly it did not include the building of any Formula 1 cars. Grand Prix racing was not well known in the USA at that time, so that any success that might come their way in that

field would perhaps be too far removed from their production car base. Success in GT and sports prototype racing would be much more appropriate and better understood by the younger element they were trying to attract to their products.

Ford fired their first serious shots in the boardroom as they negotiated to take over Ferrari in an attempt to get a readymade product with which to pursue their aims. Should negotiations succeed, the resulting competition cars were to be called Ferrari-Ford and the production cars Ford-Ferrari. With the failure of that attempt the struggle moved out on to the race tracks with a Ford victory at Le Mans as its principal objective. If that win came at the expense of Ferrari it would be that much sweeter.

Having proved to his own satisfaction – through the SP cars and the 250P – that a mid-engined layout was the technically correct approach to the future, Ferrari built a series of cars that have passed into history as the P cars. Although spread over a period of 4 years, they were closely related and for that reason have been brought together at this point.

Whilst the cars used by the works team were the most important and the most technically advanced, Ferrari did not neglect 'customer' support in the shape of cars entered by his concessionaires. Some of the P cars were built specially for the important back-up in terms of 'numbers of cars on the ground' that the concessionaire teams brought at a vital period in Ferrari racing history.

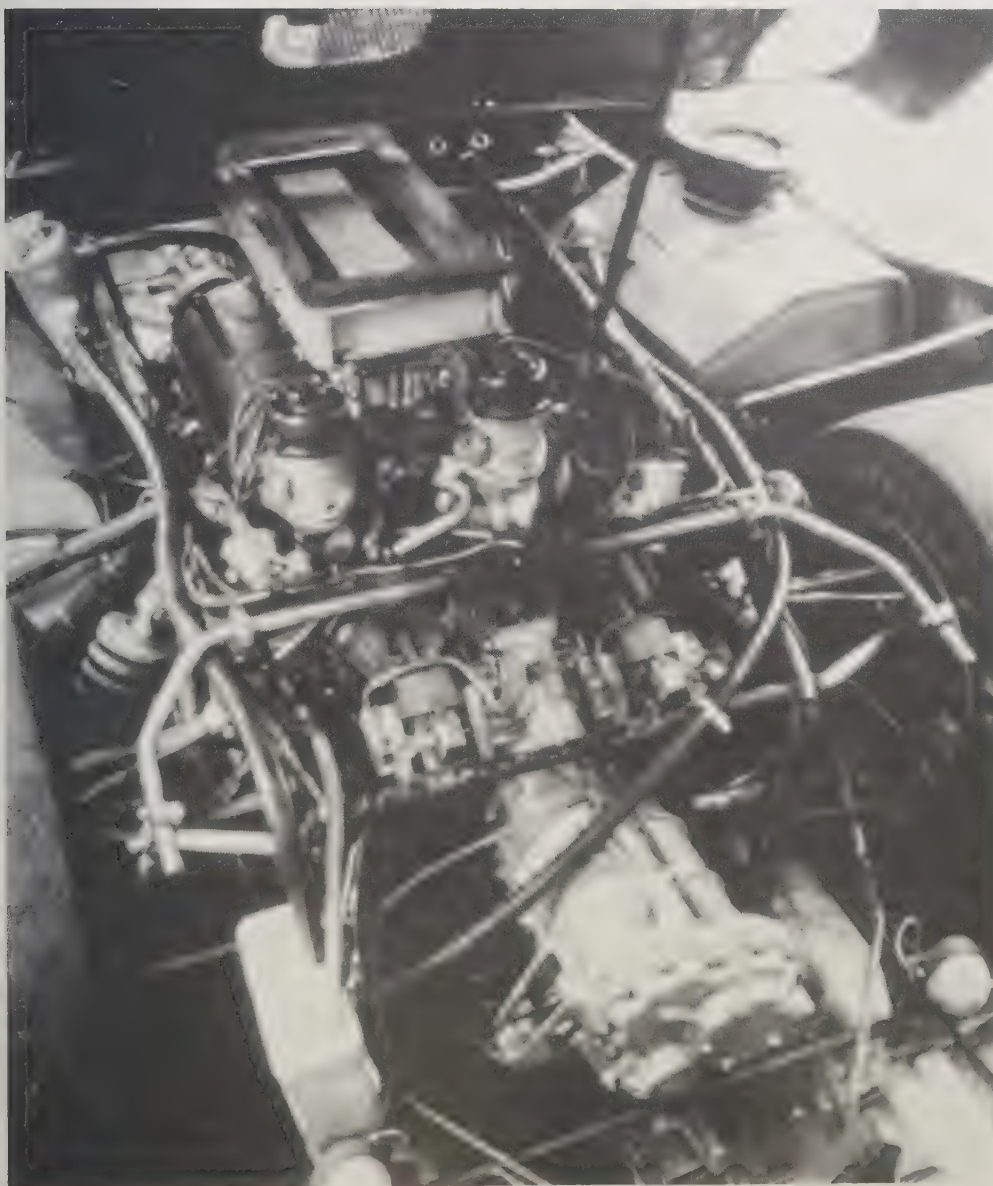
1964 V-12/Prototype sports

275P

The 275P was available for both works and concessionaire teams. Its details were generally as for the 250P except that bore size was increased to 77 mm to give a capacity of 3285 cc and power was up slightly to a stated 320 bhp at 7700 rpm. The bodywork was generally similar to that of the 250P but could be picked out by 4 differing features: the front of the roll-bar was straight instead of being notched at the sides and was overlapped by the plexiglass windows at the tops of the doors; the air scoops leading to the rear brakes were placed nearer to the tops of the wheel arches and were smaller and cleaner in appearance; the tail section was longer and the rear section below the axle centreline did not swing up with the rest when opened; and finally the fuel filler caps were more on top of the front wings.

Its first race appearance was at the Sebring 12-Hour on 21 March 1964 where two cars were entered by the works for Parkes/Maglioli and Scarfiotti/Vacarella and they finished first and second respectively. Other notable successes were a first place at the Nurburgring 1000 Km (Scarfiotti/Vacarella) and a win at Le Mans with Scarfiotti/Bandini.

For chassis number details see note under 330P.



1964 V-12/Prototype sports

330P

3967 cc, 77×71 mm, 370 bhp at 7300 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, coil ignition, 6×38 DCN Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1350 mm Rear 1340 mm.

The 330P was available for both works and concessionaire use. Its first race appearance was at Sebring. Three cars were entered, one by the works for Surtees/Bandini, one by Maranello Concessionaires – the UK concessionaire – for Graham Hill and Jo Bonnier and the third – which might have been a reworked 250P – by NART for Pedro Rodriguez/G Baghetti. Both concessionaire cars retired and the works entry, although setting a cracking pace, could do no better than third.

Looking back at the end of the season it was evident that, whilst the larger-engined car had a record that compared well with that of the 275P, it was the smaller of the two which had collected the important wins noted above.

Chassis numbers for these cars are still far from being clear but it would seem that only 3 new chassis were brought into use in 1964, i.e. 0818, 0820 and 0822. How they were assigned is another matter, bearing in mind that it was no problem to interchange the different engines used, and undoubtedly, to make up the number of cars employed, some of the previous years' 250Ps were reworked to suit.

Right: The Maranello Concessionaires 330P (chassis number 0818) driven by G. Hill/Bonnier at Le Mans, 1964.

Below: The Surtees/Bandini 330P, seen at Le Mans, 1964.







1965 V-12/Prototype sports

330P2

3967 cc, 77×71 mm, 410 bhp at 8200 rpm, CR 9.8:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 6×40 DCN/2 Webers, 5-speed gearbox integral with final drive.

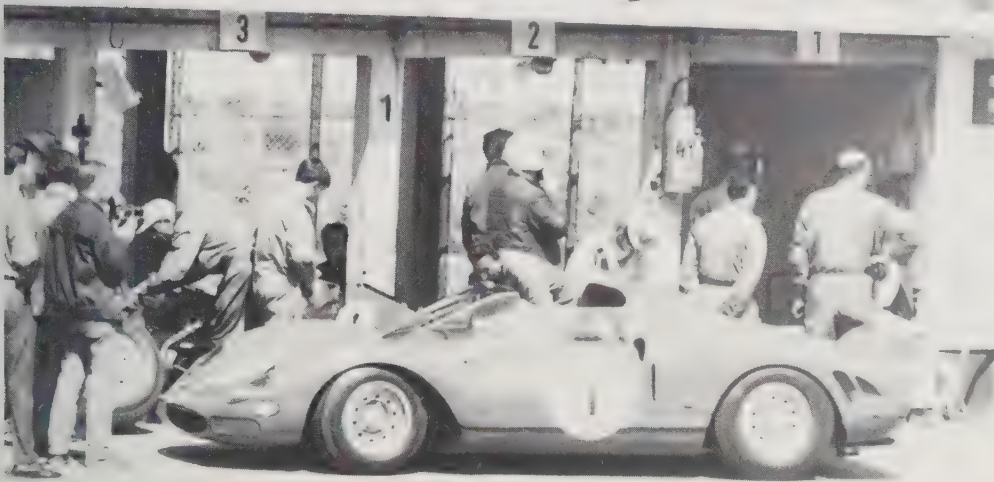
Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1400 mm Rear 1370 mm.

Announced along with the 3.3-litre 275P2 at the Ferrari press conference held in Modena on 12 December 1964, the 330P2 was an entirely new design and showed that the company were starting to transfer some of the techniques used for their Formula 1 cars over to the prototype sports cars. Although the chassis was still built up, as in the past, from a variety of tubes, some of the aluminium body panels were riveted to the chassis tubes to give added strength. The rear suspension followed GP practice in having forward-facing radius arms to give a very large base of triangulation and less camber variation to suit the wider tyres that were to be used. Wire wheels were discarded in favour of cast magnesium. The engine used twin overhead camshafts per bank and 2 plugs per cylinder.

Their bodies built by Fantuzzi, also new, were said to have been designed with the aid of wind tunnel studies. It was much lower at the front and in prototype form had small diplane spoilers attached at either side to reduce front-end lift at high speed. The single headlights were placed behind faired-in plexiglass covers and the open cockpit had a low wrap-around windscreen. Because of the very low waistline, the wheel arches at the front and the back stood noticeably proud of the bodyline. The rear deck, which was also set very low, had a large blister on it to clear the tops of the carburettors. The area between the wheel arches and the centre bulge was taken up with louvres and there were double air outlets behind each of the rear wheels. By the time the European racing season commenced a much deeper windscreen had been fitted and a 'basket handle' roll-over structure had been built up behind the cockpit.

The first competition appearance of the new car came at Daytona on 27 February 1965. A single car was entered under the NART banner for John Surtees/Pedro Rodriguez. It was not an auspicious occasion. The car was retired short of half-distance after a number of tyre blow-outs on the left wheel wrecked the drive line on that side.

In the other races in which 330P2s were entered during 1965 they came second at Monza and first at the Nurburgring. They failed to finish at Le Mans, however. Because they had not been as successful as had been hoped, a redesign was needed for the following year.



Above: The John Surtees works 330P2 in the Nurburgring 1000 Km (1965).

Opposite: The 275P2 of Bandini/Biscaldi as dusk falls in the 1965 Le Mans race.

1965 V-12/Prototype sports

275P2

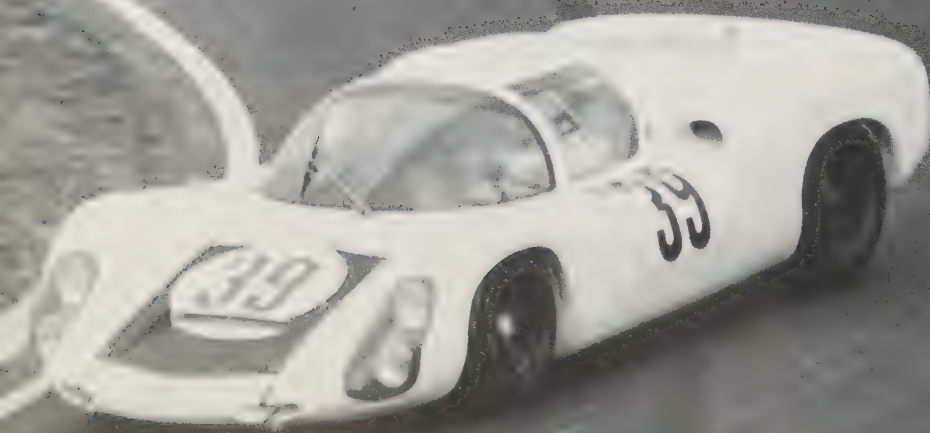
3285 cc, 77×58.8 mm, 350 bhp at 8500 rpm, CR 9.8:1, double ohc per bank, 2 plugs per cylinder, coil ignition, 6×40 DCN/2 Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1400 mm Rear 1370 mm.

Announced along with the 330P2 at the December 1964 Ferrari press conference, the 275P2 was identical in appearance to the larger car. It was not seen until the Le Mans test weekend held in April 1965. Its first race was the Monza 1000 Km held on 25 April where a single example entered for Parkes and Guichet came in first ahead of the 330P2 of Surtees/Scarfiotti. Of the remaining races in which they were entered during 1965, the 275P2s finished first in the Targa Florio, came second at the Nurburgring and failed to finish at Le Mans.

With one exception, the 275P2s – like the larger 4-litre cars – were raced only by the works. The exception came when Maranello Concessionaires – the UK distributor – were loaned a 275P2 for the Nurburgring 1000 Km. It was driven by Graham Hill and Jackie Stewart but failed to finish due to a burnt-out alternator on the tenth lap.

Chassis numbering for these two models cannot be cleared beyond noting that they were probably covered by 0826, 0828, 0830, 0832 and 0836 which were 5 new chassis built that year.



1965 V-12/Prototype sports

365P

4390 cc, 81×71 mm, 380 bhp at 7300 rpm, CR 9.0:1, single ohc per bank, single plug per cylinder, coil ignition, 6×42 DCN Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear springs:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1400 mm Rear 1370 mm.

The 365Ps were 4.4-litre, single-overhead-camshaft-per-bank-engined cars built for use by the concessionaire teams during 1965 although the majority were not delivered until just before Le Mans. The reason seems to have been that for the most part they made use of the works P2 chassis as opposed to having new ones built for them. The first example, that provided for the Scuderia Filipinetti in time for the Monza 1000 Km, used chassis 0824 which did not get involved with the P2s. Unfortunately the car crashed during the race, killing its driver Tommy Spyghiger. Maranello Concessionaires had their car, 0826, in time for Le Mans along with NART who had 0838 – a second chassis not to have gone through the P2 process. A fourth example, 0836, was delivered to David Piper later in the season.

1966 V-12/Prototype sports

330P3

Details generally as for the 330P2 with the exception of the output of 420 bhp at 8000 rpm, CR 11.4:1, Lucas fuel injection in place of Webers. *Track:* Front 1462 mm Rear 1431 mm.

Whilst the between-seasons rumours had it that Ferrari would be introducing a 5-litre car to take on the 7-litre Fords, the 330P3 – announced on the occasion of his press conference in December 1965 and shown to the press in February 1966 – stayed at 4 litres. Ferrari evidently believed that the smaller-engined car would be lighter and therefore just as competitive as anything larger that might have been devised. There was a nominal increase in power to 420 bhp and a Lucas system of fuel injection took the place of the traditional Weber carburettors. Detail redesign work on the cylinder heads gave a reported saving of some 65 lbs on engine weight. For whatever reasons, a new 5-speed gearbox, but by ZF instead of being an 'in-house' unit, was fitted and the opportunity was taken to place the clutch in the more conventional position between engine and transmission rather than being hung on the end of the latter.

Opposite: Car number 26 is the NART-entered 365P2/3 at Le Mans, 1967 (see page 147).

Below: 330P3/4 (see page 150).



The chassis was still multi-tubular, but increasing attention was being paid to the use of more advanced methods of construction spilling over from the Formula 1 cars.

The body built by Piero Drogo's Carozzeria Sports Cars conformed to the revised Appendix J requirements. With an easing of the FIA's windshield regulations, the new screen was very much rounded to the extent of being almost a semi-circle at its top. The nose of the car, with its full-width radiator grille, was kept very low. Of the 3 air ducts located in the upper lip of the grille, the larger ones at each end conducted air on to the front brakes. Also noteworthy was the integration of headlight, driving light and turn indicator under a single transparent plastic cover faired into the front of the wheel arch on either side. The roll-over structure was swept back towards the rear of the car as a streamlined fairing and this, together with the revised windscreen,

gave the car the appearance of a berlinetta from which a small section of roofing had been removed.

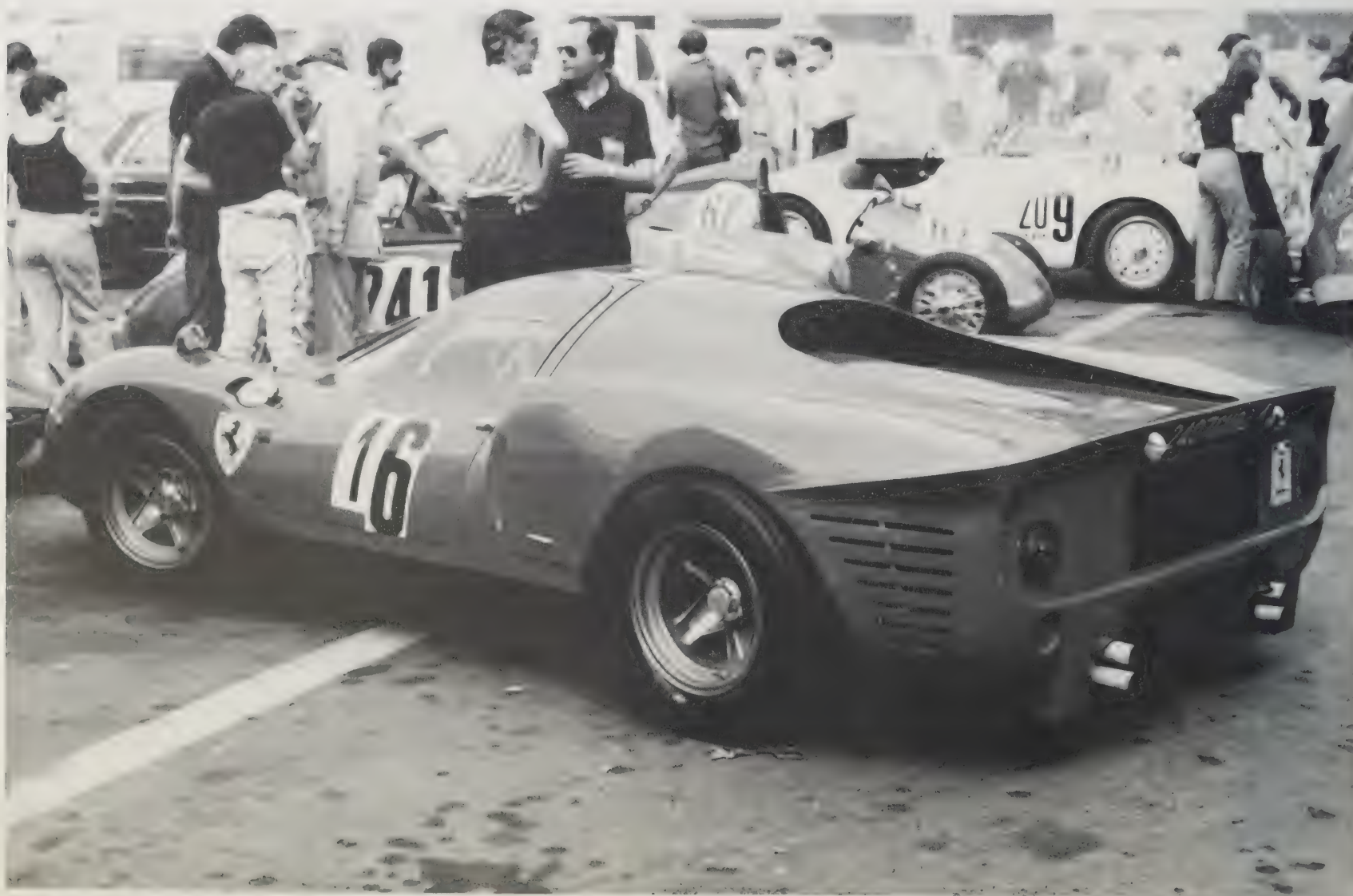
The first race for the new car came at Sebring on 26 March 1966 with one car entered for Mike Parkes and Bob Bondurant. It was very fast and for a time held first or second place. It was retired in the final hour, however, with a broken gear-selector lever.

During the remainder of the year 330P3s came first in the Monza 1000 Km; DNF in the Targa Florio; came first in the Spa 1000 Km; second in the Nurburgring 1000 Km and DNF in the Le Mans 24-Hour.

The failure of the P3s at Le Mans meant that Ford had at last gained their primary objective and in doing so also picked up the Manufacturers' Championship for Sports Prototypes.

Chassis numbers: it would appear that there were only 3 P3s built, 0844, 0846 and 0848.

Below: 365P2/3 (chassis number 0828).



1966 V-12/Prototype sports

365P2/3

For concessionaire team use during 1966, the previous year's 365Ps were given a facelift by revising the centre section of the body to the same specifications as those of the works P3s, hence the designation 365P2/3 for the 1966 cars. They were easily recognized by the rear air intakes which started at the front end of the rear wings rather than from the rear of the doors as was the case with the P3s. The engines remained on carburettors.

Additional cars delivered were 0828 to Ecurie Francorchamps and 0832 to Scuderia Filipinetti.



Left: 365P2/3 cockpit with simple instrumentation.

Below: 365P2/3.



1967 V-12/Prototype sports

330P4

3967 cc, 77×71 mm, 450 bhp at 8200 rpm, CR 11.5:1, double ohc per bank, 3 valves (2 inlet/1 exhaust) and 2 plugs per cylinder, coil ignition, Lucas fuel injection, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1488 mm Rear 1450 mm.

Although in outward appearance almost identical to the previous year's P3s, the 330P4 was under the body shell a brand new car. The engine – which had not been the main cause of trouble in 1966 – had been taken in hand by Franco Rocchi and as a result was virtually a new design. The principal changes made had been the introduction of 3 valves – 2 inlet and 1 exhaust – per cylinder; new injection pipes positioned between the camshafts; 10 mm instead of 12 mm spark plugs and a considerable strengthening of the block through the use of cross-bolted main bearing caps. Away from the engine, inboard disc brakes had been abandoned in favour of an outside location at the wheels which aided cooling and gave better accessibility; and the transmission, which had given trouble during 1966, was completely redesigned.

The new car was first seen in December 1966 when one was flown out to Daytona accompanied by team manager Dragoni and the 1967 driver team to give it a thorough testing on the track where it would have its first race of the forthcoming season. Some 600 laps were

Right: David Clarke's beautifully restored 330P4.

Below: David Piper's replica 330P4 (chassis number 0900), seen racing at Hockenheim in 1983.







Above: Maranello Concessionaires 412P (330P3/4). The car was driven by Richard Attwood in the BOAC 500.

driven by the 4 drivers and all existing records for the track were broken.

Two cars were entered for the Daytona 24-Hours on 4 February 1967, the December test car for Bandini/Amon and a berlinetta version for Parkes/Scarfiotti. At the end of the race 2 P4s crossed the line in first and second places respectively. Although the 2 cars were 3 laps apart, the finish was stage managed to put them across the line together, backed up by the NART 412P of Rodriguez/Scarfiotti. With the Daytona victory followed by a win at Monza, a second at Le Mans and Brands Hatch and a third at Francorchamps, the P4 brought Ferrari his twelfth Constructors' World Championship title.

Chassis numbers: Only 3 P4s were made: 0856, 0858 and 0860.

1967 V-12/Prototype sports

330P3/4 (412P)

For the concessionaire teams in 1967 Ferrari rejuvenated the 1966 P3s into what were generally at the time known as 330P3/4s but were officially designated 412P by the factory. The 1967 body – apart from a few minor details – was used but the engines were virtually as run in 1966, i.e. they did not have the 3 valve heads and were still equipped with carburettors. For a large part of the season the ZF gearbox was retained but with an oil cooler attached.

Four were delivered: 0844 to NART, 0848 to Scuderia Filipinetti, 0850 to the Ecurie Francorchamps and 0854 to Maranello Concessionaires. A fifth example, 0846, was retained by the factory.

1966 V-6/Prototype sports

Dino 166P/206P

1592 cc, (1986 cc), 77×57 mm (86×57 mm), 180 bhp at 9000 rpm (205 bhp at 8800 rpm), CR 9.8:1 (?), double ohc per bank, 2 plugs per cylinder, coil ignition, 3×38 or 40 DCN Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* independent double wishbones, coil springs. *Wheelbase:* 2280 mm. *Track:* Front 1348 mm Rear 1355 mm.

Ferrari disclosed something of his plans for 1965 at his press conference held in December 1964. The Formula 1 cars would be powered by the new Bellei-designed V-8 and the Forghieri flat-12 engines. Endurance races would be undertaken by the 275 and 330P2s. In passing, mention was made of a new '168 Dino GT' car. Attempts to draw elaboration failed and nothing further was heard of the 'Dino 168'. If it had been a statement of interest in a production-based engine suited to the forthcoming revision of the Formula 2 regulations, it was a little strange because by then it was well known that no more than 6 cylinders would be allowed.

If the GT car proved a phantom there was nothing unreal about the ear-splitting sound of a brand-new V-6-engined Dino 166P chassis 0834 – that turned up unexpectedly at practice for the Monza 1000 Km Race to be held on 25 April.

Its twin overhead camshafts per bank, 65 degree, twin-plug-ignition engine was said to be an 'endurance racing' version of that being prepared by Franco Rocchi

to meet the Fiat-Ferrari agreement on a production-based engine suitable for the new Formula 2 regulations.

In appearance the car was likened to a scaled-down berlinetta version of the P2 cars introduced that season. Its cockpit was a little ungainly, being rather higher and wider than a true scaling-down of the larger cars.

In practice it was indecently fast, but in the race – to be driven by Baghetti and Biscaldi – it suffered an engine failure after the first lap. Prior to appearing at the Nurburgring, it was driven by Baghetti to victory in a sports car race that was a supporting event to the Formula 2 Rome Grand Prix at Vellelunga. At the Nurburgring, driven again by Baghetti and Biscaldi, it finished fourth overall. At one time it lay third ahead of an array of Porsches, Fords and Cobras, but after it ingested a piece of rubber from an air intake seal a persistent misfire dropped it back to fourth.

At Le Mans it was to be driven by Baghetti and Casoni, but with Baghetti at the wheel blew its engine before Casoni had a chance to take his turn.

With no more 2-litre class endurance races scheduled it was turned over to Ludovico Scarfiotti to try for the European Mountain Championship. It made its hill-climb debut at the third event in the series, Trento-Bondonne. By then it had been re-engined with an experimental 2-litre V-6 which produced around 205 bhp at 8800 rpm and was technically speaking a 206P. Still in berlinetta form, it had no difficulty in making FTD.

Two weeks later it arrived at the Cesana-Sestriere climb with a new spyder body. It again had no problem in setting FTD and from there on gave its drivers no serious trouble in winning the championship for Ferrari.

Chassis number: 0834.

Below: Dino 166P at the 1965 Nurburgring 1000 Km.



1966-7 V-6/Prototype sports

Dino 206S and 246P

1986 cc, 86×57 mm, 218 bhp at 9000 rpm, CR 10.8:1, double ohc per bank, single plug per cylinder, coil ignition, 3×40 DCN2 Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones. *Rear suspension:* as front suspension. *Wheelbase:* 2280 mm.

Track: Front 1360 mm Rear 1355 mm.

The above details are suited to the initial appearance of the model. During its life there were a number of changes and 'experiments' carried out in respect of the engine.

Early in February 1966 Ferrari introduced the 4-litre 330P3 to the press at Maranello. Alongside it was a smaller sister, the Dino 206S. It was Ferrari's intention to build 50 of these smaller V-6 cars to qualify them for homologation as 2-litre Group 4 sports cars. Unfortunately, during the summer of that year, there were a number of labour troubles which effectively ruined any chance of the Dino achieving its production target. In the long run only 18 examples were made.

Although the 2-litre engine which had appeared in the 206P was retained for the 206S it had undergone several changes including a redesigned combustion chamber, lower compression ratio and reversion to single-plug ignition. It started life as a carburetted engine but there were certainly a number of occasions when fuel injection was tried using a Lucas system. Apart from these changes the specification was mechanically much the same as for the previous cars.

The brand-new bodywork was by Piero Drogo's Carrozzeria Sports Cars in Modena and was very definitely a scaled-down version of that used by the P3. On a number of the cars a section of the roof over the driver's head was removed to give a targa-type top. A roll-bar was moulded into the roof section behind the driver.

The chassis was a revised semi-monocoque structure formed over a welded tubular frame that was stiffened by stressed alloy panels riveted into place. Some glass-fibre panels were also used, particularly in the cockpit area where bag-type fuel tanks were fitted into the sills.

Dimensionally the 206S was a little longer and higher than its predecessor, but also slightly narrower. It was a little heavier too.

The history of the cars both individually and as a group is far too long and complicated to go into here. The works Dino 206S – chassis 0824 – made its competition debut at Sebring on 26 March 1966 where, with drivers Scarfiotti and Bandini, it eventually – after many dramas – finished fifth. During the remainder of the season the works-entered 206Ss came ninth at Monza, second in the Targa Florio, second and third at the Nurburgring and sixth at Spa-Francorchamps.



By mid-1967 the works had lost all interest in the 206S. Most of the cars ended up in private hands and were campaigned extensively over the next 2 or 3 years in a variety of events.

A number of changes were wrought in their specification including 3 valve heads and dual-plug ignition.

The '246P' noted in the heading came about in 1967 when, for the Nurburgring 1000 Km that year, Ferrari produced a Dino 'special' in the shape of an ex-works chassis (004) into which had been placed a Formula 1 Dino 246 engine. The car was in the hands of Scarfiotti and Klass and on form should have done well. Unfortunately, during practice it broke a piston and the engine was too badly damaged to make the start.

Chassis numbers: 0842 (works prototype), 002, 004, 006, 008, 010, 012, 014, 016, 018, 020, 022, 024, 026, 028, 030, 032, 034, 036 (bare chassis only).

For general details on these cars reference should be made to *Dino – The Little Ferrari* by Doug Nye (Osprey Publishing Ltd, 1979). For a fully detailed owner-by-owner and competition history, etc., of each car reference should be made to the particularly valuable *Ferrari*, Vol. 17, Nos. 3 & 4, a special issue of the journal of the American-based Ferrari Owners' Club, prepared by Marcel Massini and Denny Schue.

Above: Interior view of the Dino 206S.

Opposite: Dudley and Sally Mason-Styrton's 206S. The car is used regularly in sprint hill climbs and has won at many concours.



V-12/GT

275GTB and 275GTB/C

By 1963 it could be concluded that the 250GT series berlinettas had just about reached their farthest point of development and that it was time to be looking for something new. In general terms Ferrari would be seeking something to continue the dual-purpose racing/touring tradition established through the Tour de France and short-wheelbase berlinettas and replace the touring-orientated Lusso berlinetta. Visually it should suggest those links with the past and throw in a bit of 250GTO for full measure.

275GTB

3285 cc, 77×58.8 mm, 250/275 bhp at 7500 rpm, CR 9.2:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCZ6 Webers (6×40 DCN3 or later DCNG Webers were optional), 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* SS front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1377 mm Rear 1393 mm.

When the 275GTB and the spyder version, 275GTS, were shown in Paris in the autumn of 1964 it could be seen that Ferrari and Pininfarina had produced a car that one writer has described as both an end and a

beginning. It was to be the last of the single-overhead-camshaft berlinettas; the last to have a fair proportion of its total production built with all-alloy bodies and the last to have largely hand-built Scaglietti bodies which practically guaranteed that each car would be just that bit different from its fellows. It was the first touring Ferrari to have independent rear suspension and the first such to use a transaxle. It was also the first touring Ferrari to use magnesium alloy wheels, although Borrani wire wheels were an option.

The Type 213 engine was the final development of the short-block Colombo design. It retained the standard 58.8 mm stroke but was taken to its limit with a 77 mm bore. As an amalgam of the old and new as far as its component parts were concerned, its principal advantage over the 250 series engines lay in improved low-speed torque characteristics. The only engine option available was 6 DCN Weber carburettors. These added some 20-25 bhp with the drawback of being a little weaker under 4000 rpm but then pulling much stronger than the standard 3-carburettor layout from 5000 rpm on.

Originally the driveshaft linking the engine and transaxle was supported by a central bearing with solid couplings at either end. This arrangement caused considerable alignment problems. To try to eliminate these, a driveshaft with constant velocity joints at either end was introduced which eased but did not totally cure the problems. The final solution was achieved by adopting the driveshaft introduced with the 330GTC whereby the driveshaft was encased in a torque tube

Below: Graceful lines of the 275GTB (chassis number 7413).



that bolted to the bellhousing and transaxle casing, then formed a rigid link.

The most visible change to the body styling during its production life was the introduction of a long-nose version to lessen the front end lift experienced with the original short-nose models at speed. This was shown at Paris in 1965. At the same time the rear window was enlarged and the boot hinges were brought to the outside of the car.

Within a total production of some 455 cars a limited number – about 14 – competition-orientated versions were made. The first, chassis 6021, had a carefully assembled stock 6-carburettor engine with a slightly modified body. It was followed early in 1965 by 3 more, chassis 6701, 6885 and 7185, which were radically different from the production cars. They had special frames and bodywork and used dry-sump 6-carburettor engines that were closely related to the 250LM units. Finally, also in 1965, a further 10 short-nose cars were built. They had alloy bodies with slots behind the wheels. Most of them had large single fuel tanks with outside fillers and had the spare tyre standing vertically behind the tank. They were powered by standard 6-carburettor engines. Chassis numbers were 7271, 7421, 7437, 7477, 7517, 7545, 7577, 7623 and 7641.

Chassis numbers

The chassis number range – including the ‘competition’ versions noted above but excluding the first prototype, 5161 – is 6006 out to 9021, for a total of 455 built.

A full list of numbers with added detail can be found in ‘275GTB’ by Dyke Ridgley in *Cavallino*, No. 9, January/February 1980.

275GTB/C

In covering the ‘competition’ versions of the 275GTB above, it was noted that 3 of them were radically different from the standard production cars and, whilst they cannot be classified as 275GTB/Cs, they were well on the way to being so. The 11 cars that can be considered as true 275GTB/Cs were built for the 1966 racing season and fall between the finish of the production run for the 275GTB and the start of that for the 275GTB/4. They followed the rules laid down by the FIA for gran turismo cars to the letter. Their dry-sump Type 213/Competizione engines were virtually the same as those of the 250LM but with 3 carburettors instead of the 6 of the LMs. They developed 275/282 bhp at 7000 rpm with peak torque at 6000 rpm. The power curve was typically ‘competition’ with a loss of power between 3000 and 3500 rpm but a substantial gain – 100 bhp – between 4000 and 5000 rpm and a further 50 bhp between 5000 and 6000 rpm. Beyond that the use of 3 instead of 6 carburettors was a limiting factor.

Scaglietti built special super-lightweight aluminium bodies for these cars. The thickness was 1 mm, i.e.

about half that of the aluminium bodies that were available for the production 275GTBs. In appearance the cars were very much like the later production versions except that the wheel arches were wider and flared – particularly at the rear – to cover wider wheels and tyres. Only the windscreens were made of glass; all other windows were plexiglass. No sound insulation was provided but the cars were fully carpeted and trimmed. The result was that they weighed in at 2178 lbs with oil, water and spares but no fuel. A steel-bodied GTB would weigh in the region of 2700 lbs and a standard alloy body about 2600 lbs.

The intermediate-type open drive shaft with constant velocity joints was used rather than the final solution torque tube type. The latter would have been a distinct disadvantage in the event of clutch changes during racing.

Chassis numbers: 9007, 9015, 9027, 9035, 9041, 9051, 9057, 9063, 9067, 9073, 9079.

For a full build specification – component by component – along with individual car histories, reference should be made to ‘275 GTB/C’ by Dyke Ridgley in *The Prancing Horse* (the journal of the Ferrari Club of America), No. 53.

Below: 275GTB showing its paces at Silverstone.









Above: Prototype right-hand-drive 1964 275GTS.

Right: The works of a 1965 275GTS.

Opposite: 275GTS.

1964-6 V-12/GT 275GTS

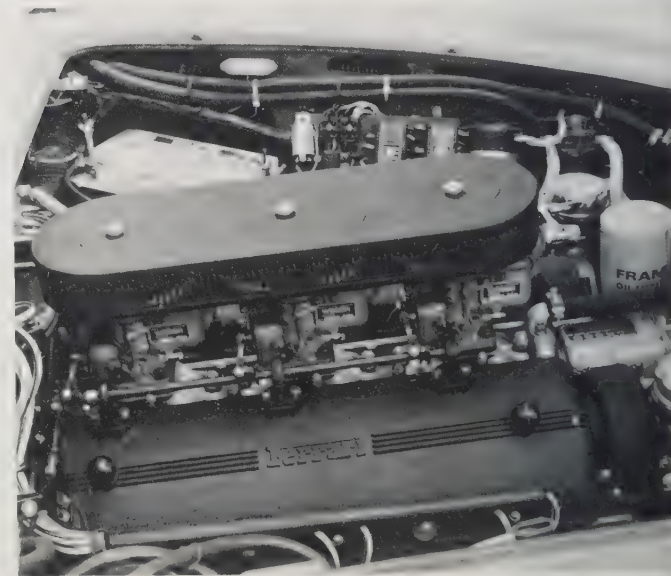
Details generally as for the 275GTB but rated for power 260 bhp at 7000 rpm.

As already noted, the 275GTS was introduced alongside the 275GTB at Paris in October 1964. Although the 2 cars shared an identical mechanical specification, the spyder as the rather less aggressive-looking of the 2 was given a slightly lower power rating.

The body for the GTS was both designed and built by Pininfarina. Those of the GTB were built by Scaglietti. This was the customary division of labour for berlinettas and spyders. The body for the GTS was in many ways more reminiscent of the single-headlight version of the 330GT 2 + 2 rather than an open version of the 275GTB. Also in keeping with the 330 was the continued use of Borrani wire wheels for the majority of the production.

Because of the identical build specification, the spyder inherited the alignment problems twist engine and transaxle that caused difficulties for the GTB, but in seeking a solution the spyders stopped at the intermediate remedy of constant velocity joints at either end of the drive shaft.

There were no significant changes made to the bodywork during production beyond that the 4-3-4 pattern of louvres in the front wings gave way to 3 large vents, a style employed with other models at the time and after. Mention has been made of a hard top becoming available but it is not clear whether this was a



listed option or not. Some of the late production cars came with the same type of cast-alloy wheels that had been introduced for the later 275GTBs.

Production, which began in the final weeks of 1964, continued through into 1966 for a total of 200 made.

Chassis number range: 6001 out to 8653.

For further details of this model together with a complete chassis number listing, reference should be made to '275GTS' by Dyke Ridgley in *Cavallino*, No. 13.



1966-7 V-12/GT

275GTB/4

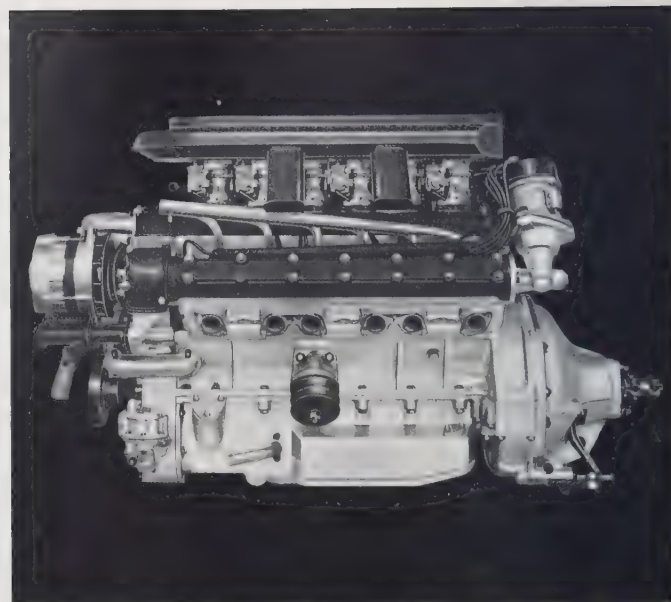
3285 cc, 77×58.8 mm, 300 bhp at 8000 rpm, CR 9.2:1, double ohc per bank, single plug per cylinder, coil ignition, 6×40 DCN 17 Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1401 mm Rear 1417 mm.

Almost 2 years to the day after he had presented the 275GTB at Paris in October 1966, Ferrari put on show at the same venue its successor, the 275GTB/4. The '4' in the designation indicated adoption of a 4-camshaft (i.e. twin-overhead-camshafts-per-bank) layout for the engine, and it was the first of Ferrari's touring cars to use such arrangement. There were sound mechanical reasons for it. Also, if any added spur were needed, just down the road at Sant'Agata Bolognese, Ferruccio Lamborghini had already accepted the principle for the V-12 engines that powered his first cars.

The new engine, Type 226, did not offer any great increase in maximum power. More usefully it gave extra torque and increased flexibility as its principal advantages. A further modification over the engine of the previous cars was the use of dry-sump lubrication.

The bodywork for the new car, designed by Pininfarina and built by Scaglietti, was very little different from that of the late production 2-cam cars. About the only noticeable new feature was the slightly raised centre section on the engine cover. It is not an infallible



guide now because a number of pre-275GTB/4 cars have it, although not necessarily as an original feature.

The model was in production for just over a year and during that time it is estimated that some 350 examples may have been built. Unlike its predecessor, no competition versions were produced. A number of aluminium-bodied examples have been mentioned but to date the best count of these to emerge has it that there were probably not more than about a dozen such.

Chassis number range: 8769 out to 11069.

Opposite: Exquisite lines of a 275GTB/4 seen from above.

Right: 275GTB/4 engine. The first 4-camshaft unit to be used for one of Ferrari's road-going cars.

Below: 275GTB/4 – a very handsome car.





1967 V-12/GT

275GTB/4 NART Spyder

Details generally as for 275GTB/4.

Whilst the 275GTB had been accompanied by a spyder version – the 275GTS – such was not the case with the GTB/4. For those who wanted open-air motoring there was the 330GTS, but Chinetti, North American Racing Team (NART) boss and Ferrari's distributor for the Eastern United States, felt that the 330GTS was not the open and more sporty type of Ferrari that his clients required. So he arranged the limited production of a spyder version of the GTB/4 which became known as the NART spider.

Accounts of how many it was intended to build vary from 25 up to around 40. In reality only 10 were built. Of these, 9 went to the United States and 1 into Europe. It would seem that no more than 4 were built from scratch as spyders. The remainder were constructed from panels that were intended for the berlinettas.

Below: Specially commissioned 275GTS/4 NART spyder, only 10 of which were built.

Whilst the type does not seem to have attracted much attention when it was being made, there has in recent years been a much greater interest and as a result there are now more 'replicas' and 'conversion' examples than there were originals in the first place.

As it was never an 'official' Ferrari type there has always been some discussion over the correct designation. '275GTS/4' has been the most popular, due in the main most probably to the September 1976 *Road & Track* road test of one. Gerald Roush, in his discussion of the model in *Ferrari Market Letter*, Vol. 9, No. 4, has indicated his preference for '275GTB/4*S NART Spyder' as being the 'most correct'.

The first off of the series, chassis 09437, was imported into the United States in February 1967 in time to be prepared and entered in the Sebring 12-Hour Race. Driven by Denise McCluggage and Pinky Rollo, it was placed seventeenth overall: a very creditable performance for a basically stock car.

Chassis numbers: 09347, 09751, 10139, 10219, 10249, 10453, 10691, 10709, 10749, 11057.



1966-70 V-12/GT

330GTC

3967 cc, 77×71 mm, 300 bhp at 7000 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DCZ6 Webers, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1401 mm Rear 1417 mm.

The 330GTC was introduced at Geneva in March 1966. The car on show was chassis 8329. It had been preceded by an earlier prototype – 275GTC – that Pininfarina had built on a 275 series chassis, 6431.

The Type 209/66 engine used was a revised – new cylinder block – version of that used for the 330GT 2 + 2.

With the 330GTC Ferrari engineers found the solution to the alignment problems that had affected the 275 series cars. They now introduced a torque tube which formed a solid link between the front-mounted engine

and the rear-mounted transaxle. As that arrangement reduced the number of engine mounting points needed, a new block had been necessary.

The body, designed and built by Pininfarina, combined a 400 Superamerica/500 Superfast-like front with a 275GTS-style rear. It was a very elegant car and is by no means out of place today.

During the production run, which lasted through into 1968, a number of changes were introduced. The most significant came at chassis 11181 with a new clutch control, new half-shafts and a new accelerator linkage. The new half-shafts are often referred to as being 'Daytona' type but in fact it is more a case of the Daytonas having picked them up from the 330GTC.

Some 600 330GTCs were produced.

Chassis number range: 08329 – ignoring the prototype – out to 11613.

For a fuller note on the model together with a listing of some 598 of the chassis numbers reference should be made to *Ferrari Market Letter*, Vol. 10, No. 7 (Rough Publications Inc.).

Below: Styled by Pininfarina, the 330GTC had a 400SA/500SF front combined with a 275GTS rear.



1966-8 V-12/GT

330GTS

Details the same as for the 330GTC.

Officially first shown to the public at large at Paris in the autumn of 1966, the 330GTS had appeared earlier in the year. Designed and built by Pininfarina, it was quite simply a convertible version of the coupé 330GTC. Apart from the nose – which was the same as that of the coupé – the general body style was very similar to that of the 275GTS. One example, chassis 10913, was given a Targa-style body by its owner William Harrah. It has a large polished roll-bar and a huge rear window which considerably shortened the boot lid at the back.

All told, some 100 of the 330GTS were built before production ceased in 1968.

Chassis number range: 8899 through to 11363.

Below: The 330GTS was a convertible version of the 330GTC.

1966-7 V-12/GT

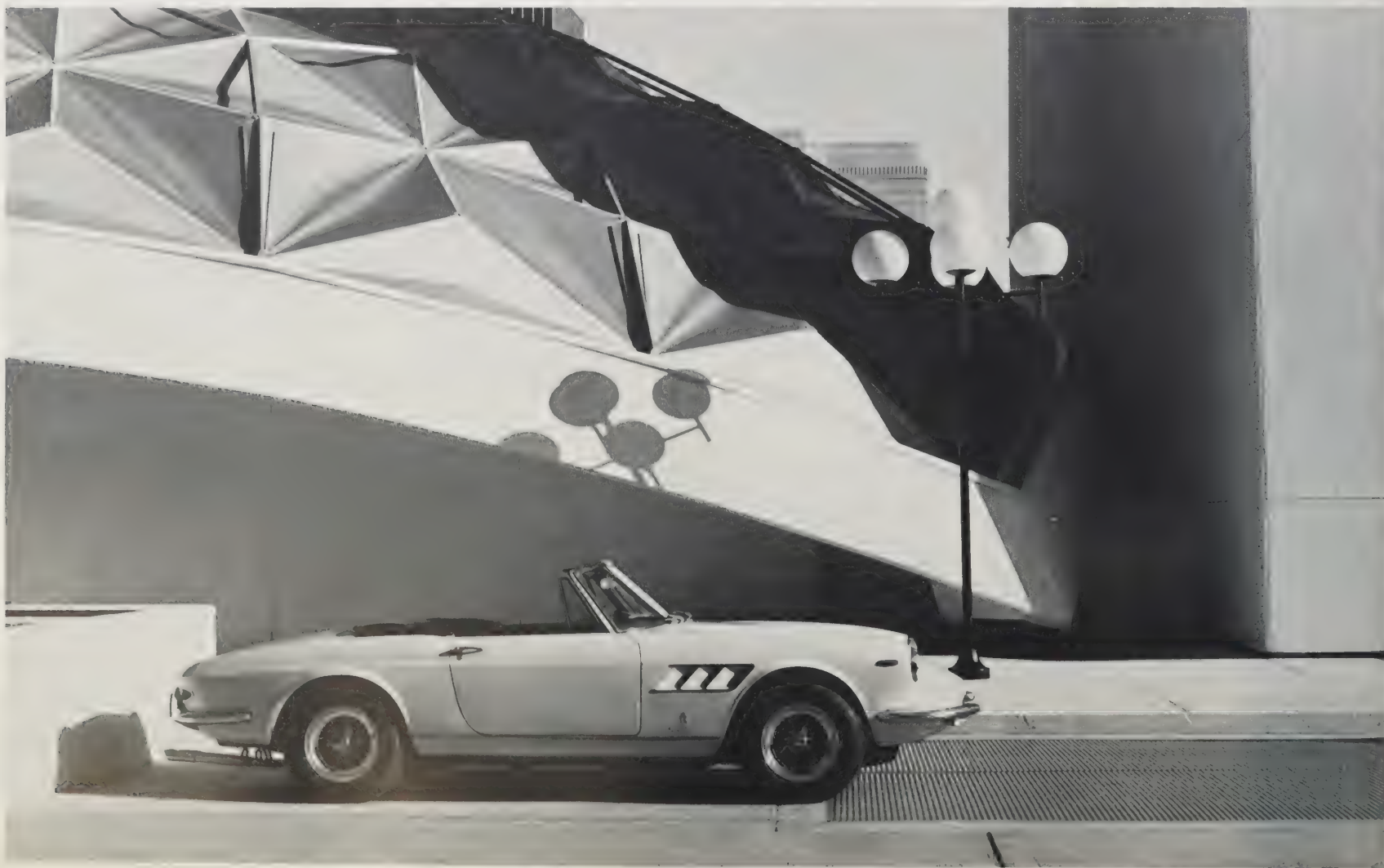
365 California

4390 cc, 81×71 mm, 320 bhp at 6600 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3 Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* rigid axle, semi-elliptic springs. *Wheelbase:* 2650 mm. *Track:* Front 1397 mm Rear 1389 mm.

The 365 California was introduced at Geneva in spring 1966. Although it was looked upon as a successor to the 500 Superfast, it was doubtful whether, because it was a cabriolet, it would appeal to those who had bought the America/Superamerica/Superfast range of cars.

Its 4.4-litre Type 217B engine was based upon the so-called 'long-block' – 94 mm bore centres – version of the Colombo engine – Type 209 – used with the 330GT 2 + 2.





Above: The sleek lines of the beautiful 365 California designed by Pininfarina.

1967 V-6/GT

Dino 206GT

63 deg, 1987 cc, 86×57 mm, 180 bhp at 8000 rpm, CR 9.0:1, double ohc per bank, single plug per cylinder, coil ignition, 3×40 DCF Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* SS front suspension. *Wheelbase:* 2280 mm. *Track:* Front 1425 mm Rear 1400 mm.

The idea of a small and more affordable GT car that would widen the appeal of Ferrari was entertained around Maranello for a long time. It was backed by rumour and sustained by the appearance of such as the 4-cylinder in-line-engined 850 cc Ferrarina, or 'Tommy Gun' as it was at times styled because of its insignia, and also the 4-cylinder 1032 cc Mille which settled out into the short-lived ASA.

With that background and a lengthy showing in public of styling exercises or prototypes, the Dino 206 seemed to creep up on the market rather than burst upon it. The car shown at Turin in November 1967, perhaps formally marking the start of the Dino 206GT,

It may also have had some affinity with the 4.4-litre engines used in the 'client' 365P prototype sports racing cars of the mid-sixties.

The chassis was essentially that of the late 330GT 2 + 2s and the 500 Superfast but its 2650 mm wheelbase was the longest ever used for a Ferrari convertible. The 5-speed gearbox was integral with the engine, with power being transmitted via a driveshaft to a solid rear axle. The combination of a long wheelbase with lack of independent rear suspension somewhat limited its handling qualities.

The body was designed and built by Pininfarina. At the front it was very much in the style of the 500 Superfast and 330GTC – the latter had also been introduced at Geneva that year. The headlights were behind perspex covers and there were pop-up driving lights. The rear of the car was very angular, flat and finished rather abruptly. It was unique to the model and in complete contrast to the flowing lines at the front.

The total production, which lasted into the summer of 1967, was for 14 cars only.

Chassis numbers: 8347, 9127, 9447, 9615, 9631, 9801, 9849, 9889, 9935, 9985, 10077, 10155, 10327 and 10369. Two, 9985 and 10369, were right-hand drive.





Above: A studio photo of the Pininfarina 1966 Dino 206GT.

was itself more in the nature of a prototype – admittedly a somewhat advanced one – than a production model. Production cars in fact did not start coming through until late 1968.

Prior to the 1967 Turin car there had been 2 significant prototypes from Pininfarina. The first of these, the Dino 206GT Speciale was shown in Paris in 1965. Its engine, a V-6 twin-overhead-camshafts-per-bank 2-litre, was the same as that used for the Dino 206S sports car. It was placed longitudinally, located ahead of the rear wheels, and is said to have contained no internal components. The chassis into which it was placed is reckoned to have been 0834 – that is, the one assigned to the works Dino 166P. In connection with this it is interesting to note that Massini and Schue, whose work on the history of the Dino 206Ss has been noted elsewhere, do make mention of this ‘fact’.

Whatever the truth of the matter, the car shown at Paris exhibited most of the features that would be found in due course on the production 206GTs. The very low roof line was, however, somewhat impractical. The headlights, 4 in all, were protected by a plexiglass cover which extended across the full width of the nose.

The second prototype, the ‘Dino Berlinetta GT’, was shown at Turin in the autumn of 1966. The design of the body had moved closer to the final look of the Dino GTs. The roof line was higher and the headlights were more traditionally located in the front wings behind perspex covers.

There was a small elliptical air intake in the nose and the cast-alloy wheels were the now familiar 5-pointed star design.

The engine was still placed lengthwise ahead of the rear axle line.

With the showing of the third prototype at Turin in 1967, the definitive 206 Dino was virtually an accomplished fact. Outwardly it differed little from the 1966

Turin version but under the rear deck lid the engine now lay across the car. This had required the design of a completely new gearbox that could be positioned parallel to the crankshaft. A new sump was cast which completely enclosed the differential and gearbox but was hermetically sealed to ensure separate lubrication systems for the engine and transmission.

The windshield was more steeply raked, the roof was slightly longer and, to accommodate the taller gearbox/engine assembly, the rear deck was slightly higher. The transverse location of the engine brought about a sizeable rear luggage compartment. The spare wheel was housed in the front compartment of the car.

There were 3 deck lids, 1 for the front compartment, 1 for the engine and 1 for the luggage compartment. All were hinged at the front.

The bodies, designed by Pininfarina, were built by Scaglietti in aluminium.

With the production versions not starting to leave the assembly line until well into 1968, the production life of the Dino 206, which ended late in 1969, was not very long.

There are a number of varying estimates of the number made. Most have settled for between 100 and 150 but recent studies suggest that there were rather more, perhaps as many as 180 if one goes on chassis numbers alone. However, it is not as simple as that because a chassis number which would certainly imply the production of 180 cars is noted by the factory as having been the 143rd example built, indicating that 150 might after all be the true figure.

Chassis numbers

For these and the remainder of the Dino series, including the 308GT4, even numbers, 2 apart, were assigned. For the Dino 206GT the range seems to be 00106 out to 00394.

Opposite: Dino 206GT, a car for the lower end of the Ferrari market.

1071 V-12/GT

365GT 2 + 2

4390 cc, 81×71 mm, 320 bhp at 6600 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, 3×40 DR1/5 Webers, 5-speed gearbox – 4th direct, 5th overdrive – integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension but with hydro-pneumatic self-levelling device. *Wheelbase:* 2650 mm. *Track: Front* 1483 mm *Rear* 1468 mm.

The popularity of the 2 + 2 Ferrari could be measured by the fact that during the 8 years that the 250 and 330 2 + 2s had been in production, almost 2100 examples over both models were made. In total that represented more than 50% of Ferrari production during that time.

Following on from the 330 series cars, the 365GT 2 + 2 was introduced at Paris in 1967. The Type 245 engine used was in reality a bored-out (81 mm) version of the Colombo long-block engine introduced with the 330GT series. It displaced 4.4 litres (365 cc per cylinder), had a single overhead camshaft per bank and, with 3×40/DF1/5 Weber carburettors, was rated 320 bhp at 6600 rpm. Torque was up to 267 lbs/ft at 5000 rpm.

The chassis had the same wheelbase as the 330GT 2 + 2 but the front and rear track dimensions were both

increased. It had full independent suspension – the first 2 + 2 Ferrari to do so. At the rear the suspension at each wheel involved a spring/shock absorber unit together with a self-levelling unit developed by Koni in conjunction with Ferrari to compensate for laden and unladen weight.

Standard equipment included power-assisted steering, air conditioning, a radio and powered window operation.

The body, designed and built by Pininfarina, received somewhat mixed comment. The front was obviously inspired by the 500 Superfast and 330GTC Speciale designs. The rear, though, was a combination of straight lines and sharp angles that were not in harmony with the curves of the front. It was a big car and looked it. To the American publication *Road & Track* it was the 'Queen Mother of Ferraris'. In spite of that rather unkind characterization, the car was no slouch. It could summon up a standing quarter-mile figure of 15.2 seconds, had a top speed of 152 mph and could pull 0-60 mph and 0-120 mph in times of 7.2 secs and 26.2 secs respectively. The power-assisted steering made it feel light on its feet and the big Michelin XVR tyres gave it high cornering power.

It was in production for just over 3 years. During that time some 800 examples were built.

Chassis number range: 10700 out to 14100.

Opposite: 365GT 2 + 2 (chassis number 12663).

Below: The single-overhead-camshaft 365GT 2+2.







1968-73 V-12/GT

365GTB/4 Daytona

4390 cc, 81×71 mm, 352 bhp at 7500 rpm, CR 9.3:1, double ohc per bank, single plug per cylinder, coil ignition, 6×40 DCN Webers, 5-speed gearbox integral with final drive, dry-sump lubrication.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2400 mm. *Track:* Front 1440 mm Rear 1425 mm.

The 275GTB/4 had a number of serious rivals in world markets in the mid-sixties. Some – Lamborghini, Maserati, Bizzarrini and Rivolta – were on Ferrari's doorstep. Others such as Aston Martin were well placed in the markets where Ferrari would be seeking sales. Some were cheaper than anything Ferrari could offer; others more technically exciting.

Well aware of the situation, Ferrari began planning a successor to the 275GTB/4 almost as soon as it had been announced. Pininfarina's stylists were briefed to develop a new berlinetta based on the chassis of the 330GTC. Work on the detail drawings needed got under way at the start of 1967 and the first prototype, chassis 10287, was completed during the third quarter of that year. Others followed as styling underwent the inevitable refining process.

To get the car into the United States it would have to meet new and more stringent exhaust emission regulations due to come into effect in 1968. As part of their quest for a 'clean-burn' engine, Ferrari installed a 3-valve, 4-cam Heron head unit in the chassis of the first prototype, 10287. The experiment was not followed through but, because of the closeness of its build to that of the 330P4 type power units, there has been speculation – incorrectly – that the engine was a detuned version of those earlier V-12s.

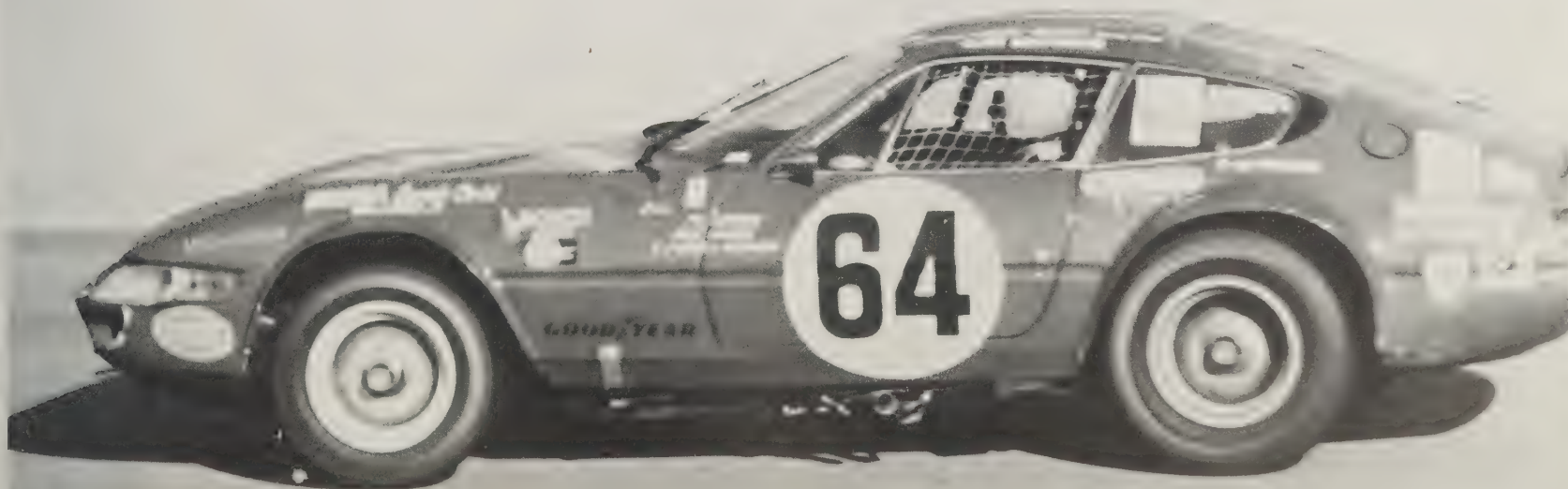
The new berlinetta was first shown to the general public in Paris in the autumn of 1968. The car was probably the final Pininfarina prototype built on chassis 11795. The production versions would be built by Scaglietti but that first show example carried both the script and badge of Pininfarina. Initial reaction to the styling was generally favourable but there was some degree of disappointment that what was obviously the flagship of the Ferrari fleet was still front- rather than mid-engined.

Looked at in terms of mass location, the styling was classic with its long nose and short passenger space. The greatest mass lay at the back with the long and low front half acting as a counter-balance to the rear. Standing still, it managed to suggest very high speed.

Quite a lot of the criticism at the time was aimed at the nose where the 4 headlights were concealed behind a plastic noseband approximately 8 ins. deep across the

Opposite: 1973 365GTB/4 known generally as the Daytona. The headlamps are no longer behind a plexiglass frontal area.

Below: Privately owned 365GTB/4 at the 1977 Daytona 24-Hour Race.





Above: Classic lines of the Pininfarina Daytona in its final form.

Opposite: About 115 Daytona spyders were factory-built. Many owners have had their berlinettas 'decapitated' in an attempt to achieve the beautiful line of the spyder (see page 182 for details).

full width of the car. In the middle the band was black, although clear right at the centre to display the Ferrari badge attached to the bodywork beneath.

The twin-overhead-camshafts-per-block, single-plug per-cylinder Type 251 engine was a 'nothing unconventional' design. In line with that of the 275GTB/4 it had dry-sump lubrication.

The chassis along with the engine was also very much 'traditional' Ferrari.

With regard to styling the American market was not very happy with the covered-in headlights. There was an interim solution in which the noseband was abandoned to leave the headlights fully exposed before the final and tidy arrangement of mounting the headlights in retractable pods was adopted. That was about the only change of any significance that took place during the car's production life.

Despite being considerably overweight, the Daytona – as the 365GTB/4 had become known – had a considerable involvement in competition although Ferrari never officially entered one under his own flag. All the running was undertaken at first by the concessionaire teams and then later by individuals who acquired cars for racing.

All told, some 15 'competition' Daytonas were constructed by the factory. They came in 3 series of 5 cars each. The first series became available in time for the 1971 Tour de France; the second series all made their debut at Le Mans in 1972 and the third series appeared on the scene at various times during 1973.

The first 5 cars were not officially homologated as the necessary 500 to be built had not come about. They could not therefore run in Group 4 but had instead to fight it out in Group 5 against such as the Matra 630 spyders. They were carefully assembled stock chassis with lightened bodies of aluminium and fibreglass and plastic side windows.

The second group of cars were a rather more serious

proposition. The engines had higher lift cams, ported and polished heads and a compression ratio of 10.1:1. They developed 402 bhp at 8300 rpm. They weighed in at 400 lbs less than a standard car. Wider rims, 9 ins. front and 11 ins. rear, were part of the revised build.

The third series were more extensively modified. They had billet connecting rods, tuned manifolds, larger valves and modified camshafts as part of an engine specification which developed 450 bhp. They also had improved brakes, larger anti-roll bars and a roll-over cage to protect the driver.

Ferrari 'supported' the activities of his concessionaires until late in 1973. At that point all support was withdrawn and the cars then started to pass into private hands. Through that outlet they continued to appear in competition through into 1979 when one of the third series cars, 16407, was driven into second overall in the Daytona 24-Hour Race by John Morton and Tony Adamowicz.

Production of the Daytona ended in 1974. The total number produced is still somewhat uncertain but would appear to be in the region of just over 1400, though that number includes the spyder version – covered later – of which there were probably just over 100 built.

Chassis numbers

The chassis number range for the general production run is 12037 out to 17087 approximately. That excludes 3 prototype versions, 10287, 11001 and 11795. It includes the competition cars which were numbered as follows:

First series: 14407, 14429, 14437, 14485, 14489.

Second series: 15225, 15373, 15667, 15681, 15685.

Third series: 16343, 16363, 16367, 16407, 16425.

For further detail on the Daytona, including competition histories of the racing versions and a detailed listing of all known chassis numbers, reference should be made to *The Ferrari 365GTB/4 Daytona* by Pat Braden and Gerald Roush (Osprey Publishing Ltd, 1982).





1968-70 V-12/GT

365GTC and 365GTS

4390 cc, 81×71 mm, 320 bhp at 6600 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 200 mm. *Track:* Front 0000 mm Rear 1401 mm.

With the phasing out of the 330GT 2+2 in favour of the larger-engined 365 2+2, it was natural to expect that in due course spyder and coupé versions would arrive to establish a full range of 365s.

The 365GTC and 365GTS models appeared together at the end of 1968. Whilst the 2+2 model was entirely different from its predecessor in looks, the spyder and coupé 365s were very much like their 330 counterparts. The only visible difference on both cars was the new arrangement for venting hot air from the engine compartment. On the 330s there had been a group of 3 large outlets in each side of the body between the front wheel arch and the door. On the 365s these had vanished to be replaced by 2 flat grilles, 1 each side of the engine compartment cover, close to its trailing edge.

Mechanically they were identical, being in fact 4.4-litre-engined versions of the corresponding 330 models. The Type 245/C engine was that used for the 365GT 2+2 but with a number of minor modifications that were covered by the 'C' suffix. In connection with the 365GTS a new throttle linkage has been noted and the carburetors were Weber 40 DFI/5 on the first 10 made and 40 DFI/7 on the last 10.

The chassis in each case was the Type 592 that had been used for the 330 cars but with a number of minor modifications that added a 'C' suffix. One of the changes noted was the use of ATE brakes in place of the Dunlop/Girling system previously used by Ferrari.

The 365GTS had a very short production life. By the middle of 1969 it had been taken out of the catalogue in favour of the 365GTB/4, although that car was in no way a replacement for it. Not until the advent of the Daytona spyders was there a new convertible Ferrari in the market. From such a limited production life only about 20GTSs were made. Besides the short time span of production there were probably other reasons that helped to account for the small number made. Compared to the Daytona the design was dated and there was the influence of new safety laws in the USA to take into account. These were becoming ever stricter and, whilst Ferrari was obviously going to have to comply with them, he could not have been very willing to expend the necessary time and resources except for completely new models.

The 365GTC had a rather longer life. It was phased out at the beginning of 1970 after somewhere in the region of 150 examples had been made. One must assume that much the same reasons accounted for its relatively speedy demise as for that of the GTC.

Chassis numbers

365GTS 12163, 12201, 12225, 12227, 12243, 12253, 12259, 12269, 12285, 12307, 12453, 12455, 12457, 12459, 12463, 12465, 12473, 12477, 12489, 12493.

365GTC Range 11823 out to 12795. A list of 150 individual numbers can be found in *Ferrari Market Letter*, Vol. 9, No. 11.

Overleaf: 1969 365GTC coupé.

Opposite: 365GTC coupé with coachwork designed by Pininfarina but similar in many respects to the 330GT.

Below: First production of the 365GTC series was in late 1968.







1969 V-12/Prototype sports

312P

2990 cc, 77×53.5 mm, 420 bhp at 9800 rpm, CR 11.0:1, double ohc per bank, 4 valves and single plug per cylinder, coil ignition, Lucas fuel injection, 5-speed gearbox integral with final drive.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2370 mm. *Track:* Front 1485 mm Rear 1500 mm.

The day after the 1967 running of the Le Mans 24-Hour Race, the CSI decided that in 1968 Group 6 prototype cars would be limited to 3 litres and those of Group 4 to 5 litres. There had been no consultation with interested race organizers or constructors. Whilst Ferrari perhaps more than any of the other major constructors affected could have pulled something out of the hat in time, he showed his displeasure at the CSI way of doing things by announcing that he would boycott the Constructors' World Championship in 1968 and kept his word.

No matter how hard feelings might be on such issues, it was unlike Ferrari to stay away from racing for very long, but it was still something of a surprise when at a press conference held on 14 December in the Real Fini Hotel, Modena, he unveiled the 312P as his entry for the 1969 Constructors' Championship.

The engine of the car was very closely related to that which would power the 312F1 cars that year. The inlet rams had been repositioned along the centre of the 'V' and the exhaust manifolds returned to the sides of the block. A single dry-plate clutch took the drive to a 5-speed Ferrari-made gearbox. The chassis was pure Maranello, being of tubular construction reinforced by aluminium panels and with the engine used to provide added rigidity. The spyder body very much resembled a scaled-down 612 Can Am car but without the wing and air brake flaps that had been present on that car. It was a handsome-looking car and was expected to give both the 3-litre Porsches and 5-litre Fords a run for their money.

The car shown at the Fini had not run, so a few changes to the exterior were to be expected once development testing got under way. The position and inclination of the front air intake was changed several times and various positions were tried out for the small spoilers fitted to the front wings. An air scoop was fitted over the intake trumpets along the centre of the rear deck. Later in the season – in time for Le Mans – 2 of the cars would appear as berlinettas with long sloping slatted roofs.

Not ready for the opening event of the Championship series at Daytona, the 312P did not make its racing debut until the Sebring 12-Hour Race on 22 March. There was just the 1 car entered for drivers Chris Amon and Mario Andretti. In Group 6 it was up against the 3-litre Type 33 Alfa Romeo and 908 Porsches. In Group 5 the Ford

GT40s were still a force to be reckoned with. Amon put it on pole position and by the third hour it was in the lead. At the half-way mark it lay second to the Porsche 908 of Mitter and Schutz. Shortly after it was damaged when struck by a bonnet cover that had flown off a slower car. The damage affected the cooling system to the extent that it became necessary to make a number of stops to take on water. Because of that it could do no better than finish second to the GT40 of Ickx/Oliver.

It had not been a bad debut but a single-car entry for a race like Sebring and only 3 all told built during the year meant that there was no margin at all to deal with any problems that might arise. 312Ps took part in 6 races during the year. They either started from pole position, led or challenged for the lead and were as fast as the opposition. But from the 8 entries made – 1 each at Sebring, Brands Hatch, Spa and Nurburgring and 2 each at Monza and Le Mans – they scored 2 seconds (Sebring and Spa) and 1 fourth, (Brands Hatch).

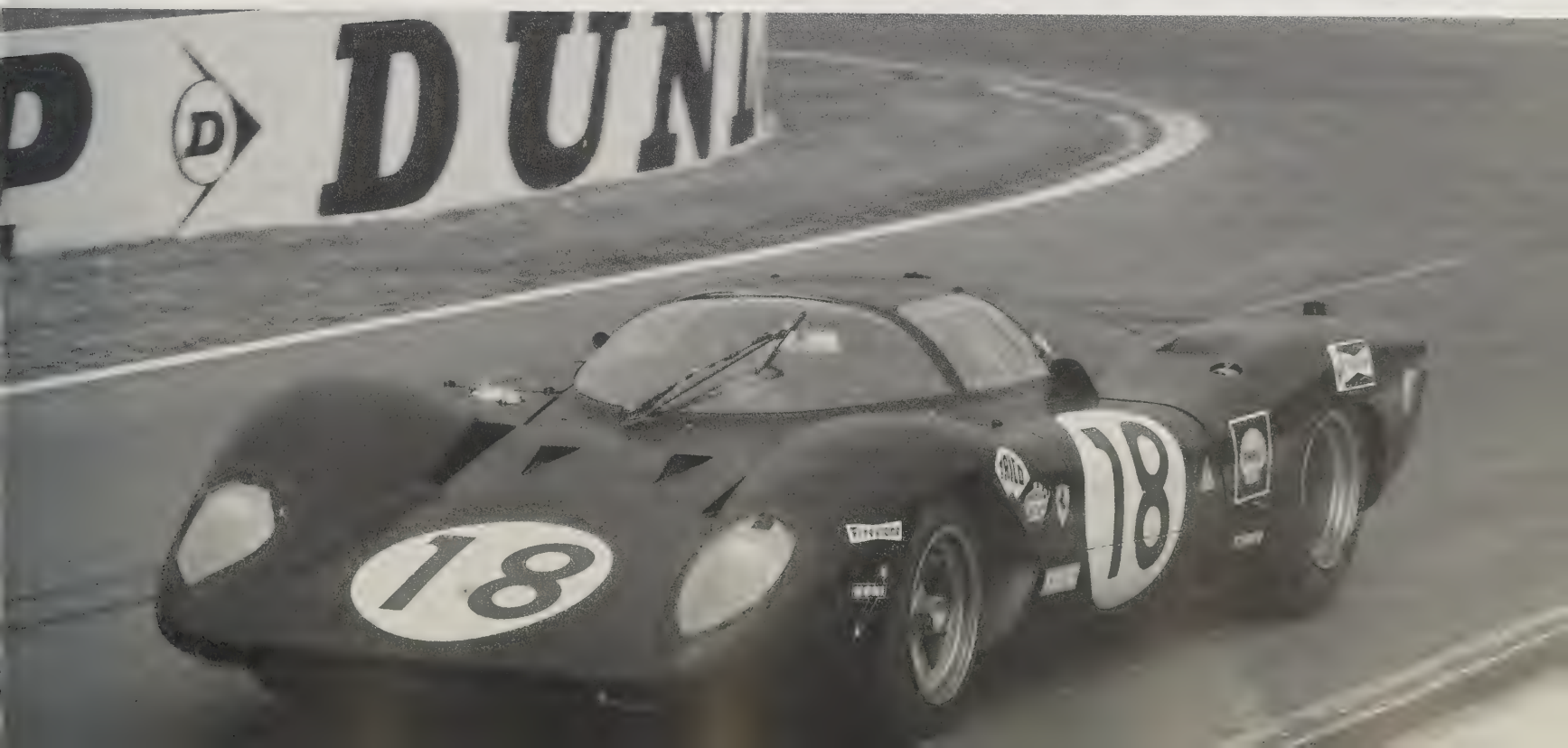
The end of the 1969 season was the end of the 312P as a works car. The 3 that had been built were sold off to Chinetti for use by NART. During the next 3 seasons they scored several good placings from among the 5-litre sports cars and newer 3-litre prototypes as well as in the Can Am series.

Chassis numbers: 0868, 0870 and 0872.

Above: Chris Amon drives the 312P in the 1969 BOAC 500 Mile Race at Brands Hatch where, with co-driver Pedro Rodriguez, it finished fourth overall.

Opposite: 312P, Le Mans, 1969.







1969-74 V-6/GT

Dino 246GT and 246GTS

65 deg, 2418 cc, 92.5×60 mm, 195 bhp at 7600 rpm, CR 9.0:1, double ohc per bank, single plug per cylinder, coil ignition, 3×40 DCN F/7 Webers, 5-speed gearbox in unit with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2340 mm. *Track:* Front 1325 mm Rear 1400 mm.

Opposite above: The clean and flowing lines of the Dino 246GT.

Opposite below: Dino 246GTS – a spyder design by Pininfarina.

Below: A factory photo of the Dino 246GTS (1970) which shows up its line to perfection. The wheels now used 5 bolts instead of the Rudge-type centre-lock hubs.

The limited production run of the Dino 206GT must have been prompted by a very quick assessment on the part of Ferrari that to gain any worthwhile foothold in the market for small high-performance GT cars they would have to offer more in the way of power-related performance than would be possible with the 2-litre 206. The Porsche 911S was up to 2.2 litres starting in August 1969, and whilst Ferrari could not hope to bite deeply into Porsche sales of 911s, it was realistic to expect that a significant number of buyers, interested in the new approach by Ferrari, could move over from Porsche. One certain way to attract greater interest was to

increase engine capacity and hence power as soon as possible.

The 2.4-litre Dino 246GT was announced in the spring of 1969 and first shown to the public at the Turin Show in the autumn of that year. Outwardly there was little to distinguish it from its predecessor. The 'Dino GT' inscription at the back still gave no clue as to the model designation. About the only noticeable difference was the use of a flap to conceal the fuel filler cap which on the 206s had been fully exposed. It is a matter of interest that early brochures for the 246GT still showed the original fuel cap – clearly an adaptation of the brochures issued for the 206 model.

Besides the obvious increase in engine size there were a number of other differences between the two cars. The engines, still made by Fiat, were given cast-iron cylinder blocks – those of the 206 had been made of light alloy with shrunk-in steel liners. The body shell was made of steel as opposed to the aluminium that had been used for the 206s, and the wheelbase was increased to 2340 mm – the same as on the 1966 Turin Show prototype Dino.

Early in 1970 the securing of the wheels by Rudge-type centre-lock hubs gave way to a new method of





Above: Dino 246GTS with the roof in position over the cockpit.

Opposite: Front view of the Dino 246GTS.

mounting which used 5 bolts as the means of attachment. At the same time the Girling-type brakes were replaced by some from ATE.

As the model progressed throughout its best part of 5 years' production life, other modifications were introduced. The details of most of these lie deep within the parts books that were issued from time to time. The issue of these books linked to specific 'valid from' chassis numbers has resulted in the cars being considered as falling into variously designated series: see the note following the chassis numbers of 246GTS.

Dino 246GTS

A spyder version, the 246GTS, was introduced at Geneva early in 1972. The body followed closely that of the GT version but with the addition of a Targa-style removable roof panel and elimination of the rear quarter-light panels. There were no changes to the general mechanical specification that had been reached by that time. A considerable number of 'options' were available and have with the progress of time resulted in the usual confusion as to what was and what was not 'original' equipment.

The 246GTS was taken out of production along with the GT version around the middle of 1974.

Chassis number range (over both models): 00400 out to 08518 for a total of 3048 cars made, i.e. 1868 coupés and 1180 spyders. The first spyder was probably 03022.

The chassis number ranges for the various 'series' that have been established through the issue of differing parts books are:

Type 'L' or Series I 00400 to 01116.

Type 'M' or Series II 01118 to 02310.

Type 'E' or Series III 02312 to 08518.

Other parts books have been issued but have not affected the 'series' breakdown noted above.

1969-73 V-12/GT

365GTB/4 Daytona Spyder

Details as for the 365GTB/4 Daytona.

Entries in this book covering Ferrari's other open GT cars will have shown that in most cases they either had their own identity or else were quite clearly the closed versions without a top. An example of the first category is the 275GTS which gave no outward indication that mechanically it was virtually a 275GTB. On the other hand, the link between the 330GTC and the 330GTS was unmistakable.

The open version of the 365GTB/4 Daytona, which made its first appearance at the Frankfurt Auto Show late in 1969, was without doubt an adaptation of the berlinetta model. The car shown on the stand of Auto Becker, the German importer for Ferrari, demonstrated that because the berlinetta was a fastback it had been necessary to undertake a little more modification than would have been needed had the original been a notchback design. The spyder version shared the front end and lower bodywork with the berlinetta but had a new rear deck and roof line.

Gerald Roush, in his coverage of the car on the front page of a *Ferrari Market Letter*, relates how for years an apocryphal story has gone the rounds that Ferrari engineers were not in favour of the idea of a Daytona spyder. Their argument was that the Daytona had been designed to permit long spells of driving at 150 mph plus. When a spyder was tried, it could not be driven as originally intended with the top up or down. Whether it is true or not, Roush feels that the story indicates something of the nature of the car and notes that the majority of the examples built went into the USA where high speed was definitely not encouraged.

More interesting perhaps than its history as a 'production' model is what has happened since it was taken out of the catalogue in 1973. The value of the spyders increased much faster than that of the berlinettas to the extent that they have become twice as valuable as the closed cars. As a result there has come about a 'conversion' craze. Berlinettas have been losing their heads at a growing rate and potential buyers have the problem of making sure whether the Daytona spyder they may contemplate buying is an original or a conversion. That job is difficult but not totally impossible. The factory has apparently at some time issued a list of the 96 USA versions that they built as spyders. As far as is known, no such list has appeared of any European originals.

Chassis number range: 12851 out to 17073.

For further details about this model, including some notes on the identification of conversions and originals and a listing of some 136 chassis numbers, refer to Gerald Roush's coverage in *Ferrari Market Letter*, Vol. 8, No. 6.



1-2 V-12/GT

365GTC/4

4390 cc, 81×71 mm, 320 bhp at 6200 rpm, CR 8.8:1, double ohc per bank, single plug per cylinder, coil ignition, 6 DCOE side-draught Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front but with hydro-pneumatic self-levelling. *Wheelbase:* 2500 mm. *Track:* Front and Rear 1470 mm.

At the start of the 1970s the Ferrari sequence of GT cars went a little out of focus. Up to that time it had become the normal course of events to have in the catalogue, for comfort and luxury, a 2 + 2 which was complimented for performance by a berlinetta. For those customers not particularly enamoured of extremes of either sort, there had been the coupés which were something of a half-way house.

The 365GTB/4 Daytona – the berlinetta – had been introduced in 1968 and was still going strong at the end of 1970 when Ferrari stopped production of the 365GT 2 + 2. The 365GTS and 365GTC models, which had fulfilled in their own manner intermediate roles, had both disappeared from the scene by the beginning of 1970. There was no sign of an immediate successor to the 365GT 2 + 2, so for a while there was an awkward gap in the catalogue.

At Geneva early in 1971 a new coupé, the 365GTC/4, was unveiled and it was no secret that for the time being at least it was going to have to take the place of the 365

2 + 2. But whilst it could offer a degree of 2 + 2 seating – children only with any degree of comfort – it was in appearance and character much closer to the berlinetta Daytona. Its 4.4-litre engine was of the same capacity as that in the Daytona but it was an entirely different unit. To meet the low bonnet line a new cylinder head was designed which put the intake manifolds between the inlet and exhaust camshafts on each bank and the 6×38 DCOE Weber carburettors were horizontally mounted. Wet-sump lubrication was used as opposed to the dry-sump method on the Daytona.

On a shorter wheelbase than the 365GT 2 + 2, the new car retained many of the features of that model, e.g. power brakes and steering and the hydro-pneumatic self-levelling device at the rear.

The Pininfarina-designed body followed the theme of the Daytona but was much less aggressive-looking. The sharply plunging bonnet was shorter than that on the berlinetta and the various curves were more gently stated. At the time there was a new trend which advocated the suppression of chrome with the result that the front bumper was made of a flexible resin and given a matt black finish. At the rear the bumper was also black but made of metal.

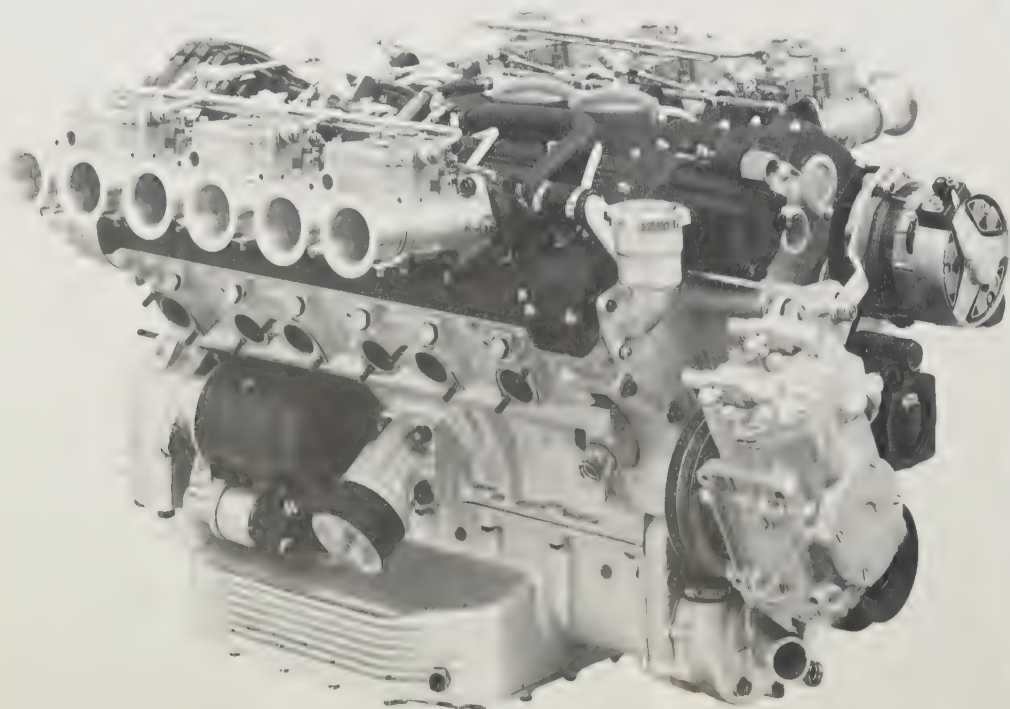
Between the spring of 1971 when it was introduced and the autumn of 1972 when it was phased out, some 500 examples were produced. In that short span of time it accounted for nearly half of Ferrari's production of V-12-engined cars. Most went to the USA, for which a special version equipped with the necessary anti-pollution equipment was prepared.

Chassis number range: 14100 out to 16300.

Opposite above: Replacing the 365GT 2 + 2, the 365GTC/4 was shown at the Geneva Salon in 1971. The coupé could at a pinch seat 2 small children at the back.

Below centre and right: 365GTC/4 – rather underrated among Ferrarists.

Below left: Works of the 4.4-litre 365GTC/4.







1970-1 V-12/Sports racing

512S and 512M

4994 cc, 87×70 mm, 550 bhp at 8500 rpm, CR 11.0:1, double ohc per bank, single plug per cylinder, coil ignition, Lucas fuel injection, 5-speed gearbox integral with differential.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* independent single upper arm, lower wishbone, coil springs. *Wheelbase:* 2400 mm. *Track:* Front 1518 mm Rear 1511 mm.

During the latter half of 1969 it was no secret that Ferrari, fed up with the absurdity of having to match 3-litre prototypes against 5-litre 'sports cars', was preparing to meet the Porsche 917 challenge with a 5-litre car of his own. Negotiations with Fiat over a partnership between the 2 firms was well under way to the extent that there was some Fiat money on hand to help finance the development of 25 cars for Group 5 racing. Many of the projected cars' details would come from the 612 Can Am car where there was a feeling that the task in hand was not so much racing a Group 7 car as developing a Group 5 car.

Whilst there was some hope that the new car would be ready in time for the Kyalami 9-Hour Race, it was not shown to the press until November and did not make its race debut before Daytona in 1970.

Before the generally known version of the 512S made its appearance in public, Pininfarina had displayed a 'show car' 512S at the Turin Show in the autumn of 1969. It was painted yellow and had long rising rear wings that started just behind the front wheel arches.

The windshield, sloped at 78 degrees from the vertical, was built into a one-piece lift-up canopy that also contained the air intakes on each side for the 5-litre V-12 engine. Unlike many such show cars, it was driveable.

The 512S shown to the press in November was a vastly different machine. Its 5-litre engine was an adaptation with few modifications of the 6.2-litre engine used for the 612 Can Am car. The required capacity had been obtained by reducing the bore and fitting a new crankshaft which reduced the stroke. The general layout of the engine had not been altered and, as on the 330P4, the one-piece crankcase/sump was used to increase rigidity. A triple dry-plate Borg and Beck clutch transferred the drive to a Ferrari-built 5-speed gearbox bolted on to the rear of the engine. The engine was mounted ahead of the rear axle in the conventional longitudinal position.

The semi-monocoque technique was used for the chassis/body with the rear section a cradle of triangulated tubes to hold and locate the engine. The bodywork featured a fairly blunt nose with extra driving lights set in the centre and a circular white number panel as the spare-tyre cover. A louvred white panel covered the engine and there was an upswept tail with only a hint of a spoiler. The doors on that car and all other 'S' models were forward-swinging.

In a departure from normal practice, Ferrari announced that the 512s would be entered by both the works and selected customer entrants at the same time. The works planned to field 3 cars in the major events during 1970 and had as drivers Mario Andretti, Jacky Ickx, Peter Schetty, Auturo Merzario, Tino Brambilla, Ignazio Giunti and Nino Vacarella. The factory would keep several cars as back-ups and for spares. The remaining cars would be sold to customers for L24,000,000 each. Most came as berlinettas but there were a number of spyders built.

For the last race in the 1970 Manufacturers' Championship series at the Osterreichring, Ferrari produced a drastically revised 512 for Ickx/Giunti. That car and all others similarly modified were known as 512M (modificata) type. The Osterreichring car was a berlinetta with the engine scoop sticking up behind the roof and a longer flatter tail with small adjustable wings at the rear. The door hinge pins were located on the roof and in the cowl area to allow the doors to clamshell forward. The total 'M' package included suspension and engine modifications and could be purchased and installed by the factory for \$30,000 back in 1971 provided that your old 512S was available. Ten of the original 'S' models were converted to 'M' specification at the factory and another 4 were converted by individual teams using the factory parts. There were no original 'M' spyders.

By and large the 512s were not as successful as they might have been, but it is difficult to pinpoint any particular fault in the cars that could account for their record. More accountable probably than the cars was the diversity of effort with levels of driving skill,

Opposite above: The 512S was developed from the 612 CanAm car to contest the Group 5 'Sports Car' races.

Opposite below: A. Obrist's 512S racing at Hockenheim in 1983.

Below: Rear deck of the 512S raised to expose the engine.





preparation and organization varying so much, plus the fact that the Porsche 917 was able to benefit from an earlier start and was generally a much more cohesive attack. There was also the fact that the works pulled out of racing 512s after the 1970 season in order to devote time to preparing a new 3-litre prototype, the 312PB.

No more 512s were built after 1970 and they were obsolete by 1972 when revised regulations no longer catered for the 5-litre cars. The Can Am series in the USA and the Interseries in Europe still provided races that the 512s could enter, so they were seen in racing and other competition activities until well into the 1970s.

Chassis numbers: These are fairly straightforward as Ferrari instituted for them a new series of even 4-figure numbers starting at 1002 and finishing at 1050 for the 25 cars made.

A full chassis-by-chassis history of these cars can be found in *Prancing Horse*, the journal of the Ferrari Club of America, No. 59/60, a special issue compiled by Manfred Lampe and required reading for anyone seeking to understand the ups and downs of the 512S and M cars.



Above: The 512M was a further development of the 512S. Note the engine scoop.

Left: Gull-wing doors on the 512M.

Opposite: The 512M's raised rear-engine deck seen from the front.

Shell

Shell

12

Firestone

Firestone

12



11-3 Flat-12/Sports racing

312PB

2991 cc, 80×49.6 mm, 440 bhp at 11,500 rpm, CR 11.5:1, double ohc per bank, single plug per cylinder, coil ignition, Lucas fuel injection, 5-speed gearbox located behind mid-mounted engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* independent single upper arm, lower wishbone, coil springs. *Wheelbase:* 2220 mm (late 1973, 2340 mm). *Track:* Front 1425 mm Rear 1420 mm.

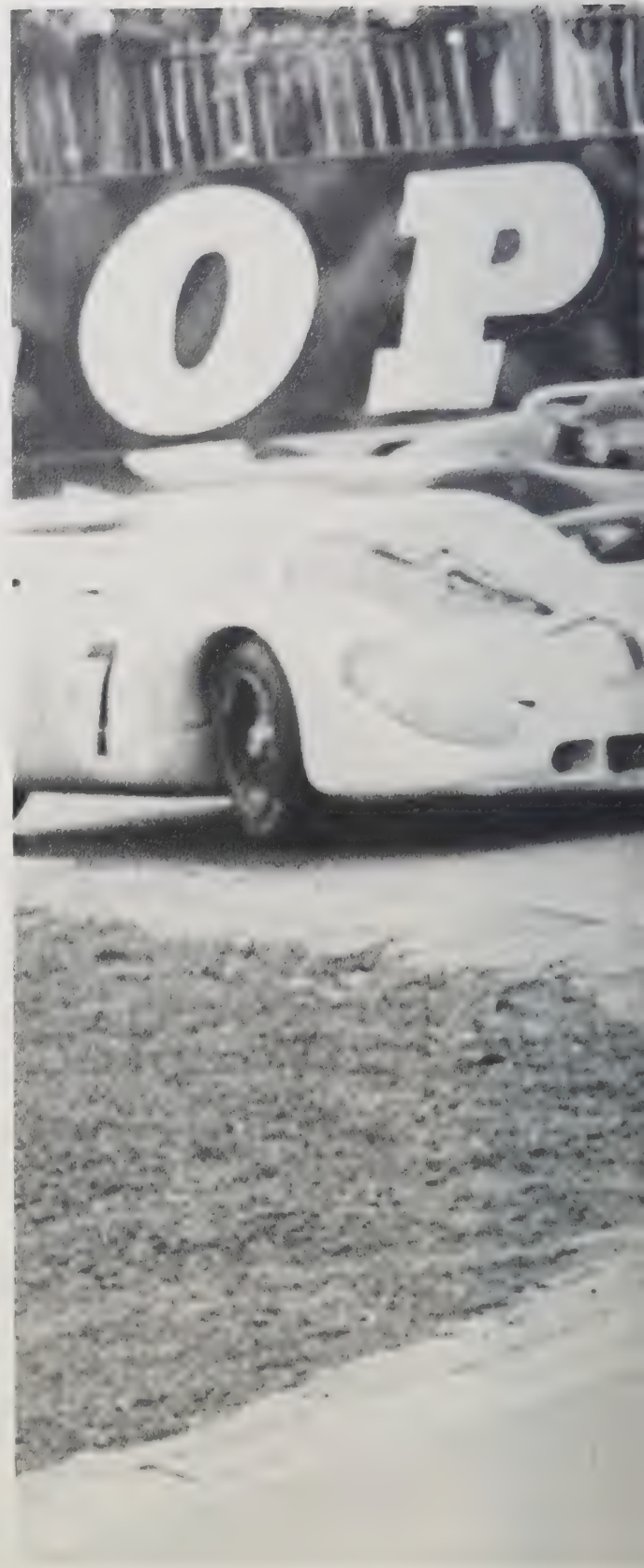
It was noted in the entry covering the 512S and M models that Ferrari had in 1970 given up works participation with the 5-litre cars in order to be able to concentrate on the development of a new sports car to meet the revised regulations which in 1972 would limit the capacity of sports car engines to 3 litres. Part of the development programme was that the car should be ready to take part in racing during 1971.

A suitable engine was already to hand in the shape of the flat-12 designed by Mauro Forghieri for the 3-litre Type 312B Formula 1 car that the works would be using during 1970. In GP racing trim, the engine was said to be putting out some 460 bhp at around 11,500 rpm. For sports car use it was to be detuned to give around 440 bhp at 10,800 rpm.

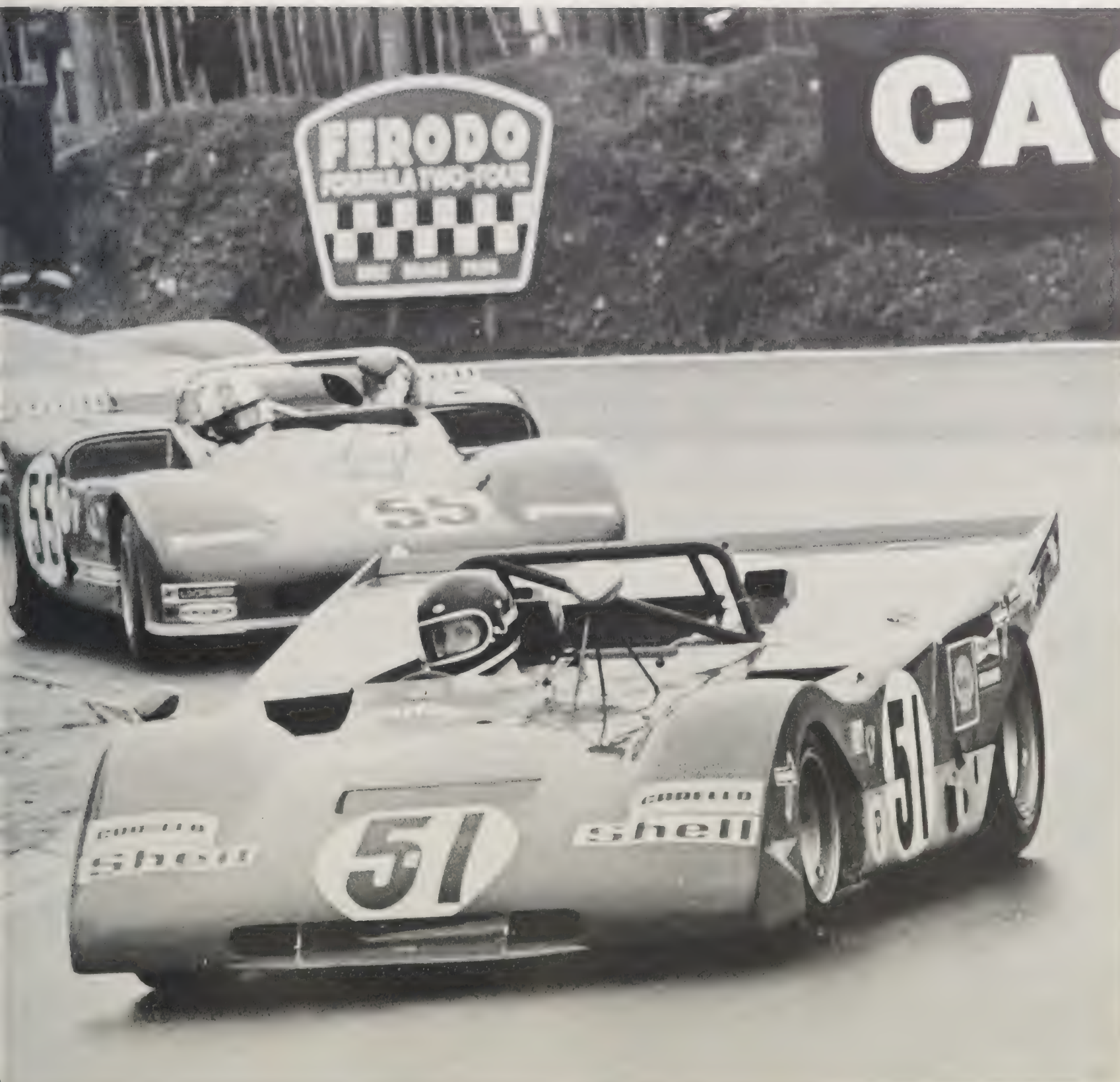
The transmission system from the Formula 1 car was also available so that the new sports cars – the 312PB as it was to be known – was in effect a 2-seater GP car.

The chassis was the usual tubular structure covered with sheet aluminium to give a semi-monocoque construction. The slipper-type bodywork was in 2 sections with the forward portion carrying the doors. As originally shown and tested, the body was made of aluminium which was more suited to modification during development. But once the shape had been finalized, fibreglass was used. The cockpit contained 2 seats set close together and flanked on either side by wide sponsons. The left-hand one carried the 120-litre fuel tank. It was counterbalanced by the weight of the driver on the right-hand side of the car. The water radiators were mounted centrally at the rear of each sponson. The 5-speed gearbox was hung out from the back of the engine as on the GP cars.

Two cars, 0880 and 0882, were built to run in the 1971 development season. At the end of the year the record books showed that, from the 8 starts made in 8 championship events, there had been 5 retirements. Ickx and Regazzoni had gained a second and an eighth at Brands Hatch and Spa respectively. The best result had been a win for Redman and Regazzoni in 0880 at the non-championship Kyalami 9-Hour Race right at the end of the season. Following the crash which had destroyed 0882 and killed its driver, Ignazio Giunti, at the opening event at Buenos Aires, 0880 had borne the brunt of the years' racing. In spite of the numerous



Right: 3-litre flat-12 312PB, driven by Jacky Ickx at Brands Hatch.



year it had been a useful year in terms of developing a new car.

For 1972 Ferrari mounted one of the most imposing onslaughts ever to be seen in sports car racing. He anticipated a strong challenge from both Matra and Alfa Romeo in the 11-race World Championship for Makes. It was planned to enter 3 cars in each of the races and to make this possible 6 more PBs were built. Along with 0880 and 0884 – the latter had joined in at Kyalami in 1971 – there were 8 cars on hand. The method of tackling the championship series was for each driver pairing to alternate between 2 allocated cars at alternate events. Thus the cars that ran in the opening event at Buenos Aires would not be seen again until the third event at Sebring and so on. A team of 3 mechanics was allocated to each of the 6 cars so that one team would be away racing while the other was back at base preparing for the next event. At the end of the year there was no doubt but that the plan had been an overwhelming success. From the 29 starts made in the 10 championship races, the 312PBs had won every race and only at Monza and the Targa Florio – where there had been just the 1 car entered – had they failed to provide the second-place car. They also won the non-championship events at Imola and Kyalami.

The 2 cars entered at Kyalami were the revamped

1973 models. They had a longer nose and a lengthened wheelbase – 2340 mm – to improve stability. The bore and stroke dimensions of the engine had changed to 80×49.6 mm for a capacity of 2991.8 cc in line with the latest Formula 1 units and the output was 455 bhp at 11,000 rpm. Goodyear tyres were used for the first time.

The 1973 season was nowhere near as successful as that of 1972. Matra, who had rather held back during 1972, were a force to be reckoned with. From their 22 starts made in 9 races the PBs won only twice – at Monza and the Nurburgring. They had 6 second placings, 3 thirds, 3 fourths and a sixth. There had been 7 retirements.

Whilst further development work was undertaken during the winter of 1973/4 Ferrari decided to draw out of sports car racing. He has not gone back on that decision.

Chassis numbers: There are some variations in the accountancy of these. The fullest list is: 0876, 0878, 0880, 0882, 0884, 0886, 0888, 0890, 0892, 0894, 0896. Most lists omit 0876 and 0878.

For further details on these cars reference should be made to *Boxer* by Jonathan Thompson (Newport Press (USA) and Osprey Publishing Ltd, 1981) and *Flat-12* by Alan Henry (Motor Racing Publications Ltd, 1981).

Opposite above: Rear view of the 365GT4 2 + 2.

Opposite below: A 'one-off' cabriolet design variation by Fly Studio of the 365GT4 2 + 2.

Below: The 365GT4 2 + 2 which followed the 365GT 2 + 2. Its lines have, with refinement, been carried on through the 400GT series to the current 412.



1972-6 V-12/GT

365GT4 2 + 2

4390 cc, 81×71 mm, 320 bhp at 7000 rpm, CR 8.8:1, double ohc per bank, single plug per cylinder, coil ignition, 6×38 DCOE side-draught Webers, 5-speed gearbox integral with engine.

Front suspension: double wishbones, coil springs. *Rear suspension:* as front but with hydro-pneumatic self-levelling. *Wheelbase:* 2700 mm. *Track:* Front 1470 mm Rear 1500 mm.

By the time the 365GT 2 + 2 was phased out of production it was something of an anachronism, being outdated by its contemporaries, all of which had twin-overhead-camshaft engines. For a while there was no logical successor to it except possibly the 365GTC4. That, however, considered too civilized by those of a more sporting inclination, had back seating arrangements which in no way qualified it for serious consideration as a 2 + 2.

The best part of 18 months went by before the introduction of the 365GT4 2 + 2 at Paris in 1972. Mechanically the new car was identical to the 365GTC4 – its engine, Type F101 AC, was the same and any





differences in the chassis were mainly a matter of dimension. The wheelbase was increased to 2700 mm and the front and rear track went up to 1470 mm and 1500 mm respectively. Despite the longer wheelbase, the overall length was down from 4990 mm to 4800 mm. The body was designed and built by Pininfarina and within its confines they had contrived materially to increase roominess and comfort. In view of what was to follow, it can be said that the 365GT4 2 + 2 was more a forerunner of the 400GT series than a direct replacement for the 365GT 2 + 2,

The car was in production for the best part of 4 years but during that time only 470 examples were built, considerably fewer than of the 365GT 2 + 2. The low production number could be accounted for by the fact that no USA legal version was produced.

Chassis number range: 17083 out to 18895.

1973-80 V-8/GT

Dino 308GT4

90 deg V-8, 2926 cc, 81×71 mm, 250 bhp at 7700 rpm, CR 8.8:1, double ohc per bank, single plug per cylinder, 4×40 DCNF Webers, 5-speed gearbox in unit with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2550 mm. *Track: Front and Rear* 1460 mm.

When Ferrari introduced the Dino 308GT4 at Paris in October 1973 it had, for it or against it, depending upon viewpoint, 3 firsts. It was the first production V-8 from Ferrari, it was their first try at a mid-engined 2 + 2 and the first time for the best part of twenty years that Pininfarina had not designed the bodywork.

Opposite: Pininfarina-bodied 365GT4 2 + 2.

Below: The Dino 308GT4 2 + 2 was the first V-8 production from the works. Later the car was given full Ferrari status.



The exact reasons behind the choice of a V-8 engine are not known but prominent amongst them must have been that the V-6 was nearing the end of its useful development and a 2 + 2, being larger and heavier, would need much more power to sustain let alone improve upon existing levels of performance; legislation relating to exhaust emissions would be stealing more power and there had at times been comment on the lack of torque with the V-6 engine.

The choice of Bertone as the stylist for the body has also never been explained. Bertone had been responsible for very few Ferraris and, with the exception of one or two specials built in the early sixties, these had been undertaken in the early fifties. They had, however, been building bodies for the Fiat Dino 2 + 2 model. Towards the end of that production the assembly line was transferred to the Ferrari works at Maranello which gave Ferrari first-hand knowledge of Bertone's work. It has also been said that at the time Pininfarina were unable to accept further work. Another suggestion is that the decision was taken by Fiat who by then were very active in decisions concerning Ferrari road cars.

Bertone were given a very difficult task in devising the outer envelope for a small mid-engined 2 + 2. Their solution brought forth a lot of criticism at the time – people had got used to Pininfarina curves, so that the functional wedge shape produced by Bertone produced for the 308 made it seem somewhat plain. To many it was not in the Ferrari mould – whatever that might have been. It might be, however, that Bertone had been selected to break that mould. Bertone have maintained that their job was to design a 2 + 2 with an enduring shape and in that they would appear to have succeeded for it is only recently that the classic simplicity of the design is becoming appreciated along with the practicality of the car.

The V-8 engine, with its bore and stroke dimensions of 81×71 mm which were identical with those of the 4.4-litre 365 V-12 engine, was in effect two-thirds of a 365. The angle between the cylinder banks was 90 degrees and there were 4 belt-driven overhead camshafts. With 4×2-barrel Weber carburettors, there was virtually a carburettor per cylinder. A wet-sump system of lubrication was used for the engine which, in unit with the 5-speed gearbox and differential, was as with the Dino 206/246 series mounted transversely just ahead of the rear wheels.

The welded tubular-steel chassis was very similar to that of the Dino 246 but with wider front and rear track dimensions and a longer wheelbase to take care of the 2 + 2 seating.

Although the 308GT4 followed on from the production of the Dino 246, it was not its replacement – that was to come with the introduction of the 308GTB. At the time of its introduction the GT4 extended the Dino range of cars and kept the Dino marque going. It was perhaps the lack of any sign of the name 'Ferrari' and its related logos that may have brought about a certain



amount of sales resistance, particularly in the USA where Ferrari sales fell off to a marked extent in 1975.

Ferrari responded to the situation by issuing a technical bulletin which authorized the use of 'Ferrari' identifications, 308GTB-type wheels and the so-called 'boxer' style-paint whereby the lower bodywork was finished matt black. A point of interest is that no attempt was made to remove the 'Dino 308GT4' script from the boot lid.

Bertone, probably stung by the criticism levelled at the GT4, went to the 1976 Turin Show with a design that was exactly the opposite. Based on a 308GT4 chassis, 12788, the 308GT Rainbow showed that, freed of the restraints imposed by a 2 + 2 requirement, they could be as radical as the rest. It was a very sharp and angular car which was startling rather than attractive to look at. The name 'Rainbow' was said to have been derived from the unique Targa top which allowed rapid conversion from rain to sunshine use.

One GT4, chassis 08020, was prepared by the factory for the 1974 Le Mans 24-Hour Race as a Group 5 car. The engine was extensively modified through the use of such things as competition Daytona pistons and rods. The crankshaft and cylinders were machined to increase clearances slightly and the heads were ported and

polished. 42 mm carburettor venturis coupled with modest race cams and an excellent set of exhaust headers completed the power-boost modifications. To keep up oil pressure whilst racing, the sump baffling was re-arranged. The result was a 300 bhp at 8200 rpm engine that could last for 24 hours. Modifications were made to brakes and suspension; the steel doors were replaced by aluminium ones and all glass, with the exception of the windshield, was replaced with plastic. The aerodynamics were cleaned up with a spoiler and an adjustable wing. It was entered by Luigi Chinetti's NART team but was retired early on in the race with reported clutch problems. It was at Le Mans again in 1975 but became a non-starter when Chinetti withdrew the NART cars following a dispute with the authorities.

The 308GT4 was in production for the best part of 7 years during which time it is estimated that between 3000 and 3500 were made.

Chassis numbers: Numbered in the Dino even-numbered series with a range of 07202 out to 15604.

For further details on the 308GT4 and other cars in the 308 range reference should be made to *Ferrari 308 and Mondial* by Geoff Willoughby (Osprey Publishing Ltd, 1982) and *The Complete Guide to the Ferrari 308 Series* by Wallace A. Wyss (Dalton Watson Ltd, 1982).

Opposite: Well-appointed interior of the 308GT4.

Below: From being an unpopular car, the 308GT4 is now well thought of and raced extensively by some owners in Britain.



1973-6 Flat-12/GT

365GT4/BB

4391 cc, 81×71 mm, 344 bhp at 7000 rpm, CR 8.8:1, double ohc per bank, single plug per cylinder, coil ignition, 4×40 IF3C Webers, 5-speed gearbox in unit with mid-mounted engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2500 mm. *Track:* Front 1500 mm Rear 1510 mm.

By the end of the 1960s it was clear that Ferrari had gone as far as it was reasonable to go with their front-engined V-12 GT cars. Lamborghini had put their mid-engined V-12 Miura on to the streets in 1966 and had the even more extreme Countach planned for 1971. At Maserati the mid-engined Merak and Bora were both on the way.

At various times in the history of the marque there have been accusations that Ferrari have been less than prompt making use of new concepts in automobile design. As far as the road-going GT cars are concerned, there has been an element of the truth in such accusations because it has been the rule at Ferrari that research and development followed the sequence of single-seater to sports/racing to gran turismo. No matter how good an idea might seem to be, it had to prove itself beyond reasonable doubt before it could be sold to the general public.

Below: First of the mid-engined GT cars, the 365GT4/BB (berlinetta boxer) appeared as a catalogue model at the 1973 Paris Salon.

Ferrari had adopted the mid-engine layout for his Formula 1 cars in 1961 – after it had been tried out in Formula 2 during 1960. As a further step, the first of a range of mid-engined sports cars, the 246SP, had also made its appearance in 1961. A flat-12 engine in 1.5-litre form had appeared in 1964 with the Type 512F1 car. A year later it disappeared and did not resurface again until the 2-litre Type 212E Montagna – the hill-climb car – came on the scene in 1969. By 1971, in 3 litre-form, flat-12 engines were being used in both Formula 1 – 312B – and in sports car racing – 312PB.

In the GT line, the Dino 206 and 246 versions had introduced the mid-engine concept to a growing number of Ferrari buyers when for a while it was on the cards that there was to be a separate 'Dino' marque of which the 206 and 246 were the first models.

If Ferrari were to go into the 1970s with a new car it was mandatory that it be mid-engined and equally so that it should have a 12-cylinder engine, although not necessarily a V-12. The classic mid-engine configuration is to put the engine ahead of the rear wheels with the gearbox behind them – a solution which puts the heaviest parts, i.e. the engine and the occupants, towards the middle of the car. With a GT car there is the important question of luggage space to be considered. A water-cooled engine means that the space ahead of the passengers is taken up with the radiator, its attendant plumbing and spare-wheel stowage. At the rear the gearbox sits where the luggage should be. Lamborghini



with their Miura and Ferrari with the Dinos had turned the engine to lie across the car and had put the gearbox in parallel with it.

Responsibility for overall design of the new car rested with Dr Angelo Bellei, a Ferrari man of many years' standing, with engine design and development in the hands of Dr Giuliano de Angelis. The solution they chose was to stay with the more conventional fore-and-aft location for the engine but placed on top of the gearbox with the cylinder blocks folded down to the horizontal. This would leave sufficient space behind the engine/transmission package for a reasonable-sized luggage compartment.

The engine design followed closely that of the 3-litre Formula 1 unit but with a capacity of 4.4 litres which would allow use of some parts – pistons and connecting rods – from the 365GTB/4. For the first time on a GT engine the twin overhead camshafts per bank were driven by toothed belts in the interests of less noise, lower initial cost, greater reliability and cheaper servicing. Although the Formula 1 engine was using Lucas fuel injection, carburetion was still the order of the day for the GT car. In the lubrication department it was to be a wet-sump design in spite of the fact that a dry-sump system had been successfully used with the 365GTB/4.

Doubt had been expressed as to whether the engine was a true 'boxer' whereby the opposing pistons are supposed to move up and down simultaneously in a

coming-together and going-away action. It is an arrangement that calls for a crankshaft with a separate throw for each piston – a complicated and expensive arrangement. On the Ferrari engine, opposing pistons occupy common crank pins.

The chassis of the car consisted of a perimeter frame made up from square-section tubing with 4 main cross members and a number of minor ones.

The new car, designated 365GT4/BB – the 'BB' standing for 'Berlinetta Boxer' – went on show for the first time at Turin in 1971 as a styling exercise and possible prototype. Not until the Paris Salon of 1973 was the car presented as a catalogue model.

There were very few changes made to the outward appearance of the car between the Turin prototype and Paris catalogue model. The door covering the fuel filler was relocated. On the tail the 4 round lights were replaced by 6 similar ones and the rear skirt was redesigned to cope with the voluminous exhaust system.

To prevent the car from looking too heavy in profile, the side panels were broken into a deep crease level with the tops of the wheel rims. From there down matt black paint was specified. The sections below the waistline at the front and rear extremities were to be of glassfibre with the remainder of the body made of steel.

Although the 365GTB/4 Daytona had received a degree of factory interest in developing competition versions, nothing was undertaken on behalf of the 365GT4/BB. The factory was almost single-mindedly devoted to its Formula 1 efforts in competition. To get involved in Group 5 racing meant taking on the highly developed Porsche effort. Consequently the only 365 Boxer to see any significant amount of competition was one modified and prepared by Chinetti's NART. It was lightened to some extent by the removal of unnecessary items, it had wider bodywork to accommodate the larger Goodyear racing tyres and it was likely that the engine output was up to 400-420 bhp. In 1975 it was retired after 1 lap at Daytona, came sixth at Sebring, was a non-starter at Road Atlanta and retired after an engine fire at Lime Rock. It did not race in 1976 but was extensively modified for the 1977 Le Mans 24-Hour Race where, driven by Francois Migault and Lucien Guitteny, it finished sixteenth. It was at Daytona for the same driver pairing in 1978 and ran as high as eighth before dropping back to twenty-second after electrical problems.

Production of the 365GT4/BB ceased around the middle of 1976 after only 387 examples had been made.

Chassis number range: 17185 out to 19323. The chassis number for the NART 'competition' 365BB has been given as 18095.



For further details on the 365GT4/BB and the later BB512 see *Ferrari Berlinetta Boxer* by Mel Nichols (Osprey Publishing Ltd, 1979) and *Boxer* by Jonathan Thompson (Newport Press (USA) and Osprey Publishing Ltd, 1981).

208 Series

1975-80 V-8/GT

208GT4

1991 cc, 66.8×71 mm, 170 bhp at 7700 rpm, CR 9.1:1, single ohc per bank, single plug per cylinder, coil ignition, 4×34 DCNF Webers, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2550 mm. *Track:* Front 1460 mm Rear 1460 mm.

In Italy cars of less than 2 litres capacity benefit from reduced value added tax. Concerned not to lose sales in his homeland, Ferrari decided to introduce 2-litre-engined versions of the 308GT4. An announcement was made about the new model in a press release from Maranello, dated 24 February 1975, giving details of the Ferrari cars that would be seen at Geneva the following month.

A brochure on the 208GT4 showed that it was, apart from the obvious change in engine dimensions, practically identical to the 308GT4 of the time. The only noticeable differences in appearance were the absence of fog lights on either side of the grille and the use of a single exhaust outlet. The tyres were 195/70 VR 14 XDX Michelins. Inside the car the instrument panel was painted black, as were the spokes of the steering wheel.

As the smaller engine had to cope with the same overall weight and move an identical body shell through the air, it was obvious that performance would fall off. The brochure figures gave a maximum of 135 mph and a 0 to 400 m acceleration of 16 seconds against figures of 156 mph and 14.4 seconds respectively for the 308GT4.

It seems that approximately 800 of the 208GT4 were made before it was phased out along with the 308 version in 1980.

1975-83 V-8/GT

208GTB/GTS

Ferrari continued to provide simultaneous 208 versions of the 308GTB and GTS models. As with the 208GT4 the smaller engine in each case had to cope with same weight and body as the 3-litre engines. Whilst there might be a considerable tax advantage in buying the smaller cars, it was obviously debatable whether that entirely offset the loss in performance.

Sales must have fallen off because Ferrari decided that the only suitable answer to the problem posed by the 208s was to go for turbocharging. At the 59th Turin Salon in April 1982 the 208 Turbo was given its first public showing.



1983/Continuing production V-8/GT

208 Turbo

The car on show was a GTB version. The main external identifying features – and they seem to have moved over from the BB512 – were NACA ducts ahead of the rear wheel arches and a roof spoiler along with louvres across the width of the front bonnet cover. Inside there were new seats and a boost gauge replaced the clock in the central console. To avoid the NACA ducts the Pininfarina 'design' script was moved back just aft of the rear wheel arch. The model designator '208 TURBO', in highly stylized lettering, appeared at the rear of the car.

For the turbocharger Ferrari chose to use the KKK (Kuhnle, Kopp and Kausch) type used on the Formula 1 cars. Because of obvious space limitations and the awkwardness of a transverse engine layout, only one turbocharger has been used. The model chosen was the K26. The amount of turbo boost is limited to 0.6 bar, approximately 8.8 psi. Of interest in the light of other automotive installations, no intercooler has been provided.

The turbo had brought the power of the 208 up from its normal rating of 170 bhp (DIN) to 220 bhp (DIN) at 7000 rpm. The maximum speed of the car is now put at 150 mph.

Chassis numbers: No details are available for any of these 208 series cars.

Above: The 208 Turbo is a current version of this series. It is sold only in Italy.



1975/Continuing production V-8/GT

**308GTB/GTS, 308GTBi/GTSi,
308GTB Qv, 308GTS Qv**

308GTB

90 deg V, 2962 cc, 81×71 mm, 255 bhp at 7600 rpm, CR 8.8:1, double ohc per bank, single plug per cylinder, coil ignition, 4×40 DCNF Webers, 5-speed gearbox in unit with engine, dry sump (UK) wet sump (USA).

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2340 mm. *Track:* Front and Rear 1460 mm.

The 308GT4, which had followed on from the 246GT, was not strictly speaking its replacement. That role was to be undertaken by the 308GTB introduced in Paris in 1965. Although it did not carry Dino badges and was chassis numbered in the Ferrari series, i.e. with odd numbers, the 308GTB was directly descended from the 308GT4.

For the body design, Ferrari went back to Pininfarina who skilfully blended together elements from the Dino 206/246 series and the 365GT4 BB. From the latter came the double body shell appearance resulting from the groove cut into the body at bumper level; the plunging nose; the rather square rear panel and sail panels extended back to meet a shallow spoiler. From the Dino

came the concave rear windows and conical air intakes ahead of the rear wheel arches.

The most important innovation, though, was the use of fibreglass for the body shell. Whatever the reasons for its use, it was short-lived, because by approximately mid-1977 steel was once again back in favour as the main material along with the selective use of fibreglass.

The engine and transmission remained basically GT4 and, although for the European market dry-sump lubrication was used, the USA stayed with the wet-sump method. With only 2 people to cater for, the wheelbase was shortened to 2340mm.

Chassis numbers

These started at 18677. The last fibreglass-bodied car was 21289. The first steel-bodied car was 20805. The final cut-off point for the model is not known.

Above: One of Pininfarina's outstanding designs – the 308GTB.

Far above: A 308GTB turned into a convertible by a specialist constructor.



308GTS

Details generally as for the 308GTB.

The 308GTS, introduced at Frankfurt in the autumn of 1977, was an obvious addition to the 308 range. Besides the removable roof panel that marked it out from the GTB, the rear quarter lights were covered by black louvred panels that were stylistic rather than functional. In the USA, considered to be a 1978 model, it had to meet more stringent exhaust emission standards. These required the use of a catalytic converter exhaust which brought additional cooling vents in the rear deck and a shroud below the rear bumper. Apart from these 'peculiar to destination' type modifications, the GTS was mechanically, with one exception, identical to the GTB. The exception was that, regardless of where the cars were to go, lubrication would be wet-sump.

Chassis numbers: started at 22619. The cut-off point is not known.

308GTBi/GTSi

Details, with the exception of fuel-injection equipment, generally as for the 308GTB/GTS. Bhp down to 214 bhp at 6600 rpm for European models and 205 bhp at 6600 rpm for USA versions.

Although Ferrari had used fuel injection for a number of his single-seater and sports racing/prototype cars, it had been considered too complex and precarious for use with road cars. As time went by, the technology improved until, in 1979, fuel injection was introduced on the 400GT. Perhaps the ousting of Weber artistry was inevitable not only from an engine development point of view but also to help in meeting the increasing demands of the legislators. Whatever the reasons, it became Ferrari policy to introduce fuel injection on all production models at a suitable time in spite of the loss of power it entailed which in some applications was more important than the gains attributed to it (see 400i).

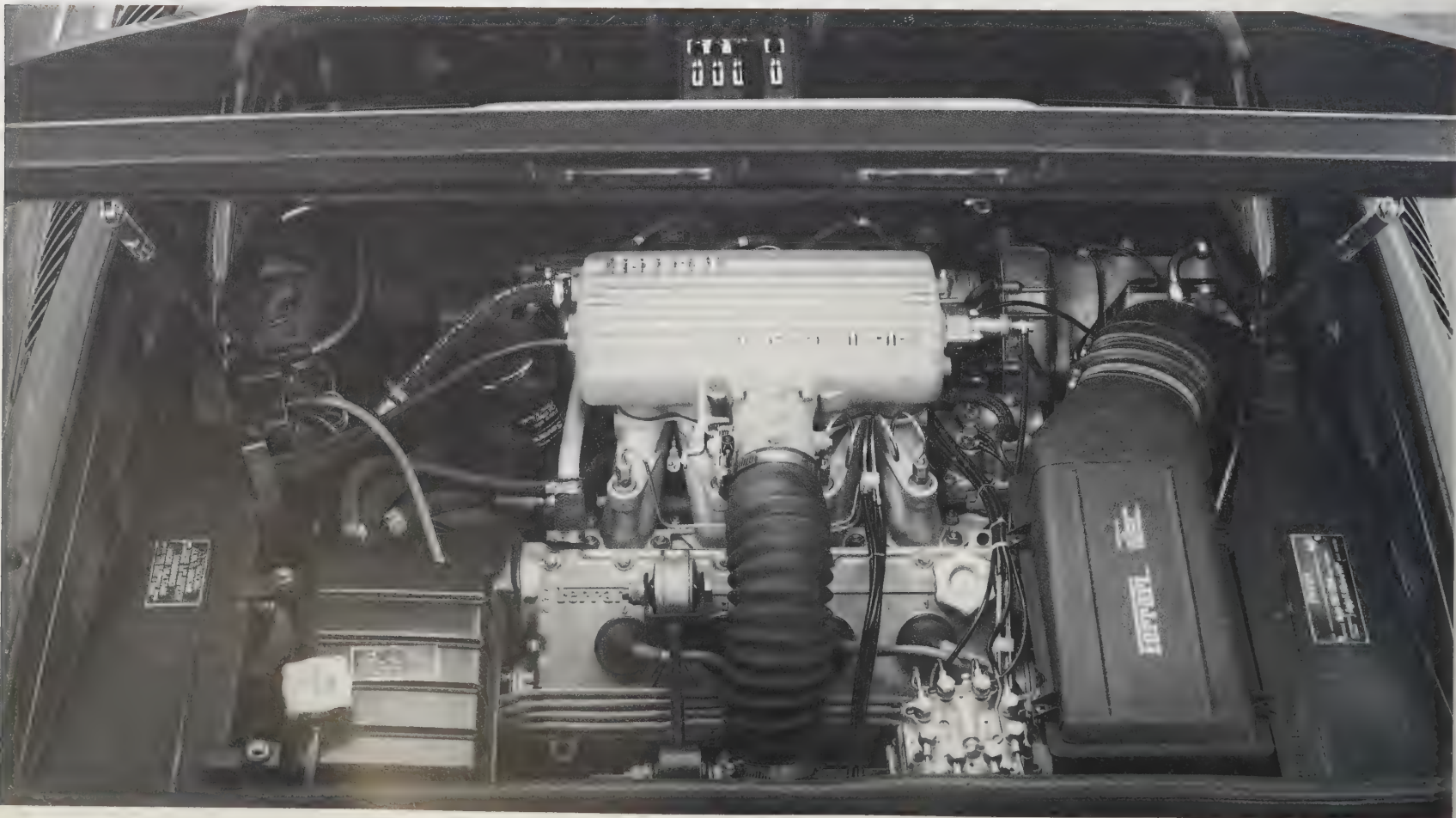
For the 308s Ferrari chose to stay with the Bosch K

Opposite above: 308GTSi – spyder or Targa top.

Opposite below: John Godfrey's 1984 308GTB Qv.

Below: 1982 308GTS with the top in place.







Jetronic system. It was available on US specification 308s around the middle of 1980 but not until some months later on the European models.

Along with the introduction of the fuel injection there was a switch to Marelli Digiplex electronic ignition; clutch operation was improved; the gearbox was modified and some changes were made to the interior trim, instruments, etc. Outwardly there was little to distinguish the new cars from those that had gone before. At the back the identifying script now included an 'i' to denote the use of injection. Twin tailpipes either side of the silencer box were also an indication but not infallible as they had been available as high-performance options for some time.

Chassis numbers

GTBi started at 31327; the cut-off point is not known. GTSi started at 31309; the cut-off point is not known.

308GTB Qv/308GTS Qv

Details, with the exception of 4-valve heads, generally as for the 308GTBi/GTSi. Power up to 240 bhp at 7000 rpm. CR increased to 9.2:1.

Whilst fuel injection had been a useful adjunct to performance in its previous applications by Ferrari, its introduction on the 400GT and 308 series cars had been more in the nature of a 'civilizing' factor with the important by-product of bringing the cars closer to current legislation on exhaust emissions. The resulting decrease in power, though bad enough in Europe, was even more telling in the US. Whilst speed limits might stay at unrealistic levels compared to the performance potential of a Ferrari, customers did not take kindly to continuing loss of power, no matter how worthy or otherwise the cause. In a move to restore power, Ferrari

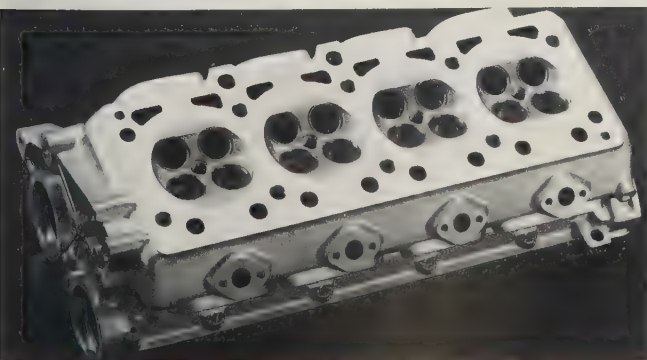
Above: The 308GTBi holds to the sleek Pininfarina line established by the 1977 carburettor version.

Opposite above: 1980 saw the first fuel-injection 308GTSi and GTBi

Opposite below: Engine bay of a quattrivalvole (4 valves per cylinder) 308.

Below left: The 308 series 4-valve cylinder head.

Below right: With suitable modifications a number of 308GTBs have found their way into rallying.



an early (1977) 400

vided to introduce 4-valve heads for the 308 series. This came about in the latter part of 1982 shortly before they were seen on the Mondial. By way of identifying the cars the 'i' was dropped from the designation at the rear – all the cars were by then fuel-injected – in favour of the Italian script 'quattrovalvole'. It has not so far been shortened to 'Qv' although that is the way they are generally spoken of.

A styling refinement introduced with the Qvs is the boxer-type roof spoiler.

Chassis numbers

As an indication only, the first right-hand-drive GTB Qv to be brought into the UK was 43427 and the first GTS Qv 43147. Both models are still in production.

1975-85 V-12/GT

400GT/400 Automatic/ 400i/400i Automatic

4823 cc, 81×71 mm, 340 bhp at 6500 rpm, CR 8.8:1, double ohc per bank, single plug per cylinder, coil ignition, 6×38 DCOE sidedraught Webers, automatic GM Turbo 400 3-speed or manual 5-speed gearbox in unit with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension but with hydro-pneumatic self-levelling device. *Wheelbase:* 2700 mm. *Track:* Front 1470 mm Rear 1500 mm.

Above details are as introduced in 1976.

For some years, particularly through his 2 + 2s, Ferrari moved steadily towards acceptance as a manufacturer working at the luxury end of the motor trade. This was done without losing sight of the fact that any road-going Ferrari was first and foremost a high-performance car.

Creature comfort, important as it was, would always be a secondary requirement, though with the introduction of such items as power steering, air conditioning, etc., the enthusiasts of 'hair shirt' mentality might already have reached an opposite conclusion. If so, with the introduction of the 400GT at the Paris show in 1976, they were in for a further shock. Their ultimate heresy – an automatic transmission – was part of the new car's specification. To soften the blow, a manual 5-speed box could be ordered if the customer so wished.

The idea of a Ferrari with an automatic transmission is said to have originated in a practical sense with C. A. Vandagriff, a Ferrari dealer in California who, in 1971, had a 365GT 2 + 2 fitted with a General Motors Type 400 3-speed turbo hydramatic automatic. After running the car for several months, he shipped it complete to Modena along with a lengthy report on its performance. Although there were still some problems to be solved, Maranello were obviously sufficiently impressed to take the project on board and bring it to commercial fruition.



Right: A further example of a 400GT, this one with automatic transmission.

Opposite: Early model of the 400 Automatic.



NAP 500W



Automatic transmission apart, the 400GT was outwardly very little changed from its predecessor. At the front a discrete spoiler was added, a rear-view mirror with interior adjustment was fitted to the driver's door, the number of tail lights was decreased from 6 to 4 and the cast light-alloy Chromodora wheels secured by 5 bolts in place of the Rudge-type hub.

On the part of Pininfarina, the most important changes were to the interior which as a result became even more accommodating and luxurious. The dashboard console and the redesigned door panels were covered in leather. The seats were changed to give added comfort and those at the front a new mounting which slid them forward when their backs were tilted forward. This greatly assisted entry to and exit from the

rear compartment. A second air conditioner, for the rear of the car, was available as an option, and a quadrophonic sound system was installed.

In mid-1979 fuel injection using the Bosch K Jetronic system was introduced with the idea of improved cold starting, quieter running and a cleaner exhaust. The price was a decrease in power to 310 bhp at 6500 rpm and torque went down to 389 lbs/ft at 4600 rpm.

In the autumn of 1982 further changes were introduced. Some of these were purely cosmetic. Others affected the engine in the shape of modified camshafts and new exhaust manifolds. Power was given as 315 bhp at 6400 rpm and torque went up to 303 lbs/ft at 4200 rpm. The suspension mountings were softened at the front and at the rear the self-levelling system was revised so that the struts were linked to a separate fluid source and pump. The amount of fluid required was controlled by a sensor valve which assessed the attitude of the car.

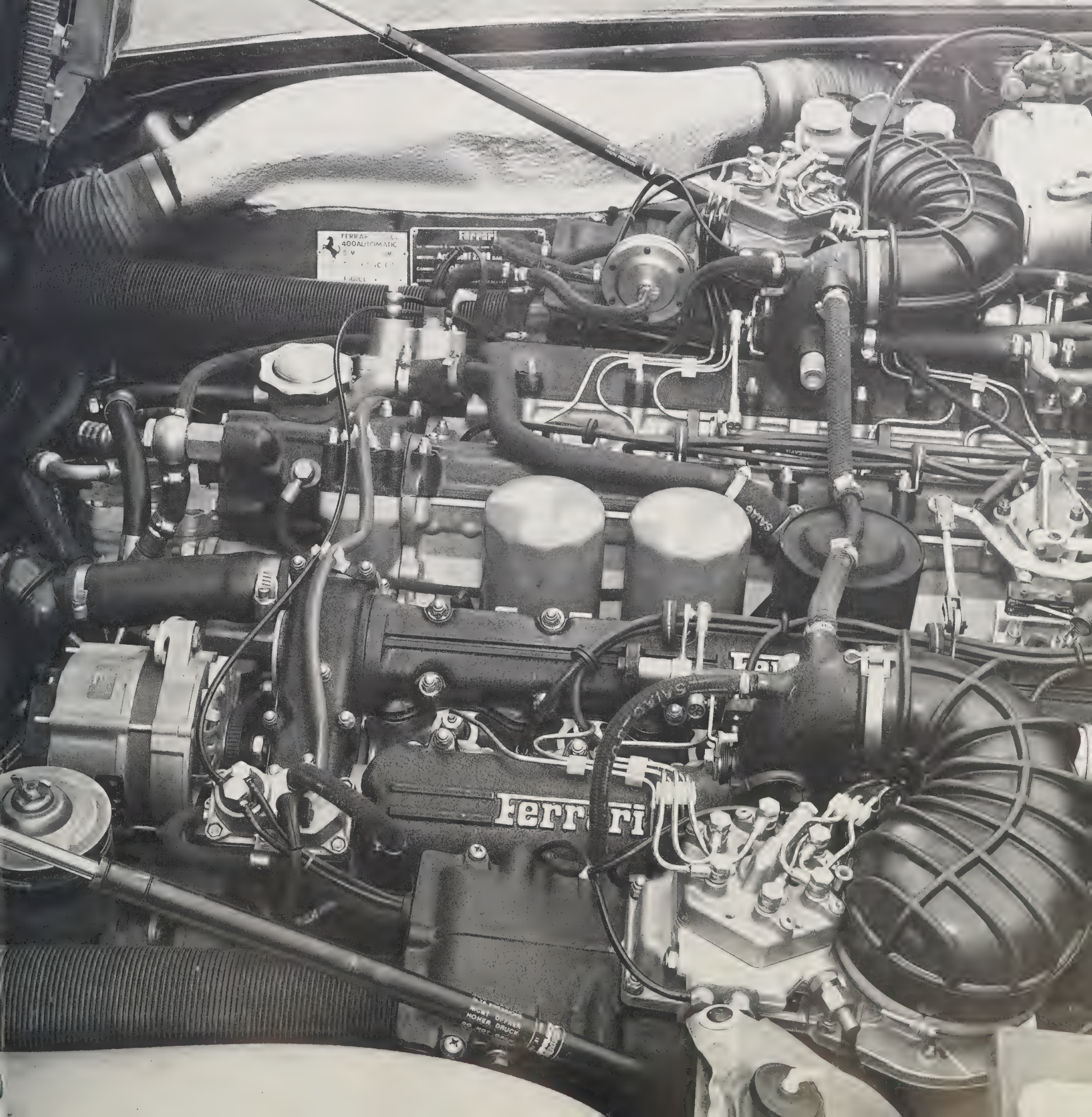
For the time being at least, the basic concept of the 400GT series is to continue through the medium of the recently introduced 412 (Geneva, 1985). Ferrari had obviously read the market right back in 1976, even the choice of an automatic transmission being fully vindicated by the fact that the majority of 400s are to that spec. The whole philosophy of the big 2 + 2 was neatly summed up by *Car & Driver* which said about the 400i that it is a 'Ferrari for the guy who has cooled off enough about Ferraris that he no longer has to have a red one'. This is a Ferrari for the man who wears suits: the one to have when you've had one of everything else.

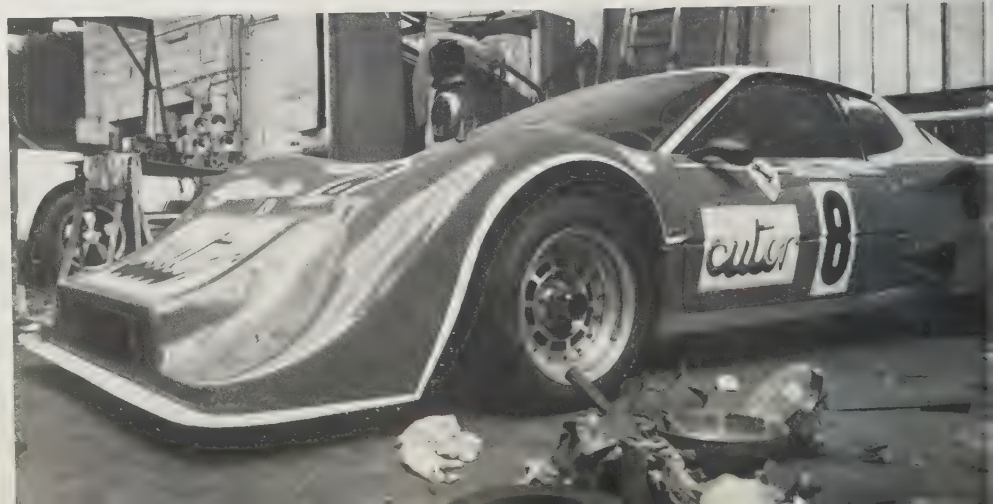
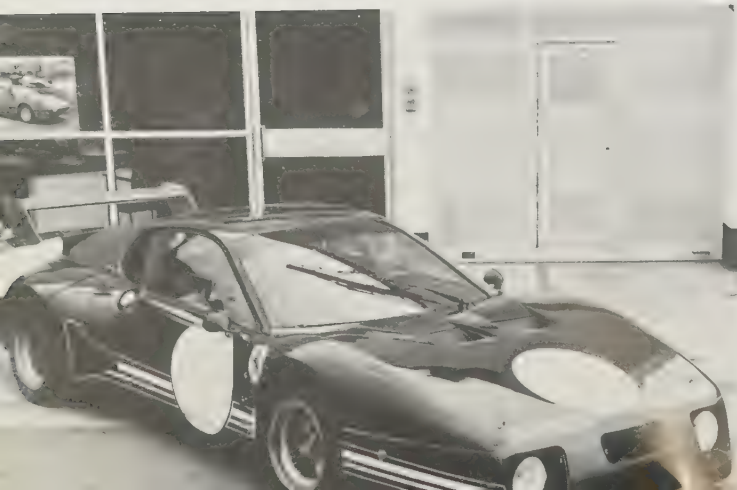
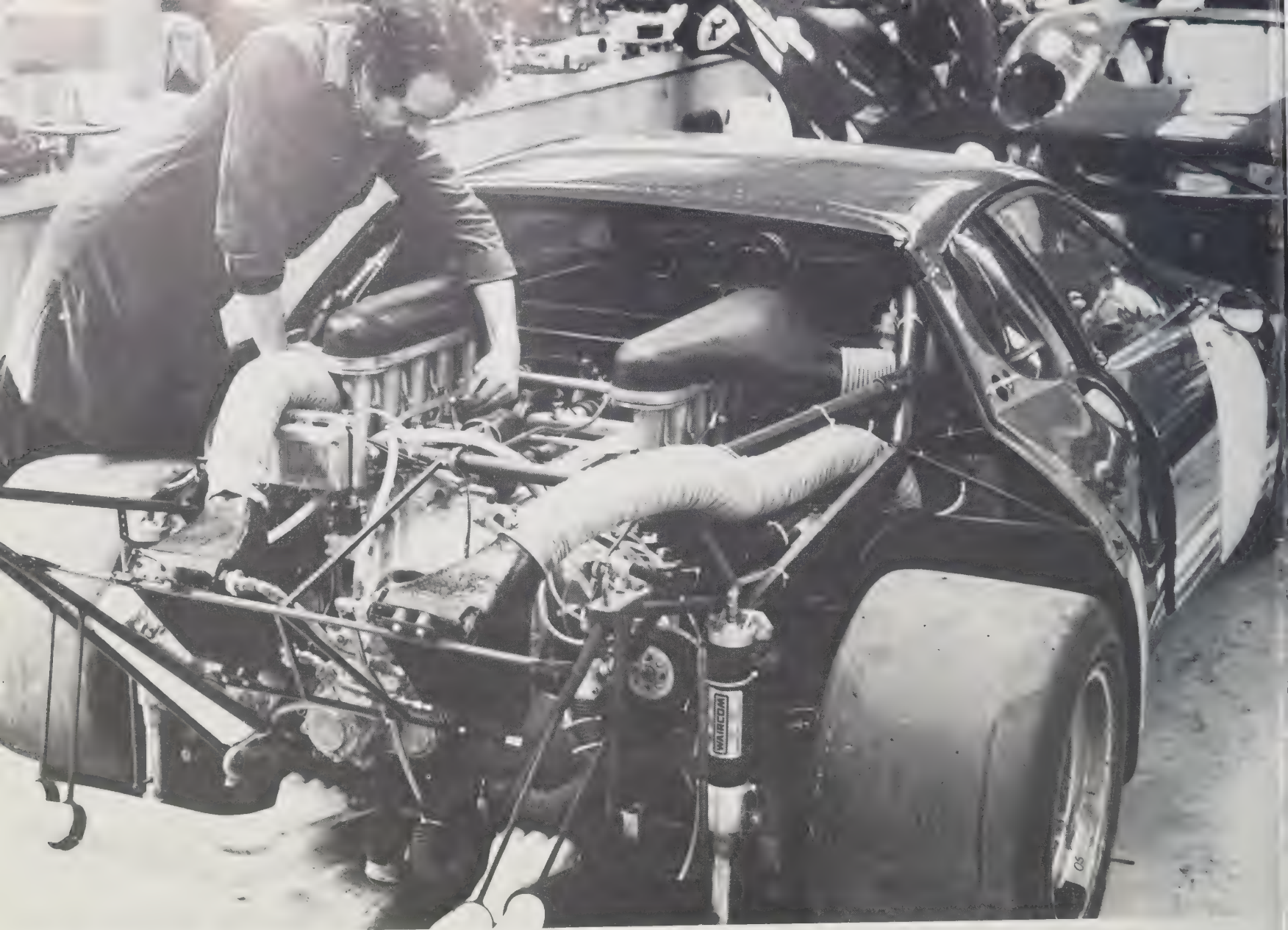
Production came to an end during 1985. The total number made is not yet known nor is the chassis number range, which started at 20093.

Above: Bosch K Jetronic fuel injection was introduced on to the 400i in mid-1979.

Left: One of the few to-date spyder conversions on a 400GT.

Opposite: The massive 4.8-litre V-12 fuel-injected engine of the 400i Automatic.





1976-81 Flat-12/GT

BB512

4942 cc, 82×78 mm, 340 bhp at 6800 rpm, CR 9.2:1. All other details (with the exception of the rear track dimension which was increased to 1563 mm) the same as for the 365GT4/BB.

Whilst the 365 Boxer was not seriously threatened by its rivals in terms of performance or market penetration, it was necessary to review its future in the face of ever more restrictive legislation concerned with pollution and noise. The feeling at Ferrari was that too much would be lost by trying to amend the 4.4-litre engine. A better solution would be to increase the engine capacity to 4942 cc through increasing both the bore and stroke dimensions. The larger engine meant lower maximum revs with the inevitable loss of some power but a gain in torque – 331 lbs/ft at 4300 rpm compared to 311 lbs/ft at 4500 for the smaller engine.

With the 5-litre engine came a change to dry-sump lubrication to counteract any oil surge problems that

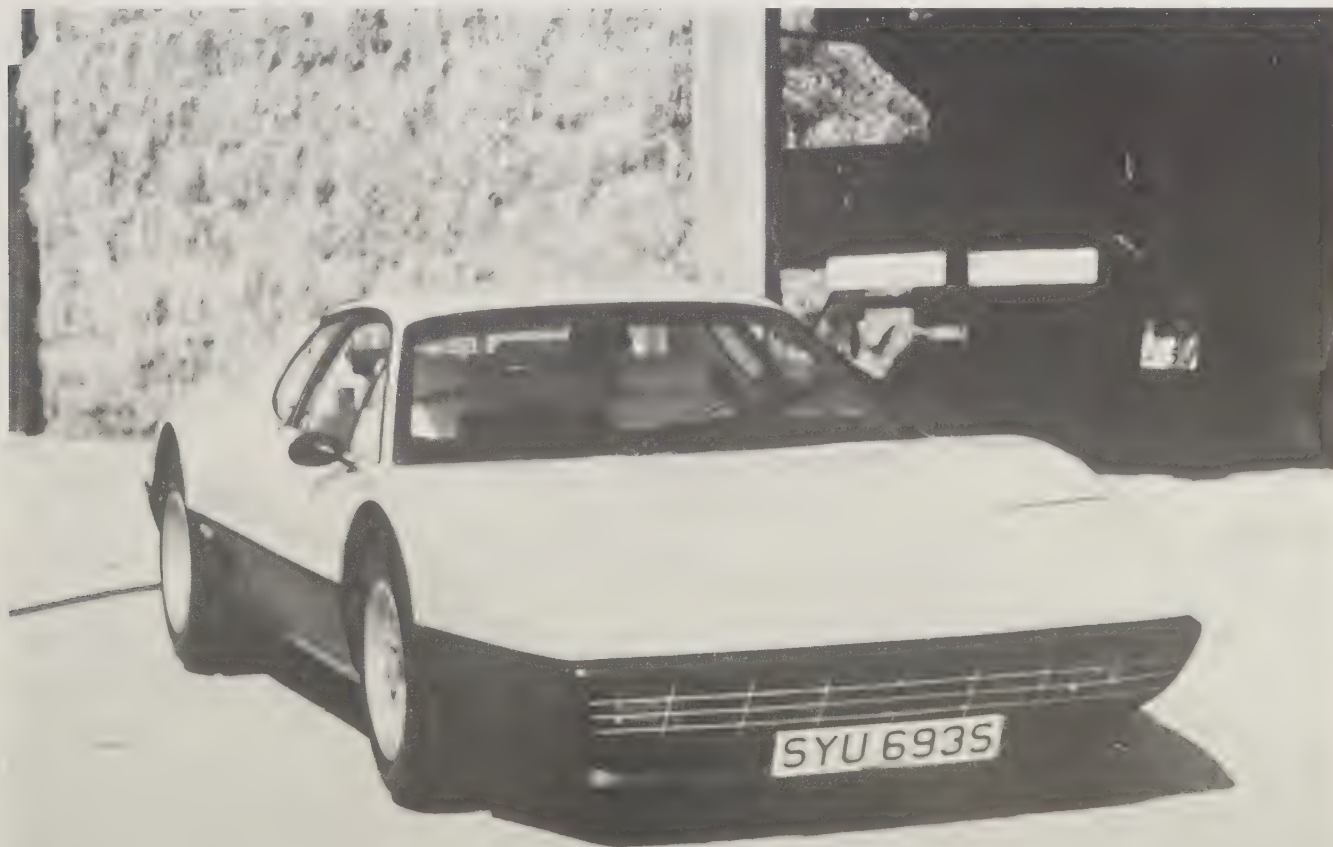
might arise from the increased cornering power of the bigger car. The original 9.5 in. single-plate clutch was replaced with an 8.5 in. twin-plate and the final drive ratio was changed from 3.46:1 to 3.2:1 to offset the lower maximum revs and keep the speeds in the gears close to those of the earlier model.

On the 365 version the tyre sizes front and rear had been the same. For the 512 Boxer those at the back were increased to 225/70VR15 on 9 in. rims instead of the 215/70VR15 on 7.5 in. rims.

At the front the nose was lowered and redesigned to incorporate a spoiler to overcome the moderate amount of lift at high speed encountered on the 365 model. Another notable feature was the introduction of NASA ducts in the flanks to feed air to the rear brakes. At the back of the car the 6 round lights were reduced to 4. A modification to the exhaust system cut the number of tail pipes back from 6 (in 2 groups of 3) to 4 (in 2 groups of 2).

In contrast to the treatment accorded the 365 Boxer, more attention was paid to the preparation of competition versions.

For the 1978 running of the Le Mans 24-Hour Race 3



Opposite above: Bob Houghton works on a Le Mans BB512 at Silverstone.

Opposite below left: BB512 outside the Rosso works in 1979.

Opposite below right: A revamped BB512 which was turbocharged (1977). It was not a great success.

Right: One for the road – the BB512.



cars – 2 for the French concessionaire Charles Pozzi and 1 for Luigi Chinetti – were prepared with factory assistance. Their weight was reduced to about 2425 lbs and, with careful tuning and assembly, engine power was raised to some 460 bhp. To cope with aerodynamic effects a larger spoiler was fitted; there was an aerodynamic duct on the front deck and a Formula 1-type front wing was fitted at the back. A fourth car was prepared at Garage Francorchamps for Jean Beurlys. It was to the same general specification but had its own aerodynamic arrangements. By being faster through the curves than the Daytonas of previous years, it set appreciably better times than those earlier cars. In the race it suffered from gearbox problems.

A second series of cars, more extensively prepared, was put in hand. The use of fuel injection brought the power up to around 480 bhp at 7200 rpm along with an even greater gain in torque. The transmission was strengthened and its lubrication improved by the use of an independent oil radiator. Brakes and suspension were worked on. The aerodynamics were improved through wind tunnel studies which gave a new front end and a long rear on which the wing was carried by 2

fins. The car's weight was down to around 2370 lbs.

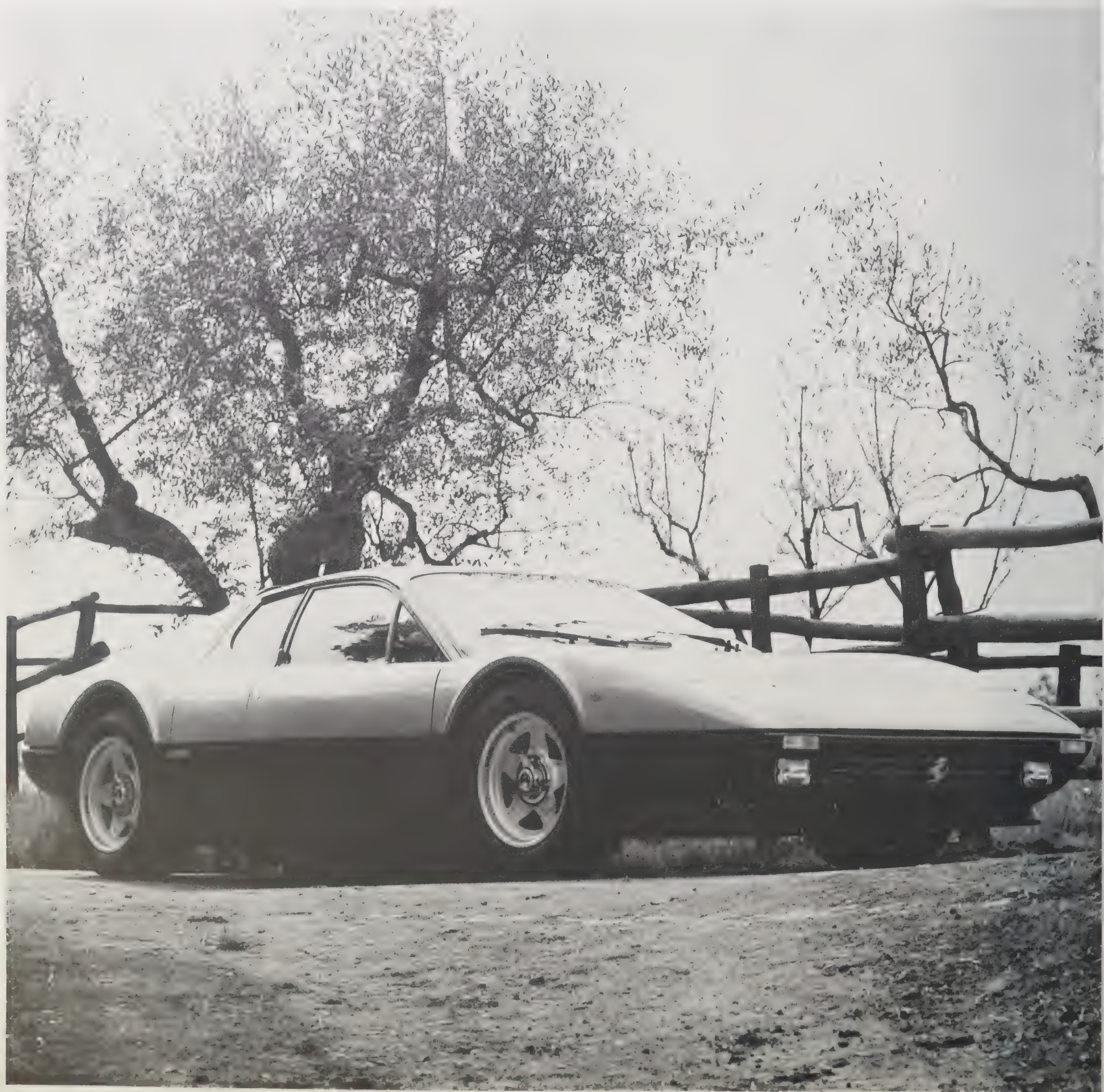
The 3 cars produced – 2 for Pozzi, 1 for NART – were entered for the Daytona 24-Hour Race of 1979 but serious tyre problems resulted in all of them retiring. At Le Mans later in the year they were joined by a fourth car, that of Jean Beurlys, which was identical to the first 3. The 2 French-entered cars were in peak condition but one, driven at the time by Michel Leclerc, was in collision with a slower car shortly after 7 am and the other, driven by Jean-Claude Andruet/Spartaco Dino, had got as high as third when it was forced into retirement around 9 am with lubrication failure. Efforts have continued in the years since then but still without any notable success.

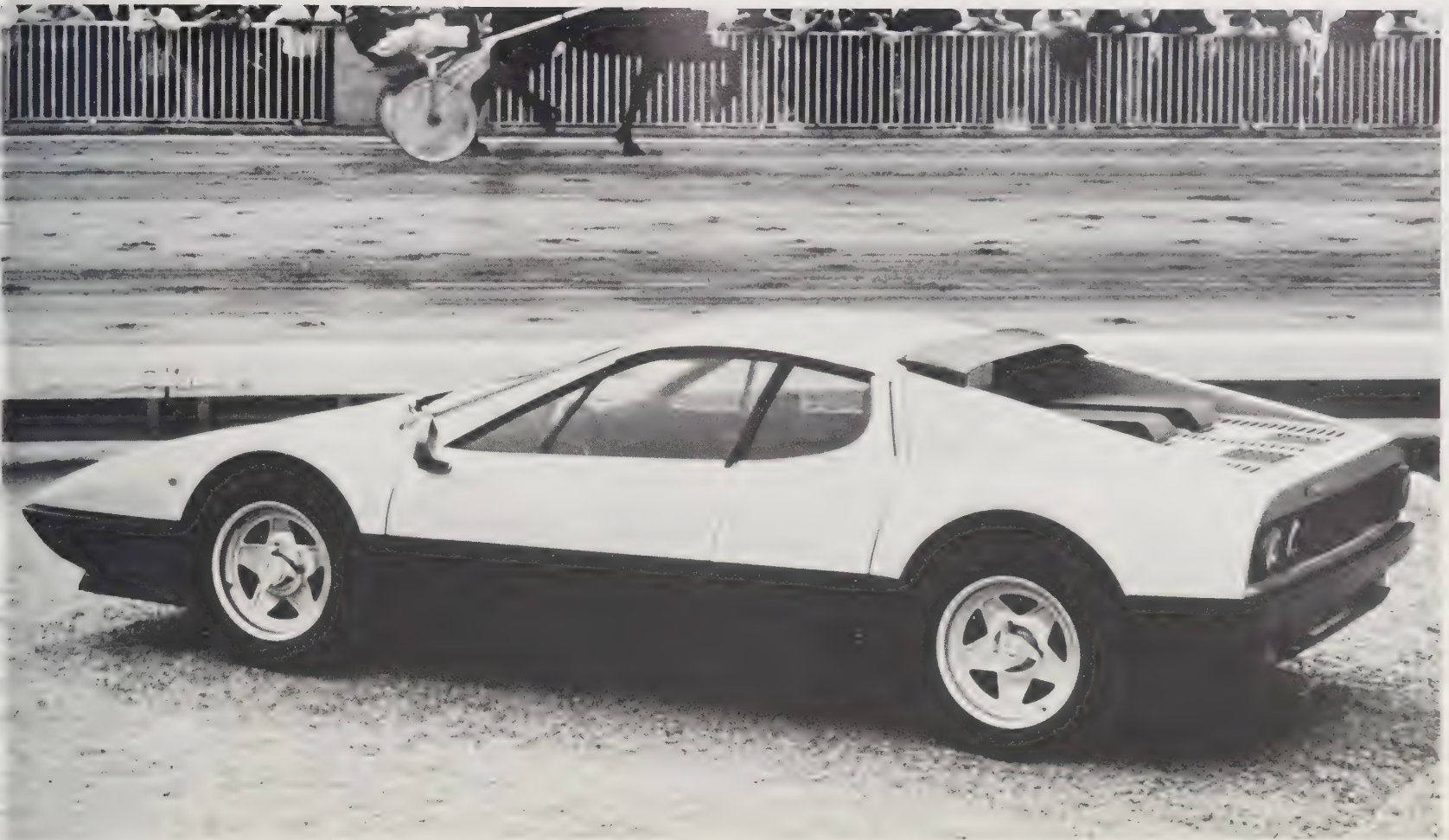
Chassis numbers: Full details of the number range not known, though the start point has been given as 19711. The first UK import was 19885 with the last generally recorded being 33965 in January 1981, which would not be too far short of the final number. The numbers of the 'competition' versions are not fully known but the following have so far been noted: 26681, 26683, 26685, 27577 and 34445.

Opposite: Front-on view of the road-going BB512.

Below: Le Mans – a BB512 entered by the French concessionaire Charles Pozzi.







Above: Flat-12-engined BB512i at American trotting race track.

Right: Comfort and luxury of the BB512i cockpit.

Opposite: BB512i. The Bosch fuel-injection system was first installed in October 1981.



1981-4 Flat-12/GT

BB512i

Details generally as for the BB512 but with Bosch K Jetronic fuel injection in place of Weber carburettors.

During 1981 there was a further development of the series through the introduction of fuel injection by the Bosch K Jetronic system already in use on other Ferrari models. Once again the move had come about as a result of increasing legislation affecting the automobile world. Fuel injection made it easier to meet the new regulations without any serious loss of power.

The most notable exterior changes were at the front where a smaller grille stopped short of the fog lights on each side and parking lights were let into the front bumper. At the rear red fog lights were set into the bumper.

Chassis numbers: No details available beyond that the first UK import was 40331 in January 1982 and the last recorded one was 49419 in January 1984.



1981-2 V-8/GT

Mondial 8

2926 cc, 81×71 mm, 214 bhp at 6600 rpm, CR 8.8:1, single ohc per bank, single plug per cylinder, coil ignition, Bosch K Jetronic fuel injection, 5-speed gearbox in unit with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2650 mm. *Track:* Front 1495 mm Rear 1517 mm.

The Mondial 8, a replacement for the 308GT4, made its debut at Geneva in the spring of 1980. Ferrari had used the name 'Mondial' before but that had been back in the early fifties and then, as previously noted, for a 2-litre, in-line 4-cylinder-engined sports racing car.

The 308GT4 had been more in the nature of an occasional 2 + 2 with its back seats more suited to the carrying of children or hand luggage rather than adults over any long distance. The Mondial 8 was to be a serious attempt at seating 4 adults in a relatively small mid-engined high-performance car. Pininfarina's designers had been set a difficult task. After evaluating

the project they asked Ferrari if it would be detrimental to the excellent roadholding of the 308GT4 to increase the wheelbase by 100 mm. Ferrari engineers had no objection to an increase which would allow the development of improved passenger-carrying capacity.

When the final solution was unveiled at Geneva it was at once apparent that Pininfarina had achieved their objectives within the obvious limitation that the comfort of the rear passengers would still depend to a large extent on just how much leg room those at the front needed. An increase in height by 3 or 4 cm gave improved headroom.

Under the skin the Mondial was very close in specification to the fuel-injected 308s but with an innovation in the chassis which had a separate sub-frame at the rear carrying the engine and transmission. The idea was that it could be unbolted and the whole power transmission pack removed for easier servicing.

The styling, with its subtle rounding of all the outer surfaces, had taken away some of the sharpness which characterized the 308GT4. It suggested the importance of comfort as opposed to out-and-out performance. Apart from the large slotted air intakes which raised a few hackles, the new shape was generally accepted as

Opposite: The 1982 fuel-injected 512.

Below: The 2+2 Mondial 8 replaced the 308GT4.



most people recognized the restraints imposed upon the designer.

According to one account there was a lot of discussion over whether to provide digital or analogue instrumentation before it was decided that the characteristics of the car demanded the traditional approach. Electronic gadgetry found its way on to the central console in the form of a questions-and-light-up-answers panel covering a number of essential functions such as engine and gearbox oil levels, closure of bonnet and boot lids, efficiency of brakes, etc. Warning lights were also incorporated covering maintenance mileages.

Because the car used the same fuel-injected engine as the 308GTBi/GTSi models, there was a reminder that increased weight and frontal area had to be paid for with lower performance. But as a family car extremes of performance were unlikely to be either sought or endured.

Chassis numbers: It is not possible to be precise about these. It would seem that they started at 31075. Deliveries into the UK started in August 1981 with chassis 33737 and continued through until August 1982 when the first of the 4-valve versions was introduced there at 42955.



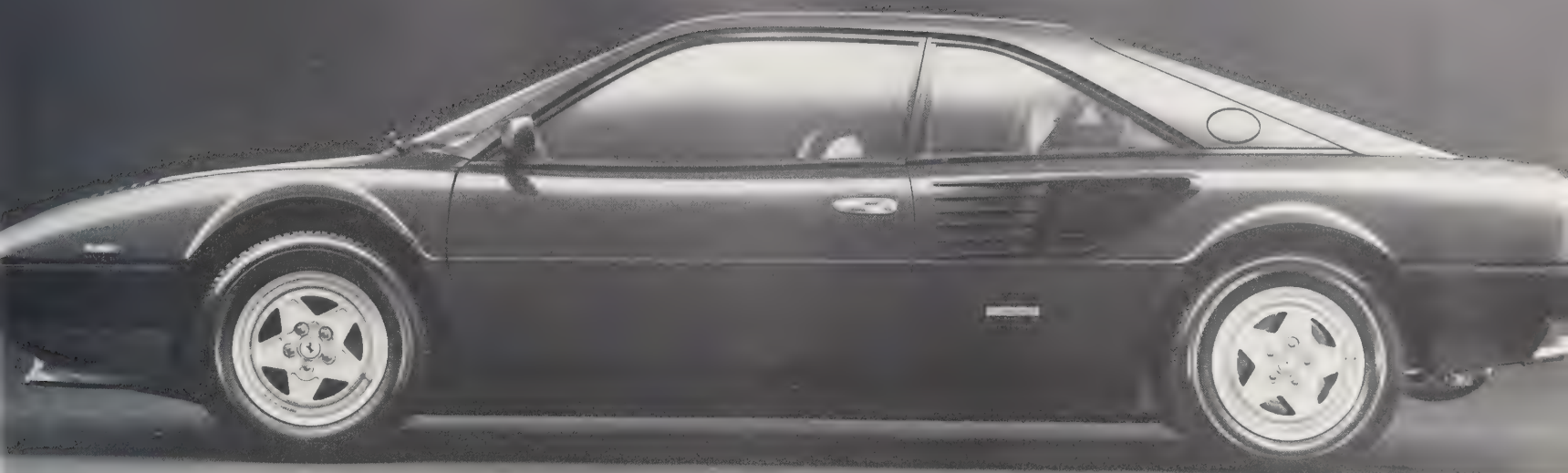
Above: Mondial dashboard.

Left: The Mondial interior offers limited comfort for rear passengers.

Opposite above: Neat lines for a 2+2 – the Mondial 8.

Opposite below: Mondial 8.







1982/Continuing production V-8/GT

Mondial 'Quattrovalvole'

Details generally as for the Mondial 8 except as indicated below.

'Quattrovalvole' means 4 valves, and by introducing 4 valves per cylinder head to the Mondial in August 1982 Ferrari initiated a change that was to embrace all of the road-going GTs in due course.

The problem to be solved was the general loss of power which had affected the V-8-engined 308 series cars as they had been progressively toned down to meet the seemingly endless legislation that seeks to specify just how automobile engines are to behave in order to be socially acceptable. The 'taxation specials' in the form of the 208 series were really up against it, and then the solution had been officially to accept turbocharging as an answer. For the 308s Ferrari sought what was considered to be a more elegant and practical solution – 32 little valves per engine instead of 16 large ones. During its time as a '2-valver', the 308 engine had dropped – in the European market – from an unlikely

255 bhp down to an almost certain 214 bhp. With a doubling-up of the valves, 240 bhp was on tap. It is interesting to note that Ferrari engineers were content with the gains that came from deeper in the theory of multiple valves rather than the more obvious ones of higher revs and increased valve area. For the legislators there was the attraction of a much cleaner exhaust.

Some other engine changes were made at the time. The compression ratio was increased – through new pistons – from 8.8:1 to 9.2:1; the cylinder liners were made from aluminium electrostatically coated with Nikasil (a nickel-silicon carbide); a special cast iron was used for the valve seats, tellurium copper for the valve guides and a nimonic alloy for the exhaust valves.

Outwardly there was nothing to distinguish the latest Mondial from the earlier versions beyond dropping the '8' from the designation and the addition of 'quattrovalvole' in lower-case script to 'Mondial' as the model designator at the rear of the car.

Chassis numbers: 42955 (first UK import). Slightly lower numbers have been noted for left-hand-drive cars.

Opposite: The 4-valve-per-cylinder Mondial Qv.

Below: The body line of the Mondial Qv remains similar to that of the Mondial 8.





Ferrari

Ferrari

Ferrari

Opposite: Transverse V-8 engine of the Mondial Qv.

Right and below: Cabriolet version of the Mondial Qv with hood up and stowed away.



1984/Continuing production V-8/GT

Mondial Cabriolet

Details generally as for the Mondial 'Quattrovalvole'

Introduced in Brussels early in 1984, this model was the first cabriolet to go into the catalogue since the 330 and 365GTs of the early seventies. Opinions naturally vary on the appearance of the car but there seems little doubt that the removal of the roof has considerably enhanced the original Pininfarina styling. There is now nothing to detract from the long flowing curve that, flattened in the door area, goes from the front bumper to the tail of the car. The sharply angled windscreen is the better for being on its own.

By all accounts the car's folding top is not too difficult to fetch out and, after use, stow away. It does stand proud of the rear deck when folded down, because what Pininfarina have done is to leave some vestige of each of the original rear sail panels in place and duplicate that shape by the protective boot. It is a neat arrangement which helps to minimize the apparent height of the folded top. Another interesting feature is the provision of retractable quarter windows behind the door that can be lowered electrically when the top is up. To increase the amount of luggage space available, the backs of the rear seats fold down on to the seat cushions.

Mechanically the cabriolet is identical to the 4-valve Mondial which it now supplements.

Chassis numbers: start at 47455.

1984 Flat-12/GT

Testarossa

4942 cc, 82×78 mm, 390 bhp at 6300 rpm, CR 9.2:1, double ohc per bank, 4 valves per cylinder, single plug per cylinder, coil ignition, Bosch K Jetronic fuel injection, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2550 mm. *Track:* Front 1518 mm Rear 1660 mm.

The question many will be asking is whether the new Testarossa is or will be the ultimate in gran turismo cars for road use. Whatever the answer, there can be no doubt but that it is a highlight in Ferrari's long career as a producer of genuine high-performance road cars.

The Testarossa made its debut at the Paris Salon in the autumn of 1984 and is a replacement for the BB512i. Although Ferrari press handouts stress that the flat-12 boxer engine has been completely redesigned, it is in general layout the same as the units used with the previous 365 and 512BBs. It retains the 4942 cc capacity



Above: With headlamps raised, the mighty 5-litre flat-12 Testarossa.

Left: The Pininfarina-designed Testarossa.

Opposite: 1984 Testarossa show car – a combination of road and racing GT lines.









Above: The impressive top hamper on the flat-12 Testarossa engine. The air intake trunking passes air to the heart of the Bosch fuel-injection system situated between the induction-pipe banks

Above right: Sumptuous interior layout of the Testarossa.

Opposite: Possibly the last of the great flat-12 GTs, this could be described as the flagship of the Ferrari 'fleet'.

of the 512 and is mid-mounted, but it now has 4 valves per cylinder. Both the cylinder block and the cylinder heads are made from a light alloy. The pistons and cylinder liners are aluminium. The latter are Nikasil-coated. Bosch K Jetronic fuel injection is still used but it is said that special attention has been paid to the inlet tracts and to the system as a whole in order to eliminate turbulence. Ignition is by Marelli but using the Microplex system in lieu of the Dinoplex previously specified on a number of cars. Lubrication is dry-sump incorporating two scavenge pumps and one pressure pump. A separate oil-cooling radiator with an automatic fan is provided.

The changeover to a 4-valve head is aimed at improving both the volumetric and thermal efficiency; increasing power and torque and reducing fuel consumption. As far as power and torque are concerned, the figures are 380 bhp at 6300 rpm and 361.6 lbs/ft at 4500 rpm for the Testarossa against 340 bhp at 6000 rpm and 332.7 lbs/ft at 4200 for the 512i. The red line has moved up to 6800 rpm from 6600 rpm. Fuel consumption figures are more open to question but an indication can be gained from the data provided by the manufacturer which gives at 90 kph a consumption of 9.9 litres/100 km and at 120 kph 11 litres/100 km for the Testarossa as opposed to 11 and 14 litres/100 km at the same speeds for the 512i.

A major change in the layout of the car has been the



removal of the forward nose-mounted radiator in favour of 2 - 1 either side - mounted amidships just ahead of the engine. By virtue of the larger area provided, the engine should be more efficiently cooled and - of great importance to a road-going GT - there is no longer any need to pass heated water under the cockpit. An added bonus is the extra luggage-carrying space in the front boot.

In spite of the radiator shift there is still a grille at the front. It is partly a matter of tradition that it remains but it also conducts cool air to the front brake discs.

A detailed styling analysis is beyond the scope of this book. Suffice it to say that, whether you like it or not, the Pininfarina-designed body is a particularly striking one and is unique to the Testarossa. Aerodynamics have obviously played a great part in a design where directional stability at high speed and the generation of negative lift have been paramount considerations. When it is seen on the road there can be no doubt at all that the purpose of the car is high-speed touring.

Along with a superb exterior there is an equally fine interior. One commentator has spoken of 'restrained and spartan elegance'. 'Spartan' in this case means simply a lack of ostentation and the elimination of needless clutter.

Chassis numbers: With production only just under way there are no worthwhile details that can be given



1984/Still in production V-8/GT

288GTO

2885 cc, 80×71 mm, 400 bhp at 7000 rpm, CR 7.7:1, twin ohc per bank, 4 valves per cylinder, single plug per cylinder, 2 Weber-Marelli injection-ignition systems, 2 IHI turbochargers, 2 Behr heat exchangers, 5-speed gearbox in unit with final drive, dry-sump lubrication. *Front suspension:* independent double wishbones, coil springs. *Rear suspension:* as front suspension. *Wheelbase:* 2450 mm. *Track:* Front 1559 mm Rear 1562 mm.

Recently Ferrari has reached back into the racing history of the marque, as in the case of the Mondial and Testa Rossa, to name, rather than type number, new models. Twenty years after the 250GTO, produced during the years 1962 to 1964, Ferrari showed the automobile world at the 54th Geneva Salon in 1984 by unveiling a 'new edition' GTO that he had lost none of his touch.

Generally referred to as 'GTO', the car has been officially designated '288GTO', i.e. '2.8-litre, 8-cylinder GTO', although that type number does not appear as part of the type designation motif at the rear of the car. It does appear as part of the type/chassis number plate behind the steering wheel.

The previous GTO had won for Ferrari the GT World Championship in the years of its production. Then, it had been an uncompromising track car, but because of its ancestry it was not difficult to drive on the ordinary roads – as many still are.

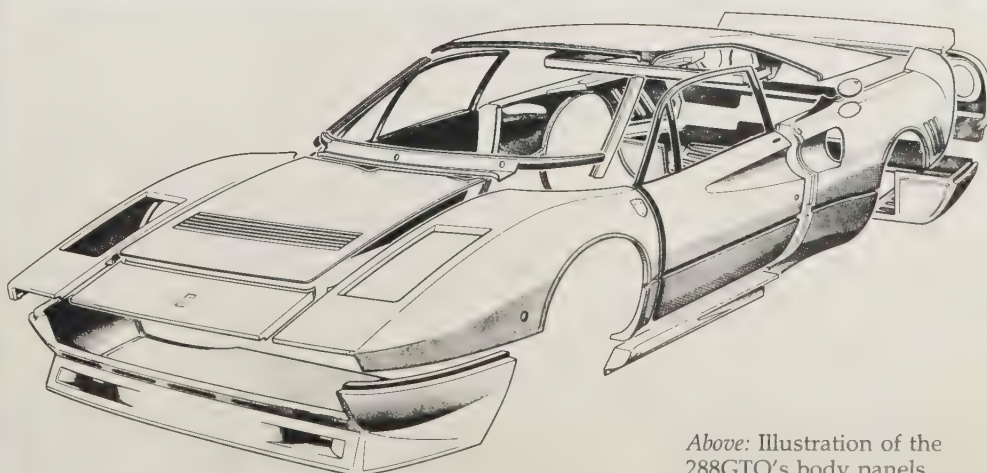
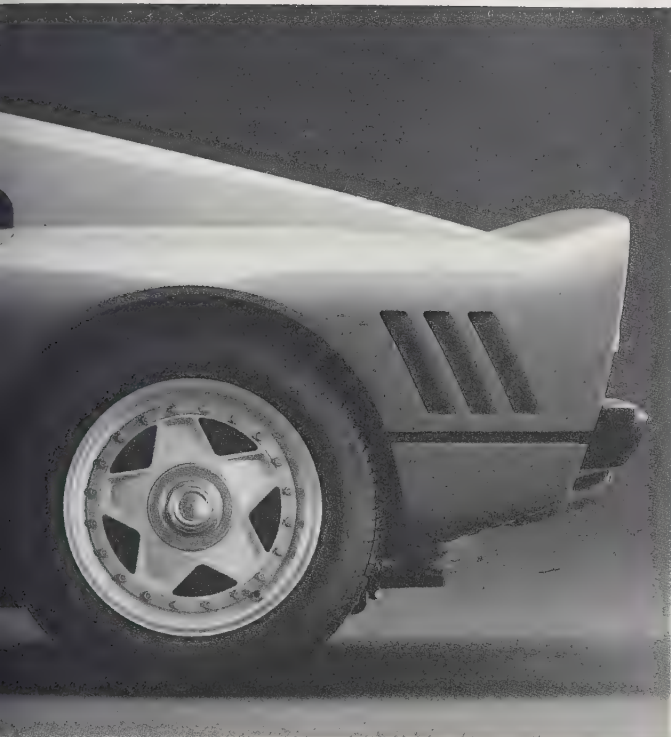
The new GTO is for normal road use but there is to be a cutting edge in the shape of a scheduled – on present plans – 20 'evolutionary' examples that are intended to take the name of Ferrari into Group B competition. It is for this reason that the initial production for the road cars has been set at 200, the minimum necessary to gain homologation. It appears that the Group B cars will be in the hands of private entrants only, the factory apparently having no commitment whatever to race or support the cars. Whether that remains the case is a point of interest to watch.

It seems that when the GTO project got under way, a limit on development time made it advantageous to start off with an already established body design – that of the 308GTB. Although in truth very little now remains of panels which went to make up the 308 body shell, the family likeness is still very strong because the changes made are most drastic in the materials now used which reflect Ferrari commitment to modern technology as a means of gaining strength while decreasing weight. There seems to be some uncertainty about exactly which materials are used for a specific application but one analysis states that the bulk of the body shell is fibreglass. An upper nose panel – that carrying the badge – the roof and rear decking along with the vertical panel for the tail are fibreglass and Nomex and the front luggage compartment lid is of Kevlar and Nomex. The interior firewall is a Kevlar, Nomex and aluminium honeycomb. It is thought likely that in the 'evolutionary' models increased use will be made of composite panels.

Above: With similarities in its coachwork to that of the 308GTB, the 288GTO looks every inch a road-burner!

Opposite above right: The beautifully 'turned' wheels of the 288GTO.

Opposite left: Bird's-eye view shows the flowing lines of the 288GTO.



Above: Illustration of the 288GTO's body panels.







The exterior changes in the shape of flared arches, large spoilers front and rear, tall outside mirrors, 4 extra driving lights set into the grille and the 3 cooling slots let into the rear wheel arches have combined to give the car an altogether sharper and more competitive look.

The heart of every Ferrari is its engine and although there will be some regrets that the new GTO is not a V-12 it cannot be denied that Ferrari now have a wealth of experience with high-performance V-8s including the use of turbocharging – the 208 Turbo for road use and the engines designed for use by Lancia in the World Endurance Championship races over the last 3 seasons.

The all-alloy V-8 has been swung round to be more suitable for racing. Its longitudinal position has also undoubtedly helped considerably with the plumbing arrangements for the twin turbochargers. The capacity

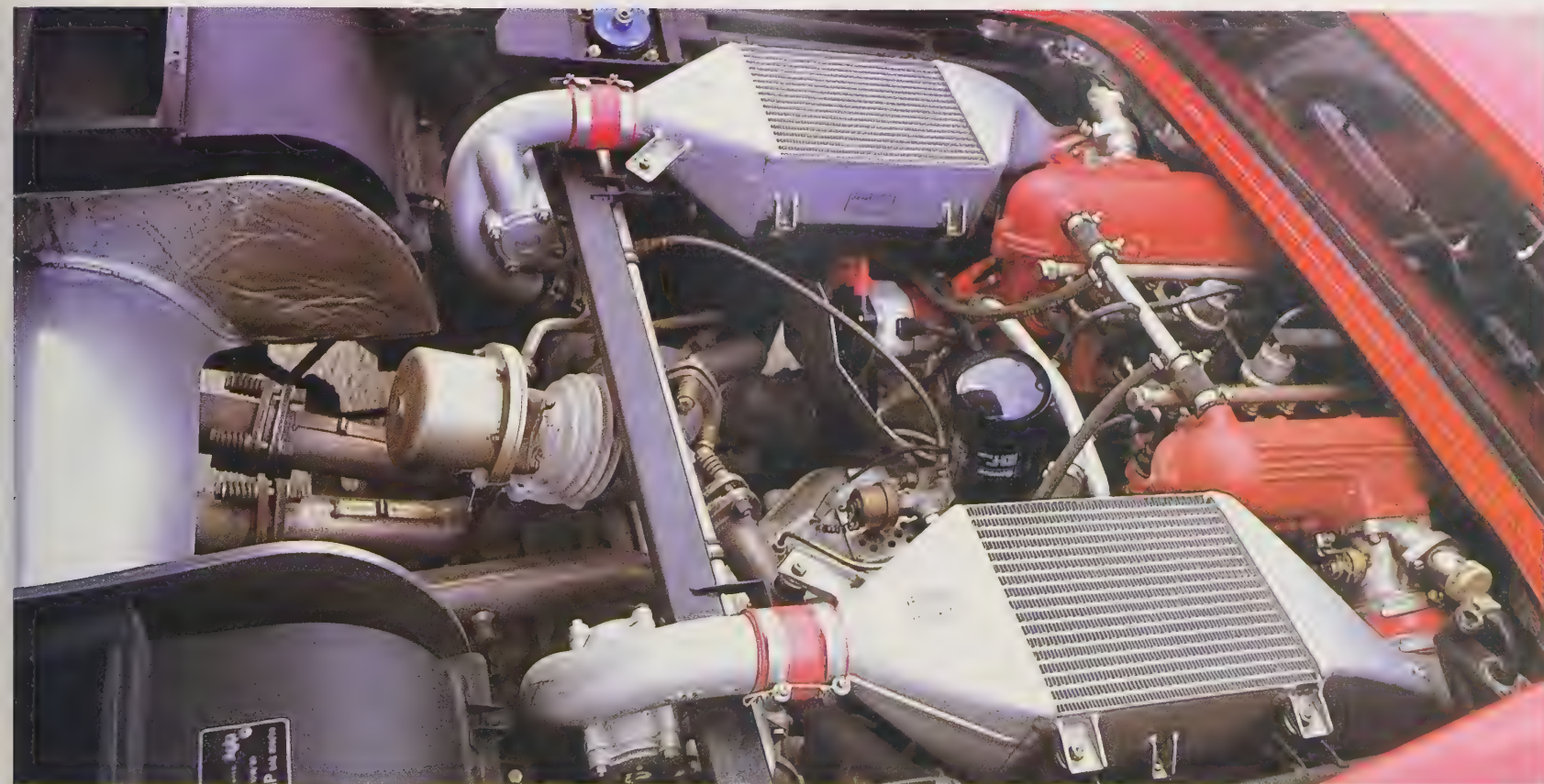
drop to 2855 cc has been brought about by the ruling that the effective capacity of a turbocharged unit is its actual capacity multiplied by a factor of 1.4, which puts the GTO just inside the 4-litre class. The engine has been placed well forward in the bay with the result that the engine compartment has a somewhat empty look compared to the 'full of flat-12' look of the Testa Rossa. The twin turbos, from the Japanese firm of IHI, have been chosen for their minimal inertia as an important feature for everyday road use. The aim has been to keep the power band wide and flexible for traffic and high-speed use. At first glance the 400 bhp on tap now does not suggest 2 decades of improvement over the previous V-12-engined cars, but at 3500 rpm the V-8 has developed almost as much power as was available in toto from the 250GTO and it goes on improving.

Above: 288GTO frontal aspect.

Opposite above: The 288GTO engine is placed longitudinally at the rear.

Opposite below: Neat, luxurious and without frills – the interior of the 288GTO.

Preceding pages: Uncluttered tail of the 288GTO with recessed rear lights.



To look after the fuel and ignition requirements of the engine, Weber-Marelli electronic injection and ignition systems are employed – 1 for each engine bank.

A new 5-speed gearbox has been built and in Formula 1 fashion it is to the rear of the differential. The drive is taken to the rear of the box where a pair of quick-change gears transfer it up and thence to the differential.

The performance figures given by the factory are impressive with 0-100 kph (62.1 mph) in 4.9 secs, a standing-start kilometre in 21.8 secs or standing quarter mile in 12.8 secs. Standing kilometre terminal speed is 156.6 mph; maximum speed 189.5 mph.

After the 250GTO had stopped racing a considerable number of years passed before it became a collector's car and prices rose accordingly and are still rising. Unlike its predecessor, the new GTO has already become a collector's item with an assured place in Ferrari history. It had achieved this even before it was seen at Geneva for the first time. It only remains now to see what part the car plays in competition when the 'evolutionary' versions enter the lists.

Chassis numbers

With production still continuing there are no details of these beyond noting that the 2 cars shown at Geneva were 50255 on the Ferrari stand and 50253 on the Pininfarina stand.

412

4943 cc, 82×78 mm, 340 bhp at 6000 rpm, CR 9.6:1, double ohc per bank, single plug cylinder, coil ignition, Bosch K Jetronic fuel injection, 5-speed gearbox integral with engine.

Front suspension: independent double wishbones, coil springs. *Rear suspension:* as front suspension but with self-levelling device. *Wheelbase:* 2700 mm. *Track:* Front 1480 mm Rear 1500 mm.

In the autumn of 1984 it was announced that the production of the 400GT range was to cease. At the time no word was given of a replacement. The most obvious candidate was the long-deferred 'Pinin', but that possibility was quickly denied by Ferrari spokesmen. The guessing game started but did not have to go on for too long, as at Geneva in March 1985 Ferrari put on show the 412.

Looking at the new car, one is in no doubt at all about its ancestry. It is very clearly a further development of the 400GT range and at first glance can easily be mistaken for one.

As an aid to what one American report has referred to as 'air flow management', the front spoiler has been deepened and skirts have been added to the lower body

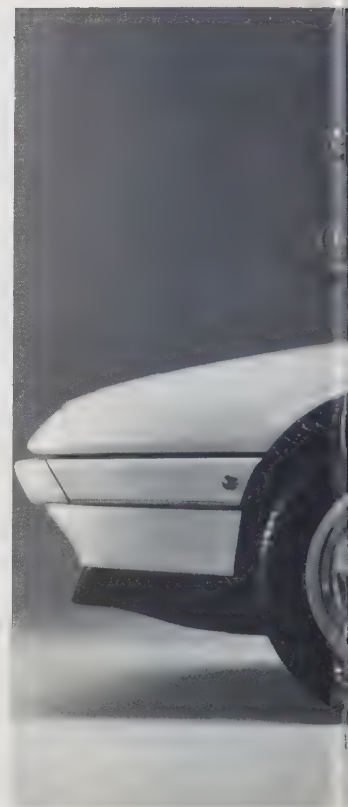
panels along the length of the car and under the rear panel. The tail is higher by about a couple of inches. The wheels retain their traditional 5-pointed-star form but have been modernized. The bumpers, both front and rear, are colour-keyed to the body colour. The fog lights no longer hide behind the front grille.

In the interior, the front seats are electrically controlled and redesigned headrests are fitted to both the front and rear seats. The seat belts have been repositioned. The efficiency of the air conditioning and ventilation has been increased through a new electronic control system.

The capacity of the engine, as noted above, has been increased to 4924 cc and this, together with other detail modifications, has put the power up to 340 bhp but at 6000 rpm, i.e. 500 rpm less than the same level of power for the 400GT before fuel injection was introduced. The Marelli Microplex system of electronic ignition combined with new injector design is said to be responsible for a lower fuel consumption and better volumetric control.

A new exhaust system has been provided in order to comply with the latest batch of regulations. To cope with the increased power and torque, a new 9½ in. clutch of the double-disc type has been fitted. The front suspension has been redesigned in order to adapt it to the Bosch ABS system of braking that has been incorporated into an already excellent braking.

Chassis numbers: No details yet available.



Above: First shown at Geneva in 1985, the 412 is the sole V-12-engined car in the Ferrari range.

Left: The 412 replaced the 400 Series which ceased production in the autumn of 1984.

Opposite below left: Driver's compartment with everything to hand.

Opposite below right: Four seats and luxury equipment but still modest leg-room at the rear.





1985/Continuing production V-8/GT

328GTB, 328GTS, 3.2 Mondial and 3.2 Mondial Cabriolet

Following the usual period of rumours and 'scoop' photographs concerning forthcoming changes in Ferrari's catalogue of GT cars, the cat was officially released from the bag at the Frankfurt Motor Show – which opened on 12 September 1985 – with the showing of the new 3.2-litre V-8-engined range of GT cars to replace the 3-litre 308 series.

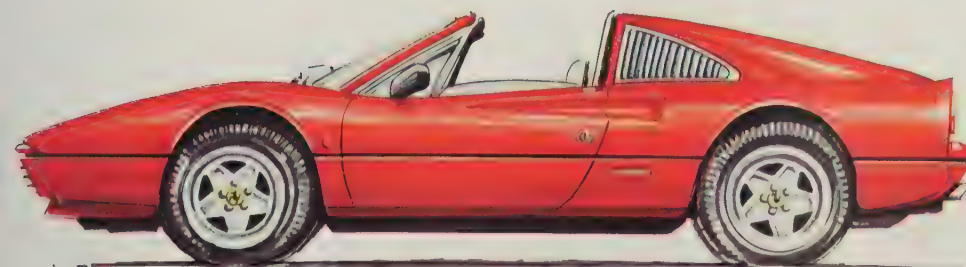
The V-8 engine is that evolved through fuel injection and 4-valve heads from the unit introduced in 1974 to power the 308GT4. With the bore and stroke dimensions increased to 83 mm and 73.6 mm respectively, capacity has been raised to 3185 cc. Power has gone up to

270 bhp at 7000 rpm – an increase of some 12.5% – and torque to 224.2 lbs/ft at 5500 rpm – an increase of some 17%. A number of internal design modifications, including raising the compression ratio from 8.8 to 9.8:1, have been incorporated.

Although in general outward appearance the new cars are very similar to the previous models, the opportunity has been taken to improve those items that affect drag and stability. The front air intake for the radiator, brakes and air conditioning has been re-designed. The bumpers have been integrated into the underfaring and are now painted to match the colour of the car. The radiator air discharge has been ducted into what is referred to as a 'defined area' under the bonnet in the interests of efficiency. New lights which incorporate parking, turn and flashing as on the Testarossa have been fitted. At the rear the bumper is painted to

Above and opposite below The 328 series was shown at Frankfurt in the autumn of 1985. The 3.2-litre V-8 engine produces an extra 30 bhp over the 3-litre 308 series which it replaces

Opposite above. The 3.2 Mondial 2 + 2 shows some cosmetic improvements over the previous Mondial series.



match the body and has also been integrated into the underfaring along with the exhaust tailpipes and rear foglights.

Within the interiors the dashboard has been completely redesigned and new-style door handles which incorporate the controls for the electric windows, exterior door mirrors and courtesy lights are used.

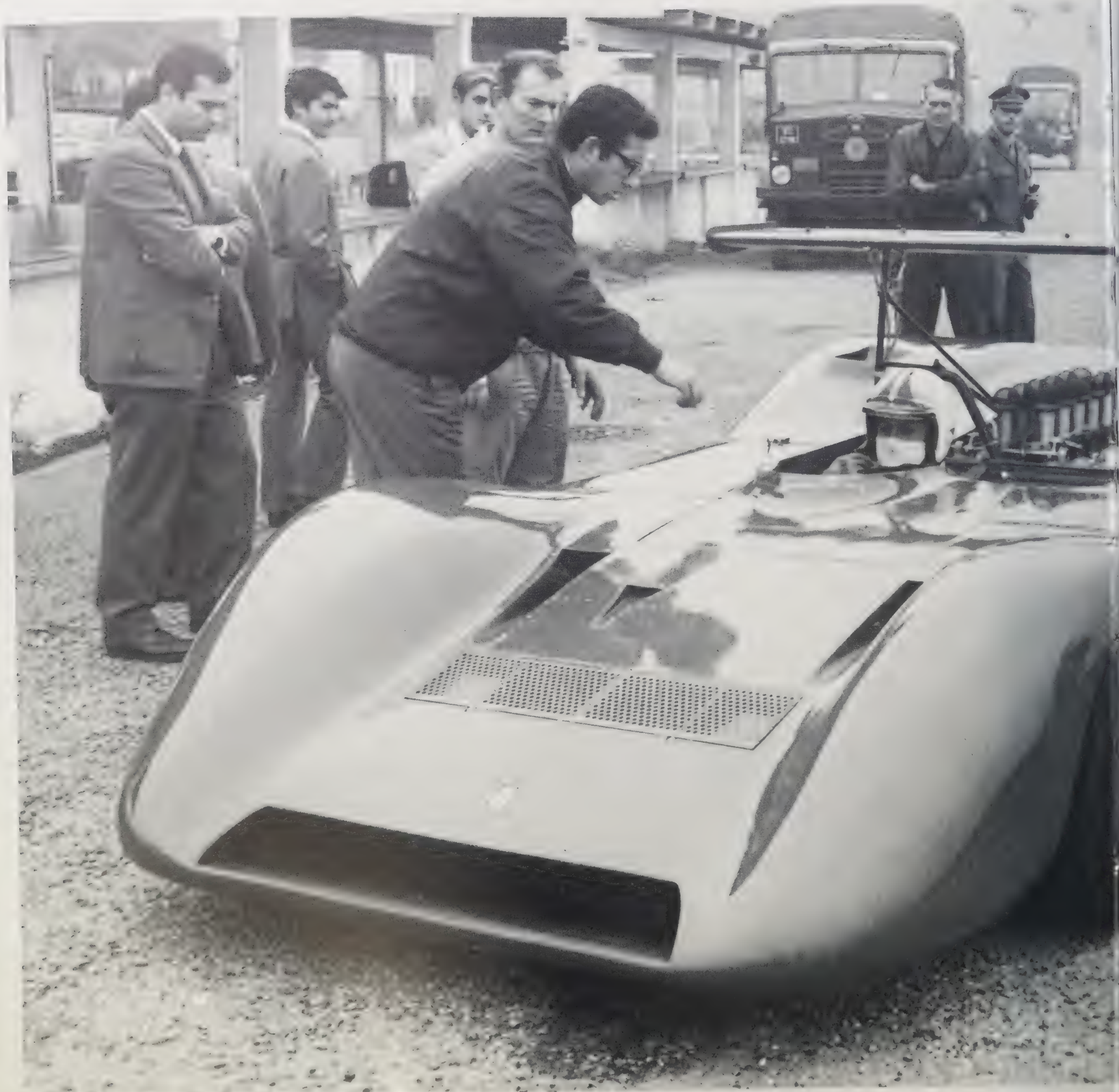
It would seem that these changes have been applied to the Mondials also – certainly those affecting the exterior have been noted. Additionally the Mondials have been given a more powerful radio than was previously supplied; modified temperature controls and smaller front wheels – 165 TR 390 instead of 185 TR 390. This last change is said to have been introduced in order to lighten the steering at low speeds and when parking.

Chassis numbers: no details available.



The CanAm Cars





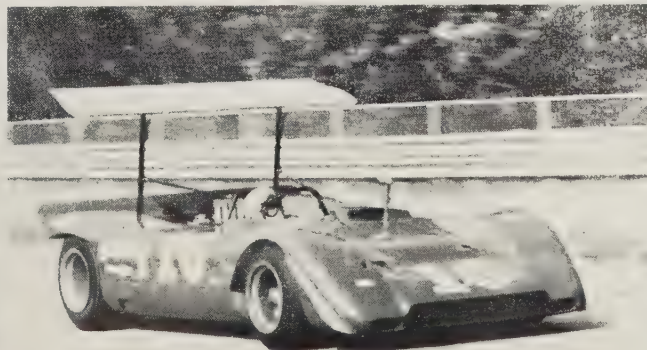


The American racing scene featured a new series of races in 1966 confined to circuits in the USA and Canada. Group 7 sports racing cars from America and Britain were involved, the majority of which used the well tried 7-litre V-8 Chevrolet engine which had plenty of torque throughout its power range.

Ferrari was to become involved through the USA concessionaire, Luigi Chinetti, even though, at that time, they did not have a car with a suitable power unit. The best they could muster had a displacement no greater than 4 litres.

In 1967 the 330P4 had regained the Manufacturers' Championship for Ferrari but would be obsolete in 1968 when the Sports Car Championship was to be contested by 5-litre cars. Apart from being sold off to privateers it seemed the cars' days were numbered until Luigi Chinetti decided to contest the new CanAm series. He had a now outdated 330P3/4 (412P), chassis no. 0844, which he returned to the factory for minor modifications such as having some weight taken off and lowering the bodywork, but seemingly no changes were made to the engine. However, it was no match for the more powerful McLaren's and Lolas. This effort seemed to stir Ferrari into action and he modified the engines of 2 of the works 330P4s (chassis nos. 0858 and 0860) by increasing the bore from 77 to 79 mm but leaving the stroke at 71 mm which increased the capacity from 3967 to 4176 cc. The compression ratio was raised to 11.0:1, giving an output of 480 bhp at 8500 rpm. The cars were designated 350 CanAm/350P4 and the late Bill Harrah (the West Coast Ferrari distributor at that time) was left to enter and look after the 2 cars, having been promised factory support. The drivers were Chris Amon and Jonathan Williams.

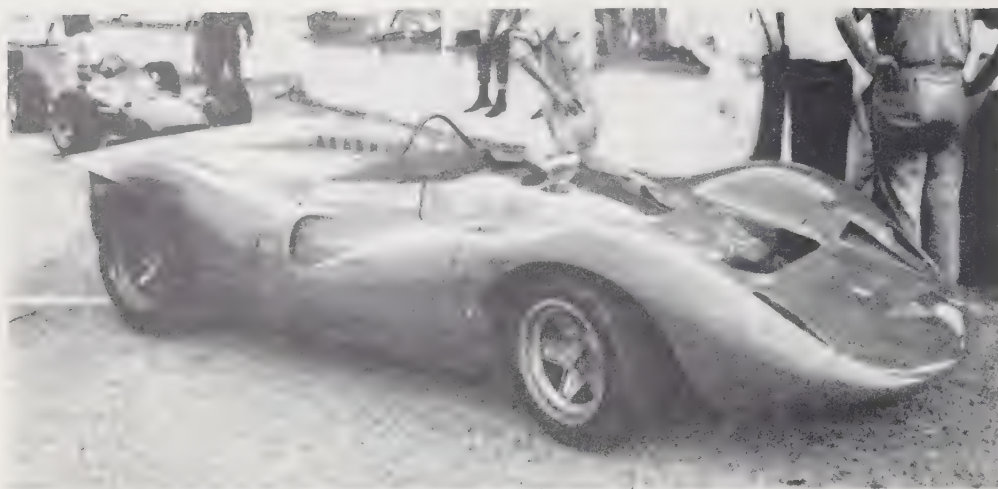
Although they failed in the 3 races contested, Mauro Forghieri, Maranello's chief engineer, was impressed by the performances of the underpowered cars and persuaded Ferrari to build a car for the race series. Since Ferrari would not be entering the new Sports Car Championship with his 5-litre cars until 1970 he probably decided it would be an excellent opportunity to build a larger engine and an entirely new car for the CanAm races, using it as a test-bed for the future.



Preceding pages: The NART Canada.

Opposite: 612 CanAm car (chassis number 0866), 1968.

Left: 612 CanAm car (chassis number 0866), 1969.



Above: Another view of the NART Canada car. This was modified by the factory from the 330P3/4 (412P).

Opposite: The final factory CanAm car – the 6.9-litre Type 712.

So an over-6-litre unit was completed with new bodywork, but unfortunately the car, designated the 612, was not ready until the last race of the 1968 series at Las Vegas. This was not really surprising when the relatively small factory was also involved in Formula 1 racing and development and the building of road cars.

The first 612, however, did not complete one lap of the race as all the leading cars were involved in a general mêlée at the first bend and the car was side-lined after sucking in a lot of dust and dirt via the air intake!

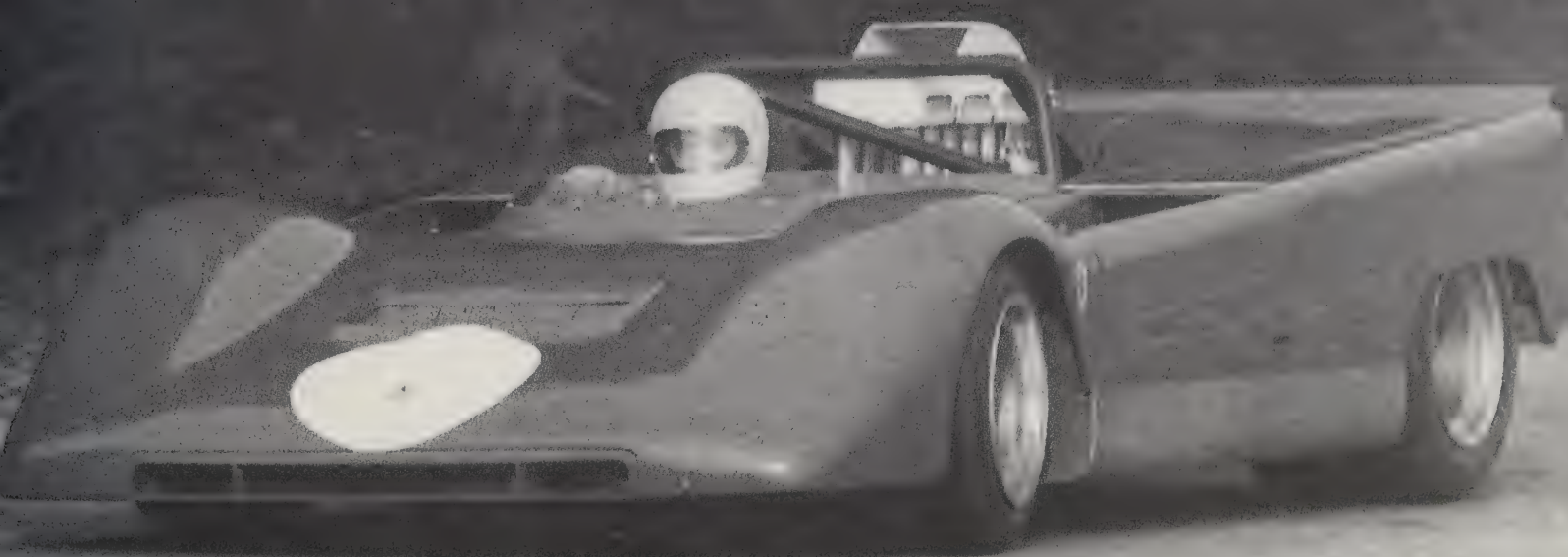
During the closed season further work was done on the engine which raised the bhp from 620 to 640 and the bodywork was revised and lightened. The car was back in the USA for the third race of the 1969 series at Watkins Glen where Chris Amon took it to a respectable third behind 2 McLarens. In the meantime a second engine had been completed as a back-up. The 612 had a mixed season, being beset with both minor and major problems, but in the Klondike 200 at Edmonton it showed its pace and reliability by finishing second, a mere 5 seconds behind Denny Hulme's McLaren.

Throughout the season, with virtually nil support from the factory, Amon was awaiting an even more potent engine, an entirely new longer-stroke V-12 of 6.9 litres. It arrived for the Riverside event where it started from third position on the grid, but as it was push-started Chris Amon was black-flagged and out of the race. During practice for the last event at the Texas International Speedway the 712, as it was designated, lost a piston.

After an almost full season in the CanAm series Ferrari decided to call it a day as he was now concentrating on the new 5-litre cars.

Looking back, the exercise seems to have been a wasted effort as little real development work on the cars had been carried out. On the other hand, with cars built for a series of events held across the Atlantic it was not an economic proposition (despite the fact that the rewards were great) to keep a team of mechanics away for such a long period each year.







Formula 1



1948-9

125GP

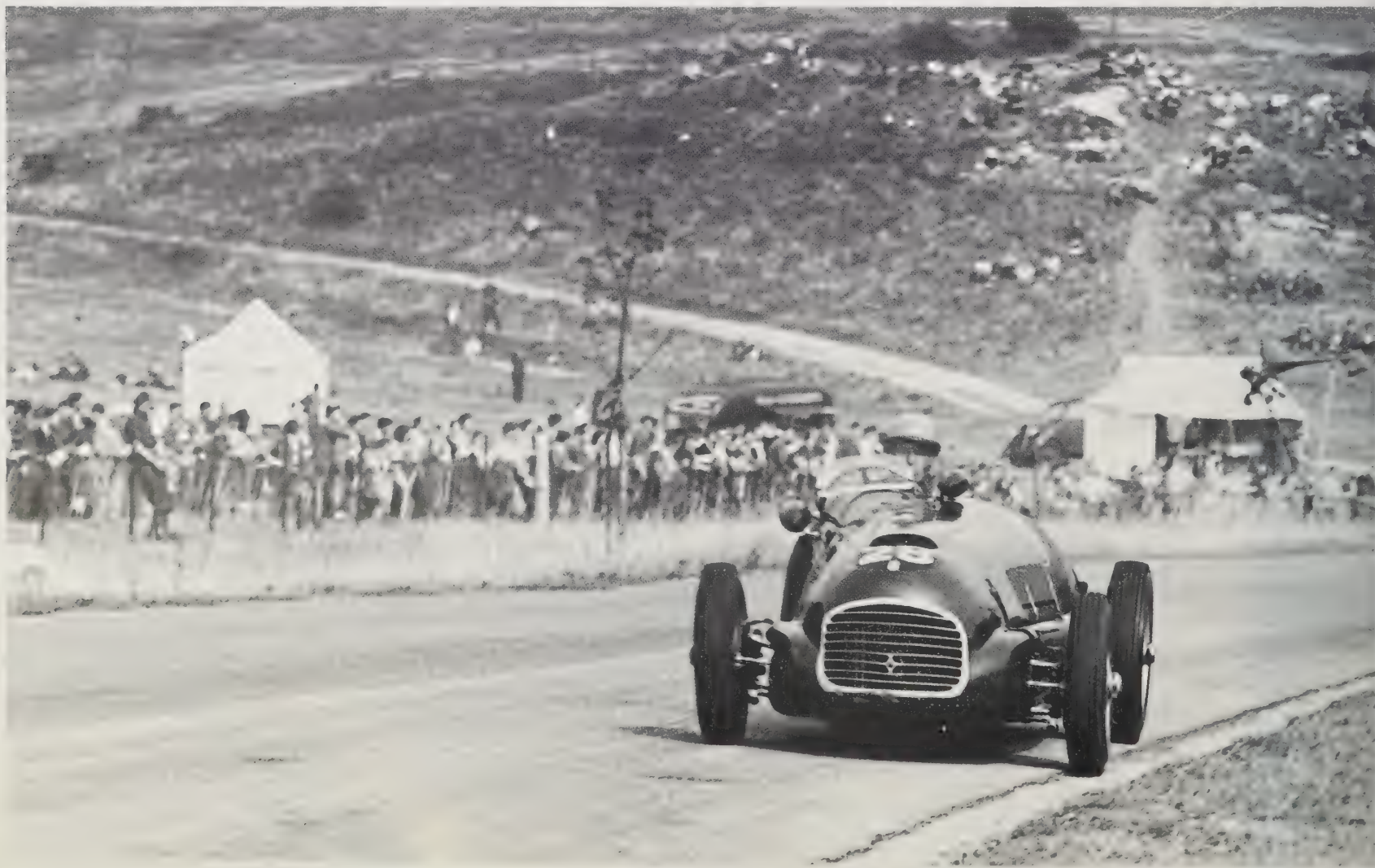
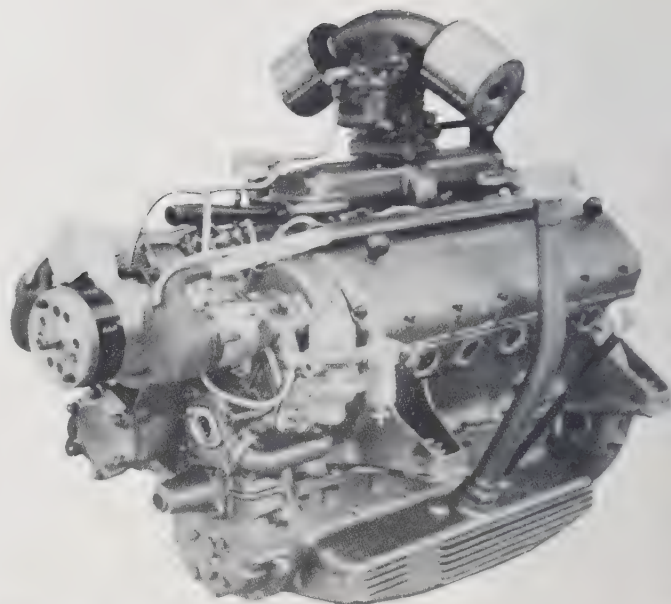
60 deg V-12 with single Rootes-type supercharger, 1496 cc, 55×52.5 mm, 230 bhp at 7000 rpm, CR 6.5:1, single ohc per bank, single plug per cylinder, 1×40 DO3C Weber, 5-speed gearbox integral with engine. *Front suspension:* double wishbones, transleaf spring. *Rear suspension:* swing-axle half-shafts, torsion bar (later transleaf) springing. *Wheelbase:* 2160 mm. *Track:* Front and Rear 1200 mm.

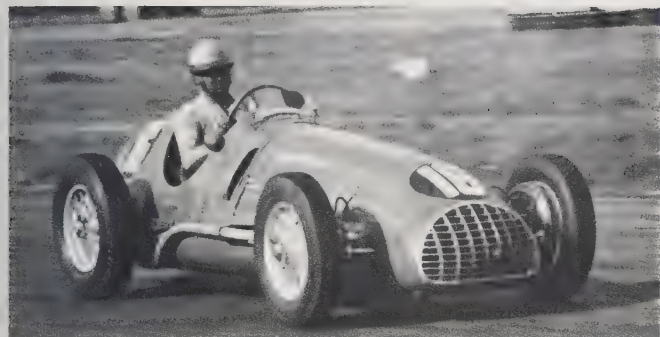
Preceding pages: Carlos Reutemann's 1977 312T2.

Right: A typical 1.5-litre 60 degree engine.

Below: Dudley Folland racing a 125F1 chassis car with a 2-litre engine installed. The race was at Blandford, England, in 1949.

The first Ferrari Formula 1 car, introduced at the Italian Grand Prix at Turin in September 1948. Three cars were entered and 1 (Sommer) finished third. The cars were raced by the factory team in 1948/9 and a few were sold to private owners. The chassis was also used for the 166F2 (see the entry on this model in the section on Formula 2 cars).





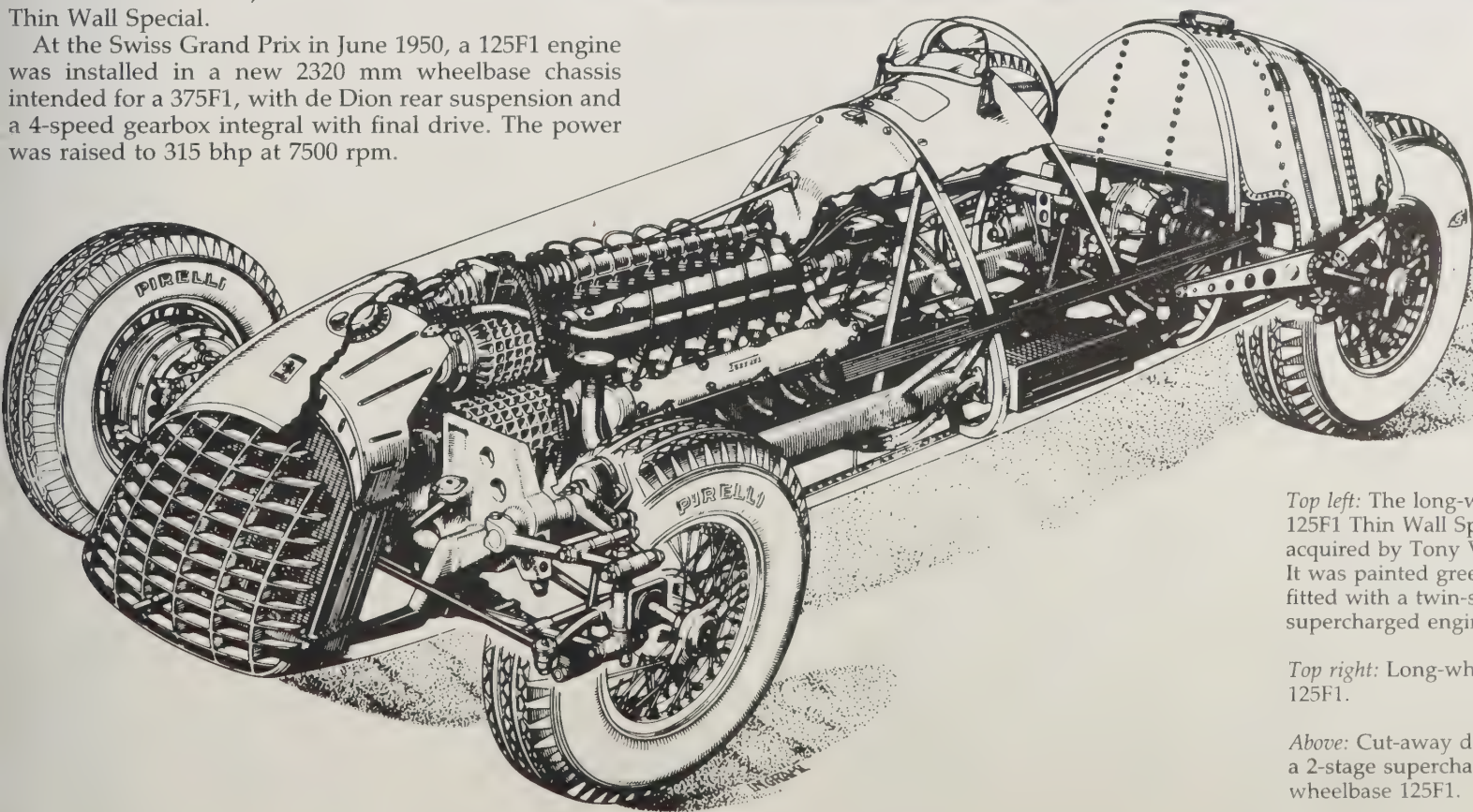
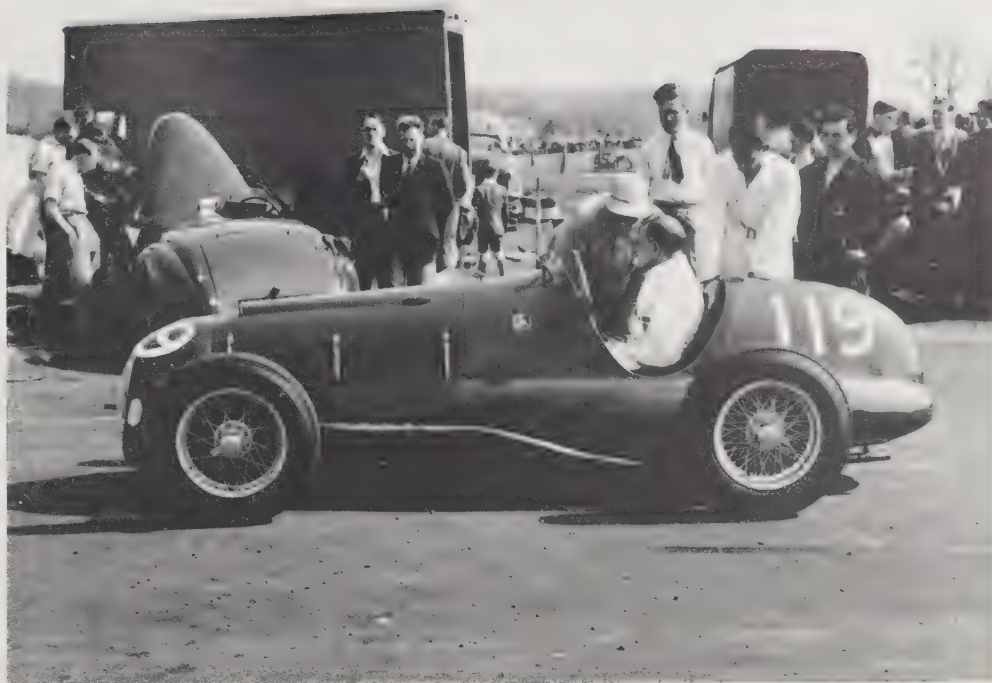
1949-50

125F1

This car was a development of the 125GP, introduced at the Italian Grand Prix at Monza in September 1949. It had a new double ohc per bank engine (with the same cylinder dimensions as the 125GP) with a 2-stage Rootes-type supercharger, giving 290 bhp at 7500 rpm with a CR of 7.0:1. It had a longer chassis but similar suspension. *Wheelbase: 2380 mm. Track: Front 1270 mm Rear 1250 mm.*

The 125F1 was raced by the factory team until mid-1950. Two cars were built, one of which later became a Thin Wall Special.

At the Swiss Grand Prix in June 1950, a 125F1 engine was installed in a new 2320 mm wheelbase chassis intended for a 375F1, with de Dion rear suspension and a 4-speed gearbox integral with final drive. The power was raised to 315 bhp at 7500 rpm.



Top left: The long-wheelbase 125F1 Thin Wall Special acquired by Tony Vandervell. It was painted green and fitted with a twin-stage supercharged engine.

Top right: Long-wheelbase 125F1.

Above: Cut-away drawing of a 2-stage supercharged long-wheelbase 125F1.





Opposite: Ex-Peter Whitehead twin-stage supercharged 125F1. Originally a long wheelbase car, its chassis was shortened on restoration. Owned now by the Donington Museum, England.

Left: Driver's view of the ex-Peter Whitehead 125F1.

Below: Ex-Peter Whitehead 125F1 – 1951 car with eggcrate-type grille.





Above: 4.5-litre V-12 Type 375 owned by Dries van der Lof of Holland.

Right: 275F1 designed by Lampredi, seen here in the paddock at Reims. The 3.3-litre unsupercharged V-12 was the first development stage for the Type 375F1.

1950-1

375F1

60 deg V-12, 4493 cc, 80×74.5 mm, 340 bhp at 7000 rpm, CR 11.0:1, single ohc per bank, single plug per cylinder, 3×40 DCF Webers, 4-speed gearbox integral with final drive.

Front suspension: double wishbones, transleaf spring.

Rear suspension: de Dion tube, twin parallel radius rods, transleaf spring. *Wheelbase:* 2320 mm. *Track:* Front 1270 mm Rear 1250 mm.

The first Lampredi-designed unsupercharged F1 engine was the 275F1 – 3322 cc, 72×68 mm, installed in a 125F1 chassis for the Belgian Grand Prix at Spa in June 1950. It was followed by the 340F1 (4101 cc, 80×68 mm) which, using the new de Dion chassis, appeared at the Grand Prix des Nations at Geneva in July 1950. The 375F1, using the same chassis, was introduced at the Italian Grand Prix at Monza in September 1950.

Revised cylinder heads with twin-plug ignition were introduced early in 1951, and the power was raised to 380 bhp at 7500 rpm, the CR to 12.0:1, but the single-plug version won the British and German Grand Prix. Six cars (nos 1-6) were built in 1950/1 for works team use; 2 were sold to private owners in 1952.

Opposite: Tony Vandervell's third Thin Wall Special was Serafini's 1950 Monza 375F1. Over the years it was much modified. The car is now in the Donington Museum, England.





1951

212F1

60 deg V-12, 2562.6 cc, 68×58.8 mm, 200 bhp at 7500 rpm, CR 13.0:1, single ohc per bank, single plug per cylinder, 3×38 DCF Webers, 4-speed gearbox integral with final drive.

Early in 1951 a modified and highly tuned 212 Export sports car engine was installed in a 166F2 de Dion-type chassis, enabling Ferrari to test a 2.5-litre unsupercharged car at a time when this capacity was being proposed as the upper limit for the 1954 Formula 1 rules. The car was raced twice only, by Serafini at Syracuse and the Pau Grand Prix in March 1951, after which the chassis was returned to Formula 2 use.

A similar engine was installed in a modified 166F2 swing-axle chassis, no. 110, for the Swiss driver Rudi Fischer, who raced it throughout 1951.

Below: 2.5-litre unsupercharged V-12 engine installed in a 166F2 chassis, number 10. Driven by Max de Terrar for Rudi Fischer's Ecurie Espadon at the Swiss Grand Prix (Bremgarten) in 1953.

1954-5

625F1

4-cylinder in-line, 2498.3 cc, 94×90 mm, 210 bhp at 7000 rpm, CR 11.0:1, double ohc, 2 plugs per cylinder, 2×50 DCO Webers, 4 speed gearbox integral with final drive.

Front suspension: double wishbones, transleaf spring.

Rear suspension: de Dion tube, twin parallel radius rods, transleaf spring. *Wheelbase:* 2160 mm. *Track:* Front 1270 mm Rear 1250 mm.

This was the first Ferrari 4-cylinder engine and was placed in a chassis designed for the 500F2. The prototype was first raced at the Bari Grand Prix in September 1951. Similar cars were used occasionally for F1/F Libre racing in 1952 to 1953. When 2.5-litre Formula 1 was introduced in 1954, the factory team used the 625F1, now with 2×50 DCOA3 Webers. A new





Left: Various views of the 1955 4-cylinder 625F1.

engine, introduced in mid-1954, used a 553F1 cylinder head block with a 625F1 crankcase. It was 2497.6 cc, 100×79.5 mm, had 2×58 DCOA3 Webers and a raised power of 230 bhp at 7000 rpm. It was further modified to use a 750 Monza crankcase, with 250 bhp at 7500 rpm. By the end of the year a full 553F1 engine was also used. Factory team cars had chassis numbers 1 to 7. Privately owned cars raced in 1954 were 0186, 0188, 0208, along with an ex-works car renumbered 54/1.

The car used by the factory team in 1955 was known officially as 625 Argentina. It had a modified 1954 chassis with coil-spring front suspension, 5-speed trans-axle and 555F1 engine, and power of 260 bhp at 7500 rpm.

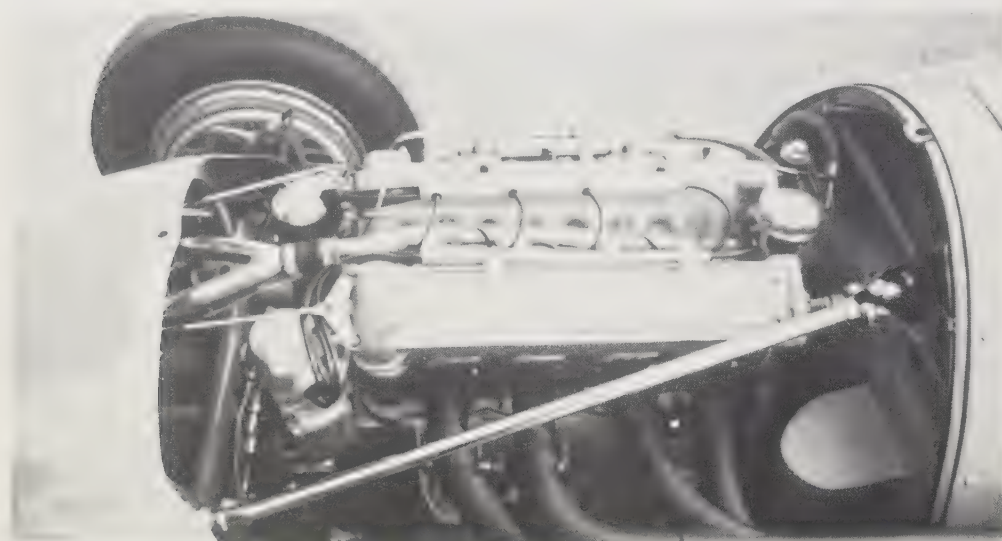
Chassis numbers: 2, 4, 6, 8.

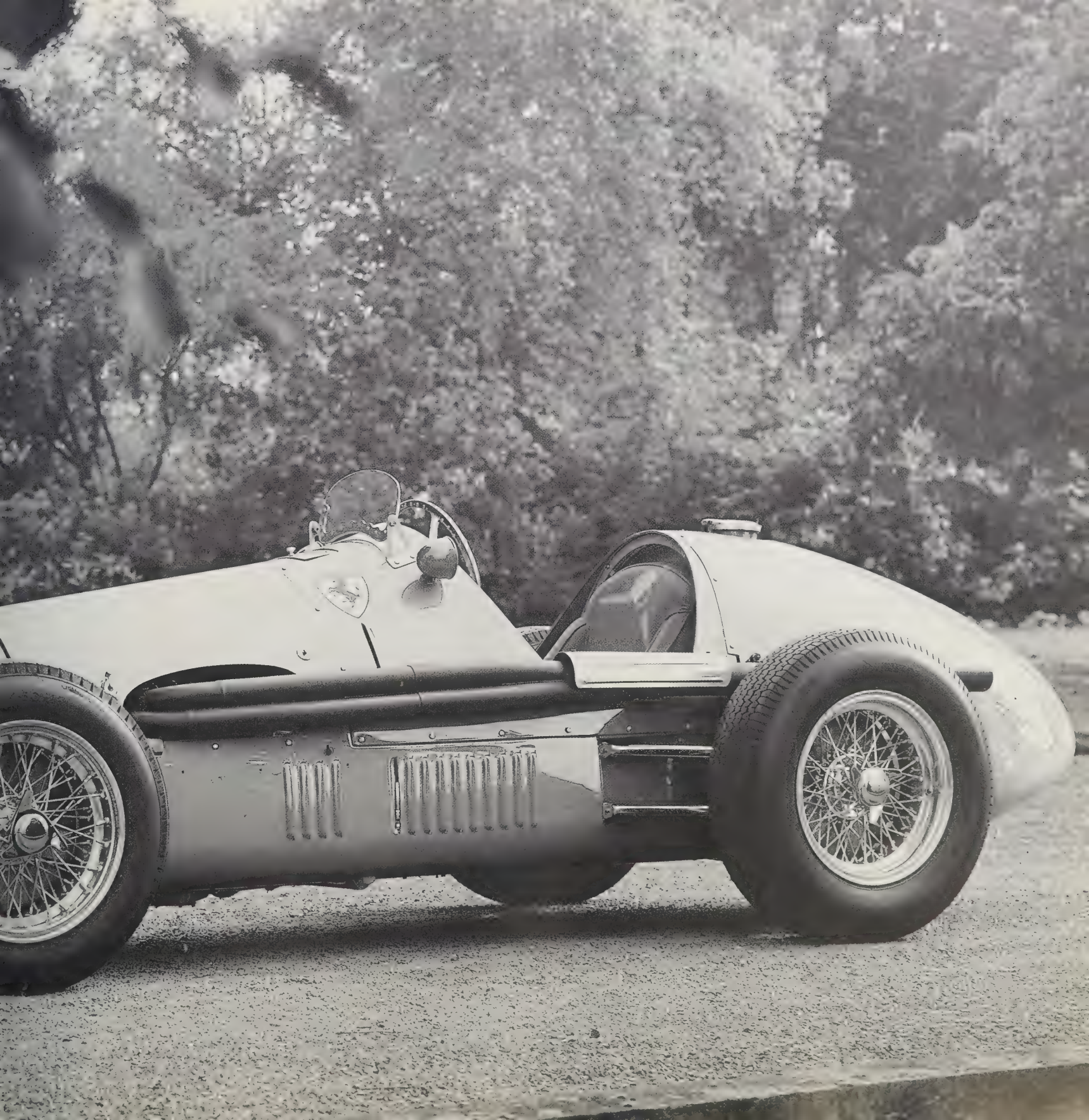
A privately owned 1954 car, renumbered 540, was partly updated to 625A specifications.

Right: 1954 625F1.

Below: The standard 625F1 engine of 1954.

Far below: 625F1 cockpit.





1954

553F1 Squalo

4-cylinder in-line, 2497.6 cc, 100×79.5 mm, 240 bhp at 7500 rpm, CR 12.0:1, double ohc, 2 plugs per cylinder, 2×58 DCOA3 Webers, 4-speed gearbox integral with final drive.

Front suspension: double wishbones, transleaf spring.

Rear suspension: de Dion tube, twin parallel radius rods, transleaf spring. *Wheelbase:* 2160 mm. *Track:* Front 1270 mm Rear 1250 mm.

Based on the 1953 553F2 (see under Formula 2 Cars) the 553F1 Squalo used the same chassis and a similar engine but with the bore and stroke increased for 1954 Formula 1. It was first raced at Syracuse Grand Prix in April 1954 and used by the factory team concurrently with the 625F1 in 1954. Detail revisions made in mid-season included the engine being mounted further forward. At the Spanish Grand Prix in October coil-spring front suspension was adopted and the power raised to 250 bhp at 7500 rpm.

Chassis numbers: 01, 02, 03.

Right: Silverstone, 1954 – Gonzales at the wheel of a 553F1 Squalo.

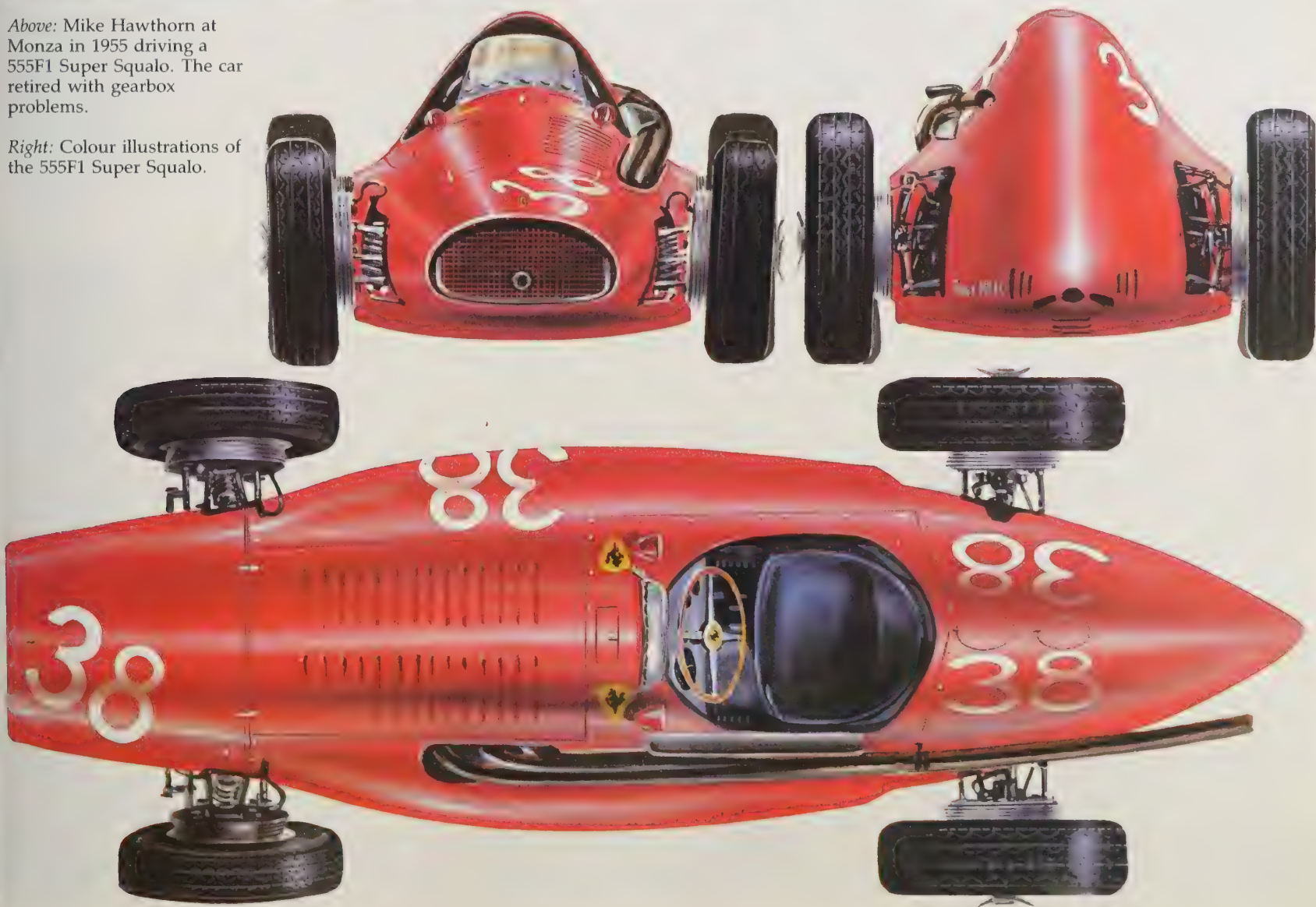
Below: Mike Hawthorn driving a 553F1 Squalo.





Above: Mike Hawthorn at Monza in 1955 driving a 555F1 Super Squalo. The car retired with gearbox problems.

Right: Colour illustrations of the 555F1 Super Squalo.



1955

555F1 Super Squalo

Introduced at the Bordeaux Grand Prix in 1955, this car was a development of the 553F1 using a new chassis with large-diameter main members. Part of the fuel load was transferred to a tail tank. The engine was revised in detail, giving 270 bhp at 7500 rpm and a CR of 14.0:1. A modified version appeared at the 1955 Italian Grand Prix, with the main fuel load carried in a tail tank, a new 5-speed transaxle and minor chassis changes. In winter 1955/6 a Lancia D50 engine was installed in one car for experimental purposes and raced twice in Argentina in early 1956.

Chassis numbers: 01, 02, 03, 04.



1954-6

Lancia Ferrari D50: Ferrari Lancia 801

90 deg V-8, 2488 cc, 73.6×73.1 mm, 250 bhp at 8100 rpm, CR 11.9:1, double ohc per bank, 2 plugs per cylinder, 4×40 P11 Solex, 5-speed gearbox integral with final drive.

Front suspension: double wishbones, transleaf spring.

Rear suspension: de Dion tube, twin parallel radius rods, transleaf spring. *Wheelbase:* 2280 mm. *Track:* Front and Rear 1270 mm.

Originally designed for Lancia by Vittorio Jano, the D50 had a multi-tubular chassis with the main fuel load in outriggered pannier tanks. It was first tested early in 1954, but not raced until the Spanish Grand Prix at Barcelona in October 1954. When Lancia withdrew from racing in mid-1955, the entire D50 project passed to Ferrari, along with financial aid from Fiat. The cars first appeared as Ferrari entries in the Italian Grand Prix at Monza in September 1955, but did not race because of tyre problems. Their first race for Ferrari was at Oulton Park later in the month.

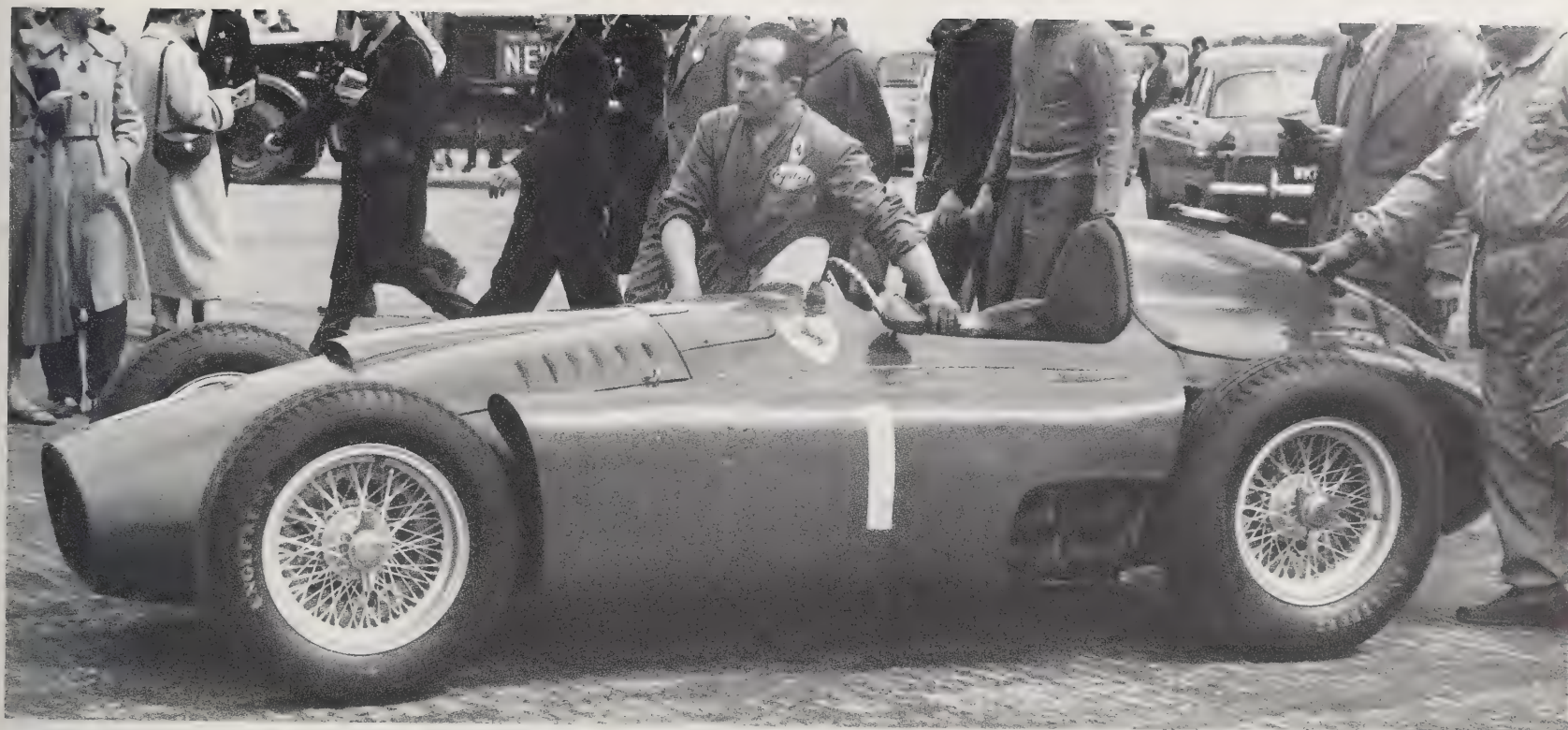
During the winter of 1955/6 the cars were modified.

Left: Lancia D50 – Alberto Ascari's car having adjustments made to the engine during a practice session.

Opposite above: 1956 Ferrari Lancia D50 with revised bodywork – the side tanks have been faired in (Fangio's car at Silverstone).

Right: Ferrari modifications carried out during the winter of 1955/6 included the mounting of a larger fuel tank at the rear.







By inserting top frame tubes between the firewall and the front crossmember Ferrari abandoned the use by Lancia of the engine as a chassis member; also part of the fuel load was transferred to a tail tank. Early 1956 modifications included merging the panniers into the main bodywork and by mid-season a revised engine was in use: 2487 cc, 76×68.5 mm, 265 bhp at 8500 rpm.

Chassis numbers (used by the factory team from 1956 to 1957): 0001, 0002, 0003, 0005, 0006, 0007.

For 1957 a further revised engine appeared: 2494.8 cc, 80×62 mm, 285 bhp at 8800 rpm. This was used in the 1956 chassis and in the new Type 801 chassis which had a multi-tubular frame with large-diameter main members, double wishbone coil-spring front suspension and a tail tank instead of panniers. Early in the season an experimental swing-axle coil-spring rear suspension was used once.

801 chassis numbers: 0008, 0009, 0010.



Opposite above: Long Nurburgring-type chassis fitted to the D50/Ferrari 801. Number 36 is Von Trips's third-placed car at Monza in 1957.

Opposite below: Cockpit view of the D50/Ferrari 801 in the pits at the Monza Grand Prix, 1957.



Right: Phil Hill's 246F1 at Monte Carlo in 1960 where he finished third.

Below: Von Trips at the 1960 Monaco Grand Prix.



1957

Dino 246F1

65 deg V-6, 2417 cc, 85×71 mm, 270 bhp at 8300 rpm, CR 10.0:1, double ohc per bank, 2 plugs per cylinder, 3×42 DCN Webers, 4-speed gearbox integral with final drive.

Front suspension: double wishbones, coil springs.

Rear suspension: de Dion tube, twin parallel radius rods, transleaf spring. *Wheelbase:* 2160 mm. *Track:* Front 1270 mm Rear 1240 mm.

This car was developed from the 1957 Dino 156F2 via 1983.7 cc and 2195 cc experimental engines. The Dino 246F1 was introduced at the Moroccan Grand Prix in Casablanca, October 1957. It was raced by the factory team in 1958 with 2 types of chassis, the original design with large-diameter main members, the other with a

Wheel change during practice for the Dutch Grand Prix (Zandvoort) in 1960. This is a 65 degree V-6 246F1.

multi-tube spaceframe. The Dino 256 engine was introduced at the Italian Grand Prix at Monza in September 1958: 2474 cc, 86×72 mm, 290 bhp at 8800 rpm. One car was fitted with Dunlop disc brakes for that race and 1 car was fitted with Girling disc brakes for the 1958 Moroccan Grand Prix.

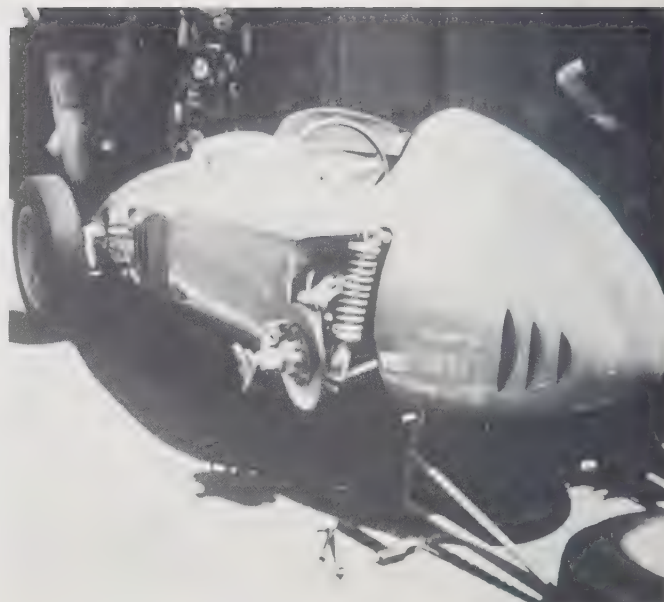
Chassis numbers: 0011, 0012, 0001, 0002, 0003, 0004, 0005, 0006, 0007.

The 1959 chassis had a 2220 mm wheelbase, large-diameter main members, coil-spring damper units front and rear, Dunlop disc brakes and a new 5-speed gearbox. Both 246 and 256 engines were used. Independent rear suspension by double wishbones and coil-spring damper units were introduced at the end of season. At the same time an experimental 60 deg single ohc engine, with the same dimensions as the standard 246, was used in 1 car. The cars used the same chassis numbers as the 1958 ones.

After tests with different wheelbase lengths in early 1960 the 2320 mm version was adopted as standard. The main fuel load was carried in side tanks and the engine was mounted further back in the chassis.

Chassis numbers: 0003, 0004, 0005, 0006, 0007.

Dino 246F1 designation was also given to the first mid-engined F1 Ferrari. This car, using a standard 246F1 engine, was introduced at Monaco in May 1960. The



chassis had a multi-tubular frame and suspension front and rear was by double wishbones and coil-spring damper units. A new 5-speed gearbox was used. The wheelbase was 2300 mm; the track front and rear, 1200 mm. After this race the chassis was modified for use as the 156F2 (see under Formula 2 Cars).

Chassis number: 0008.

Below: 1959/60 246F1 chassis.



1961-4

156F1

120 deg V-6, 1476.6 cc, 73×58.8 mm, 190 bhp at 9500 rpm, CR 9.8:1, double ohc per bank, 2 plugs per cylinder, 2×40 IF3C Webers, 5-speed gearbox integral with final drive.

Front suspension: double wishbones, coil-spring damper units. *Rear suspension:* double wishbones, coil-spring damper units. *Wheelbase:* 2300 mm. *Track:* Front and Rear 1200 mm.

This car was based on the 1960 Dino 156F2 but with a new 120 deg engine for 1961's 1.5-litre Formula 1. It also raced with 65 deg engine previously used in a 156F2, with the same cylinder dimensions. The 120 deg engine was introduced at Monaco in May 1961.

Chassis numbers (used by the factory team in 1961): 0008, (ex-156F2), 0001, 00Q2, 0003, 0004, 0006.

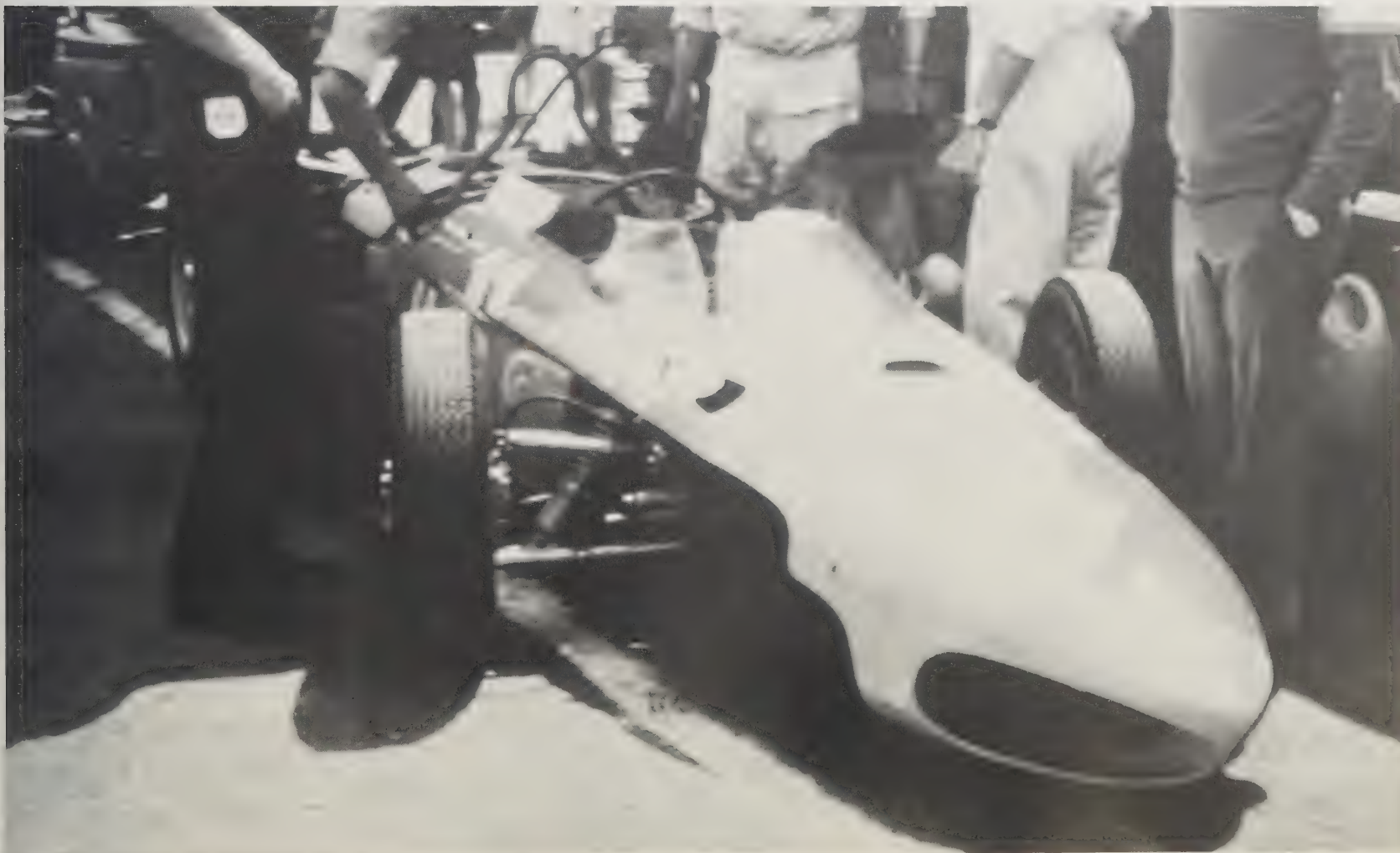
A 24-valve 120 deg engine announced early in 1962 did not race. The 1962 chassis used a 6-speed gearbox. On 1 car the gearbox was mounted ahead of the final drive. The wheelbase was increased to 2350 mm. An experimental car with a new lighter spaceframe was introduced in 1962 at the German Grand Prix. The wheelbase went to 2320 mm, the front track to 1340 mm and the rear to 1320 mm.

Chassis number: 0008. Other 1962 factory team cars were 0001, 0003, 0004, 0006, 0007, 0009.

A completely new car introduced early in 1963 had a lighter spaceframe with rear suspension by single upper links, twin radius rods and reversed lower wishbones. The engine had Bosch fuel injection, 200 bhp at 10200 rpm and the gearbox was a 6-speed version of a new design. The wheelbase was 2380 mm; the track front and rear, 1380 mm.

Chassis numbers: 0001, 0002.

Below: 120 degree V-6 156F1 at Spa for the 1962 Belgian Grand Prix.



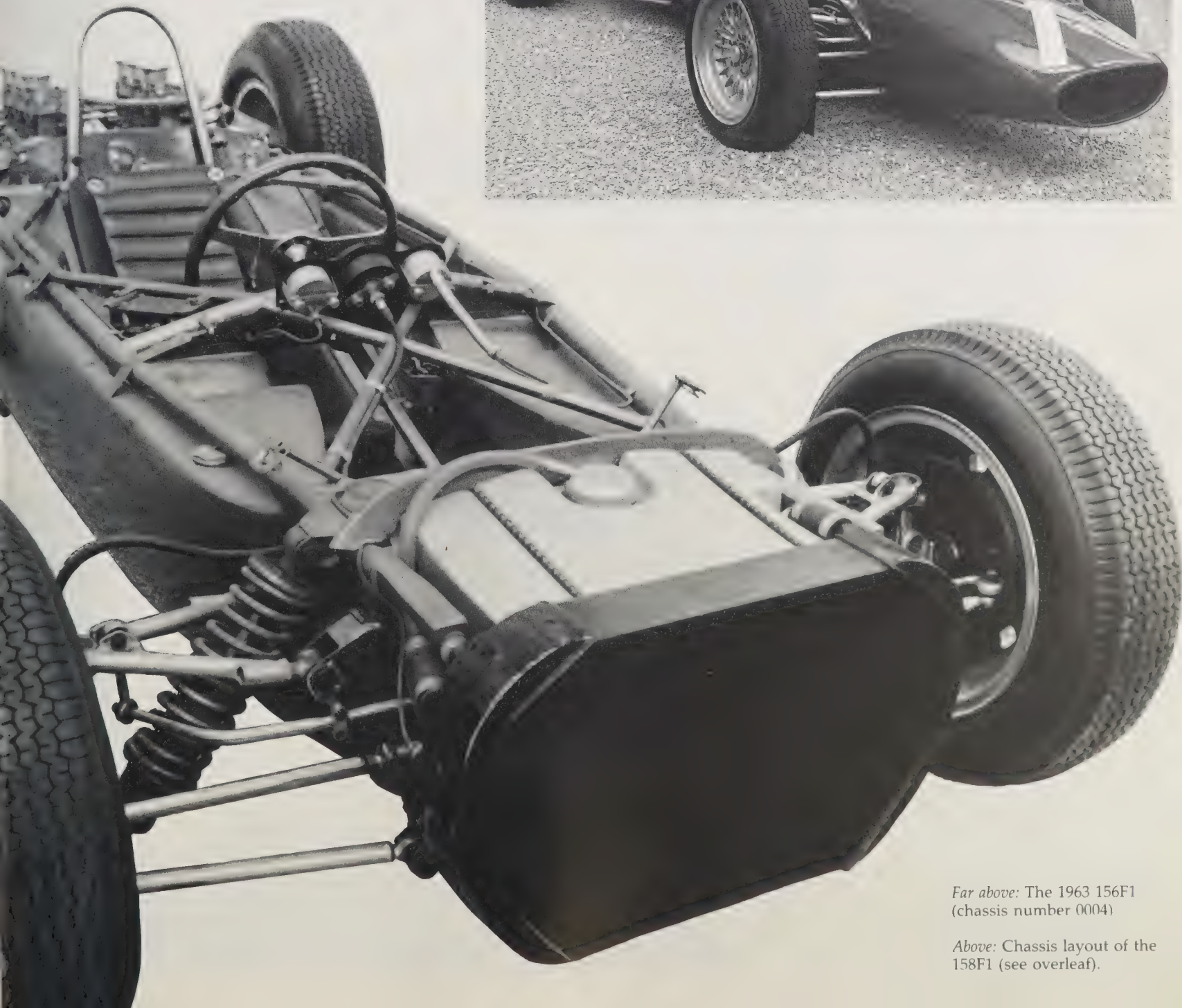
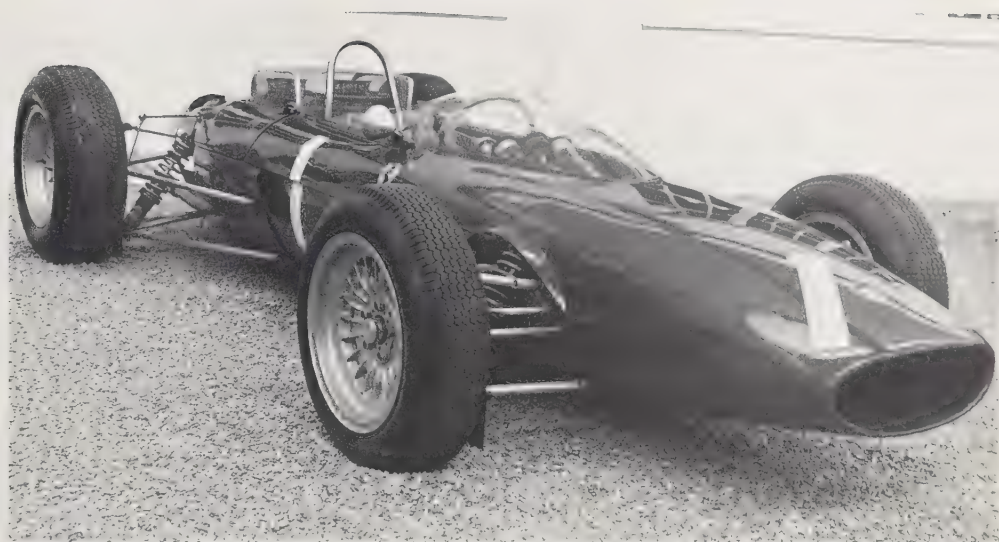


Left: Italian Grand Prix (Monza), 1961. Five 156F1s were entered. In this picture P. Hill (120 degrees, No. 2) leads Ginther (120 degrees, No. 6), Rodriguez (65 degrees, No. 8) and Baghetti (120 degrees, No. 32). Hill won, Von Trips was fatally injured and the other cars retired with various problems.



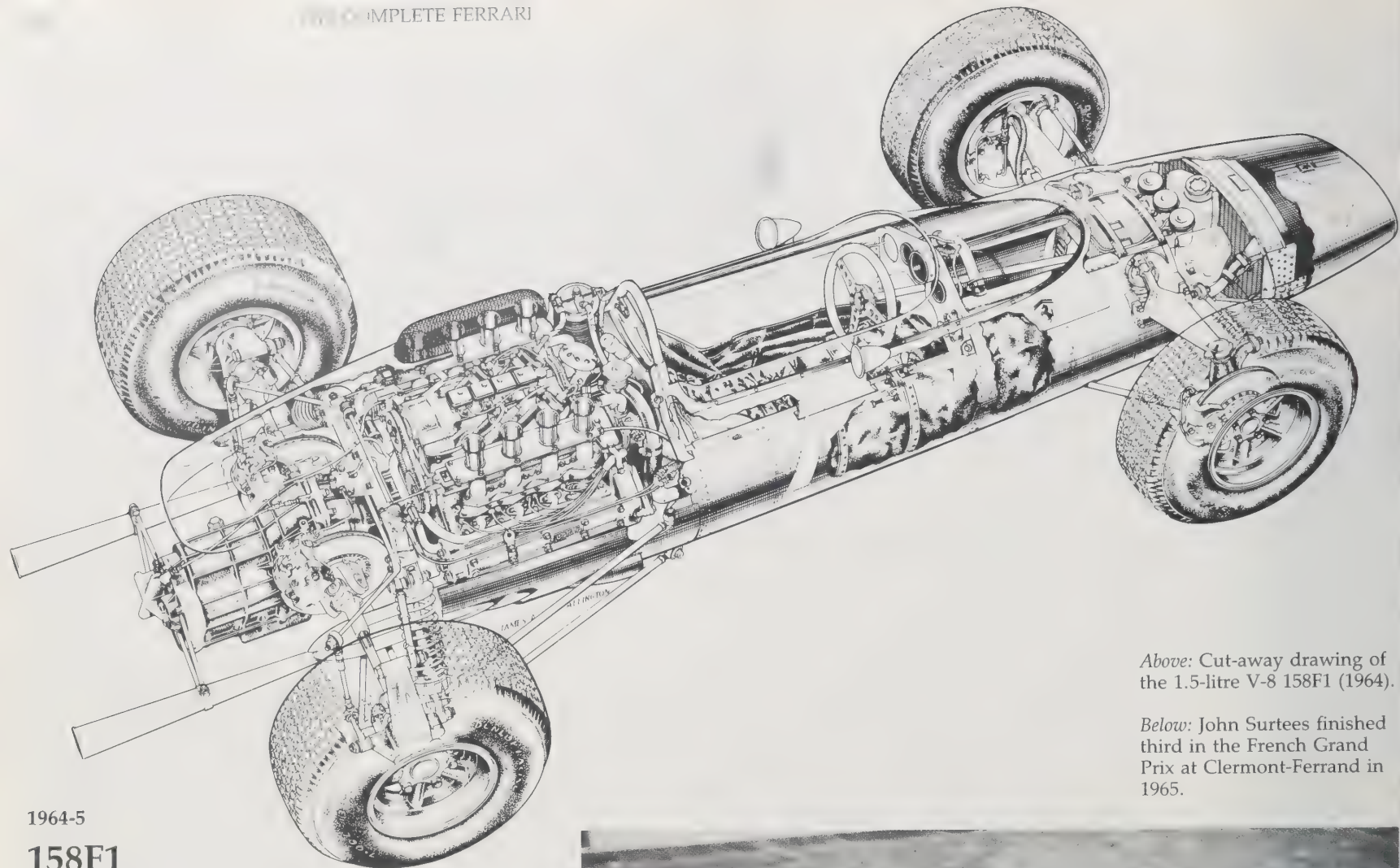
The final version of the car was the 156 Aero, introduced at the Italian Grand Prix at Monza in September 1963. This had a new semi-monococque designed for the 158F1, rocker-arm front suspension and a 5-speed gearbox. It was raced by the factory team from 1963 to 1964.

Chassis numbers: 0003, 0004.



Far above: The 1963 156F1
(chassis number 0004)

Above: Chassis layout of the
158F1 (see overleaf).



Above: Cut-away drawing of the 1.5-litre V-8 158F1 (1964).

Below: John Surtees finished third in the French Grand Prix at Clermont-Ferrand in 1965.

1964-5

158F1

90 deg V-8, 1487.5 cc, 64×57.8 mm, 205 bhp at 10500 rpm, CR 10.0:1, double ohc per bank, 2 plugs per cylinder, Bosch fuel injection, 5-speed gearbox integral with final drive.

Front suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones.

Rear suspension: single upper links, reversed lower wishbones, twin radius rods, coil-spring damper units.

Wheelbase: 2380 mm. *Track:* Front 1350 mm Rear 1340 mm.

The first car to have a Ferrari Aero semi-monocoque with many of its features reflecting British design trends of the time, the 158F1 had its initial test in summer 1963 but it was not raced that year. The same chassis was used in 1964 but with the rear track increased to 1350 mm. The engine was redesigned to 1489.2 cc, 67×52.8 mm, 210 bhp at 11000 rpm, CR 10.5:1. The car's first race was at the Syracuse Grand Prix in April 1964. It was raced by the factory team from 1964 to 1965.

Chassis numbers: 0005, 0006.





Above: Lorenzo Bandini crashed the flat-12 1512F1 in the 1965 French Grand Prix at Clermont-Ferrand.

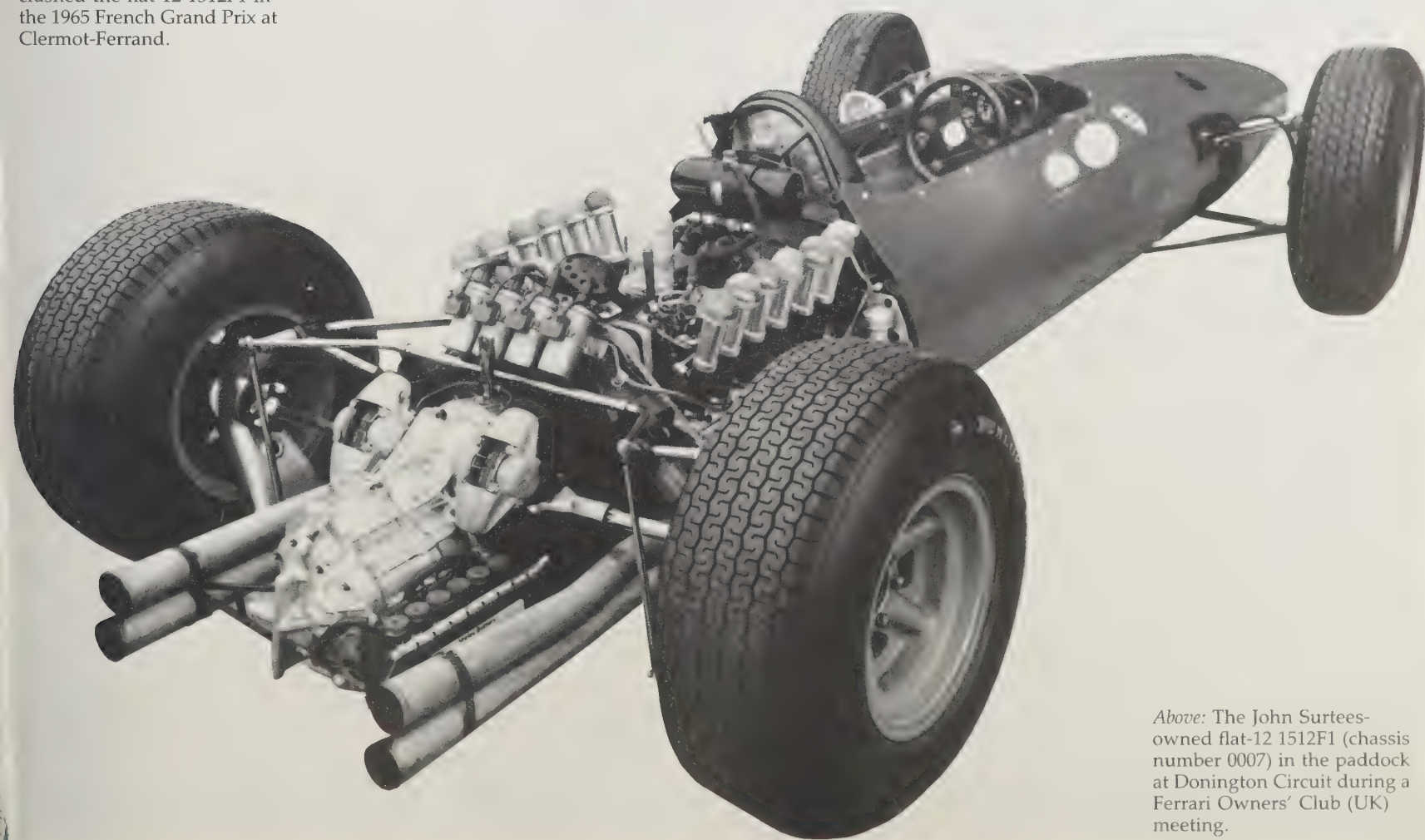
1964-5

1512F1

Flat 12, 1489.6 cc, 56×50.4 mm, 220 bhp at 11500 rpm, CR 9.8:1, double ohc per bank, single plug per cylinder, Lucas fuel injection. Chassis as 158F1, except that the wheelbase was increased to 2400 mm.

Using a chassis very similar to that of the 158F1, the 1512F1 had a new Forghieri-designed flat 12 engine. It first appeared in practice for the Italian Grand Prix at Monza in September 1964 but was not raced. The car's first race was the US Grand Prix at Watkins Glen in October 1964. For 1965 twin ignition was adopted and the power raised to 225 bhp at 11500 rpm. The car was raced by the factory team concurrently with the 158F1. It was also known as the 512F1.

Chassis numbers: 0007, 0008, 0009.



Above: The John Surtees-owned flat-12 1512F1 (chassis number 0007) in the paddock at Donington Circuit during a Ferrari Owners' Club (UK) meeting.

312F1

60 deg V-12, 2989.5 cc, 77×53.5 mm, 360 bhp at 1000 rpm, CR 11.8:1, double ohc per bank, 2 plugs per cylinder, Lucas fuel injection, 5-speed gearbox integral with final drive.

Front suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones.

Rear suspension: single upper links, reversed lower wishbones, coil-spring damper units, twin radius rods.

Wheelbase: 2400 mm. *Track:* Front 1450 mm Rear 1436 mm.

Designed for 3-litre Formula 1, which came into effect in 1966, the car was announced in late 1965. Its first race was at the Syracuse Grand Prix in May 1966. The original version used a 24-valve engine, but a 36-valve engine was introduced at the Italian Grand Prix in September 1966. The power was raised to 375 bhp at 10000 rpm, the CR to 10.5:1, a revised 36-valve engine (385 bhp, CR 11.0:1) was used for most of 1967. The 1967 chassis was modified and lighter. At the 1967 Italian Grand Prix a 48-valve engine with single-plug ignition was introduced: power 390 bhp at 10500 rpm, CR 11.8:1. Late that year the lighter 166F2 transaxle was adopted.

The same engine, but with power raised to 405 bhp at 11000 rpm, was used for 1968. The chassis was basically unchanged although a chassis-mounted aerofoil was introduced in mid-season. The further modification of a 48-valve engine appeared at the 1968 Italian Grand Prix: 412 bhp at 10500 rpm. The 1969 version of the 48-valve engine was a complete revision: power 436 bhp at 11000 rpm; the 1969 monocoque was wider than earlier types.

Chassis numbers (cars used by the factory team from 1966 to 1969): 010, 011, 012, 0001, 0003, 0005, 0007, 0009, 0011, 0015, 0017, 0019.



1966

246F1

65 deg V-6, 2417.3 cc, 85×71 mm, 280 bhp at 8500 rpm, CR 9.8:1, double ohc per bank, 2 plugs per cylinder, Lucas fuel injection, 5-speed gearbox integral with final drive. Chassis as 158F1.

Originally built for John Surtees to drive in the 1966 Tasman races, the 246F1 did not appear after he was badly injured in a CanAm race in late 1965. The car consisted of an old-type Dino 246 engine with modified heads and fuel injection in a 158F1 chassis (0006).

When 3-litre Formula 1 was introduced in 1966 the car became known as the 246F1, and was used as a back-up car to the new 312F1. Its first race was at the Syracuse Grand Prix in May 1966.

Above: Bandini's 246F1 at Syracuse (May, 1966). He took second place.

Left: Jacky Ickx driving the 48-valve 60 degree V-12 312F1.

Opposite above and below: The 312B.

1970

312B

Flat 12, 2991 cc, 78.5×51.5 mm, 455 bhp at 11500 rpm, CR 11.8:1, double ohc per bank, single plug per cylinder, Lucas fuel injection, 5-speed gearbox integral with final drive.

Front suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones.

Rear suspension: single upper links, reversed lower wishbones, coil-spring damper units, twin radius rods.

Wheelbase: 2380 mm. *Track:* Front 1560 mm Rear 1570 mm.

The first car to use a Forghieri-designed 3-litre flat 12 engine, the 312B had a semi-monocoque of traditional Ferrari construction and was first tested in summer 1969. Its first race was at the South African Grand Prix at Kyalami in March 1970. It was raced by the factory team from 1970 to 1971.

Chassis numbers: 001, 002 (2 cars with this number), 003, 004.



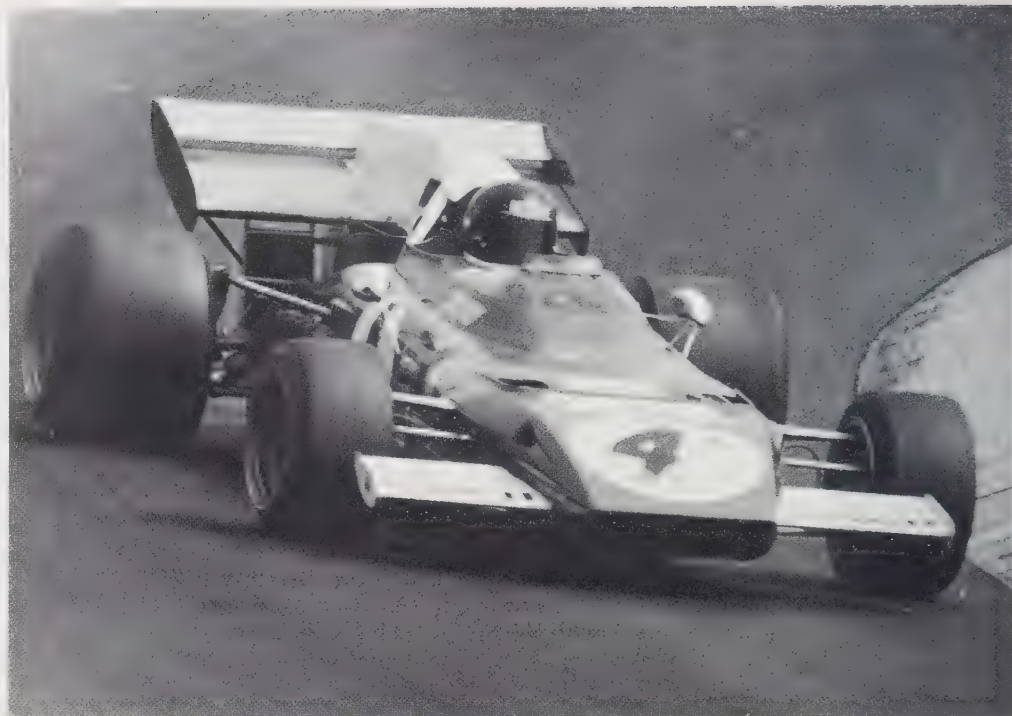
1971-3

312B2

This car was a development of the 312B, using a similar but flatter semi-monocoque with new and unorthodox rear suspension: inboard coil-spring damper units set almost horizontal were actuated by triangulated links attached to the tops of the wheel uprights. Upper radius rods and lower wishbones completed the layout. Wheelbase and track dimensions were the same as those of the 312B. The car's power was 470 bhp at 12500 rpm. It was announced early in 1971 and its first race was the Race of Champions at Brands Hatch in March of that year.

For 1972 a revised version of the flat 12 engine was introduced: 2991.8cc, 80×49.6 mm, 480 bhp at 12500 rpm. The rear suspension more conventional: single upper links, lower wishbones, coil-spring damper units, twin radius rods. From mid-season upper radius rods only were used. The wheelbase was 2420 mm. The track dimensions were: front 1520 mm; rear 1580 mm. The cars were raced by the factory team until early 1973.

Chassis numbers: 005, 006, 007, 008.

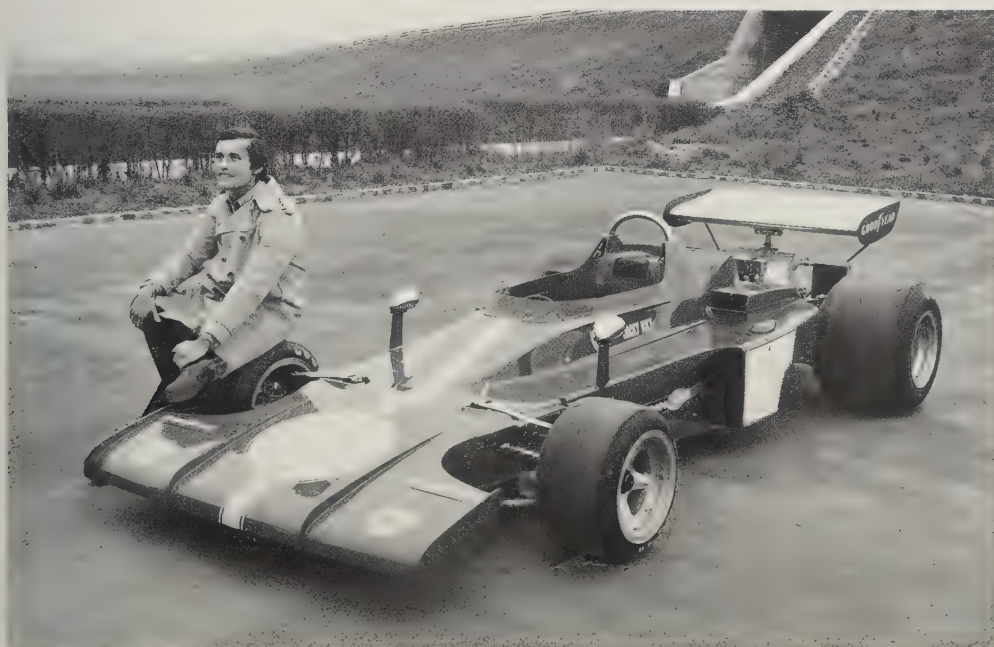


Opposite above: Ickx on his way to winning the 1972 German Grand Prix (Nurburgring) in the 312B2.

Opposite below: Ickx crosses the finish line in the 1972 German Grand Prix in his 312B2.

Right: Merzario is seen here in a much-modified version of the B3 that was part of the design process leading to the much improved 312T.

Below: The second-development 312B3 car which followed the so-called 'snowplough' design. Jacky Ickx takes it easy sitting on a Goodyear tyre.



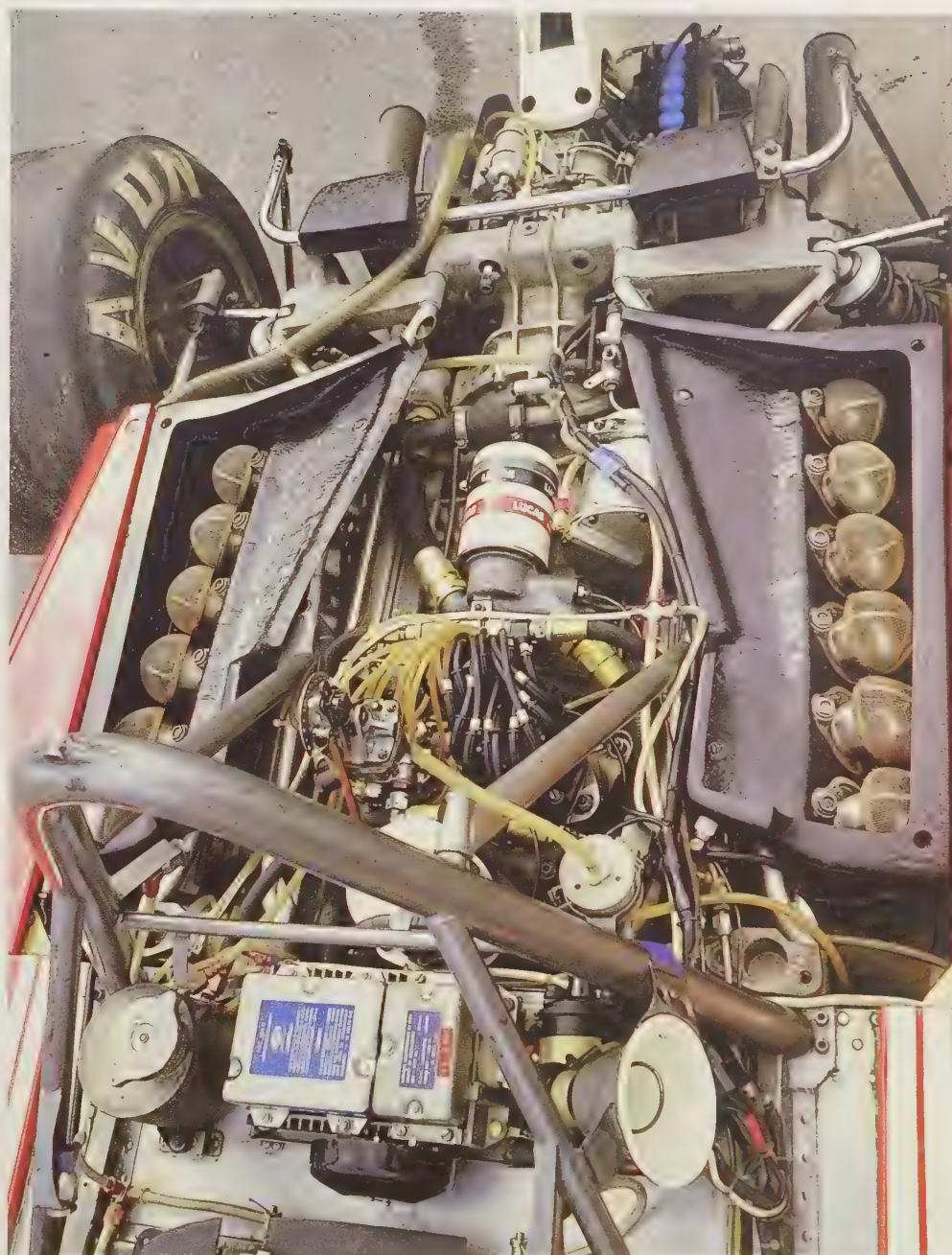
1973-4

312B3

The original B3 was designed by Forghieri and built in 1972. Also known as the Snowplough, this car (chassis 009) conformed to the 1973 deformable structure regulations and had a short 2360 mm wheelbase. After proving unsatisfactory in testing, the project was abandoned. Another design team was responsible for the second version of B3, the first Ferrari to have a true monocoque, 3 of which were built in the UK. The front suspension was by upper rocker arms, inboard coil-spring damper units, lower wishbones; the rear suspension by single upper links, lower wishbones, upper radius rods, coil-spring damper units. The wheelbase was 2500 mm. The track dimensions were: front 1620 mm; rear 1600 mm. The power was 485 bhp at 12500 rpm. Designed with side radiators, it appeared at its first race, the Spanish Grand Prix at Barcelona in April 1973, with a front radiator and was used in that form for the first half of the season.

At the 1973 Austrian Grand Prix a much modified





Above: 3-litre flat-12 engine installed in B Series car.

Left: 1974 development of the 312B3. Number 11 was driven by Clay Regazzoni.

version with side radiators and improved aerodynamics and weight distribution appeared. During the winter of 1973/4 the cars were again modified and adopted a more forward driving position. Early in 1974 a new rear suspension was introduced: single upper links, parallel lower links, coil-spring damper units, parallel radius rods. The wheelbase was 2510 mm. The track dimensions were: front 1600 mm; rear 1640 mm. The cars were raced by the factory team until early 1975.

Chassis numbers: 010, 011, 014, 015, 016, 020.



1974-6

312T

This car's engine was the same as that of the 312B3, but the power was raised to 500 bhp at 12200 rpm and there was a 5-speed gearbox mounted transversely and integral with the final drive.

Front suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones.

Rear suspension: single upper links, reversed lower wishbones, coil-spring damper units, single radius rods. Wheelbase: 2518 mm. Track: Front 1510 mm Rear 1530 mm.

Although developed from the 312B3, the 312T had its new transverse gearbox located ahead of the rear axle line. The aerodynamics were also much improved. The car was announced in late 1974 and its first race was at the South African Grand Prix at Kyalami in March 1976.

Chassis numbers: 018, 019, 021, 022, 023, 024.





Above: The 312T2 had a lighter and narrower monocoque than the 312T.

Opposite above: 312T developed from the 312B3 with new transverse gearbox located ahead of rear axle.

Opposite below: Ex-Niki Lauda 312T now owned by John Hugenholtz Jr, seen here at Zandvoort.



Right: 312T2.

1976-8

312T2

The 312T2 was very similar to the 312T but with a lighter and narrower monocoque and was built to conform to revised Formula 1 regulations introduced early in 1976. The wheelbase was 2560 mm. The track dimensions were: front 1400 mm; rear 1450 mm. The car was announced in October 1975 and its first race was the Race of Champions at Brands Hatch in March 1976. The version shown at the press launch had a tubular-frame de Dion rear suspension but was never used for racing.

The factory team used the 312T2 with detail modifications in 1977 and early 1978 – track: front 1590 mm; rear 1560 mm. During 1977 de Dion front suspension and twin rear tyres were tested but never raced.

Chassis numbers: 025, 026, 027, 028, 029, 030, 031.

1977-8

312T3

Designed to run on Michelin tyres, the 312T3 was announced in November 1977. While its rear suspension was similar to that of the 312T2, new triangulated tubular rocker arms were used at the front. By reversing the front suspension, the wheelbase could be increased to 2700 mm. The standard wheelbase was 2560 mm. The track dimensions were: front 1620 mm; rear 1560 mm. The flat 12 engine was unchanged but the power was raised to 510 bhp at 12200 rpm. Its first race was at the South African Grand Prix at Kyalami in March 1978. Fixed side skirts were tested in mid-season and used for the last few races. At the end of the year sliding skirts were tested on a very much modified car. Cars were raced by the factory team in 1978 and early 1979.

Chassis numbers: 032, 033, 034, 035, 036.

1979

312T4

This car's engine was the same as that of the 312T3, with the power raised to 515 bhp at 12300 rpm, and a 5-speed gearbox mounted transversely, integral with the final drive.

Front suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones.

Rear suspension: coil-spring damper units mounted inboard operated by tubular rocker arms. *Wheelbase:* 2700 mm. *Track:* Front 1700 mm Rear 1600 mm.

After the success of the Lotus 79 'ground-effect' car in 1978, the 312T4 was designed to work on the same lines, although the width of the flat 12 engine prevented full exploitation of ground-effect principles. The car had a narrow monocoque with wide sidepods containing the venturi sections and sliding skirts were used. An-

Below: 312T3 seen at the Monaco Grand Prix in 1978.

Opposite: The 1979 312T4.





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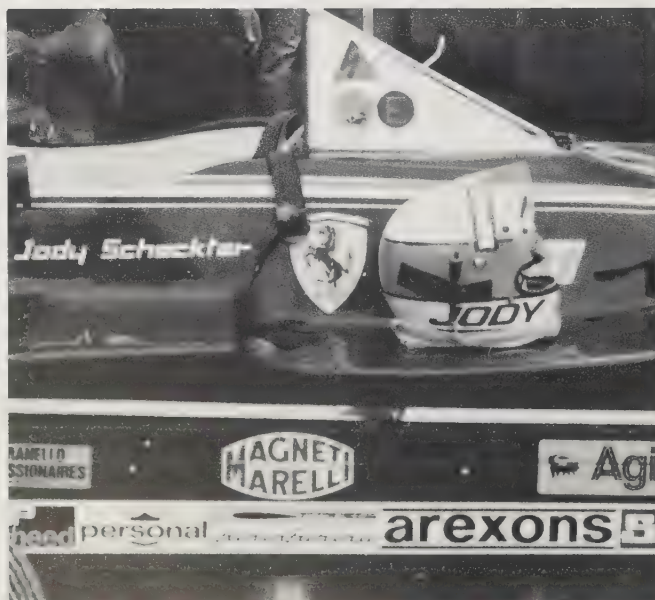


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Above: Jody Scheckter drives the 312T4 at the 1979 French Grand Prix.

Right: 312T4 with driver Jody Scheckter's helmet.



nounced in January 1979, the 312T4 had its first race at the South African Grand Prix at Kyalami in March 1979. The B version with outboard rear brakes appeared at the Italian Grand Prix at Monza in September 1979.

Chassis numbers: 037, 038, 039, 040, 041.

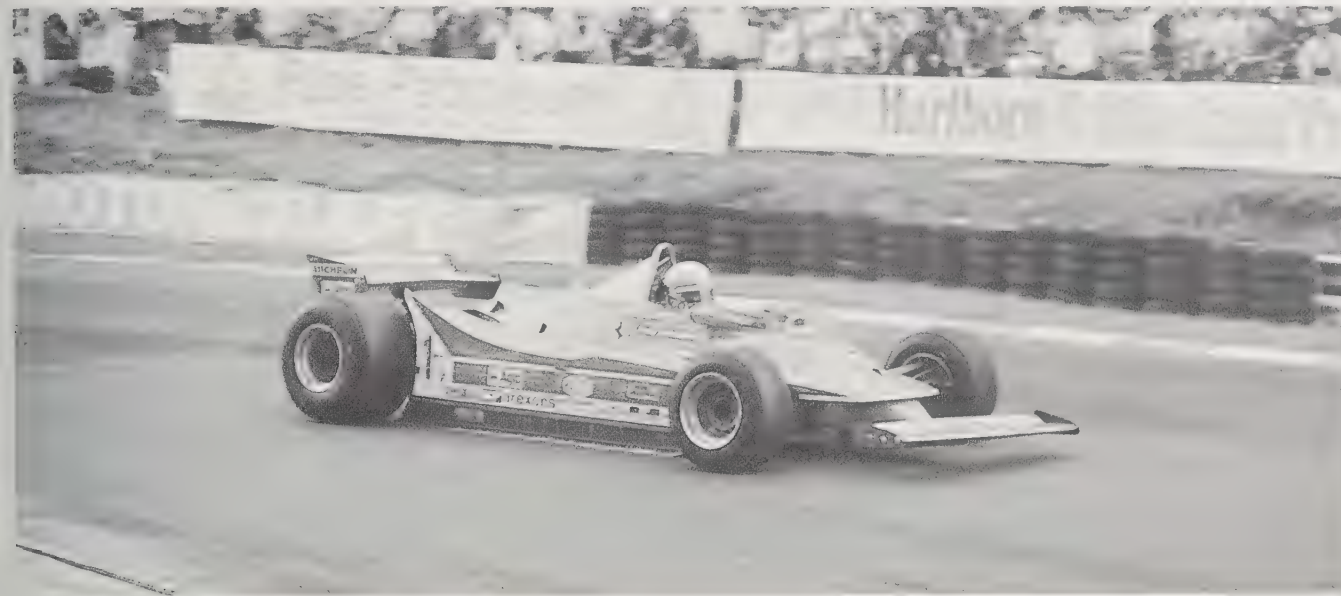
1979-80

312T5

The 312T5 was a straightforward development of the 312T4 with similar monocoque and suspension, although one-piece fabricated rocker arms replaced the tubular type used on the T4. By fitting front rocker arms of a different shape the wheelbase could be shortened by 100 mm. The standard wheelbase remained the same as that of the T4. The track dimensions were: front 1750 mm; rear 1625 mm. A revised gearbox casing was used with 5 or 6 gears available. The brakes were outboard front and rear. Announced in November 1979, the car had its first race at the Argentine Grand Prix at Buenos Aires in January 1980. For early races a revised engine with narrower cylinder heads was used. From mid-season inboard rear brakes were used. Cars were raced by the factory team in 1980.

Chassis numbers: 042, 043, 044, 045, 046, 048.





Left: British Grand Prix 1980 – Jody Scheckter in a 312T5.

Below: 312T5 driven by Gilles Villeneuve at the 1980 Italian Grand Prix.





1980-1

126C

120 deg V-6 with twin KKK turbochargers, 1496.4 cc, 81×48.4 mm, 540 bhp at 11000 rpm, CR 6.5:1, double ohc per bank, single plug per cylinder, Lucas/Ferrari fuel injection, 5- and 6-speed gearbox mounted transversely, integral with final drive.

Front suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones.

Rear suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones. *Wheelbase* 2720 mm. *Track:* Front 1760 mm Rear 1625 mm.

Following the introduction by Renault of their turbo-charged F1 car at the 1977 British Grand Prix, Ferrari were quick to see the advantages of forced induction and by the end of the year had started work on a turbo project. The prototype 126C, chassis 047, was shown to the press in June 1980, and in September that year a car was in use during practice for the Italian Grand Prix at Imola. During the winter of 1980/1 and in the early part of the 1981 season, the Brown Boveri Compres pressure-wave supercharger was extensively tested but was not used for racing.

In 1981 KKK-equipped cars were referred to as '126CK' and those with the Compres system as '126CX'. Compared with the prototype, the 1981 cars had many detail changes, and in mid-season a B version was introduced with a strengthened monocoque. Hydraulic ride height adjustment was used for much of the season and for some races the wheelbase was extended to 2850 mm by inserting a spacer between engine and gearbox. The power was raised to 560 bhp at 11500 rpm in race form.

Chassis numbers: 049, 050, 051, 052, 053, 054.



Above: The works 126C at the Dutch Grand Prix in 1981.

Left: British Grand Prix, 1981 (Silverstone). Gilles Villeneuve with the 126C.

Opposite: 126C – Didier Pironi at the wheel in the British Grand Prix, 1981 (Silverstone).

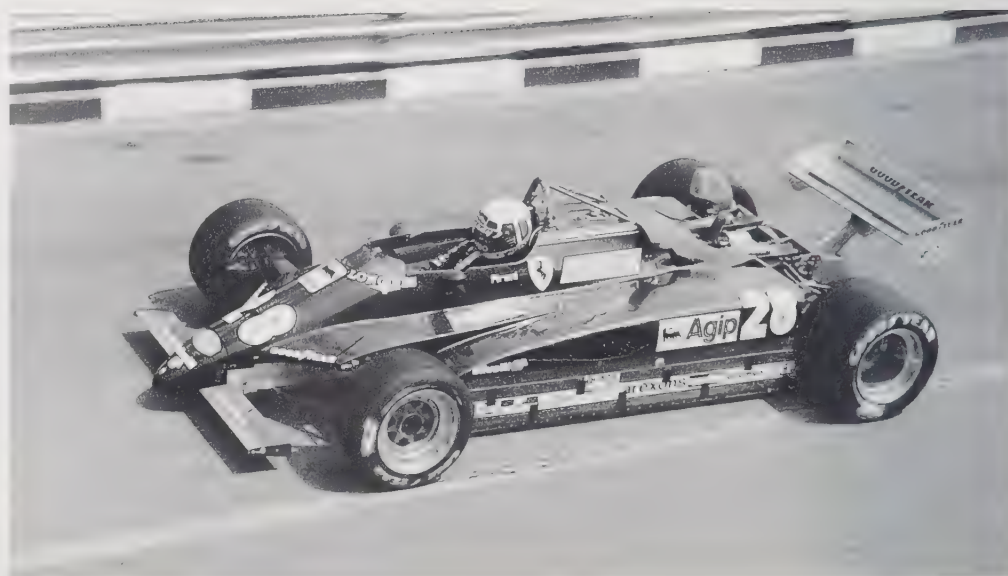
1981

126C2

British designer Dr H. Postlethwaite joined Ferrari in June 1981 to take charge of chassis development of the 126C series. His influence was seen in a new car, the 126C2, announced in January 1982. This had a lighter, narrower monocoque constructed from an aluminium-skinned honeycomb material. The two main sections were bonded together. Suspension was similar to that of the 126C. The wheelbase was 2650 mm. The track dimensions were: front 1790 mm; rear 1640 mm. Twin KKK turbochargers were again used. The quoted power was 580 bhp at 11000 rpm.

The 126C2's first race was at the South African Grand Prix at Kyalami in January 1982. By mid-season a pull-rod front suspension system was in use, with double wishbones and inboard coil-spring damper units operated by a diagonal rod connecting the outer end of the top wishbone to a link system below the spring. Experiments were conducted with a longitudinal gearbox and revised rear suspension. It increased the wheelbase by 200 mm but was never used for racing. Also tested was a water injection system developed in cooperation with the AGIP fuel company. By the end of the season this was in regular use, together with the Testa Rossa version of the V-6 engine, which had redesigned internal water passages.

To meet the 1983 flat bottom regulations, the 126C2 was modified to B specification. Most of the changes



involved aerodynamics, but chassis and suspension were also revised in detail. Its first race was at the Brazilian Grand Prix at Rio de Janeiro in March 1983. Early in the season the rocker-arm rear suspension was replaced by a pull-rod layout working on the same principles as the front suspension.

Chassis numbers (of cars raced by the factory team from 1982 to 1983): 055, 056, 057, 058, 059, 060, 061, 062, 063, 064, 065.

Above: Monaco Grand Prix, 1982 – Pironi with the 126C2.



Left: Pironi with a 126C2 at the British Grand Prix in 1982.

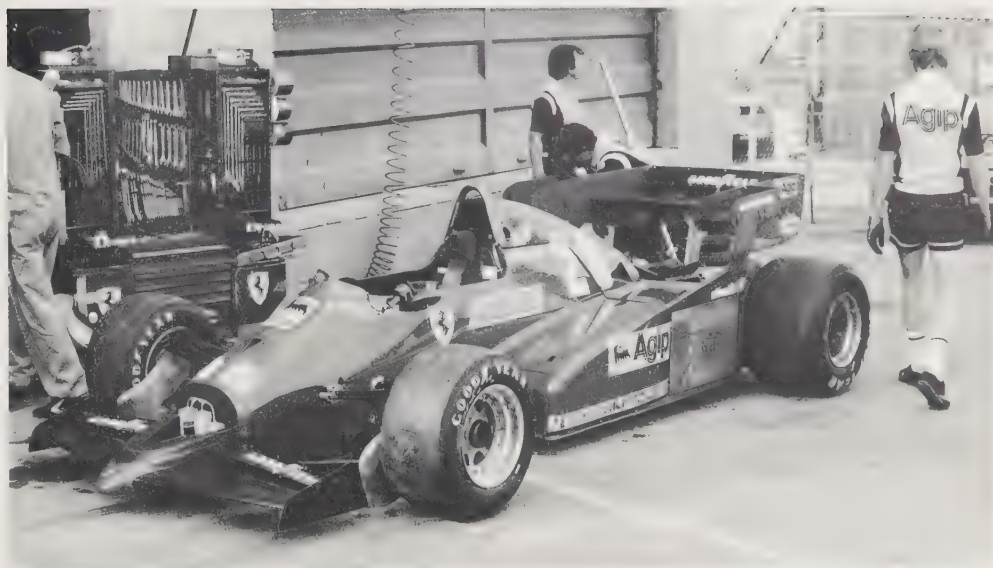
1983

126C3

Announced in June 1983, the 126C3 had a completely new Postlethwaite-designed monocoque, constructed from Kevlar and carbon fibre. The use of these materials resulted in a lighter and stiffer structure. The suspension was similar to that of the 126C2/B, being of pull-rod type front and rear. The wheelbase was 2600 mm. The track dimensions were: front 1765 mm; rear 1665 mm. The power was raised to 600 bhp at 11500 rpm in race form.

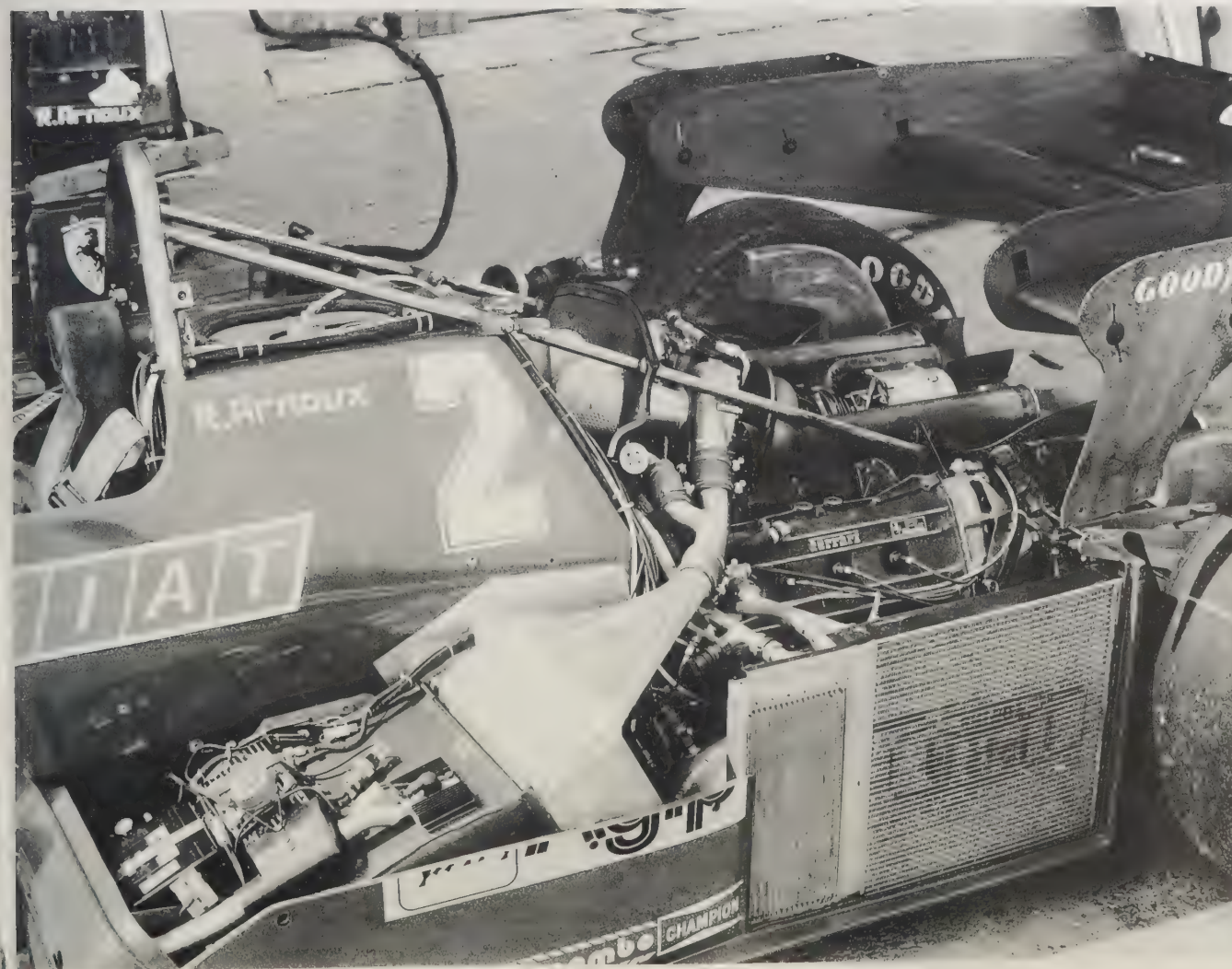
The car's first race was at the British Grand Prix at Silverstone in July 1983 and then it was used by the factory team for the remainder of the season. In late 1983/early 1984 a B version with a revised cooling-system layout was used for winter testing.

Chassis numbers: 066, 067, 068, 069, 070.



Above: Mechanics with the 126C3 at Silverstone.

Left: Works exposed in the Rene Arnoux 126C3.





Above left: 'Fish-eye' view of Tambay's 126C3 at the European Grand Prix, (Brands Hatch), 1983.

Above right: Tambay in the 126C3 chats while waiting for the warm-up lap in the European Grand Prix, 1983.

Right: René Arnoux's 126C3, European Grand Prix, 1983.



1984

126C4

First shown in February 1984, the 126C4 had a monocoque of similar composite construction to that of the 126C3. Changes to the V-6 engine included modified cylinder heads and a lower crankcase, and the power was raised to 600 bhp in race form. The transverse gearbox was also modified and lightened. Its first race was at the Brazilian Grand Prix at Rio de Janeiro in March 1984. The Marelli/Weber engine management system was adopted from the start of the season, but was replaced by Ferrari/Lucas mechanical injection for some races. The cooling system had a new layout from mid-season and later changes included the adoption of push-rod rear suspension and a longer wheelbase.

A further revised version, the 126C4/M2, was introduced at the Italian Grand Prix in September 1984. Using the existing monocoque, the M2 had a long wheelbase and push-rod rear suspension, together with redesigned rear bodywork similar to that pioneered by McLaren on their successful MP4/2 model.

Chassis numbers (used by the factory team in 1984): 071, 072, 073, 074, 075, 076.



Left: Michele Alboreto ready to don his helmet to drive a 126C4 in the 1984 British Grand Prix.

Below: 126C4/M2 at Monza (Italian Grand Prix, 1984).





1985

156/85

First shown in February 1985, the 156/85 has an all-new monocoque of carbonfibre/Kevlar composite construction. Aft of the cockpit the new car is very similar to the development C4 seen at Estoril and Rio, having the same reversed turbo installation, radiator layout, gearbox and rear suspension. With a compression ratio of 7:1 the V-6 is claimed to produce 780 bhp at 11,000 rpm. The oil tank is contained in an extended bell housing necessitating a wheelbase increase to 2762 mm. Weight has been trimmed to less than 550 kg.

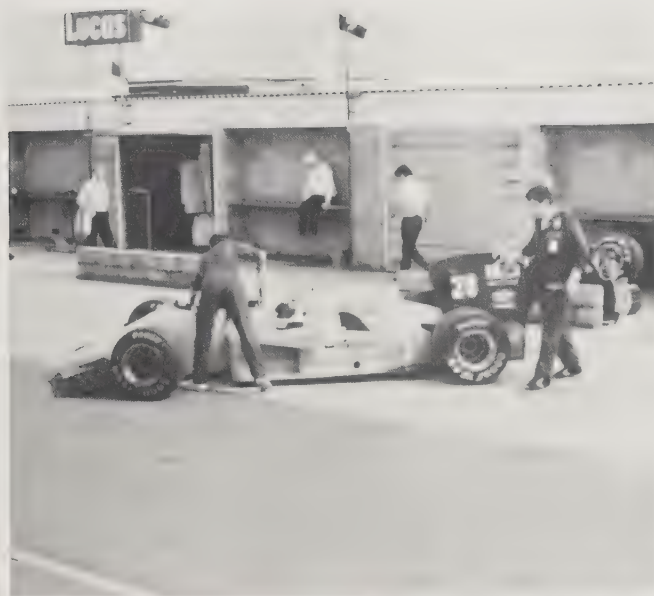
Logically the car should have been designated '126C5' but Ferrari decided on a different type numbering system reverting to the Dino-style designation of the 1950s and 1960s (i.e., '15' denotes '1.5 litres' and '6' the number of cylinders).

Chassis numbers: 078, 079, 080, 081, 082, 083, 084.

Opposite: Johansson practising in the 156/85 for the 1985 British Grand Prix at Silverstone.

Right: Mechanics handling the Johansson 156/85 into the pit-lane at Silverstone.

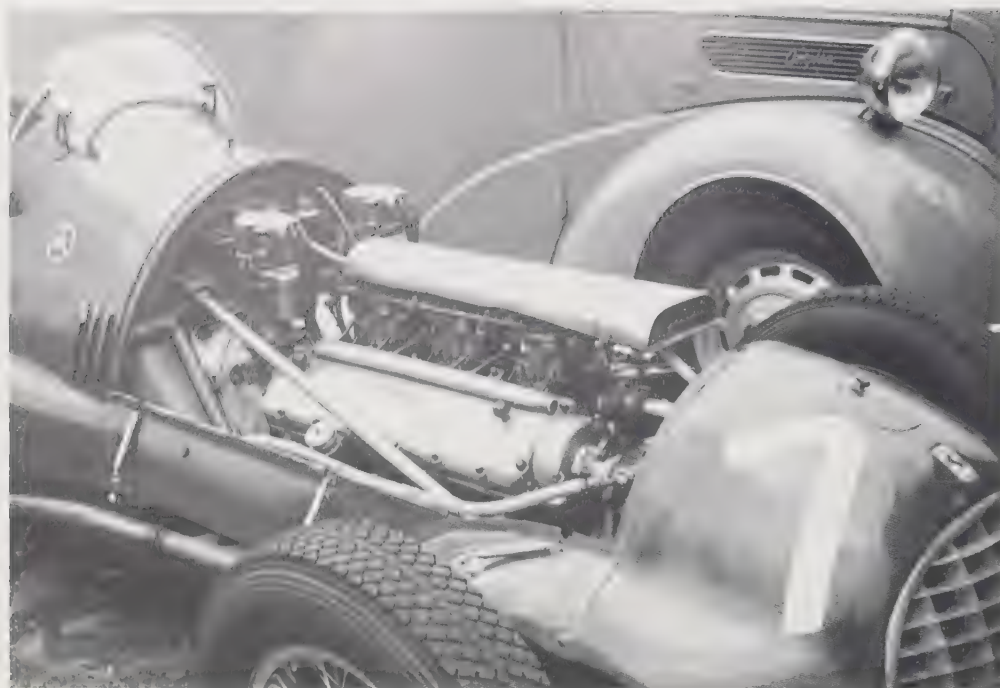
Below: Johansson's 156/85 in the shelter of the pits at Silverstone.





Formula 2





Above: Engine of an unsupercharged 2-litre V-12 Type 166F2 at Boreham (England) in July 1952.

Right: V-12 166F2 with Peter Hirt of Ecurie Espadon at the wheel – Silverstone, 1952.



Preceding pages: Type 500F2 at Bremgarten (Swiss Grand Prix, 1953). The large bulge was necessary for the longer carburettor intakes

1948-50

166F2

60 deg V-12, 1995 cc, 60×58.8 mm, 155 bhp at 7000 rpm, CR 10.0:1, single ohc per bank, single plug per cylinder, 3×32 DCF Webers. Chassis as 125GP.

In 1948, the first year of the 2-litre Formula 2, Ferrari used a stripped-down 166 Spyder Corsa sports car running on alcohol fuel. The 166F2 single-seater, using the same chassis as the 125GP Formula 1 car, was introduced at the Circuit of Florence in September 1948. It was raced by the factory team from 1949 to 1950 and several cars were sold to private owners. The total production was at least 9 cars, some of which raced as 166F2 and 125GP depending on factory requirements.

A new chassis was introduced in 1950 with a de Dion rear axle and 4-speed gearbox integral with the final drive. The wheelbase was 2320 mm. The track dimensions were: front 1225 mm; rear 1200 mm. The power was raised to 160 bhp at 7000 rpm. Three cars were raced by the factory team from 1950 to 1951 then sold to Scuderia Marzotto.



Left: Mechanics push Gonzales' 1953 500F2 to his pit area.

Below: Rudi Fischer (Ecurie Espadon), a private entrant, took his 1952 500F2 to second place at Bremgarten (Swiss Grand Prix, 1952).

1952-3

500F2

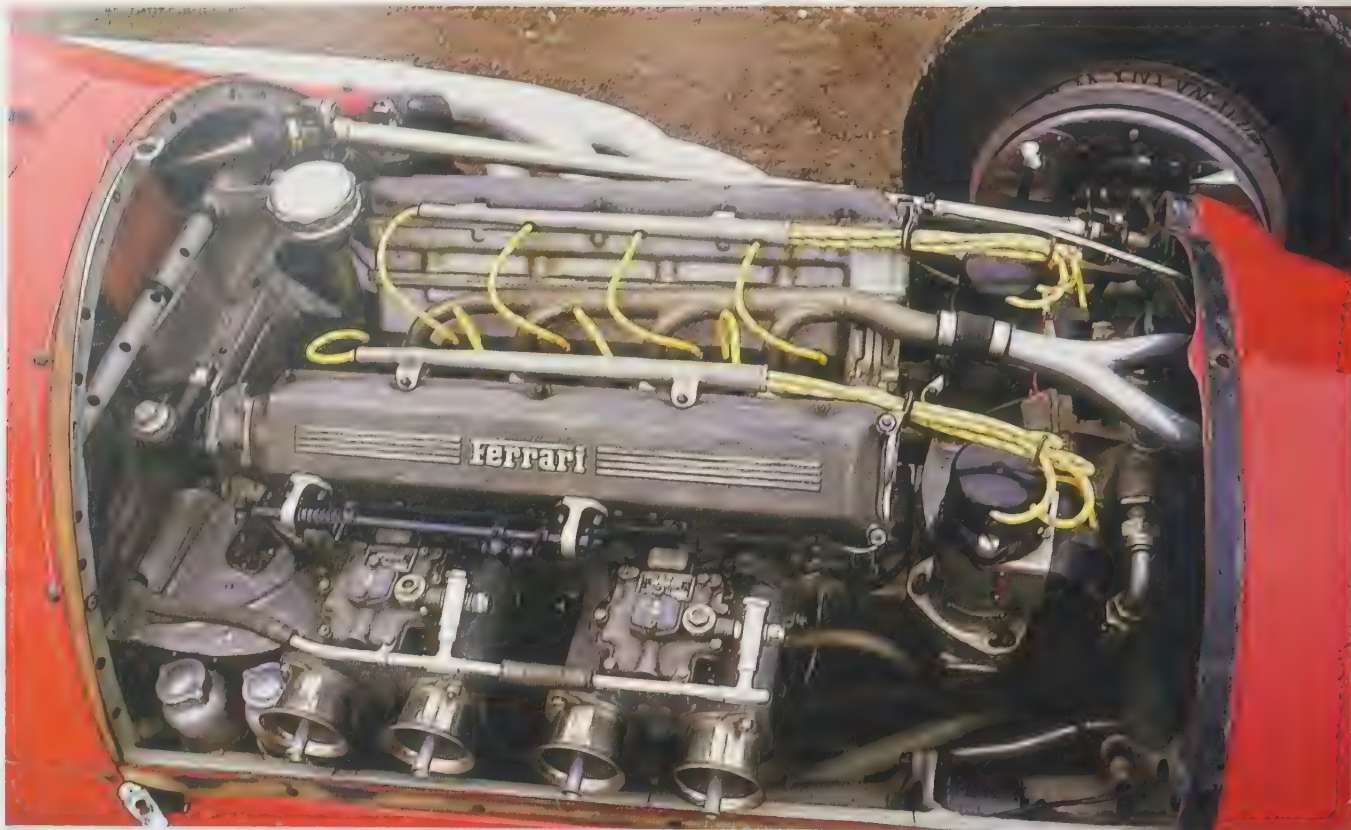
4-cylinder in-line, 1984.9 cc, 90×78 mm, 165 bhp at 7000 rpm, CR 11.5:1, double ohc per bank, 2 plugs per cylinder, 2×50 DCO Webers. Chassis as 625F1.

This car was designed as a replacement for the 166F2 with a new 4-cylinder engine in a similar but shorter chassis. Its first race was at Modena in September 1951. The 1952 engine had 4×45 DOE Webers, with power raised to 170 bhp at 7200 rpm, and the CR to 12.0:1. Stub exhausts were used that year, and early in the season the front suspension was modified. The power was raised to 180 bhp at 7500 rpm for 1953, and, later in the season when 2×50 DCOA Webers were used, to 185 bhp at 7500 rpm.

Chassis numbers (used by the factory team in 1952-3): 1, 2, 3, 4, 5, 6, 7.

Privately owned 1952 cars were numbered 0184, 0186, 0188, 0208, 0210.



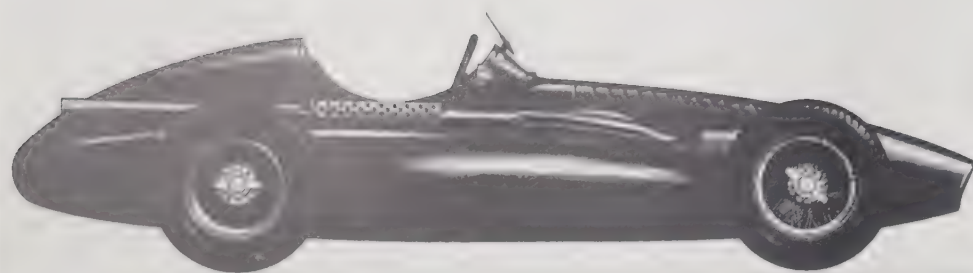


Right: Engine of a 4-cylinder 500F2. This shows the late 1953 version with twin magnetos at front, 2 twin-throat carburetors and 2-into-1 exhaust pipes.

Opposite and below: 1953 500F2.







Above: 553F2 Squalo.

1953

553F2 Squalo

4-cylinder in-line, 1997.2 cc, 93×73.5 mm, 190 bhp at 7500 rpm, CR 13.0:1, double ohc per bank, 2 plugs per cylinder, 2×50 DCOA Webbers. Chassis as 553F1.

Although designed with the 1954 2.5-litre Formula 1 in mind, the 553 was built initially as a 2-litre Formula 2 car. The engine was a new design, and the multi-tubular chassis was the first of this type built by Ferrari. To obtain a low polar moment of inertia, the main fuel load was carried in side tanks within the wheelbase. The car was raced only once, at the Italian Grand Prix at Monza in September 1953, then developed into the 553F1.

Chassis numbers: 01, 02.

1957-60

Dino 156F2

65 deg V-6, 1489.35 cc, 70×64.5 mm, 175 bhp at 8500 rpm, CR 10.0:1, double ohc per bank, 2 plugs per cylinder, 2×38 DCN Webbers. Chassis as 1958 Dino 246.

Using a new Jano-designed V-6, the Dino 156F2 was built for 1.5-litre Formula 2, introduced in 1957. Its first race was at the Naples Grand Prix in April 1957. The car raced only twice that year, then was used for F1 development with larger engines.

Chassis numbers: 0011, 0012.

The 1958 version used a small-tube multi-tubular chassis. The power was raised to 180 bhp at 9000 rpm. The car used the same chassis number, 0011, as the 1957 version with coil-spring damper units front and rear, and Dunlop disc brakes.

Chassis numbers: 0011, 0012.

The 1960 car had the original type of chassis frame, with large-diameter main members, double wishbone coil-spring suspension front and rear and the main fuel load carried in side tanks. All 1960 cars had a 2160 mm wheelbase.

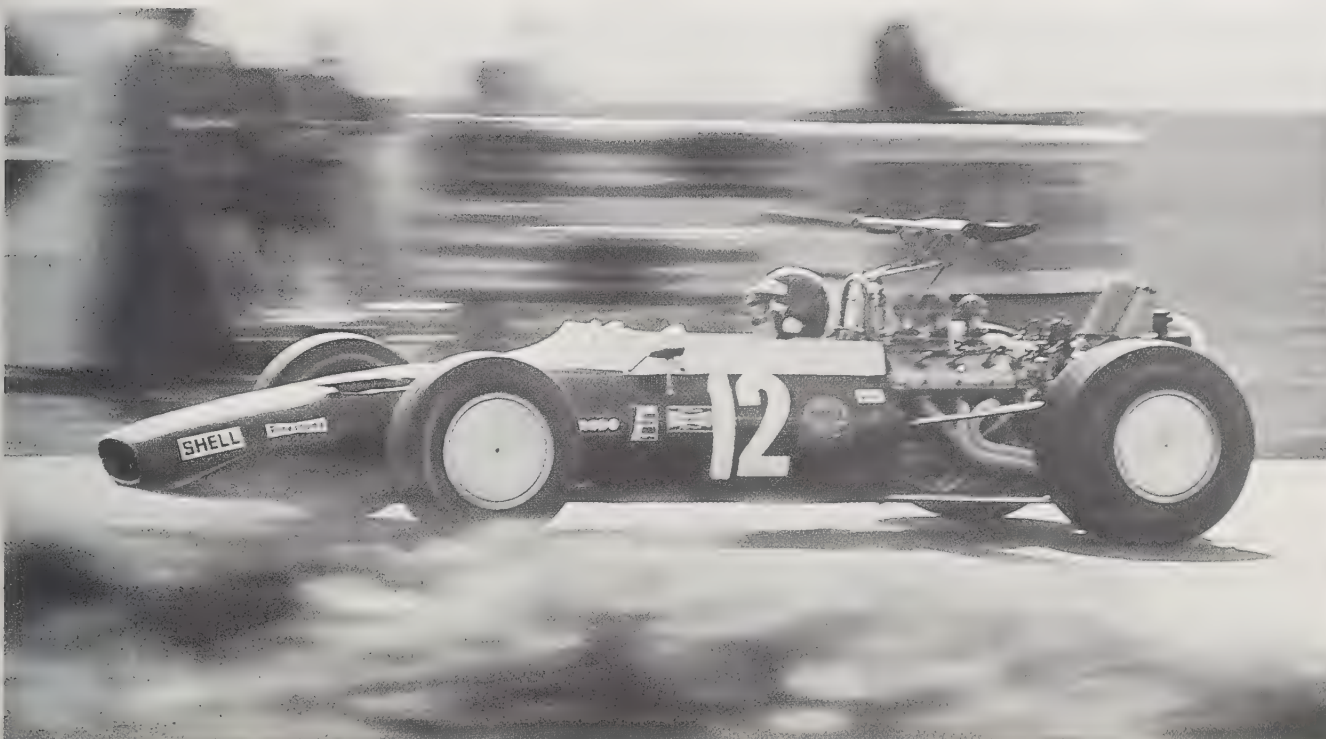
Chassis number: 0011.

Dino 156F2 designation was also given to a mid-engined 1960 car raced originally with a 246F1 engine. For F2 use this had a revised engine: 1476.6 cc, 73×58.8 mm, 180 bhp at 9200 rpm, CR 9.8:1, 3×38 DCW Webbers.

Chassis number: 0008.



Right: Lampredi-designed 60 deg V-6 1490 cc Formula 2 car, seen here at Reims where Maurice Trintignant won the 1957 Coupe de Vitesse.



Left: Dino 166F2 raced by the factory in 1968 and 1969.

Below and overleaf: 166F2 which, fitted with a 2.4 litre V6, was suitable for Tasman series racing (see also page 304).

1967-70

Dino 166F2

65 deg V-6, 1596.3 cc, 86×45.8 mm, 200 bhp at 10000 rpm, CR 11.0:1, double ohc per bank, 2 plugs per cylinder, Lucas fuel injection, 5-speed gearbox integral with final drive.

Front suspension: upper rocker arms, inboard coil-spring damper units, wide-base lower wishbones. *Rear*

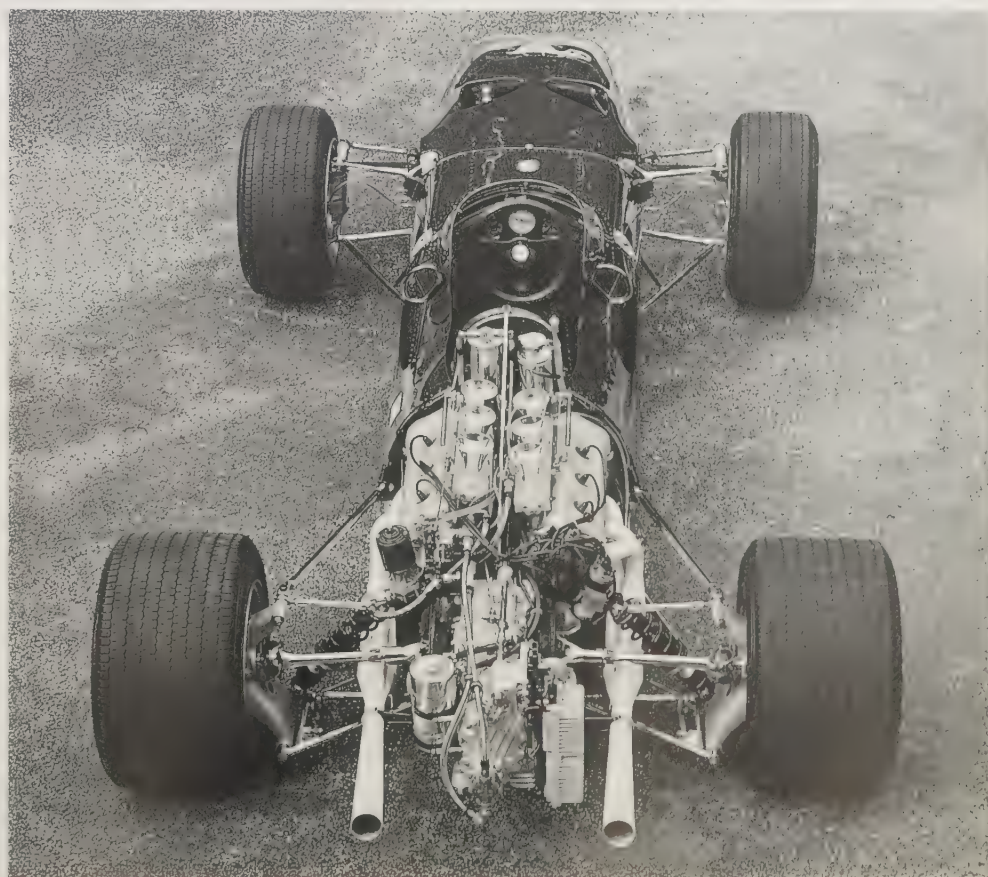
suspension: single upper links, reversed lower wishbones, coil-spring damper units, twin radius rods.

Wheelbase: 2200 mm. *Track: Front* 1405 mm *Rear* 1425 mm.

The 1967 Formula 2 regulations required engines based on production units and the Dino 166F2 used one derived from the 2-litre V-6 which powered the Fiat Dino 2000 and Ferrari Dino 206GT. It was first shown in 18-valve form at the Turin Racing Car Show in February 1967, and its first race was at Rouen in July of that year when revised cylinder heads were used. Late in 1967 a 24-valve engine with single ignition was tested.

In 1968 a new engine was introduced, also with 24 valves and single ignition; 1593.6 cc, 79.5×53.5 mm, 225 bhp at 10600 rpm. The modified chassis had the wheelbase increased to 2250 mm, the rear track to 1435 mm. Cars were raced by the factory team from 1968 to 1969. One car was loaned to E. Brambilla in 1970.

Chassis numbers: 0002, 0004, 0006, 0008, 0010, 0012, 0014.

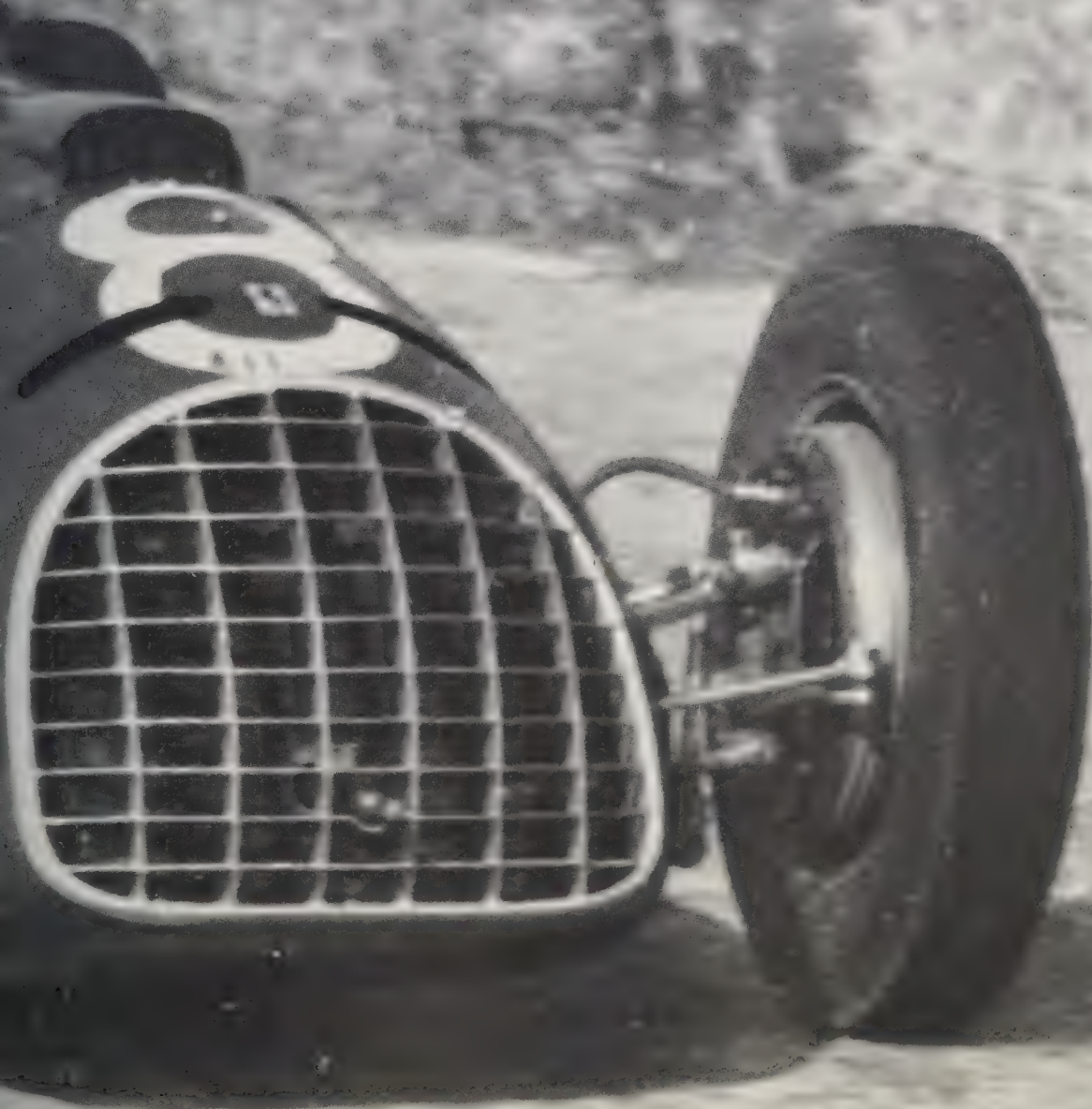


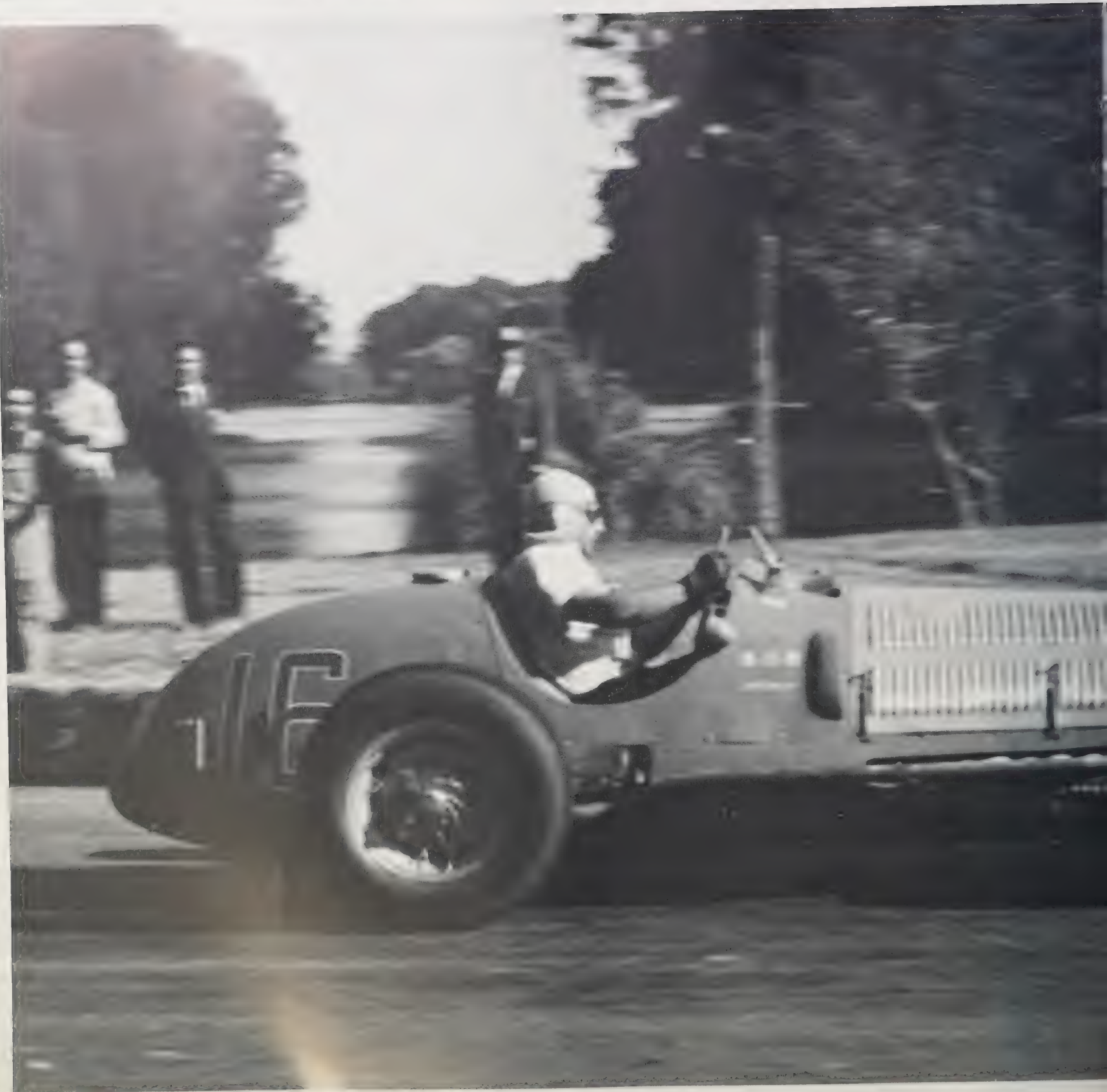






Other Single-seaters





1949-50

166FL

60 deg V-12 with single Rootes-type supercharger, 1995 cc, 60×58.8 mm, 310 bhp at 7000 rpm, CR 7.0:1, single ohc per bank, single plug per cylinder, 1×40 DO3C Weber. Chassis as 125F1 or 166F2.

Based on the 166F2 engine and developed for use in South American races to Formule Libre rules, the 166FL differed mainly in having gear-driven camshafts. The factory team used 166FL engines in 125F1 long-chassis cars in Argentina in late 1949/early 1950, and a similar car was sold to Automovil Club Argentino. The engine was also used in 166F2 short-chassis cars, two of which were sold to private owners.

1951-4

125F1 Special

Built for Peter Whitehead and using a chassis similar to that of the 125F1 but with a 4-speed gearbox integral with the final drive and slightly shorter wheelbase, the 125F1 Special was fitted with an early 1.5-litre V-12 with a single Rootes-type supercharger for F1 racing and with a 2-litre V-12 for F2 events. It was raced by Whitehead in this form from 1951 to 1952. In 1954, a 2-litre engine with a supercharger was used for racing in New Zealand.

Chassis number: 114.

Preceding pages: Ascari in the Italian Grand Prix of 1949 drives the 125F1 which became the basis for a number of 166FL cars.

Left: Juan Fangio drives the 2-litre 166FL in the Argentina Temporada races (1949).

Below: Ascari's factory entered the 166FL at Buenos Aires in 1949.



375 Indianapolis

60 deg V-12, 4493.7 cc, 80×74.5 mm, 390 bhp at 7500 rpm, CR 12.0:1, single ohc per bank, 2 plugs per cylinder, 3/40 IH4C Webbers, 4-speed gearbox integral with final drive

Front suspension: double wishbones, transleaf spring.

Rear suspension: de Dion tube, twin parallel radius rods, transleaf spring. *Wheelbase:* 2420 mm. *Track:* Front 1270 mm Rear 1250 mm

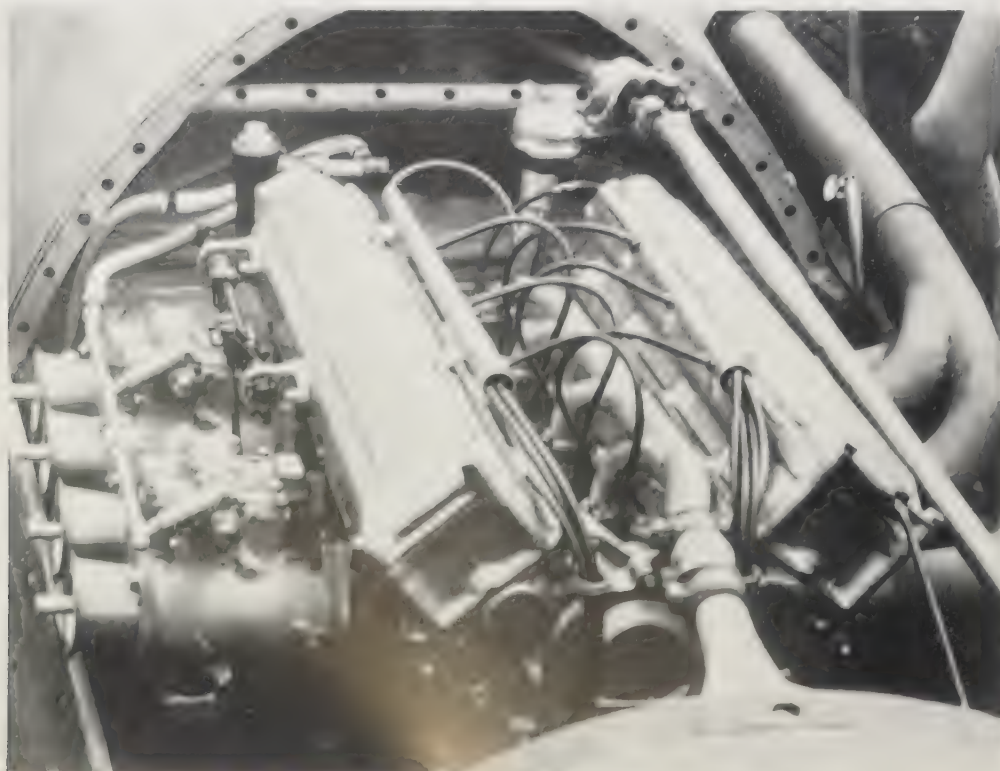
This car was originally designed for F1 use in 1952, using a modified 375F1 chassis with a longer wheelbase and triangulated tubular superstructure to improve rigidity. It first raced in the Valentino Grand Prix at Turin in April 1952. When Formula 1 was abandoned in favour of Formula 2, the cars were sent to Indianapolis. One car was entered by the factory, 3 by private owners. Another car, sold to A. G. Vandervell, formed the basis of the final ThinWall Special.

Chassis numbers: 002, 004, 006, 008, 010.

Late in 1953 a new multi-tubular chassis with a shorter wheelbase was built for Luigi Chinetti. It was entered at Indianapolis in 1954, but did not qualify.

Chassis number: 0388.

Below: 4-cylinder 625/750 used by P. Whitehead and Tony Gaze



1954-60

625/750

4-cylinder in-line, 2984.5 cc, 100×95 mm, 260 bhp at 6000 rpm, CR 8.6:1, double ohc, 2 plugs per cylinder, 2×52 DCO Webbers. Chassis as 625F1.

In 1954 2 special cars were assembled for Peter Whitehead and Tony Gaze to race in New Zealand, Australia and South Africa early in 1955. Ex-factory team 625F1 chassis were used. The engines were special 3-litre versions of the 1954 F1 engine, modified to run on 100/130 octane Avgas. A similar car was entered by the factory in the Buenos Aires Grand Prix in January 1955.

For the 1956 races, 750 Monza sports car engines, modified to run on alcohol fuel, were used (2999.6 cc, 103×90 mm, 280 bhp at 6500 rpm, compression ratio 11.5:1, 2×58 DCOA Webbers). The Whitehead car had a modified chassis to 625A specification with coil-spring front suspension and 5-speed transaxle.

Chassis numbers: 0480 (Gaze), 0482 (Whitehead).

1956-7

555/860

4-cylinder in-line, 3431.9 cc, 102×105 mm, 281 bhp at 6000 rpm, CR 9.5:1, double ohc, 2 plugs per cylinder, 2×58 DCOA Webbers. Chassis as 555F1, except 4-speed gearbox.

Two cars were supplied to Reg Parnell and Peter Whitehead to race in Australia and New Zealand in late 1956-7. Modified 860 Monza sports car engines were installed in ex-factory team 555F1 Super Squalo chassis.

Chassis numbers: FL9001 (Whitehead), FL9002 (Parnell)

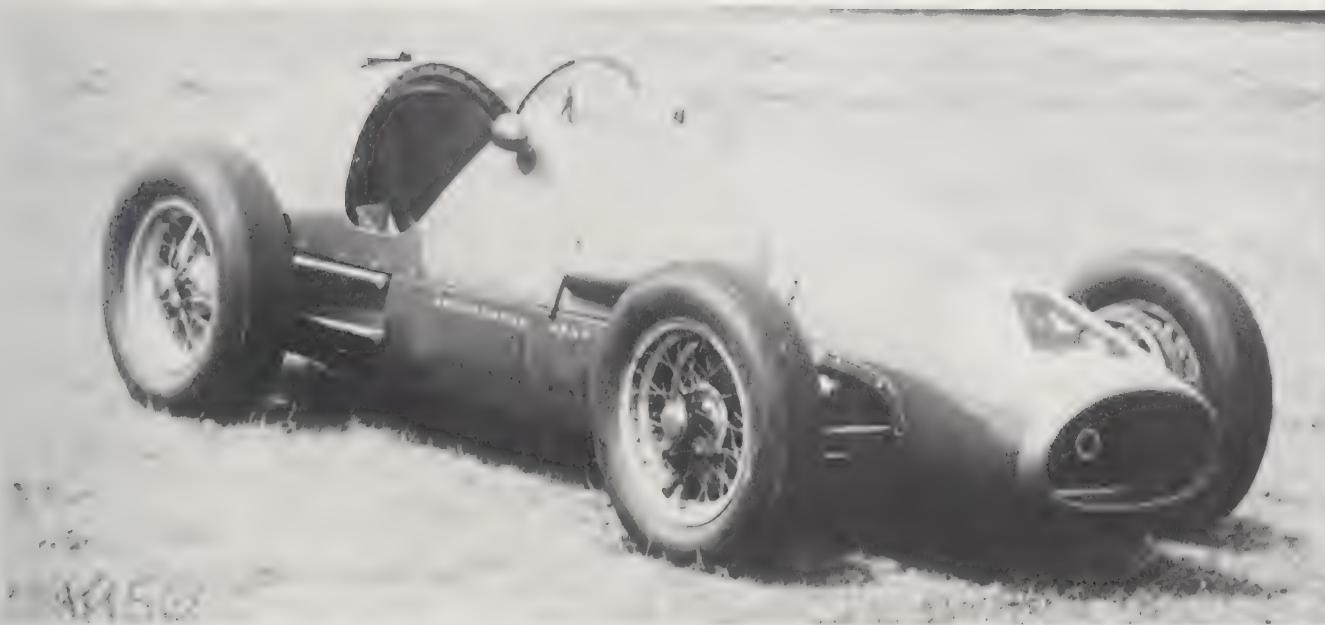
1957-60

625 Tasman

4-cylinder in-line, 2730 cc, 98.5×90 mm, 250 bhp at 6200 rpm, CR 9.0:1, double ohc, 2 plugs per cylinder, 2×42 DCOA Webbers. Chassis as 625A, except 555F1-type 5-speed gearbox integral with final drive.

Built for Pat Hoare for Formule Libre racing, this used a modified 625A chassis with 555F1 5-speed transaxle and unique bodywork with Lancia D50 tail tank. The engine was an enlarged version of the 1956 2.5-litre 625LM sports car unit (Type 137).

Chassis number: 0712.



Left: The hybrid 625/750.

1958

296MI

65 deg V-6, 2962 cc, 85×87 mm, 316 bhp at 8250 rpm, CR 9.0:1, double ohc per bank, 2 plugs per cylinder, 3×46 DCN Webers. Chassis as 1958 Dino 246F1 except wheelbase 2220 mm, coil springs at rear, double dampers front and rear.

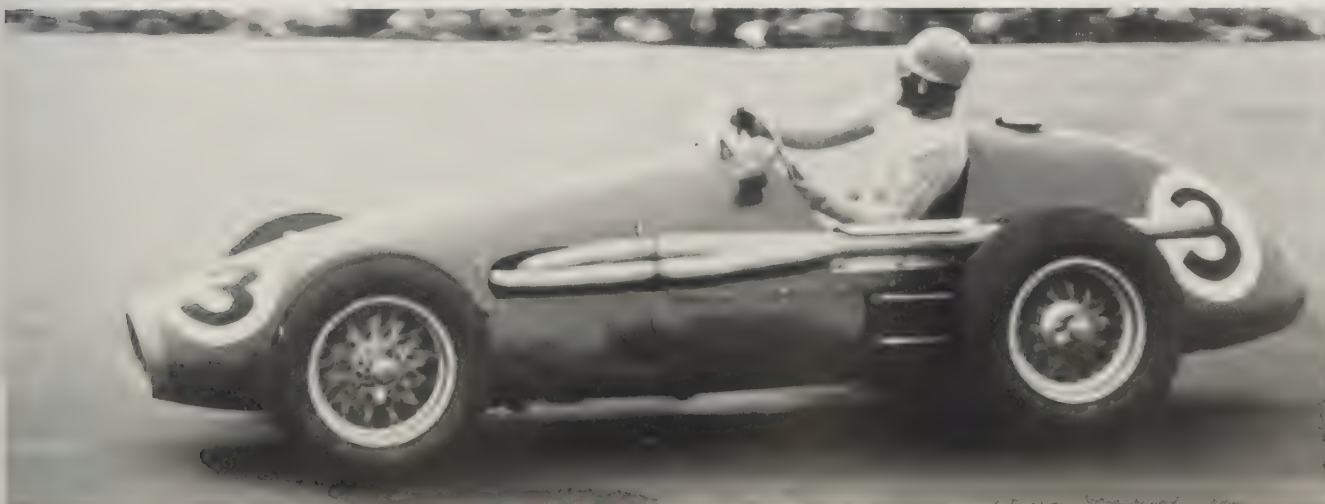
One of 2 specials built for the 1958 Monza 500 Miles Track Race, the 296MI used a modified Dino 246F1 chassis with a longer wheelbase and had a 3-litre V-6 engine previously used in a Dino 296S sports car. After the Monza race, the chassis was returned to Formula 1 use with a Dino 246F1 engine installed.

1958

412MI

60 deg V-12, 4023 cc, 77×72 mm, 447 bhp at 7700 rpm, CR 9.4:1, double ohc per bank, 2 plugs per cylinder, 6×42 DCN Webers, 3-speed gearbox integral with final drive. Chassis as 375F1, except coil springs at front.

The 412MI was the second special car built for the 1958 Monza 500 Miles Race. The chassis was basically 375F1 but with coil-spring front suspension. The gearbox final drive was similar to the original 375F1 type but had only 3 forward speeds. The engine was a modified 335S sports car unit. The car was raced only once.



Left: Tony Gaze in his 625/750 at Wigram, New Zealand.

1960-2

Dino 246F1/250TR

60 deg V-12, 2953 cc, 73×58.8 mm, 300 bhp at 7500 rpm, CR 9.8:1, single ohc per bank, single plug per cylinder, 6×42 DCN Webers. Chassis as 1960 Dino 246F1.

Another Tasman special built for Pat Hoare, this model had a 250TR sports car engine installed in an ex-factory team Dino 246F1, originally chassis 0007. Built in late 1960, it was raced by Hoare from 1961 to 1962.

Chassis number: 0788.

1969-70

Dino 246 Tasman

65 deg V-6, 2404.7 cc, 90×63 mm, 285 bhp at 8900 rpm, CR 11.5:1, double ohc per bank, 2 plugs per cylinder, Lucas fuel injection. Chassis as Dino 166F2, except rear track 1400 mm.

Built for Chris Amon to drive in the 1968 Tasman series, this car used a 1967 Dino 166F2 chassis (0004) with a specially designed 2.4-litre V-6 engine, originally with 3 valves per cylinder. Its first race was the New Zealand Grand Prix at Pukekohe in January 1968. A 24-valve engine was introduced at Surfers Paradise in 1969.

Two cars were built for the 1969 Tasman series, using Dino 166F2 chassis, numbers 0008 and 0010. The engines were the 24-valve type with power raised to 300 bhp at 8900 rpm. Chassis 0008 was sold to G. Lawrence of New Zealand in 1970.

Below and right: 1969 Tasman Dino 246 racing in New Zealand.





Chassis Number List

Formula 1 Chassis Numbers

125GP, 1948-9

Chassis were numbered 02C, 04C, etc., but the total number of cars built is not known.

125F1, 1949-50

125-C-01, 125-C-02.

For chassis numbers see 125GP.

375, 1950-1

Factory team cars: 1, 2, 3, 4, 5, 6.

212, 1951

Factory team car: chassis number unknown.

Privately owned car: 110.

625, 1954

Factory team cars: 1, 2, 3, 4, 5, 6, 7.

Privately owned cars: 0186, 0188, 0208, 54/1.

1955

2, 4, 6, 8.

Privately owned car: 540.

553 Squalo, 1954

01, 02, 03.

555 Super Squalo, 1955

01, 02, 03, 04.

Lancia Ferrari D50, 1954-6

0001, 0002, 0003, 0005, 0006, 0007.

Ferrari Lancia 801, 1957

0008, 0009, 0010.

Dino 246, 1957-60

1957-9

0011, 0012, 0001, 0002, 0003, 0004, 0005, 0006, 0007.

1960

0003, 0004, 0005, 0006, 0007.

156, 1961-4

1961

0008, 0001, 0002, 0003, 0004, 0006.

1962

Experimental car: 0008.

Factory team cars: 0001, 0003, 0004, 0006, 0007, 0009.

1963

New car: 0001, 0002.

1963-4

Factory team: 0003, 0004.

158, 1964-5

0005, 0006.

1512, 1964-5

0007, 0008, 0009.

312, 1966-9

010, 011, 012, 0001, 0003, 0005, 0007, 0009, 0011, 0015, 0017, 0019.

246

0006 (ex-158).

312B, 1970

001, 002, 003, 004.

312B2, 1971-3

005, 006, 007, 008.

312B3, 1973-4

010, 011, 014, 015, 016, 020.

312T, 1974-6

018, 019, 021, 022, 023, 024.

312T2, 1976-8

025, 026, 027, 028, 029, 030, 031.

312T3, 1977-9

032, 033, 034, 035, 036.

312T4, 1979

037, 038, 039, 040, 041.

312T5, 1979-80

042, 043, 044, 045, 046, 048.

126C, 1980-1

049, 050, 051, 052, 053, 054.

126C2, 1982-3

055, 056, 057, 058, 059, 060, 061, 062, 063, 064, 065.

126C3, 1983

066, 067, 068, 069, 070.

126C4, 1984

071, 072, 073, 074, 075, 076.

Formula 2 Chassis Numbers

166, 1948-50

For chassis numbers see 125GP.

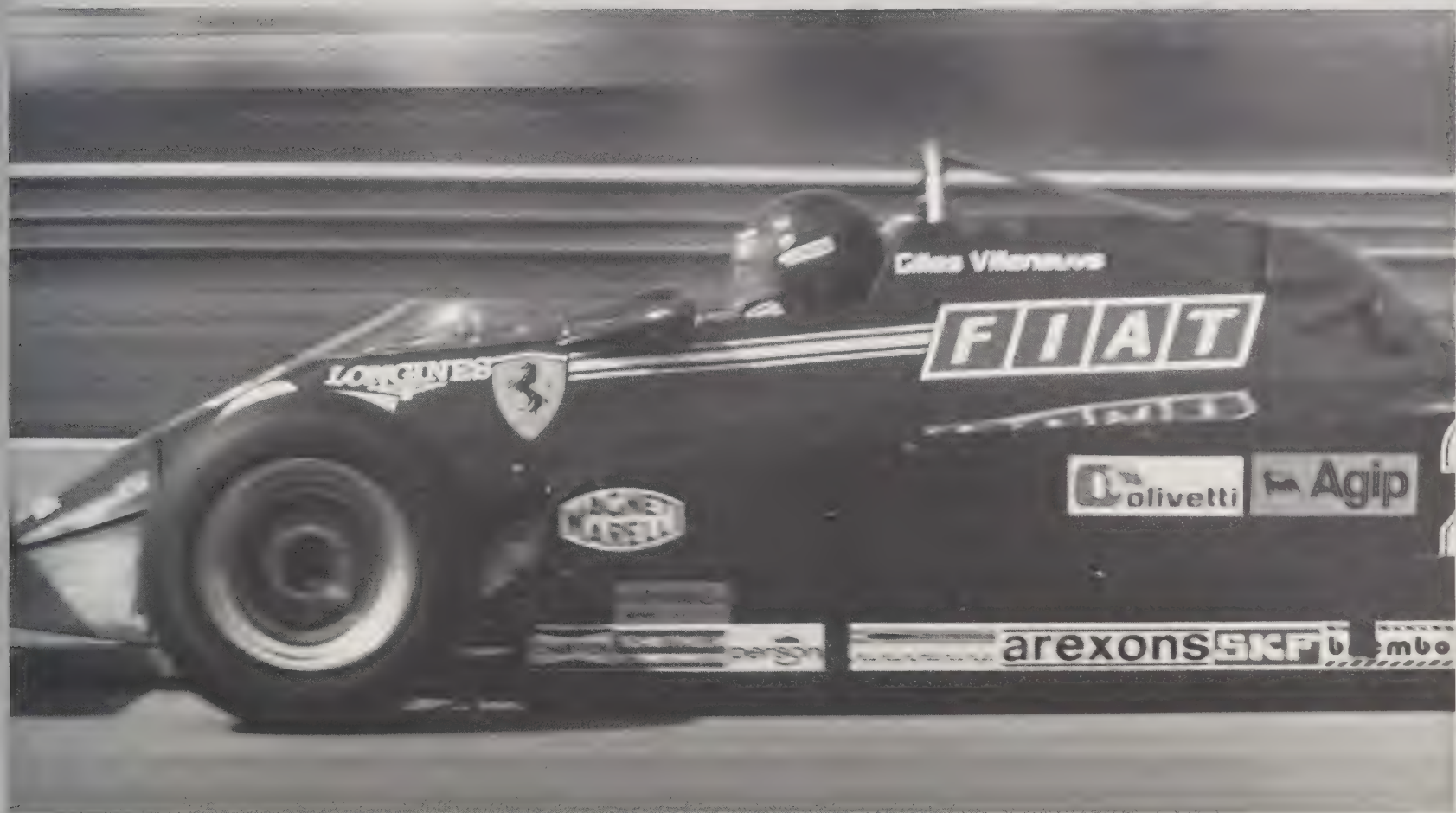
500, 1951-3

Factory team cars: 1, 2, 3, 4, 5, 6, 7.

Privately owned cars: 0184, 0186, 0188, 0208, 0210.

553 Squalo, 1953

01, 02.



Dino 156, 1957-60

1957
0011, 0012.

1958

0011.

1959

0011, 0012.

1960

0011, 0008.

Dino 166, 1967-70

0002, 0004, 0006, 0008, 0010, 0012, 0014.

Other Single Seaters 1949-69

166FL

106.

125F1 Special, 1951-4

114.

375 Indianapolis, 1952-54
1952

002, 004, 006, 008, 010.

1953-4

0388.

625/750, 1954-6

0480, 0482.

Above: An accident on lap 1 put Gilles Villeneuve out of the 1981 Dutch Grand Prix.

555/860, 1956-7

FL9001, FL9002.

625 Tasman, 1957-60

0712.

296MI, 1958

0007.

412MI, 1958

Chassis numbers unknown.

Dino 246F1/250TR, 1960-2

0788.

Dino 246 Tasman, 1968-70

0008, 0010.



The One-off Ferraris



Ferrari was adept at producing cars for a series of races; he was also unsurpassed at building a 'one-off' model for a particular event in quick time. The cars described in this chapter are 'one-off' specials which took no part in any subsequent 'programme' of the works.

412MI and 296MI

August 1909 saw the opening of a 2½ mile oval track in America known as the Indianapolis Motor Speedway where an important annual 500 mile race would be run.

In pre-1914 years American and European racing cars were in competition in the USA and this continued until 1919. In fact European cars were prominent from 1913 and for 4 consecutive years French and German cars won the important 500 miler. The last occasion, in that era, when the Europeans won was in 1919 when Howard Wilcock crossed the line in first place with a Peugeot. After this the Americans took control with their specialized track cars and dominated the race for 20 years. It was during this period that a wide gap developed between the American and European concept of motor racing which also included racing car design. Despite the difference Jimmy Murphy shipped his track Duesenberg to Europe in 1921 to win the French Grand Prix run over a road circuit. Two years later he posted a third place with his Miller in the European Grand Prix at Monza.

In Europe, apart from a few purpose-built tracks such as Brooklands and Monthlery, racing took place over road circuits.

During 1956 the Automobile Club of Italy made a surprise announcement stating that it would run a 500 mile race over the new high-speed banked track at Monza the following year and the leading Indy drivers

would be invited. However, most of the European teams and the automobile press greeted the proposal with a singular lack of enthusiasm. For the first event Maserati made a half-hearted attempt to build a car for Jean Behra but the car was withdrawn after problems in practice. However, the late David Murray entered his team of 3 Ecurie Ecosse D-Type Jaguars which had won at Le Mans. Although other European teams decided to stay at home, the Automobile Club of Italy went ahead with their plans and those present witnessed some spectacular high-speed racing which had never been seen before in Europe. The Indy 'boys' were highly delighted with their trip and promised to return the following year.

There was a change of heart for the 1958 race as some of the European drivers had decided that the rewards were well worth picking up (in those days the grand prix drivers were not exactly overpaid).

It was said that Ferrari was not too keen to enter any cars but the Automobile Club of Italy is alleged to have put some pressure on him! Once the decision had been taken by the factory, work proceeded apace to get 2 cars ready. Both could be described as 'bitza' cars.

In 1957 Ferrari had had a reasonable season with his 4-cam V-12 sports cars, the final version being the 4022 cc Type 335S, but for 1958 the CSI, the governing body of motor sport, introduced a 3-litre limit for sports cars leaving him with a lot of unwanted and expensive hardware on his hands.

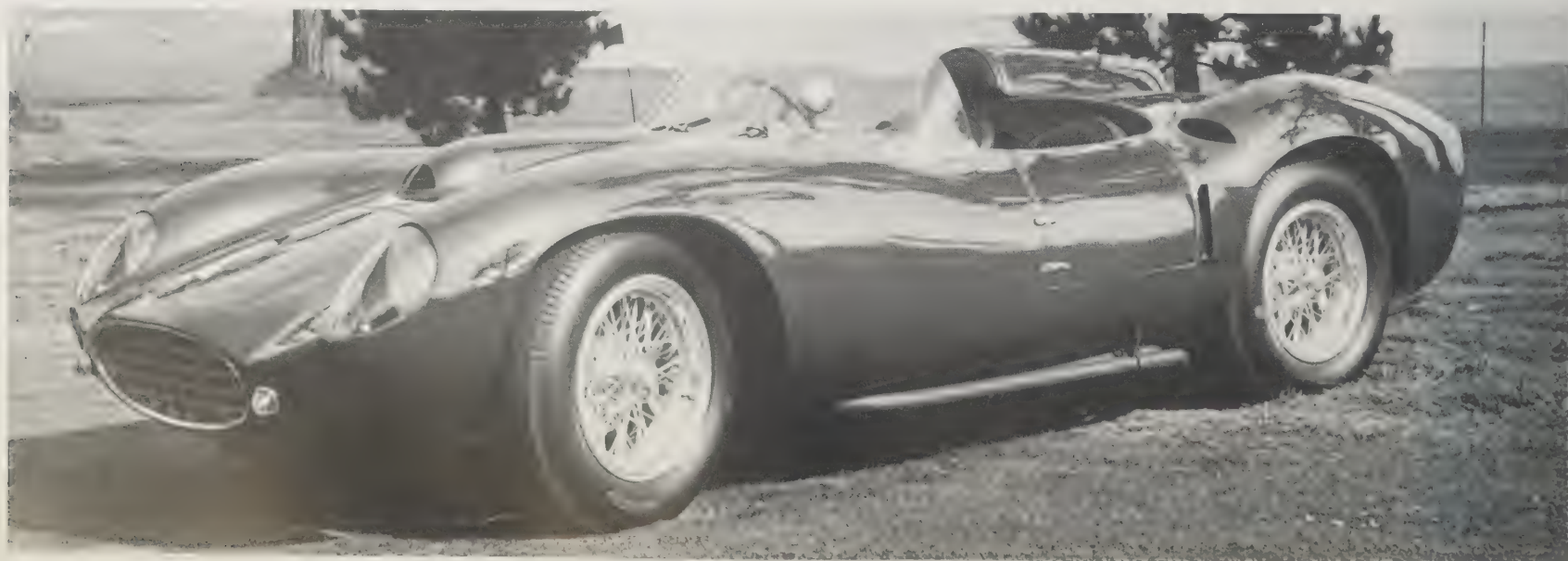
The Monza 500 was to be for cars with a maximum capacity of 4.2 litres to comply with the United States Auto Club capacity limit, so the race offered Ferrari a great opportunity to use at least one of the 4-litre engines against the horde of Meyer-Drake Offenhauser-built units.

To cope with the banked track a special chassis was

Preceding pages: The 412MI prepared for the 1958 500 Miles of Monza. It had a modified 4-litre V-12 sports car engine placed in what was basically a 375F1 chassis.

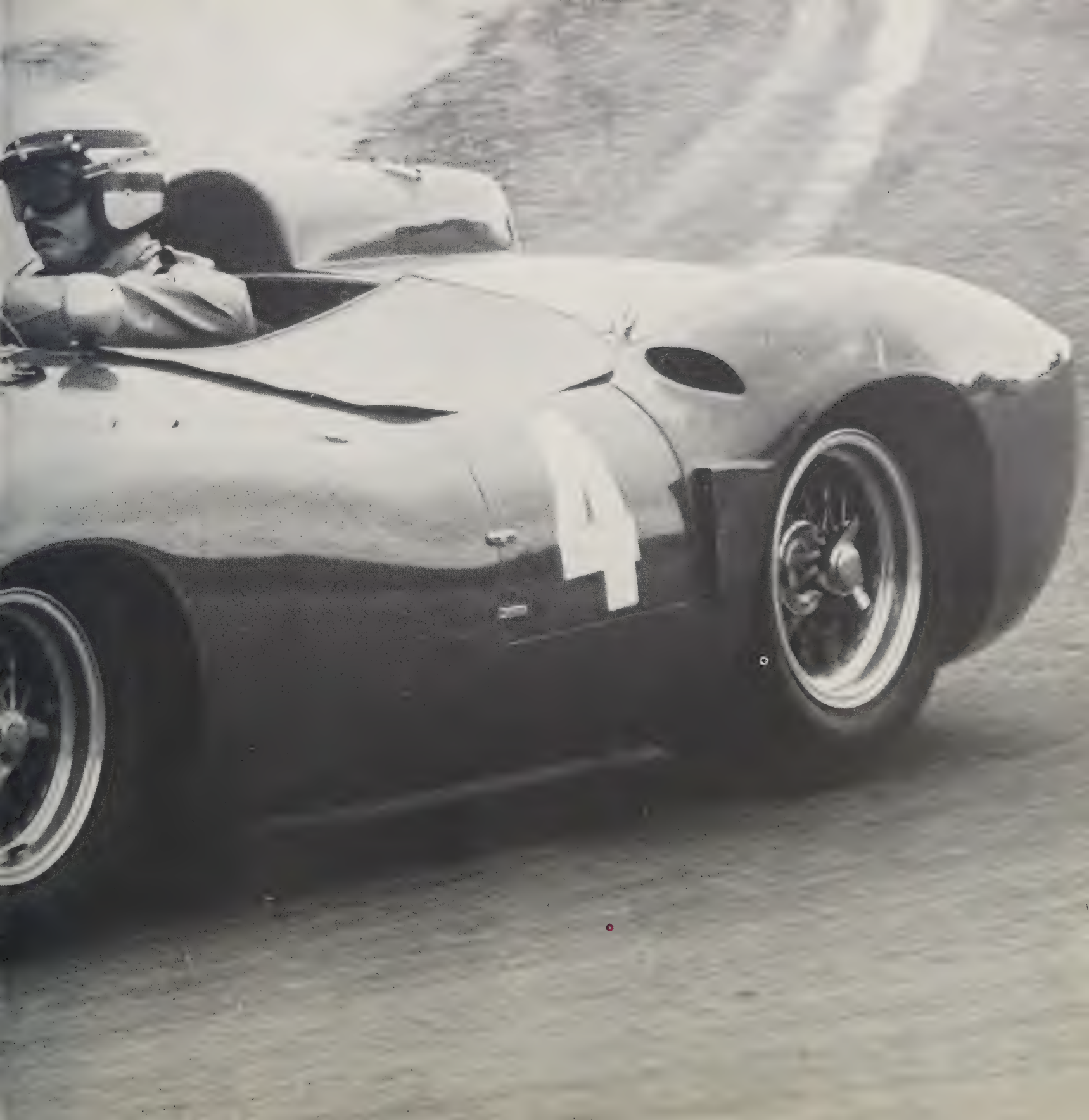
Below: Following the 1958 500 Miles of Monza, the engine from the 412MI single-seater reverted to sports car use in this '412MI' version owned at one time by John von Neumann.

Opposite: 296MI prepared for the 1958 500 Miles of Monza. It had a Dino 246F1 chassis with a 2.9- or possibly 3.2-litre V-6 engine.









constructed based on the 1951 design which housed the 4.5-litre engine of the 375 Formula 1. At the same time the de Dion/transverse leaf spring rear end and the gearbox in unit with the differential were also retained from the earlier design although only 3 forward speeds were considered necessary for the race. Front suspension was by coil springs and wishbones. The body was based on that of the Dino 246F1 although it was more bulbous with a narrow and somewhat ugly tail. The car was known as the 412M1.

As a back-up to the 412M1 Ferrari took a standard Dino 246 and replaced the 2.4-litre V-6 engine with the 2962 cc V-6 which had been used in a sports car driven by Mike Hawthorn at Silverstone. Some modifications were carried out to cope with the pounding the car would take on the track. The de Dion/transverse leaf spring rear suspension was replaced by an experimental de Dion coil-spring system and double Houdaille shock absorbers all round. The steering and suspension parts were all strengthened. The bodywork followed the lines of the Dino 246F1 except that the tail was short and stubby. The car was designated 296M1.

The 296M1 was retired with magneto problems in the first of the 3 heats (each heat was 63 laps of the 2.641 mile circuit) but the 412M1 survived to take up its grid position for the final heat. After the 63 laps the big Ferrari was in third place and when the times of the 3 heats were added together the Ferrari was placed third overall. The 412M1 had shown it was no sluggard for in the hands of Musso it put in the 3 obligatory qualifying laps at an average speed of 174.67 mph which put the car on pole for the first heat.

Preceding pages: The 412M1 at speed.

Below: Villorosi at Silverstone in 1952 with the Indianapolis-style 4.5 litre 375F1. The car was not a success in the Indy 500 (1952).



Indianapolis Cars

The 4.5-litre 375F1 cars were redundant by the end of the 1951 season since the grand prix championship for the next 2 years would be contested by Formula 2 cars.

As Luigi Chinetti, the American distributor for Ferrari, was anxious to run a car in the 1952 Indianapolis 500 and Ferrari had some expensive machinery to dispose of, in the form of the 4.5-litre cars, what could have been more natural than to let him have a 375F1 to run? Ferrari also managed to sell 3 of the cars to Howard Keck and Johnny Mauro of the Grant Piston Ring Corporation as it was their intention to enter the cars for the Indy 500. The Chinetti car was supported by the factory.

Of course, none of the cars was suitable for American-type track racing but Ascari, who was driving the Chinetti-Ferrari 375F1, had, at least, moved up from the back of the grid to sixth place when a rear wheel collapsed and the hub seized up.

Both Ferrari and Ascari were keen to try again in 1953 and Aurelio Lampredi, the car manufacturer's chief designer, set about designing a new engine. The Indianapolis regulations stipulated unblown units up to 4.5 litres or 3 litres supercharged. The latter was chosen and Lampredi came up with a single-camshaft-per-bank-of-cylinders V-12 with induction via a single-stage blower. 500 bhp was said to be available, making this the most powerful Ferrari engine to date. The blown 3-litre engine, designated 2501, was built and tested but there do not appear to be any records available to indicate whether a new chassis was built. In any case the project was dropped as Ferrari had enough on his plate.

375 Indianapolis Special

Towards the end of 1953 it became apparent that Ferrari was building a special car for Luigi Chinetti with the intention of entering it for the Indy 500. The car was shown to the public at the New York Show early in February 1954 and in appearance was not unlike an overgrown 553 Squalo complete with 'overblown' side panniers. Although it was a 375 special, it did not resemble the 4.5-litre cars.

In 1953 Lampredi designed a spaceframe chassis for the 553 Squalo – tubing of various diameters was used in the construction and the frame was triangulated only in certain areas. It is possible that this unusual frame was built originally for the 3-litre 2501. Front suspension was similar to that of the 375F1 apart from some small details. The de Dion axle and rear suspension more or less followed that of the 4.5-litre car but with additional damping provided by coil springs with rubber inserts. Regarding the bulbous panniers, that on the left contained supplementary fuel and oil tanks, the other the main oil cooler – this arrangement gave a left-hand weight bias which was characteristic of Indianapolis

cars. Wire-spoked wheels were used and after Ascari's disaster in 1952 the hubs were strengthened. The wheelbase of about 92 ins. was 4 ins. shorter than that of the 1952 car. The V-12 engine had a displacement of 4493 cc with fuel fed through 3 huge 4-choke Webers and the power output was around 380 bhp. The chassis number of the car was 0388.

A number of Indy drivers tried out the car, which suffered from a variety of mechanical problems but without a regular driver it never reached the official qualifying rounds.

The car next appeared at the 1955 Florida Daytona Beach Speed Trials where it won the Grand Prix Class, and after being used by Farina (due to race the Bardhal-Ferrari) for familiarization trials at Indianapolis in 1956, where it ran well, it was used in hill climbs in the USA, again showing its potential by winning its classes.

In June 1958 the 375 Indianapolis car was entered by Chinetti for the second of the Monza 500 races to be driven by Harry Schell. To comply with the regulations

the Ferrari factory overhauled the car and the engine was stroked down to 4.2 litres. It did not perform well, suffering from magneto and other maladies, and was retired during the second heat.

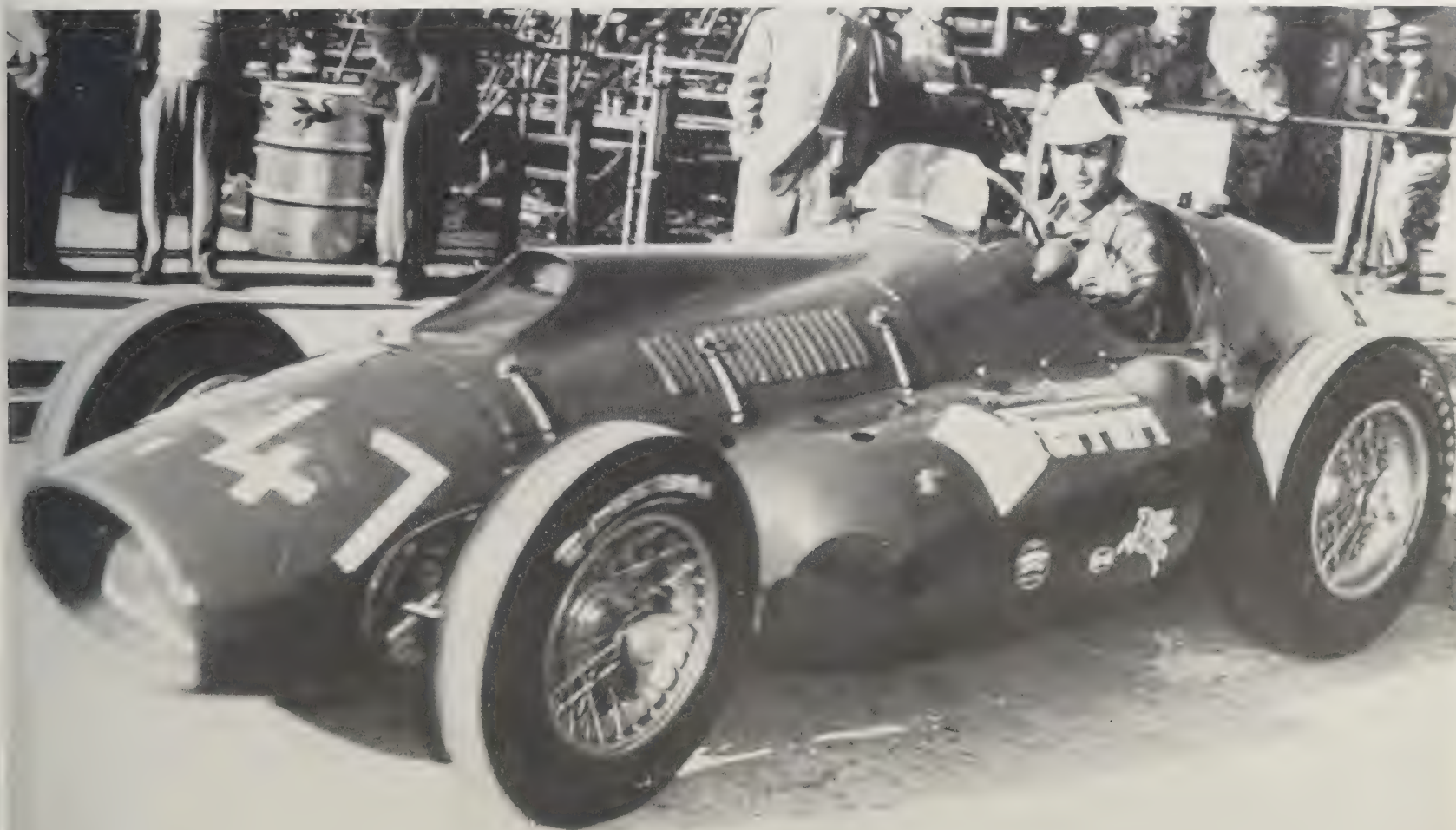
Before the car was returned to the USA the factory restored the engine to 4.5 litres and carried out other modifications and at the same time Fantuzzi built a slimmer body but retained the original nose cowl.

Bardhal-Ferrari Experimental

In spite of the previous setbacks at the Indianapolis brickyard Luigi Chinetti was still game to have another go, as was Nino Farina before he retired from racing.

Deciding on a new approach, Chinetti installed a Ferrari engine in a proved Indy chassis – this was to be a Kurtis Type 500-D which was a rugged tubular structure. The basic design is that of 2 ladder-type structures made from 1.5 in. diameter steel tube separated by a number

Below: The 1954 375 Indianapolis Special with Fred Agabashian at the wheel.







of cross members. The wheelbase was 2438 mm with front and rear track measuring 1372 mm. The beam front axle was sprung by transverse torsion bars and the front suspension used a lever-action shock absorber with a tubular shock absorber on either side. The live rear axle was also sprung by 2 transverse torsion bars. American-made disc brakes were fitted, as were Hali-brand magnesium alloy disc wheels.

A Ferrari 6-in-line 4.4-litre 121LM engine was installed in the chassis and before trials in the USA a Hilborn fuel injection system was fitted and the car, running on alcohol-based fuel, had an output of 382 bhp. A Meyer-Drake 2-speed gearbox was in unit with the engine.

The car was called the Bardhal-Ferrari Experimental as it was supposed to be a joint effort by the Italian Division of the Bardhal Company (producers of petroleum products and lubricants) and the Ferrari works. However, either because Ferrari did not have his heart in the job or was too busy with the factory's other work he decided to pull out and the project was turned over to the Maserati brothers at the OSCA factory.

The car was not completed in time to contest the 1955 Indy 500 but it was ready for the following year's race when it unfortunately failed to qualify.

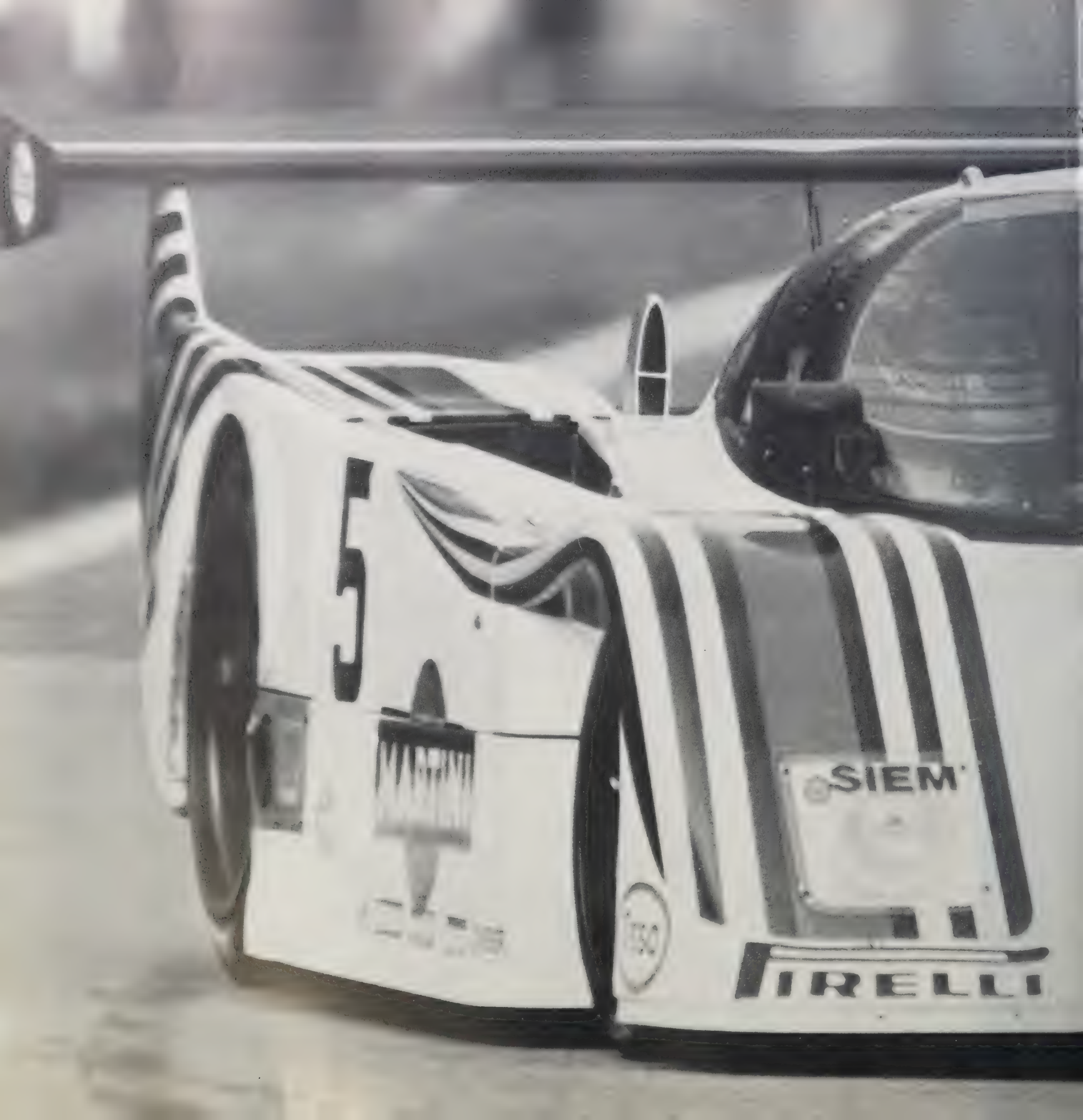
212E Montagna/Sport 2000

The origins of this 'one-off' flat-12-cylinder engine can be traced back to 1964 when the 1.5-litre Formula 1 flat-12 was developed in the hope of improving the performance of the successful 1.5-litre V-8 which won John Surtees his World Drivers' Championship in 1964. The flat-12 was called the 1512F1 (1.5-litre flat-12). At the end of 1967 this basic engine appeared in 2-litre form in one of the Dino 206S spyder chassis and was called the Sport 2000. The purpose of the car was to contest the 1968 European Mountain Championship but it failed to appear. After further development work on the Dino chassis it reappeared in 1969 as the 212E Montagna.

The development work on the flat-12 boxer engine had been carried out by Jacoponi and with a bore/stroke of 65×50 mm its displacement was 1990.8 cc. It had twin overhead camshafts per bank of cylinders, a single plug per cylinder, coil ignition, 4 valves per cylinder, Lucas fuel injection and a compression ratio of 11.0:1 or 11.3:1. Power output was 320 bhp per 11,800 rpm. The 5-speed gearbox was located behind the mid-mounted engine. Front suspension was independent with double wishbones and coil springs and at the rear a single upper arm with a lower wishbone with coil springs. The wheelbase was 2340 mm and the front and rear tracks respectively 1485 mm and 1535 mm.

Peter Schetty drove the car in the 1969 European Mountain Championship, winning 7 of the 8 rounds (the last event was not contested as he had already won the series). Schetty also collected new records at all the events contested.

Left: 1969 European Mountain Championship car with Chris Amon at the wheel for a test session. Peter Schetty won 7 out of 8 rounds in the flat-12 212E Montagna.



The 'Alternative Cars'



The title 'alternative' was given to cars other than Ferraris which were powered by engines designed by the factory. Excluded from this category, however, are the 'one-offs' which were, in the main, other marques' racing or sports racing cars that installed Ferrari power units.

From 1966 when Fiat's Dino was shown to the public at the Turin Show there have been 4 Ferrari-designed engines installed in chassis other than Ferraris. Two of these were manufactured by Fiat as the Ferrari works was not geared to build the numbers required. The first had a capacity of 2 litres, the second a displacement of 2.4 litres – both of which powered Fiat Dinos and the latter was also used in the almost unbeatable Lancia Stratos rally cars. These 2 units did, of course, power Ferraris such as the 206GT and the 246 series which are dealt with elsewhere. Ferrari also designed, with Fiat backing, a Dino 206F2 as a gesture to help Italian drivers who wanted to compete in Formula 2 racing. By early 1983 the Lancia Group C cars, which were to be involved in endurance racing, were supplied with Ferrari-designed and built 2.6-litre engines.

Fiat Dinos

The origin of the Dino engines (which go back to Vittorio Jano's 1.5-litre V-6 of 1957) is dealt with elsewhere but it plays an important part in Ferrari history and, as it happens, in Fiat history.

For 1967 Ferrari wanted to enter cars for Formula 2 events and it was his idea to build V-8 units but the 'powers that be' laid down that V-8s would not be

permissible and stipulated that engines would have to be based on production units of which 500 would have to be built. Ferrari had no capacity to produce such a number with all his other commitments but after talks with Fiat (who had intimated in 1964 that they would be prepared to help Ferrari whenever possible) it was agreed that they would produce the engines since they were already looking for a replacement for their somewhat outdated 2300S coupé.

At the 1966 Turin Show Fiat put on display 2 prototype Fiat Dinos – 1 an open sports car with coachwork designed by Pininfarina and the other a 2+2 fastback coupé designed by Bertone. Both models had the Rocchi de-tuned version of the 65 degree 4-cam V-6 engine with bore/stroke of 86 mm × 57 mm giving a displacement of 1986.61 cc and, using twin-choke 40 DCNF Weber carburettors, developed 160 bhp at 7200 rpm. The cylinder block was aluminium with pressed liners. Engines were front-mounted.

The 2-litre Fiat Dinos were mainly for Italian customers' none being available for the UK market. The model was discontinued in 1969 when Fiat decided to build a more powerful version using a cast-iron block as they had never been happy with the light-alloy block. The new engine was still the 4-cam V-6 but the bore/stroke had been increased to 92.5 mm × 60 mm giving a swept volume of 2419.20 cc. Various modifications were carried out to cope with the increase in power which was 180 bhp at 6600 rpm. Both the spyder and coupé models were capable of speeds in the region of 130 mph. While the 2.4-litre cars were exported, not too many came to the UK, but both the 2- and 2.4-litre models are still sought after.

Preceding pages: The 1984 LC2 Lancia-Martini Group C car with 2.6-litre V-8 Ferrari engine.

Opposite: 2-litre V-6 Ferrari-engined Fiat Dino coupé 2 + 2. Coachwork by Bertone.

Below: 2.4-litre V-6 Ferrari-engined Fiat Dino open sports car. Coachwork by Pininfarina.





Lancia Stratos

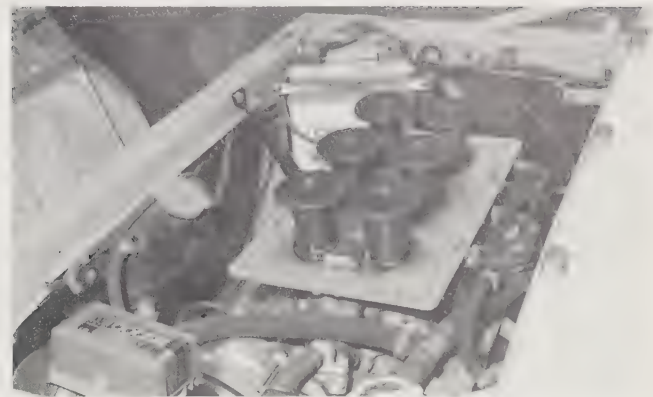
By 1970 the Lancia Fulvia 1600HF rally car had just about finished its useful competition life and, to keep ahead of a new specialized breed of rally car, an entirely new model was needed. Renault had entered the scene with their purpose-built Alpine and taken the World Rally Championship in 1971. Porsche with 911s and 914/6s were building specialized cars, so if Lancia wanted to be in the reckoning it was essential to have a rethink.

As luck would have it Bertone, at the 1970 Turin Show, had displayed an outlandish wedge-shape mid-engined styling exercise fitted with a Fulvia engine and

running gear. It was named the Stratos. Cesare Fiorio, Lancia's team manager, was interested but decided that the car would need a new power plant and with Lancia being part of the Fiat empire thought the obvious choice was the Ferrari-designed 2.4-litre engine built by Fiat. This was the same unit which had been installed in the Fiat Dino and the Dino 246. A year later, also at the Turin Show, Bertone produced a more acceptable design of the Stratos with the Ferrari V-6 Dino 2.4-litre engine placed amidship and transversely. Thus was born the Lancia Stratos rally car which won the World Rally Championship for 3 consecutive years – 1976, 1977 and 1978 – before the Lancia works ceased racing in December 1978.

Below: Total exposure of road-going Lancia Stratos, showing 2.4-litre V-6 Ferrari engine.

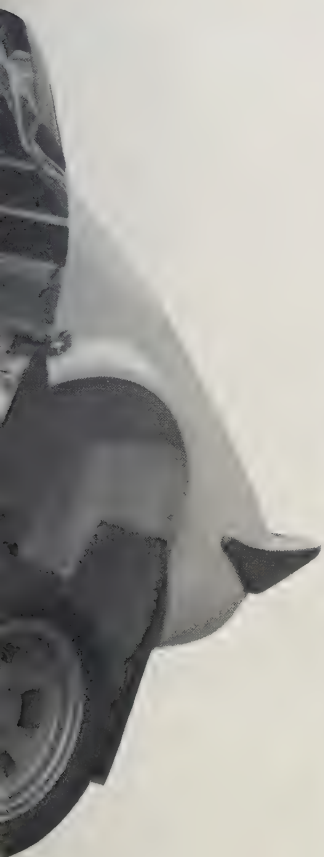




The year that the Lancia Stratos started on its winning ways in 1974 was the year Ferrari terminated production of the Dino 246.

The Stratos was a purpose-built competition machine, the design making this apparent. The chassis was simple but immensely strong with the driving compartment a steel monocoque re-inforced with steel tubes. A rigid box of girders at the rear surrounded the transverse-mounted engine and gearbox, providing mounting points for the MacPherson strut suspension. Two fuel tanks were mounted ahead of each wheel. At the front 2 steel outriggers carried the front wishbone suspension and the radiator. The 1-piece front and rear

panels were fibreglass, hinged at the extremities to provide total access to the mechanicals. Doors were also fibreglass with a primitive window-opening system. The cockpit was adequate for a purpose-built rally car with simple adjustable bucket seats. The body shape was angular, short and stumpy – almost wedge-shaped, with the cockpit areas as a small hump. In all it was a very aggressive and purposeful machine. The Stratos handbook quotes a power output of 190 bhp at 7000 rpm which is probably fictional; it has been suggested that Ferrari released the engine to Lancia provided the power output and maximum speed figures quoted were inferior to those of the Dino 246.



Above left: Even the road-going Lancia Stratos looks aggressive. The coachwork is by Bertone.

Above right: Engine bay showing transversely mounted Ferrari 2.4-litre V-6 unit.

Right: Lancia Stratos Group 4 rally car.

Right: 1985 Lancia
Martini leads from the grid
1000 Km at Silverstone

Right below: LC2-85 in the pits
(Silverstone, 1985) with front
bodywork removed.

Dino 206F2

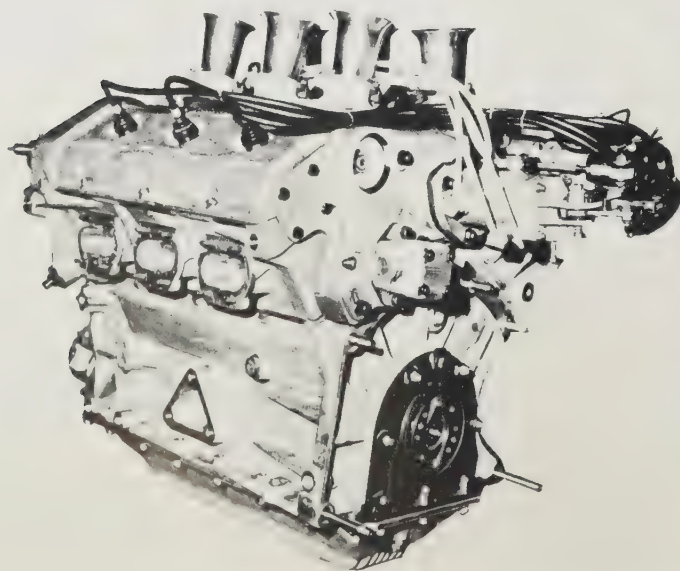
During 1976 there were rumours that Ferrari was considering a return to Formula 2 racing. At his press conference that year, on October 26, this was confirmed, though not quite in the manner expected!

Ferrari had been pressed by the Italian papers (he was forever being harried by them for many reasons, one of which was the fact that he never employed 'home-grown' drivers in his grand prix team) to loan one or more of the many Italian scuderia a 312T so that the native drivers could 'cut their teeth' on a full-blown Formula 1 car. This he was unwilling to do but decided to build 8 or 10 engines for 4 scuderia to install in the chassis which they intended to race in Formula 2.

With Fiat backing he produced the Dino 206F2 – a new 4-cam, 24-valve V-6 which bore similarities to the last racing Dino, the 166F2 of 1968/9, but the design was new, using a great deal of aluminium and titanium in the construction. The bore/stroke of 86 mm × 57 mm gave an overall capacity of 1986.61 cc. The project co-ordinator was Giulio Borsari, former mechanic to Ferrari driver Reggazoni.

These engines were to be installed in an Osella F2 for Arturo Merzario, a March F2 for Gianfranco Brancatelli and Bruno Giacomelli and a Chevron F2 for Ricardo Patrese. The choice of chassis is interesting as the British had a virtual monopoly of F2 chassis construction and the March and Chevron were British. They were, however, designed to take BMW and Hart engines – not the new Ferrari unit with its high centre of gravity and deep sump which led to installation problems and obviously had an adverse effect on chassis handling.

Trivellato Racing was the first team to suffer from the foregoing problems in their Chevron B40 Dino, so they fitted a much shallower sump of their own design. When the car was sent to Italy for test the Ferrari works



Right: 2-litre V-6 F2 engine for
use by other scuderia.



held up their hands in horror and shouted 'Sacrilege!', pointing out that there would be a power loss.

The only other constructor known to have been involved with the Dino was Ron Tauranac's Ralt concern which built 2 chassis for Scuderia Everest. Although the team ran at Silverstone, Thruxton and Hockenheim, the cars were beset with problems, no doubt due to lack of development work.

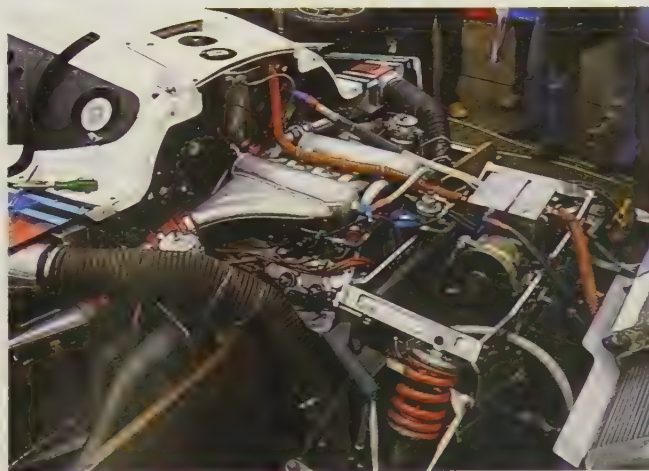
One of the main troubles seems to have been lack of oil pressure which persisted for much of the 1977 season. There was, however, one occasion on which it seemed that everything was coming right. This was at the Misano race on August 7 when Leoni finished second in the first heat and won the second heat in the Chevron Dino. The 1978 season was hardly better for, although the cars in the main were reliable, they obviously lacked power, finishing well down the field.



Lancia-Martini Group C

The Lancia LC2-83 Group C endurance racing sports car was developed to replace the Group 6 sports prototypes to compete in the World Endurance Championship from 1983. Work commenced on the car in June 1982 when it was known that an engine would be available from Ferrari. Apart from Ferrari other member companies in the Fiat empire were also involved.

Under the direction of the project engineer, Gianni Tonti, the design was completed by the Abarth designers while construction on the chassis was handed over to Gianpaulo Dallara's race shop. The first car was finished just in time to receive the Ferrari 268C engine and the press saw it in the Museo Martini at Pessione in February 1983. There was not a great deal of time to give the car a real shake-down before the 1000 Km event at



Above: Pit-stop for the Lancia-Martini – Silverstone 1000 Km, 1984.

Left: Engine bay of the Lancia-Martini, showing 2.6-litre V-8 Ferrari engine.





Left: LC2-83 Ferrari-engined Lancia-Martini.

Below: LC2-83 Group C Lancia-Martini at speed.

Monza in April, but despite this Ghinzani managed to place it on pole position for the race.

Up to the present the team cars have never shown their real potential because of minor ailments and the lack of suitable tyres.

Specification of the Ferrari engine is as follows – a V-8 with a bore/stroke of 80 mm × 64.5 mm giving a displacement of 2599 cc; 2 KKK multi-stage turbochargers providing 620 bhp on race boost pressures; Weber indirect electronic fuel injection; dry-sump lubrication with thermostat-controlled oil coolers. The electrical system is Magneti Marelli. Transmission is through a twin-plate clutch and Hewland VG200 5-speed gearbox. The car has all-round independent quadrilateral-type suspension with Bilstein hydro-pneumatic shock absorbers. The wheels are by Speedline with Brembo self-ventilated disc brakes. The aluminium monocoque chassis is reinforced with magnesium hoops. The bodywork is a carbonfibre Kevlar weave. The car has a maximum speed of around 214 mph.

Thema Lancia

Lancia, an offshoot of the giant Fiat empire, had been going through a rough passage since the Beta model was 'called in' early in 1980. The trouble was the old problem of rust and the Beta had this to an extent beyond economic repair. Since then the company has been trying to win back friends and its share of the automobile market with cars such as the Gamma and Montecarlo.

Lancia are no strangers to the installation of Ferrari engines in their chassis – there was the highly successful Stratos rally car with the 2.4-litre Dino unit and in 1983 a 2.6-litre V-8 Ferrari unit was used (and still is) by the Group C endurance racing Lancia but with limited success mainly as a result of tyre problems.

The Thema Lancia was introduced to the European market in October 1984 and it is rumoured that if all goes well the model will have a detuned Ferrari 308 engine by 1986. The engine will be front-mounted and as the power output of 200 bhp is too excessive for front-wheel drive it will have a 4-wheel drive system developed with the help of Steyr of Austria.





Pininfarina

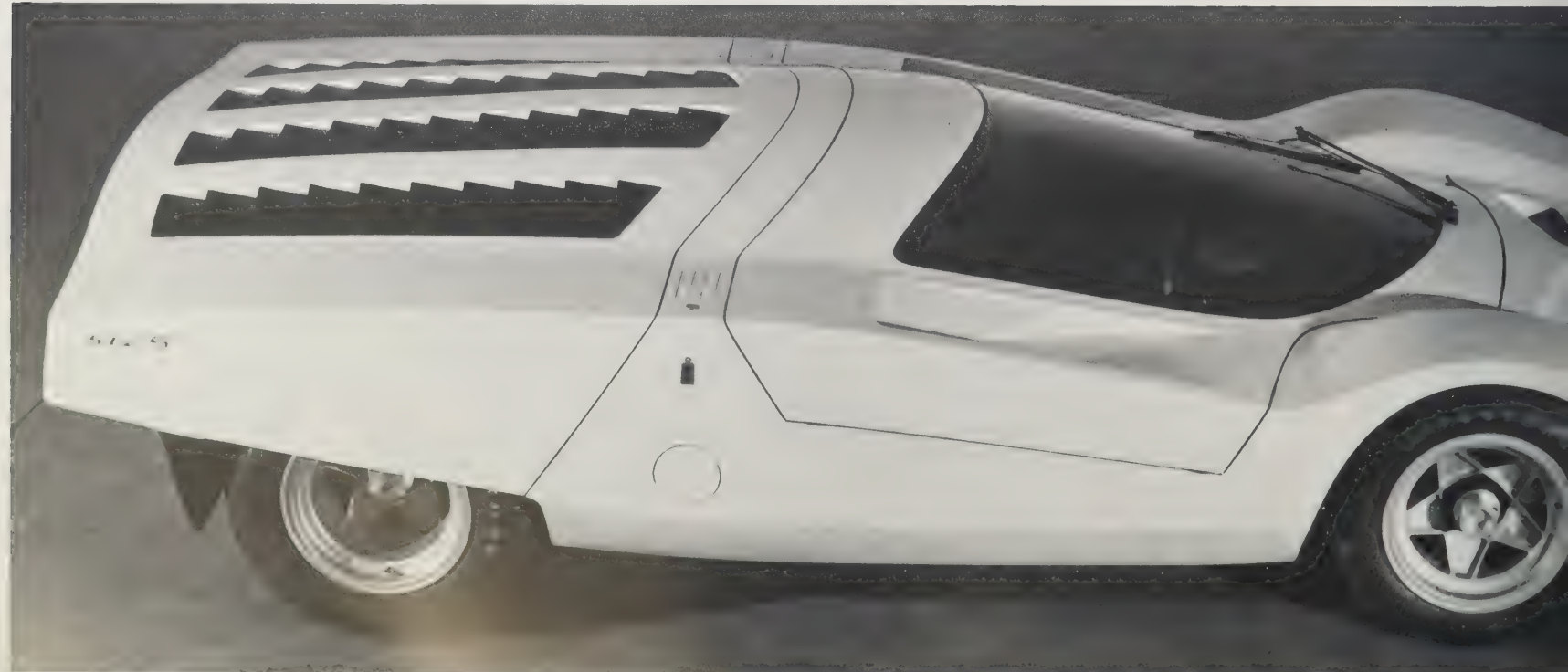
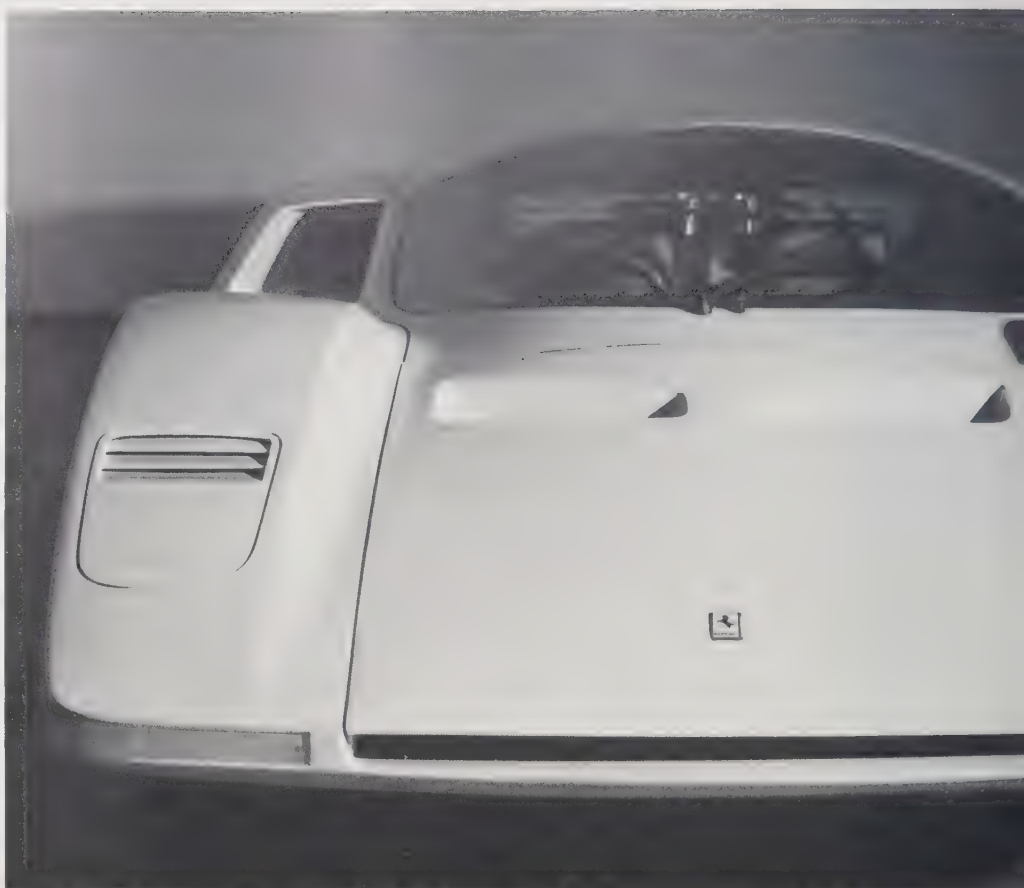


Pinin Farina was always, even in his youth, interested in automobile coachwork design and when his eldest brother, Giovanni, who had worked for the coach-builder Marcello Alessio, founded a repair and body shop in 1910 which he called Farina Enterprises, Pinin and another brother, Carlo, joined the company. His first real success was when he designed a radiator for the Fiat 'Zero' and his model was chosen from a dozen or so others by Cavaliere Agnelli, grandfather of the present generation of Fiat owners.

It was in 1930 that Pinin decided to go his own way, founding his first factory under the name 'Pinin Farina Automobile Body Corporation'. For many years the 2 names Pinin Farina were kept separate but during the fifties, when most Ferrari bodies were designed by his company, the names were joined into Pininfarina. No doubt many of the newer generation of Ferrarists associate the name mainly with Ferrari, forgetting that the company has 'clothed' the chassis of many famous marques and also a number of chassis of the more day-to-day cars.

Pinin Farina has always been a man who deplored frills whatever the design and his work has been characterized by simplicity coupled with functionalism. Even the bodywork on his show cars has a simple and functional styling which has rarely, if ever, been achieved by any other automobile designers.

The next few pages contain examples of Pininfarina show car designs achieved on Ferrari chassis. Some may seem impractical but there is a beauty and 'roundness' in every line.

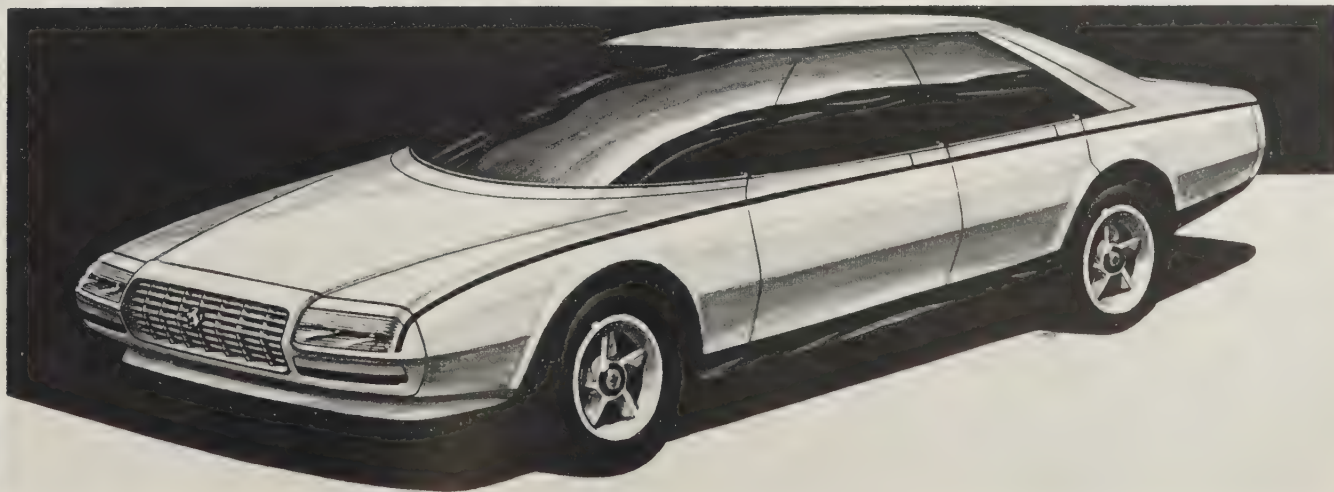
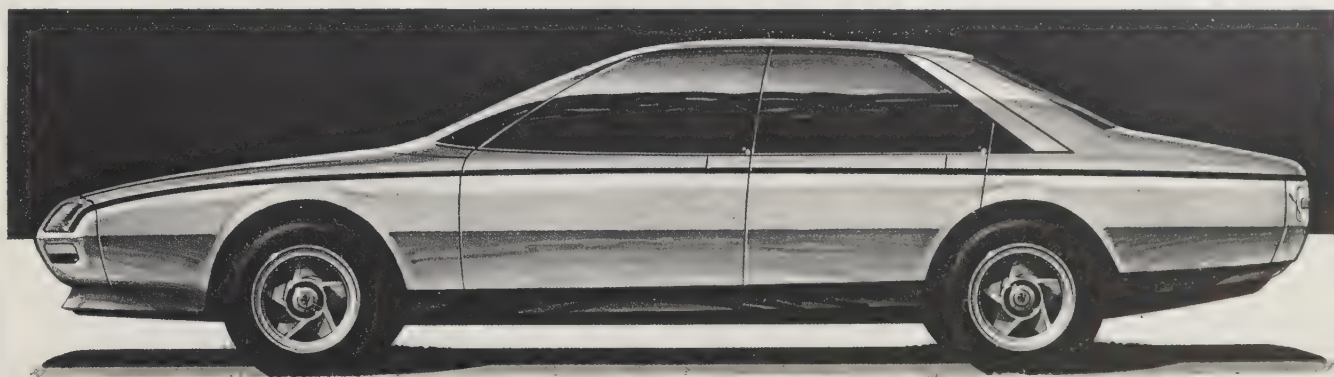
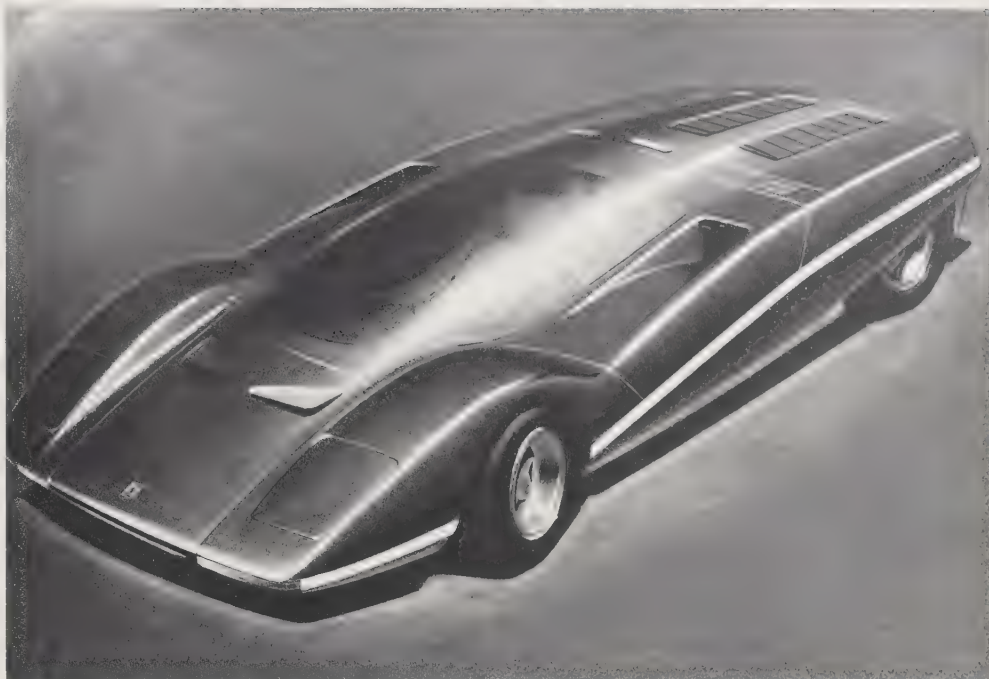


Preceding pages: The 365P with the unique feature of three seats across the front. The driver sits in the middle.

Left above and below: 1970 prototype bodywork for the 512S.

Right: An artist's impression of the 1970 512S prototype bodywork.

Below right and far below right: Design studies for a 4-door saloon with front-mounted flat-12-cylinder engine. Known as the 'Pinin', it is looked upon as part of the process of evolving a replacement for the long-running 400 Series cars.







Opposite, right and below: 1967 prototype Dino 206GT with front/rear spoilers and gull-wing doors. This was more a research vehicle than a real racing body.



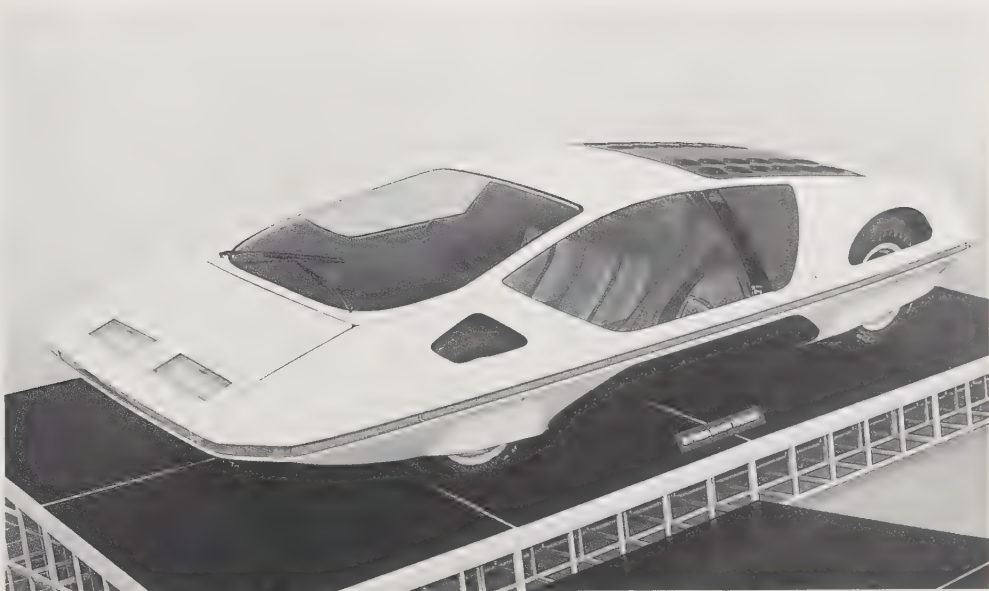


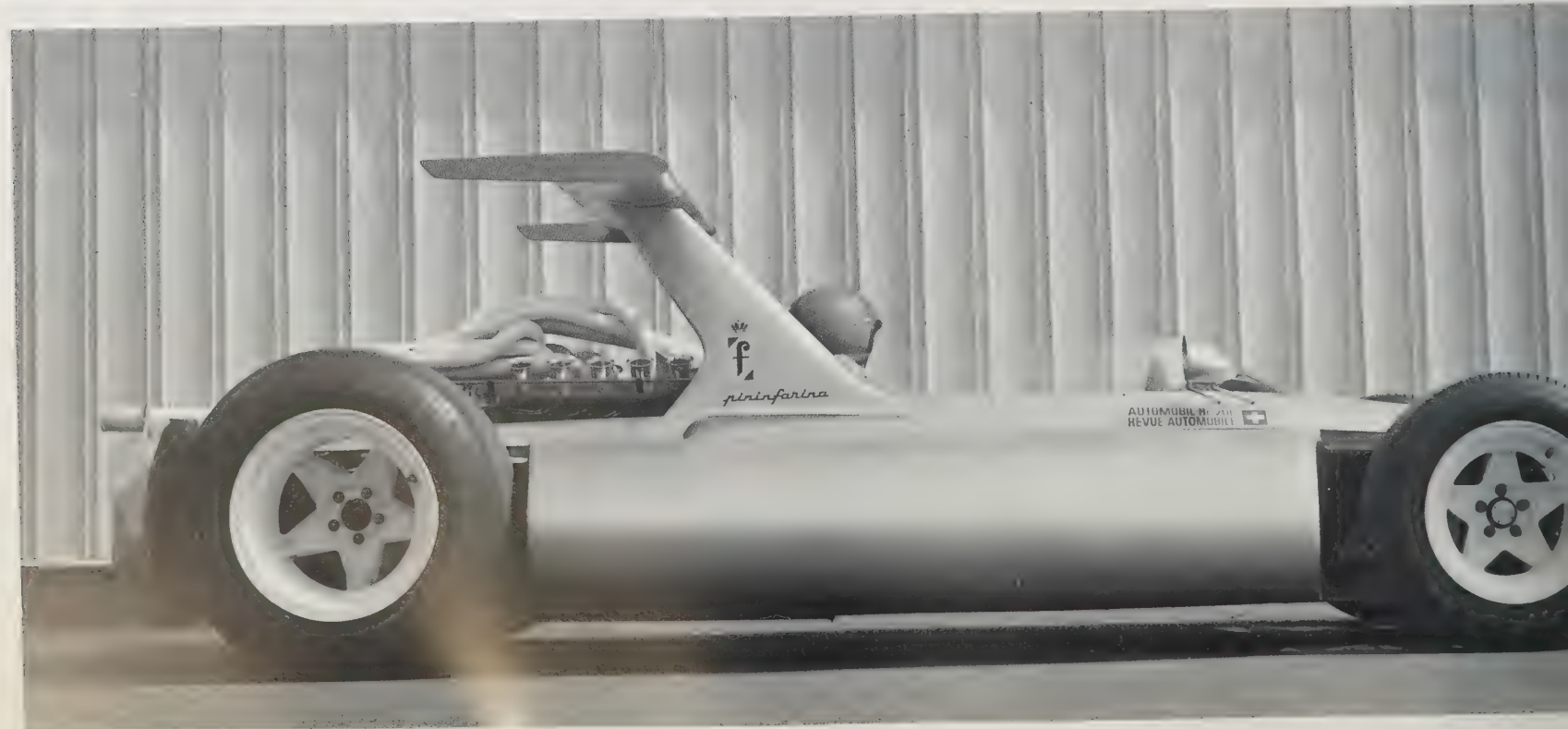
Left: Aesthetically pure line of the 1970 show Modulo.

Below left: Modulo with one-piece windshield and door in open position.

Right above: Original design for the 512S – the Modulo shown at Geneva in 1970.

Right below: 1968 P6 berlinetta. The 365 and 512 berlinetta boxers were derived from this design.



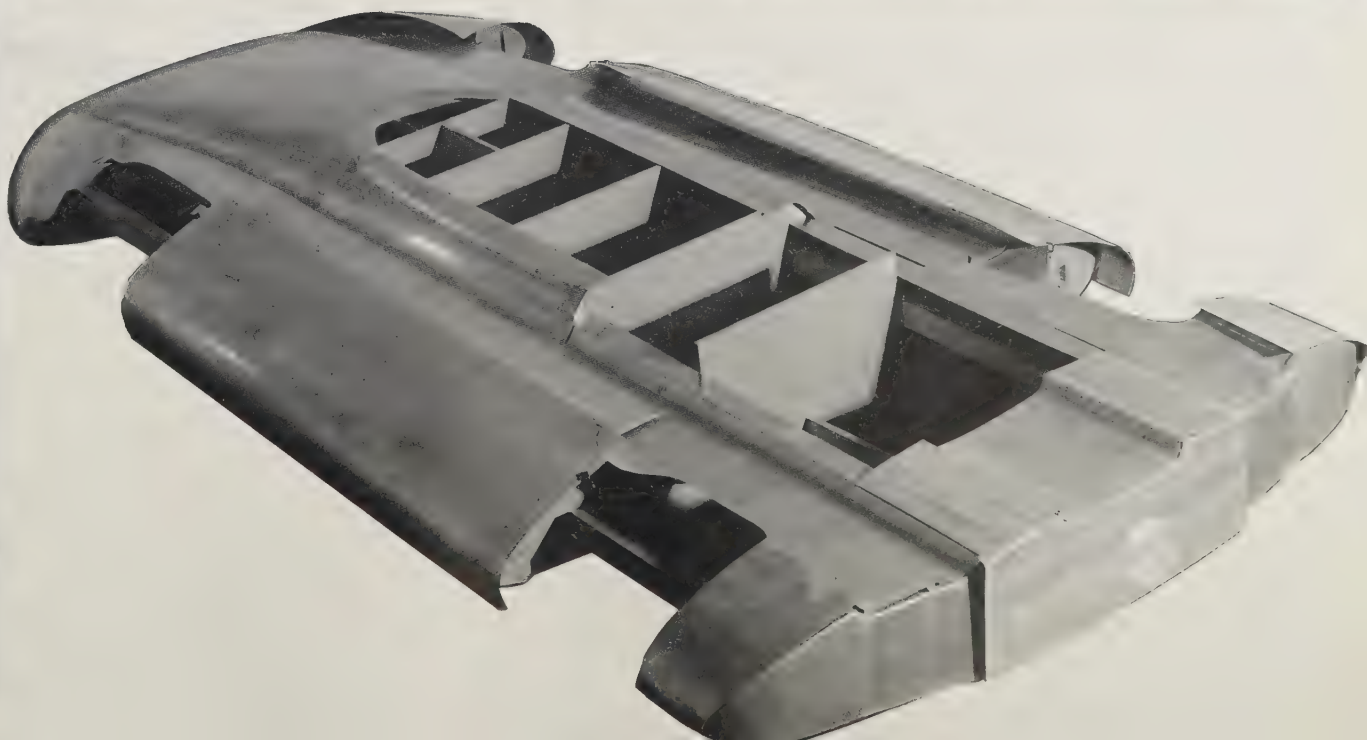


Opposite above: Study Cr 25 – a 1974 project aimed at achieving a low coefficient of resistance with a vehicle of large dimensions. The use of Ferrari mechanical components was assumed.

Below left: Pininfarina's Sigma GP design incorporating all possible safety devices.

Right above: Rear view of the Sigma GP.

Right below: Wooden former constructed as basis for the Sigma GP car.





Appendices



Appendix 1 Ferrari Designation and Numbering

Introduction

To many owners of Ferraris the fact that their car has a chassis and engine number is of small consequence. But to those whose lives are bound up in the marque these numbers are of the utmost significance for they are a means of identifying all Ferraris and, perhaps more importantly, identifying the earlier and in some instances rarer models, many of which command high prices.

Today these numbers are of even greater importance with the increase in Ferrari replicas or 'look-alikes' which are beginning to invade the market. Possibly the best known of all models, the 1963-4 250GTO (of which 36 were built plus those with 4-litre engines), is the main target of those building replicas. Replica bodies of the GTO are being built on the Datsun Z series chassis, and on the tipo 250GTE chassis, and some of the latter are also powered by the 250GTE engine. It is in this respect that the chassis and engine numbers of the 39 GTOs built are of the utmost importance; otherwise future buyers of these rare and unique models may find that the GTO they have purchased is not genuine. The GTO is not the only model which is being misrepresented – another is the 250 Testa Rossa. So it is essential that anyone buying one of the older cars of the marque should make certain that it bears a factory chassis/engine number.

It is not only in the realm of the replica that the buyer should look carefully at the chassis/engine number. In 1968 the factory produced the 365GTB/4 or Daytona (to give the model its common name); it was originally a berlinetta but in 1971 a spyder model was marketed with an estimated production limit of around 125. For some reason – perhaps because of its outstanding aesthetic appeal – the spyder has a higher value in the market place than the berlinetta, which prompted a number of berlinetta owners to have their cars 'decapitated', converting them into spyders. Apart from the chassis numbers it is extremely difficult to tell which is a genuine factory spyder and which is the pseudo model. But perhaps this point is not so critical in assessing which is which as it is when dealing with replicas which are not genuine factory cars.

Model Designation

To deal with Ferraris is to deal with a bewildering array of numbers, of which the serial numbers are only one, albeit very important, part. The first set of numbers that a Ferrarist should be acquainted with is the model designation. Before the advent of the Mondial 8 in 1980 the model designation numbers always gave some clue as to the displacement of the engine. Over the years, Ferrari has used 3 such numbering systems, on occasion all 3 at the same time, and 2 of them are still in effect.

The original model designation number was nothing more than the displacement of 1 cylinder of the engine. Thus a V-12 166 was, in round figures, a 2-litre ($166 \text{ cc} \times 12 = 1,992 \text{ cc}$); a V-12 250 was a 3-litre; a 330 V-12 was a 4-litre, etc. Today this system can be seen in the 400i, a V-12-engined model with a displacement of approximately 4.8 litres. This same system was also applied to the first non-V-12 Ferraris. So the 4-cylinder 500 was a 2-litre; the 4-cylinder 750 was a 3-litre, etc.

The second system of model designation numbers came along with the 6- and 8-cylinder models. This system used the displacement of the engine as a whole and the number of cylinders of the engine. Hence a 206 was a 2-litre V-6; 246 was a 2.4-litre V-6; 248 was a 2.4-litre V-8, etc. Today this system can be seen in the 308 series, V-8s with 3-litre displacements; and the 512 BBi, a 5-litre 12-cylinder.

Finally, there was a system that used only the total engine displacement as the basis for model designations. It was used only twice. First came the 400 Superamerica, a 4-litre, or 4000 cc, V-12; second was the 500 Superfast, a 5-litre V-12. No Ferrari today uses this system.

The problem for the barely initiated Ferrarist is the fact that it is not always clear which system has been used as quite dissimilar models have quite similar designations, and quite similar models have quite dissimilar designations. The 166 V-12 2-litre shares its number with the 166 V-6 1.6-litre. The 400SA and 400GT have, respectively, displacements of 4 litres and 4.8 litres for their V-12s, while the 400SA and 330GT have identical bore and stroke (and hence displacement) dimensions. The 410SA and 500SF also have identical bore and stroke dimensions, while the 500TR and 500SF have, respectively, displacements of 4.8 litres and 5 litres for their engines. So an

understanding of where the numbers came from is only the first step in understanding the actual meaning of the numbers. Familiarity with the models themselves is required to understand the numbering system completely. Fortunately the average Ferrarist is concerned only with the more common production types, and need not worry whether or not the 446S and 735LM are one and the same.

The letters used in model designation should also be considered. Again, these letter and occasional number suffixes do not follow a perfect pattern, so familiarity is necessary here too. In general the letters are abbreviations for longer word designations. GT, of course, stands for gran turismo. A letter added to the GT indicates the type of grand touring car – B for berlinetta, C for coupé, S for spyder. In the competition cars such letters as LM for Le Mans, S for sport, SP for sports/prototype, P for prototype, MM for Mille Miglia, etc., were used.

Numbers used as suffixes indicated either the seating capacity (i.e. 2+2) or the number of camshafts in the engine (i.e. 4 = 4 cams). For instance, in the 365 series of V-12-engined Ferraris, there was the 365GT 2 + 2, a 4.4-litre gran turismo seating 4 people; the 365GTC, a 4.4-litre gran turismo coupé; the 365GTS, a 4.4-litre gran turismo spyder; the 365GTB/4, a 4.4-litre gran turismo berlinetta with a 4-cam engine; the 365GTC/4, a 4.4-litre gran turismo coupé with a 4-cam engine; the 365GT4 2 + 2, a 4.4-litre gran turismo with a 4-cam engine seating 4 people; and a 365GT4/BB, a 4.4-litre gran turismo with a 4-cam boxer engine and berlinetta body.

But the system was not always applied so consistently. Otherwise, the 308GTB would be the 308GTB/4 or the 5-litre Berlinetta Boxer would be the 415GT4/BB. Sometimes rules and regulations kept the system from functioning. The 250LM actually had a 275 or 3.3-litre engine in it, but hassles over homologation meant the original designation remained. The 'Daytona Spyders' brought to the United States were actually designated as 365GTB/4 on the data plates, not 365GTS/4, since only the 365GTB/4 model was certified, although none of the pollution and safety equipment varied between the 2 models.

Chassis numbers

Over the years Ferrari has also used 3 numbering systems for chassis numbers. Two of them date back to the very earliest days, although it appears that at first Ferrari considered numbering each type separately, as seems to

have been done with the formula monopostos, the first 3 cars, 1C, 2C and 3C, and the first batch of 166 Spyder Corsas, 002 through 018 (or 020, 022, 024). Following these early experiments, systems of numbers were used. Odd numbers were assigned to 'street' vehicles and even numbers to 'racing' vehicles. As with all previous numbering systems discussed, this too was not consistent in its application. Some very 'ordinary and mundane' Ferraris wound up with even numbers and some potent machinery got odd numbers. But in general the system was applied as described. Since Ferrari's production of street and racing cars was, in the early days, almost equal, the numbers did not get too far out of alignment. Chassis number 0672, a 625-engined Testa Rossa, was completed in February 1957; chassis number 0677, a 250GT, was completed in March 1957. There soon developed a disparity, however, and when the first 250P, 0810, was being built in the winter of 1962/3 the production car numbers had already passed the 4001 mark!

The numbers were assigned to chassis in more-or-less straight numerical order. They were *not* assigned in batches. For example, consider the following sequence of 10 production Ferraris from 1960:

- 2001 – 250GT swb berlinetta
- 2003 – 250GT Pininfarina coupé
- 2005 – 250 Pininfarina cabriolet
- 2007 – 250GT Pininfarina cabriolet
- 2009 – 250GT swb berlinetta
- 2011 – 250GT Pininfarina cabriolet
- 2013 – 250GT Pininfarina cabriolet
- 2015 – 250GT swb Spyder California
- 2017 – 250GT Pininfarina coupé
- 2019 – 250 Pininfarina coupé

The third system of chassis numbering was introduced with the Dinos, and once again an even-number system was used – not to be confused with the 'racing car' numbering system. To avoid confusion, once the production of Dinos began they were given a 5-digit number, i.e. 00404. This system was continued right on through the 246 and Dino 308GT4 series, and then was dropped. Today all Ferraris being produced are numbered in the odd-number system only. While the 308GT4 was numbered in the even-number system, because at the time it was looked upon as being part of the possible marque 'Dino' series, when the 308GTB came out that was added to the odd-number system, and now 328s, Mondials, Boxers, and 400s are all being

numbered together, just like the example above of the first 10 cars with 2XXX numbers.

Theoretically, since the numbers are being assigned in sequence, the higher the chassis number, the later the car was produced. But keep in mind the fact that the numbers are (or at least were in the 'old days') assigned when construction of the chassis began, not when the car was completed. Since some cars took longer to build than others, some discrepancies can be noted. As an example, chassis number 6529, a 275GTB, was completed in January 1965. Number 6303, a 500 Superfast some 114 numbers earlier, was not completed until May 1965. While you might think that such discrepancies would not exist today since custom work, such as was applied to the 500 Superfast, is no longer done, consider the case of the first USA-certified 308 Quattrovalves to reach the American dealers' showrooms. They carried chassis numbers in the 41XXX range and plates in the doors that said they were manufactured in February 1983. But 512 BBis and 400is with chassis numbers in the 44XXX and 45XXX range were already in the USA by February 1983, thanks to the 'Grey Market'. Future Ferrari historians may go insane trying to figure out how 308 production jumped from the 41XXX range in February to the 46XXX range in March of 1983: that is a span of 2500 cars in one month!

Vehicle Identification Numbers

A further complication involving chassis numbers has come about because of the internationally agreed vehicle identification number. This is the 17-digit number that is commonly referred to as the 'VIN'. Ferrari, of course, have to comply with this system of numbering and as a result all Ferraris now being made have this lengthy alpha-numeric identification. Each part of the VIN has a specific meaning based on 3 sections. For example, the VIN used by Ferrari to illustrate the system in their Service Bulletin SB 00-6, dated 7 March 1980, was ZFFAA01A1A0021371. The explanation is as follows:

First section, 3 digits, identifies the manufacturer. Ferrari was assigned 2 sets of 3 digits: ZFF for Ferrari vehicles; ZDF for Dino vehicles.

Second section, 6 digits, identifies the model. The first digit in this section identifies the engine. In the example above, A=3-litre V-8 fuel-injected, meeting 1980 USA emission specifications. The second digit identifies the restraint system. In the example above, A=3 point seat belts with automatic retractors. The third and fourth digits identify the model

designation. In the example above, 01=308 GTBi. The fifth digit identifies the market designation. In the example above, A=LHD North American market. The sixth and final digit of this section is something called the 'USA Check Digit' and it is 'prescribed by the USA' but what it means is a mystery, having noted a wide range of numbers here but no pattern. On the non-USA cars a 0 is found here.

Third section, 8 digits, identifies the specific car. The first digit in this section identifies the model year, starting with A for 1980, then B for 1981, and so on. On the non-USA cars a 0 is found here, making all the 'Grey Market' cars 1994 models. The second digit identifies the production plant. Since Ferrari has only 1 production plant, a 0 is used here. Finally, digits 3 to 8 are the chassis number, the same number that Ferrari has been using all along. (It should be pointed out, by the way, that S/N21371 used in the example above is not a 1980 308GTBi!)

Type numbers

The fourth set of numbers that pertain to Ferraris, and which cause some confusion, are the type numbers. Here once again there have been 3 systems used at Ferrari. Originally the type numbers and the model designations were the same. Hence a 166MM is identified as having engine type 166M and chassis type 166M. But in the early 1950s a new system of type numbers, or design numbers, was instituted. Engine type numbers started with 100, and chassis type numbers with 500 (or 501?) and each new design was assigned the next number, while letter suffixes were used to indicate minor differences not deemed worthy of a complete new type number. Again, as an example, a 250GT Pininfarina coupé, chassis number 1063, has in it a motor type 128D and a chassis type 508D. The third system of type numbering appears to have been an innovation of the Fiat control, as it first appears in the early 1970s. The last Ferrari production model using the old system of type numbers on record was the 365GTC/4. It was engine type 260 and chassis type 616. In the new system it became F101AC. While all of the intervening numbers between 100 and 260, and 500 and 616, were probably assigned, many of them never saw production, or were designs for racing cars, or were simply 'experimental'. A few found their way into quite common usage. Ever wonder why the 250GTE 2+2 had the 'E' in there? It originally was built using chassis type 508E and engine type 128E.

The 146S or 735LM designations mentioned earlier? They are better known by the engine type number, 121LM!

If you have stuck with this bewildering and benumbing barrage of numbers this far, you are probably beginning to wonder what the point of all this is. It is, quite simply, an attempt to make you aware of the numbers so that you will better understand the Ferrari you own, or be more knowledgeable when you go to buy a Ferrari. Checking the numbers on a Ferrari can be as important as checking the compression of the engine or the synchros in the gearbox, and failure to check them can be as expensive.

Number Locations

On the older cars, the numbers can be found in at least 3 places. The chassis number is stamped somewhere on the chassis itself. It varies from model to model, and even within a particular model. One particular 250GT defied efforts to locate its chassis number on the chassis. It should have been, or so the 'experts' claimed, on the left main chassis member in the engine compartment. It was found on the right side – but only after the Houdaille shock absorber was removed! It had been stamped in a location that was completely hidden when the shock absorber was installed.

The chassis number is also, on the older cars, stamped on the engine block. The usual location for this is on the right rear of the engine, on a raised boss. On some cars it is also found on the timing case at the front of the engine, or on the front of the block between the heads. Keep in mind the fact that this is the *chassis* number, and it was stamped on to the block after the engine was assembled and tested. During the assembly and testing the engine went by another number, sometimes referred to as the 'block number' or the 'internal number'. Once the engine was assigned to a chassis, then and only then was it stamped out with that chassis's number. So if the Ferrari in question has a number on the engine that does not match the number on the chassis, then it is not the original engine. A consideration that can be and has been argued is the importance of these numbers matching. To some people and on some models it can be extremely important; to others and in other instances, it can be virtually ignored. Of course, it is possible to counterfeit the number on the block, and the only check against this is the 'numero interno'. Finally, be aware of the fact that, in the early 1970s, during the



production run of the 365GTB/4 and 365GTC/4, engine blocks stopped being stamped with the chassis number. So on the majority of Ferraris, the question of matching numbers is of no concern.

Finally, the chassis number on older cars can also be found on the data plate located in the engine compartment, on one of the panels. There are 3 blanks on the data plate – 'Type', 'Engine', and 'Chassis'. Over the years different procedures were followed in stamping the data to fill the blanks. Under 'Type' might be found the chassis type number, the engine type number (or both), or the model designation. Under 'Engine' might be found the engine type number or the chassis number as stamped on the engine. Under 'Chassis' the chassis number appeared, sometimes alone, sometimes also with the model designation.

On Ferraris made for the USA market from the late 1960s to the present, as well as later non-USA cars, the model designation and the chassis number can also be found on the raised boss on the steering column (by DOT standards, it must be visible from the outside

Above: Neat and uncluttered placement of 308GTSi rear lamps.

left windshield post). Also on the cars made for the USA market the same information plus the date of manufacture is stamped on a plate located inside the left door, usually on the door jamb but on the 365GT 2+2 it is on the door itself. Again, this was mandated by the USA laws, and it basically states that the vehicle was manufactured to conform with the standards in effect on the date of manufacture.

On the newest Ferraris there are no data plates in the engine compartments, but the vehicle type (using the Fiat system or F 1XX number) is stamped on some part of the chassis, as well as the chassis number itself. Also, stamped somewhere on the engine is the engine identification number although, of course, it is no longer the same as the chassis number, so correlating the engine and chassis numbers to check originality is impossible.

It is not all that difficult, therefore, for even the average enthusiast fully to identify a particular Ferrari.

Appendix 2 Designers and bodybuilders

Over the years a number of coachbuilders have put their interpretations of what a Ferrari should look like on the bare chassis. In the early days Ferrari was not 'contracted' (if that is the right word) to one designer or bodybuilder. Perhaps that was as well, otherwise the marque might have had a progressive sameness down the years, whereas one can generally pinpoint a design as coming from a particular designer or coachbuilder.

The firms responsible for designing and in some instances producing the bodies are as follows:

Allemano of Turin was responsible for a few of the early road cars but quickly faded from the scene.

Bertone, also from Turin, built some bodies for the early cars such as the 166 and early 250s but was not heard of again until commissioned to design a body for the 308GT4 2+2. The firm was also responsible for the 308 Rainbow – a one-off with angular lines.

Vignale built a great many of the early Ferraris, most of which were, however, designed by Giovanni Michelotti who had his studio in Turin. The early cars certainly had a great appeal but, at times, Michelotti 'ran' a little wild with quite unnecessary embellishments. The last Ferrari from Vignale was around the mid-fifties and in 1969 the firm was taken over by Ghia.

Touring of Milan was certainly the most important of the early Ferrari coachbuilders. Surprisingly the firm was set up in 1926 by 2 lawyers. Their speciality was producing lightweight bodies. The most notable cars were the early barchettas which are much prized today as are some of the berlinettas with their sleek lines. On occasions the designs were not worthy of a Ferrari. The last design produced by the 'house' was for the 500TR.

Stabilimenti Farina, an old firm established in 1905, was responsible for some, but not many, of the early Ferraris. It ceased operating in the early fifties.

Ghia of Turin was another old firm. Founded in 1915, it was run by Mario Boano after Giacinto Ghia died in the forties. Many early Ferraris were designed and built by the firm. However, the designs became too Americanized in the mid-fifties. The firm was finally bought out by Ford.

Boano started in 1954 after Mario Boano had

left Ghia in 1953. Mario was in partnership with his son Gian Paolo and was responsible for building the early 250GT coupé designed by Pininfarina and a number of one-off bodies. Boano seemingly did not want his work to be recognized as he never identified it with a logo!

Ellena was formed when Mario Boano went to Fiat and his partner Luciano Pollo and Mario's son-in-law (Ezio Ellena) took over the Boano business. The only work the firm did for Ferrari was the completion of the 250GT coupés designed by Pininfarina.

Motto of Turin is included in the list although he only built a berlinetta on an early 166 chassis.

Ghia S.A., a Swiss firm and in no way connected with the other Ghia, built a few bodies on Ferrari chassis, the designs of which were the work of Michelotti.

Fantuzzi was responsible for a number of the bodies of the sports racing cars during the sixties.

Zagato, an old firm of coachbuilders responsible for some famous designs, also built a few one-off bodies on the 250 series.

Viotti is credited with building some designs from Michelotti on early Ferrari chassis.

Scaglietti is renowned for translating most of the Pininfarina designs for Ferrari. The firm is now controlled by Ferrari.

Pininfarina has been dealt with elsewhere. The company was Ferrari's chief designer for many years and was responsible for a number of exotic show cars which were never translated into reality.

There were and are a number of body 'shops' and design centres which have customized Ferraris over the years – usually taking used cars as a basis. Such are Drogo, Neri and Bonacini, and at one time the American Tom Meade designed and built some occasionally exotic and aesthetically pleasing designs on Ferrari chassis for customers.

Below: 308 Rainbow. A one-off angular design by Bertone.



Appendix 3 Ferrari Race Drivers (Formula 1 and 2)

With 38 years of racing his own cars, including the short interlude when the D50 Lancia works cars were handed over to the Scuderia, Enzo Ferrari has engaged a considerable number of drivers. Some were on short-term contracts (for a race or 2), while others remained with him for many years and would, no doubt, have stayed longer if they had not been killed at the wheel during racing, practice or testing.

Ferrari has for years been the target of a certain acrimony from the always-partisan Italian national press which felt that he frequently ignored Italian drivers while offering contracts to drivers from other countries. But Ferrari has the capacity to brush off criticism from whichever quarter it may come. For all that he has had under contract, at one time or another, no less than 22 Italians and this figure excludes the drivers engaged for sports and gran turismo racing.

Of the short-term contract drivers Cesare Perdisa drove a mere 33 laps in the 1957 Argentine Grand Prix before he handed over the Lancia-Ferrari which he shared with Wolfgang von Trips and Peter Collins. In 1948 at the Penya Rhin Grand Prix on the Pedralbes circuit Julio Pola took over Raymond Sommer's 125F1 (Sommer was unfit to drive). Like Farina and Bira he retired, but in his case it was a question of over-revving the engine. Masten Gregory had a fortuitous ride at the 1957 Buenos Aires City Grand Prix. The temperature, at track level, was 140 degrees Fahrenheit and, overcome by the conditions in the first heat (it was a 2-heat race) Peter Collins came in and handed over to Gregory who was not under contract. The Englishman Stuart Lewis-Evans did have a contract and while he had tested a grand prix car at Monza and was due to take a seat in a Lancia-Ferrari for the 1957 French Grand Prix at Rouen, he found on arrival at the circuit that Maurice Trintignant had been given his car. No doubt disgusted at this treatment, Lewis-Evans decided to 'walk away' from the Ferrari set-up.

Ferrari had, over the years, made a number of overtures to Stirling Moss, including an invitation to drive for the Scuderia in the 1951 British and French Grand Prix. However, he had a commitment to drive a HWM F2 car at Avus on the same day as the French event but agreed to drive in the British Grand Prix. In his perverse way Ferrari decided that if Moss

wouldn't commit himself to the 2 races he didn't want him! Later Moss was invited to Modena to sign a contract to drive the prototype 4-cylinder 2.42-litre 625F1 at Bari. It is said that Moss 'blew' the engine while testing with the result that he was asked to pack his bags. Piero Taruffi was given the drive and brought the car home third behind 2 375F1s. In 1962 Ferrari and Moss agreed to forget their past differences and Moss was promised a drive in the V-6 156F1 which would be painted in Rob Walker's livery of blue. Unfortunately, before he could take his seat, Moss had a horrific accident at the Goodwood Easter Monday meeting in 1962. As a tribute, and perhaps to show good faith, Enzo Ferrari loaned one of the 65 degree 156F1 cars to the UDT-Laystall team (who had connections with Rob Walker) to be driven by Innes Ireland in the Daily Express Trophy race at Silverstone. Ireland made fourth place in the race which was run in the wet.

The list of drivers who have had contracts from 1948 up to the end of the 1985 season follows in alphabetical order:

Alboreto, Michele (It.) 1984, 1985
 Allison, Cliff (Br.) 1959, 1960
 Amon, Chris (NZ) 1967, 1968, 1969
 Andretti, Mario (USA) 1971, 1972, 1982
 Arnoux, Rene (Fr.) 1983, 1984, 1985
 Ascari, Alberto (It.) 1949, 1950, 1951, 1952, 1953, 1954
 B. Bira (Sia.) 1948
 Baghetti, Giancarlo (It.) 1962
 Bandini, Lorenzo (It.) 1962, 1963, 1964, 1965, 1966, 1967
 Bell, Derek (Br.) 1968
 Bondurant, Bob (USA) 1965
 Behra, Jean (Fr.) 1959
 Brambilla, Ernesto (It.) 1968 (F2 only)
 Brooks, Tony (Br.) 1959
 Castellotti, Eugenio (It.) 1955, 1956, 1957
 Carini, Piero (It.) 1953
 Collins, Peter (Br.) 1956, 1957, 1958
 De Adamich, Andrea (It.) 1967, 1968
 De Portago, Alfonso (Sp.) 1956, 1957
 Fangio, Juan Manuel (Arg.) 1956
 Farina, Giuseppe (It.) 1948, 1952, 1953, 1954, 1955
 Frere, Paul (Bel.) 1955, 1956
 Galli, Nanni (It.) 1972
 Gendebien, Oliver (Bel.) 1956, 1957, 1958, 1959, 1961
 Ginther, Ritchie (USA) 1960, 1961

Giunti, Ignazio (It.) 1970
 Gonzales, Froilan (Arg.) 1951, 1954, 1955, 1957, 1960
 Gregory, Masten (USA) 1957
 Gurney, Dan (USA) 1959
 Hawthorn, Mike (Br.) 1953, 1954, 1955, 1957, 1958
 Hill, Phil (USA) 1958, 1959, 1960, 1961, 1962
 Ickx, Jacky (Bel.) 1968, 1970, 1971, 1972, 1973
 Johansson, Stefan (Swed.) 1985
 Lauda, Niki (Aus.) 1974, 1975, 1976, 1977
 Maglioli, Umberto (It.) 1953, 1954, 1955
 Mairesse, Willy (Bel.) 1960, 1961, 1962, 1963
 Manzon, Robert (Fr.) 1954
 Merzario, Arturo (It.) 1972, 1973
 Musso, Luigi (It.) 1956, 1957, 1958
 Parkes, Mike (Br.) 1966, 1967
 Perdisa, Cesare (It.) 1957
 Pilette, Andre (Bel.) 1956
 Pironi, Didier (Fr.) 1981, 1982
 Pola, Julio (Sp.) 1948
 Regazzoni, Gianclaudio (Clay) (Switz.) 1970, 1971, 1972, 1974
 Reutemann, Carlos (Arg.) 1976, 1977, 1978
 Rodriguez, Pedro (Mex.) 1965, 1969
 Rodriguez, Ricardo (Mex.) 1961, 1962
 Scarfiotti, Ludovico (It.) 1963, 1966, 1967
 Schell, Harry (Fr./US) 1955
 Schekter, Jody (SA) 1979, 1980
 Scoti, Piero (It.) 1952
 Serafini, Dorino (It.) 1950, 1951
 Simon, Andre (Fr.) 1952
 Sommer, Raymond (Fr.) 1952
 Surtees, John (Br.) 1963, 1964, 1965, 1966
 Tambay, Patrick (Fr.) 1982
 Taruffi, Piero (It.) 1950, 1951, 1952, 1953
 Trintignant, Maurice (Fr.) 1954, 1955, 1957
 Vaccarella, Nino (It.) 1965
 Vallone, Roberto (It.) 1950
 Villoresi, Luigi (It.) 1949, 1950, 1951, 1952, 1953
 Villeneuve, Gilles (Can.) 1977, 1978, 1979, 1980, 1981, 1982
 von Trips, Wolfgang (Ger.) 1956, 1957, 1958, 1959, 1960, 1961
 Williams, Jonathan (Br.) 1967

Opposite, above left: 'New boy' for 1985 Ferrari team – Stefan Johansson.

Opposite above right: Didier Pironi (British Grand Prix, Silverstone, 1981).

Opposite below: Michele Alboreto joined the Ferrari team in 1984.



Division of drivers by nationality

Italian	22
British	8
USA	6
French	8
Belgian	5
Spanish	2
Argentine	3
German	1
Mexican	2
Austrian	1
New Zealand	1
Siamese	1
Franco/USA	1
Swedish	1
Swiss	1
Canadian	1
South African	1
Total	65



Appendix 4 Ferrari championship and classic race wins

Ferrari cars have been in motor competition continuously since 1947 – not only in Formula 1 and Formula 2 but in sports car and gran turismo racing too. In fact it is estimated that Ferraris have been involved in a total of over 5000 races with cars from the factory, concessionaires and private entrants.

Up to the present time the marque has 24 World Championships to its credit.

Drivers' World Championship

This championship was instituted in 1950 and has been won by the following Ferrari drivers:

1952	A. Ascari	Type 500F2
1953	A. Ascari	Type 500F2
1956	J. Fangio	Ferrari-Lancia D50
1958	M. Hawthorn	Dino 246
1961	P. Hill	Dino 156
1964	J. Surtees	Type 158
1975	N. Lauda	312T
1977	N. Lauda	312T2
1979	J. Scheckter	312T4

Formula 1 Manufacturers' Championship

It is not quite certain when this championship was first instituted as various sources give conflicting dates. Whatever the year, however, Ferrari's first win was in 1952.

1952	Type 500F2
1953	Type 500F2
1956	Ferrari-Lancia D50
1964	Type 158
1975	312T
1976	312T/312T2
1977	312T2
1979	312T4
1982	126C2
1983	126C3

World Sports Car Championship

This championship started in 1953 and continued through to 1961 when it was replaced by a number of championships, first for gran turismo cars where Ferrari was successful in 1962 and 1963. The championship then included prototypes for either gran turismo or sports racing cars and again Ferrari was the leading constructor for 1962, 1963, 1964, 1965, 1967 and 1972.

1953	340MM, 375MM
1954	375MM, 500 Mondial, 375 Plus, 750 Monza
1956	860 Monza, 290MM
1957	290MM, 335 Sport, 315S
1958	250 Testa Rossa
1960	250 Testa Rossa, Dino 246
1961	250 Testa Rossa, Dino 246SP

Classic races

Certain races in the calendar could be considered as classics. Ferrari has had his share of winners in these as the following tables show:

Sebring 12 Hours

1956	Fangio/Castellotti	860 Monza
1958	Collins/P. Hill	250TR
1959	P. Hill/Gendebien	250TR
1961	P. Hill/Gendebien	250TR
1962	Bonnier/Bianchi	250TR
1963	Surtees/Scarfiotti	250P
1964	Parkes/Maglioli	275P
1970	Giunti/Vacarella	512S
1972	Ickx/Andretti	312P

Mille Miglia

1948	Biondetti/Navone	166MM
1949	Biondetti/Salani	166MM
1950	G. Marsotto/Crozara	195S
1951	L. Villoresi/Casani	340 America
1952	G. Bracco/Rolfo	250MM
1953	G. Marsotto/Crozara	340MM
1956	Castellotti	290MM
1957	Taruffi	315S

Targa Florio

1948	Biondetti/Troubetskoy	166MM
1949	Biondetti/Benedetti	166MM
1958	Musso/Gendebien	250TR
1961	von Trips/Gendebien	246SP
1962	Mairesse/Rodriguez/Gendebien	246SP
1965	Vacarella/Bandini	275P2
1972	Merzario/Munari	312P

Nurburgring 1000 Km

1953	Ascari/Farina	375MM
1962	P. Hill/Gendebien	246SP
1963	Surtees/Mairesse	250P

1964	Scarfiotti/Vacarella	275P
1965	Surtees/Scarfiotti	330P2
1972	Peterson/Schenken	312P

Le Mans 24 Hours

1949	Chinetti/Selsden	166MM
1954	Gonzales/Trintignant	375 Plus
1958	P. Hill/Gendebien	250TR
1960	Frere/Gendebien	250TR
1961	P. Hill/Gendebien	250TR
1962	P. Hill/Gendebien	330P
1963	Scarfiotti/Bandini	250P
1964	Guichet/Vacarella	275P
1965	Gregory/Rindt	250LM (NART car)

Ferrari also made 2 forays into the European Hill Climb Championship and was successful on both occasions. In 1965 Ludovico Scarfiotti won with the Dino 206S and in 1969 Peter Schetty took the championship with a 212E.

Appendix 5 Ferrari engines

The Colombo and Lampredi V-12s

A Ferrari is an engine, a point which has been made clear on many occasions over the years by Ing. Enzo Ferrari, and in the eyes of many Ferrari enthusiasts there is but one engine – the V-12. All this started from the single-overhead-camshaft 1947 cc Type 125GT V-12 designed in 1946 by Ing. Gioacchino Colombo. With its modest output – 72 bhp at 5400 rpm – detachable cylinder heads, generator and place for a starter on the block, it was clearly linked to the 'GT' aspect in its designation. It had, however, been designed for high-performance sports racing applications and, with the addition of a supercharger, for the Formula 1 cars of the day.

The 12 cylinders formed a 60 degree 'V' and a 20 mm offset between the banks allowed the use of side-by-side connecting rods. Spacing between the bore centres was 90 mm. The cylinder heads, block and crankcase were made from a copper-aluminium alloy – variously called Silumin or Siluminium – with shrunk-in cast-iron cylinder liners which were held in compression by the cylinder heads. The latter carried the single overhead camshafts which ran in 6 bearings and actuated the valves by finger follower rocker arms. There were 2 hairpin springs per valve and the included angle between the 2 valves was about 60 degrees. The almost hemispherical combustion chambers had a 14 mm spark plug on the inlet side. There were 6 exhaust ports for each head but the intake ports were paired with each port serving 2 adjacent cylinders – a feature that favoured supercharging rather than normal aspiration. To bolt the heads to the block there were 3 studs per cylinder.

The aluminium pistons were fitted with 2 compression rings and 2 oil rings. The connecting rods, which were H-section, were short and strong and made from forged steel; the big ends were split at an angle of 40 degrees which allowed them to be removed from above in the original engines which had a bore of 55 mm.

The crankshaft (nitride-hardened) had 7 main bearings and, as was the case with cranks turned out by the factory, was made from a solid billet of steel. The throws were at 120 degrees. A shallow aluminium sump had internal baffles to lessen oil surge and was externally finned to allow for adequate cooling.

Two magnetos placed horizontally and driven from the rear of the camshafts on the early engines provided the ignition. When coil ignition was introduced, 2 distributors were mounted at the forward end of the timing case on most of the early models. Distributor positioning has varied on Ferrari engines through the years.

The 'standard' Colombo engines changed in basic architecture only in 1963 when a new cylinder block with 94 mm bore centres became necessary to meet increased displacement. Up to that point the engines of that family had been successive modifications of the original 125GT through increases in bore and stroke dimensions to enlarge the displacement and detail design improvements to improve efficiency. They were produced in displacements from 1.5 to 4 litres and with power ratings ranging from 72 to over 400 bhp (in racing versions). The last manifestation of the series was the engine for the 275GTB/4 introduced in 1966. With the increase in bore centre dimension introduced in 1963, their displacement was taken up to 4.4 litres.

A second family of V-12 engines, the 'long-block' versions – so called because of an increase in the bore centre dimension to 108 mm – came about through the designs of Aurelio Lampredi. Lampredi had originally worked with Colombo on detail design work in connection with the first series of V-12s. Within regulations that allowed either 1.5-litre supercharged or 4.5-litre unsupercharged engines to be used in Formula 1 racing, Lampredi persuaded Ferrari that the normally aspirated engine was the more logical choice.

The design and building of the unblown 4.5-litre 60 degree V-12 was a major change in engine development not only for racing but also for the road-going Ferraris, although over the years both designs with modifications were to power the V-12 cars. Two of the main differences were the repositioning of the starter which was now fitted into the lower left-hand side of the clutch housing; and the circulation of oil by bolted-on pipes instead of cast-in passages in the block. Also wet cylinder barrels were screwed into the heads, making head gasket failure a thing of the past. Sealing at the base necessitated 2 O-rings for each liner near the bottom ends.

Because the bore centres were now 108 mm instead of 90 mm, the length of the block and cylinder head unit was 4 in. longer – 27.5 in.

instead of 23.5 in. – and the overall length was increased by 5 in. to 42 in. To permit side-by-side connecting rods in the cylinder blocks, they were offset by 22 mm to accommodate an additional 1 mm width of the rods.

The cylinder heads were light-alloy castings with inserted valve seats and the 2 valves per cylinder inclined at an included angle of 60 degrees as in the Colombo unit. Valves were still closed by twin hairpin springs but there were now 10 coils instead of 8.

Lampredi's crankcase was split on the centre line of the crankshaft which ran in 7 Vandervell bearings (these had also been used for the Colombo engines). These bearings gave greater efficiency, longer life and reliability. The front of the crankshaft drove a roller chain for the camshafts – there being a single camshaft for each bank of cylinders.

External identification of the engine is possible by the 7 studs along each side which hold down the cam covers: the Colombo unit has only 6.

The light-alloy pistons were steeply domed and the H-section connecting rods with horizontally split caps did not permit the piston and rod assembly to be withdrawn through the top of the block.

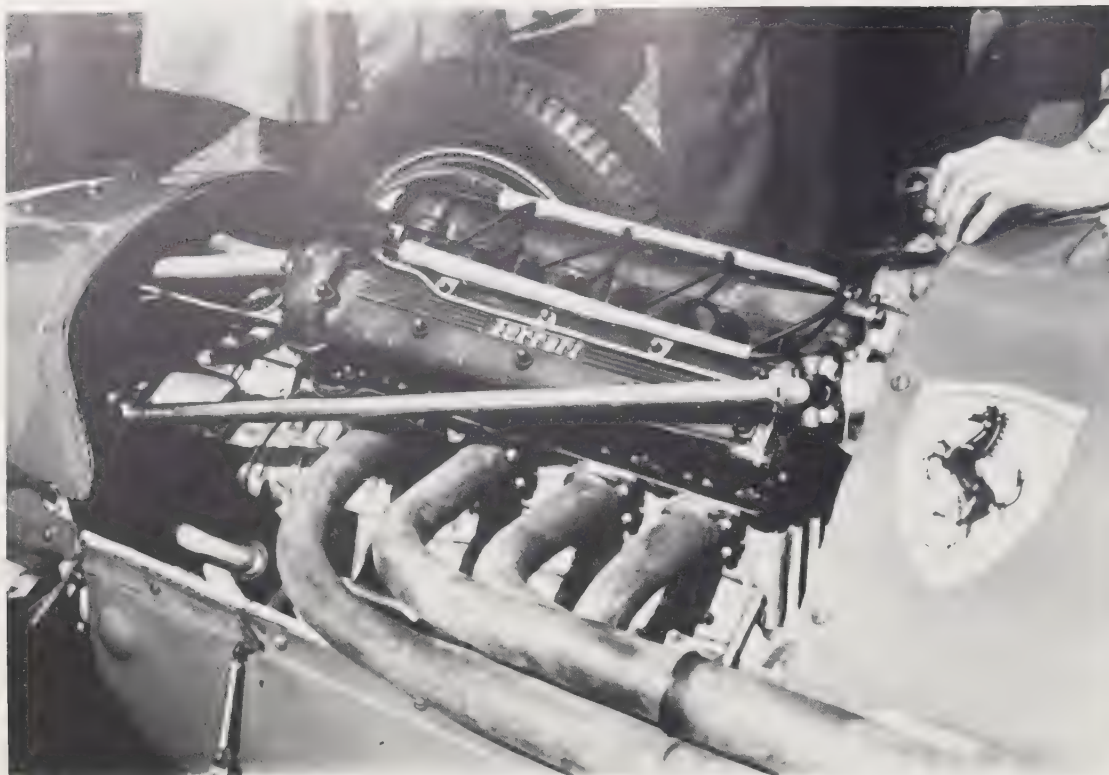
The main oil gallery, as noted, instead of being a cast-in channel as on the Colombo engines, consisted of a tube running rearwards from the oil pump at the front and secured to the main bearing caps through the use of hollow bolts.

These engines were introduced in 1950 with the 3.3-litre 275S – a sports car version – leading to the appearance of a full 4.5-litre GP version for the cars used in the Italian Grand Prix at Monza later in the year. Within the series there was produced the largest so far of Ferrari's engines, the 4961.57 cc unit that powered the 410 Superamerica series of GT cars introduced in 1956. The 'pure' Lampredi V-12s were used by Ferrari for less than 10 years but some of their features carried over into other engines.

Other configurations

Apart from the V-12 engines of Colombo and Lampredi there have been a number of other engine configurations.

The first departure from the 60 degree V-12 configuration came in 1951 with the 500F2, which was an in-line 4-cylinder with a bore and stroke of 90 mm × 78 mm (1984.85 cc). It had twin overhead camshafts, 2 valves per cylinder, 2 carburettors and developed 185



Above: Lampredi-designed 4-cylinder 500F2 engine – late 1953 version.

bhp. The engine was of the 'Lampredi' style – that is, with the cylinder liners screwed into the heads. It appeared in various displacements ranging from 2 to 3.4 litres, with power ratings as high as 280 bhp. Its final manifestation came in 1956 with the introduction of the 500 Testa Rossa. During the same timespan, a closely related series of in-line 6-cylinder engines was introduced. They appeared in the years 1954 to 1956 with displacements ranging from 2.5 to 4.4 litres and developing up to 360 bhp. These first in-line 4s and 6s were used only for competition cars.

A further group of in-line 4-cylinder engines came about during 1959 and 1960 when Ferrari engineers were developing the first 'small' Ferrari. The 3 engines, Types 854, 950 and 1000, were all single-camshaft, 2-valve, 2-carburettor versions. Their displacements ranged from 0.85 to 1 litre; their power from 68 to 98 bhp. The final design saw production not in a Ferrari but in the ASA Mille.

Ferrari's first V-6 engine was the 65 degree 156F2 of 1957. That engine and the subsequent group of V-6s – along with the closely related V-8s – were known as 'Dino' engines in honour of Enzo Ferrari's son Alfredo, also

called Dino, who had played an important role in their early design before his premature death in 1956. The V-6 was originally designed for Formula 1 with 1.9-, 2.2-, 2.4- and 2.5-litre versions in both 65 degree and 60 degree layouts. To meet the lower displacement limits put into effect in 1961, a new 1.5-litre V-6 was designed. That was seen in both 65 degree and 120 degree layouts.

The V-6 was also developed for sports car racing and eventually found its way into the GT Ferraris to power the Dino 206GT and Dino 246GT series of cars. The unit used was a 65 degree V-6, with twin overhead camshafts, 2 valves per cylinder and 3 2-barrel carburetors. While that use for the V-6 ended in 1964 with the phasing out of the Dino 246 series of cars, the engine as a type remained under development. In 1976 there was a 'Dino 206F2' engine with fuel injection and in 1977 the 'Dino 156/C' which was turbocharged, had 4 valves and 4 cams per cylinder and was fuel injected. Both of these were 65 degree V-6s. Finally, since 1980, Ferrari Formula 1 cars have been powered by 1.5-litre, 120 degree turbocharged V-6 engines.

The first Ferrari V-8 was the experimental 2.5-litre of 1956 which was followed in 1957 by the 298S, a 90 degree, V-8, single-camshaft engine, officially 2.9 litres but in reality closer

to being 3 litres. It also apparently never passed beyond the point of being experimental. The first effective use by Ferrari of a V-8 was in 1962 with the 248SP and 268SP sports prototype cars. For 1963 and 1964 there followed the 158F1 after which the V-8 format was dropped until 1974 when the Dino 308GT4 was introduced. The engine introduced then is still in production today, although in the course of time it has appeared with displacements of 2 litres (for the 208GT series of cars), 2.6 and 2.8 litres and now 3.2 litres for the just-introduced 328GT series. It has used both carburetors and fuel injection, 2 and 4 valves per cylinder and turbocharging. With its rated 400 bhp for the 288GTO it is the most powerful engine to be used in a production GT Ferrari.

The other major configuration used by Ferrari over the years has been the flat-12 cylinder – or, as it is sometimes styled, 180 degree V-12 – boxer engine. The first of these was the 512F1 engine introduced in 1964. It was a 1.5-litre and is not to be confused with the 4934 cc flat-12 engine introduced in 1976 for the BB512 series of GT cars. The flat-12 has been one of Ferrari's most successful racing engines. Examples of it have powered the all-conquering 212E hill-climb car, the 312PB sports racing cars and the 312B through 312T3 Formula 1 cars. It is still in use today in the GT Testarossa.

Two other configurations have appeared although neither went beyond the initial development stage. One was an in-line 2-cylinder – see 'Experimental engines' below – and the other a 'W'-format. The latter has been listed by Ferrari as '3 doppio V 89° + 80°' and is said to have had a displacement of 497.74 cc, a single camshaft per cylinder bank, and 2 valves per cylinder; to have been fuel injected and to have developed 80 bhp. [Editor's note: In the table of engine specifications below there is listed under the year 1969 a '318W', i.e. a 3-litre, 18-cylinder (6 banks of 3 cylinders) 'W'-format engine rated at 450 bhp. It looks as if the Ferrari data given above relates to a single bank of 3 cylinders and that development of the 'W' engine may not have progressed beyond that stage.]

The most powerful engine produced by Ferrari so far is the current Formula 1 unit with a rating of 780 bhp. The most powerful of the normally aspirated engines listed is the 1969 612 CanAm with its own 640 bhp, although it should be noted that for the Riverside event in the 1969 series the factory sent over what was reputed to be a 6.9-litre

engine. A piston collapsed during practice so the engine was not race run. It was re-installed for the final race in Texas but the same problem occurred in practice.

Experimental engines

Most of the experimental engine projects will be found in the table of engine specifications 1946-85 (overleaf) which have been taken from the official Ferrari records. However, there are a few projects which are of more than passing interest.

The 2-cylinder grand prix engine (252F1)

In 1954 the new Formula 1 category came into being for 2.5-litre cars and Lampredi came up with the 4-cylinder 625 which was not, however, a great success. But during the period of its race development in 1954 Lampredi designed (in 1955) the Type 116 engine – a 2-cylinder unit with a large bore/stroke of 118 mm × 114 mm giving a capacity of 2493 cc. A great deal of testing took place and a power output of 175 bhp at 4800 rpm was registered on the bench. The idea behind the project was to produce an engine with plenty of torque low down for the tighter circuits such as Monaco and which would also be much lighter in weight than the conventional grand prix cars. There were many problems to be solved, the main one being that of excessive vibration which could not be overcome since both pistons rose and fell together. The whole idea was then abandoned.

The 6-cylinder grand prix engine

For the faster circuits Lampredi experimented with a 6-cylinder unit (Type 115 engine) which was derived from the Type 114 engine (an experimental 3-litre sports car unit). The bore/stroke of 82.4 mm × 78 mm gave a displacement of 2495 cc. The power output was good, being 250 bhp at 6500 rpm, but overheating caused a great deal of distortion (the same problems had been encountered in the larger-capacity 6-cylinder units used in the sports racing cars). So this project was rejected.

The 1500 cc diesel

The idea behind this project is somewhat uncertain but at least one engine was completed and it is said that parts had been produced for some 20 units before Ferrari abandoned the project and handed over all the bits and pieces to the Maserati brothers!

The 1500 cc 8-in-line

In 1959 there were strong rumours that Ferrari had the idea of building an air-cooled engine for grand prix racing. He sounded out Ing. Taglietti, designer of the Ducati motorcycle concern, but this approach obviously was unfruitful as he then turned to Gilera whose 4-cylinder motorcycles had been supreme for a number of years.

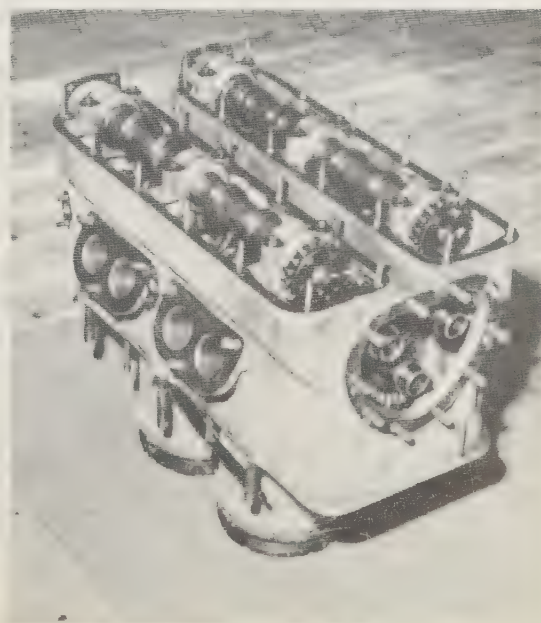
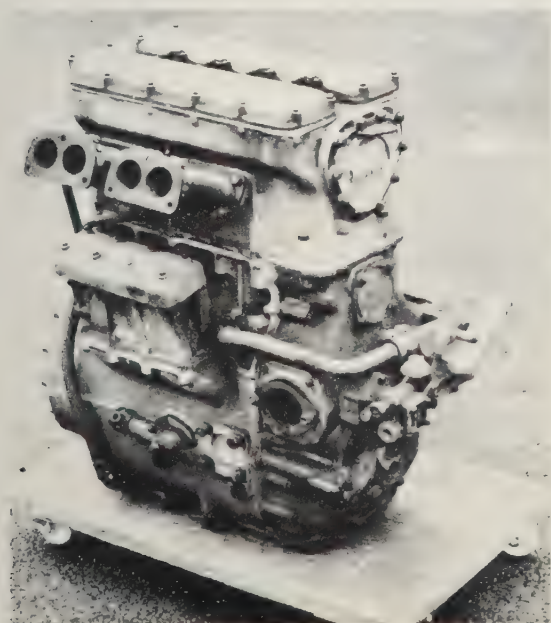
Gilera and Ing. Ferrari were old friends and no doubt the former encouraged Ferrari in the possible project. On the drawing board the idea seemed feasible. The straight-8 engine would have a displacement of 1500 cc (to

conform to the regulations) with twin overhead camshafts and desmodromic valve actuation. With 4 double-choke Weber carburettors it was estimated that the power output would be over 200 bhp at 11,000 rpm. Following the idea first tried on the Type 251 Bugatti, the engine would be placed transversely at the rear at a forward angle of 60 degrees. Lubrication would be dry-sump with an oil tank and oil radiator under the car's nose. The suggested wheelbase was 92.75 ins. and front and rear track both 47.3 ins. Dunlop disc brakes, fitted with an Italian anti-locking device, would be standard. The use of an air-cooled engine for grand prix racing was not new as Porsche had already proved its worth.

Powerboat engine

Ferrari toyed with the idea of producing an engine for a racing boat. It is understood that a 4-cylinder 2.7-litre unit was built with a bore/stroke of 99 mm × 99 mm, but once again the project was shelved. If he was serious about powerboat racing, Ferrari would have done better if he had followed 2 Australasians who used the normal grand prix engines – the 1.5-litre V-12 single-stage supercharged 125F1, the 2-litre V-12, the 3.5-litre (engine from the 1956 Swedish Grand Prix-winning car) and the 4.5-litre V-12 375F1 unit. This last engine won many races for the Australian Ernie Nunn with his hydroplane Wasp Two, on one occasion averaging 138.8 mph.

Below: Type 116F1 GP experimental engine.



Engine Specifications 1946-85

From official Ferrari records

Year	Type	No. Cyl.	Total cc	Eng. Type No.	B/S (mm)	Cam	Plugs/ Cyl.	CR	bhp	rpm	Ign.	No. and Type Carb./Fuel Feed
1946	125GT	V-12	1496.7	125	55×52.5	Si	1	8	72	5400	2D	3×30DCF
1947	125S	V-12	1496.7	125	55×52.5	Si	1	9	118	7000	2D	3×30DCF
	159S	V-12	1902.8	159	59×58	Si	1	8.5	125	7000	2D	3×30DCF
1948	166S	V-12	1995	166	60×58.8	Si	1	8.5	150	7000	2D	3×30DCF
	166MM	V-12	1995	166MM	60×58.8	Si	1	8.5	140	6600	2D	3×32DCF
	166 Inter	V-12	1995	166	60×58.8	Si	1	8	115	6000	2D	1×32DCF
	125F1	V-12	1496.7	125	55×52.5	Si	1	6.5	230	7000	2M	1×50WCF
	166F2	V-12	1995	166	60×58.8	Si	1	7	160	7000	2M	3×32DCF
1949	125F1	V-12	1496.7	125	55×52.5	Tw	1	10	260	7000	2M	1×Weber TR Choke
	125F1DD	V-12	1496.7	125	55×52.5	Tw	1	7	280	7500	2M	1×50WCF
	166FE	V-12	1995	166	60×58.8	Si	1	6.5	310	7000	2M	1×40DO3C
	166FELC	V-12	1995	166	60×58.8	Si	1	6.5	310	7000	2M	1×40DO3C
	166S	V-12	1995	166	60×58.8	Si	1	8	90	5600	2D	1×32DCF
	166MM	V-12	1995	166	60×58.8	Si	1	8.5	140	6600	2D	3×32DCF
1950	195S (MM)	V-12	2341	195	65×58.8	Si	1	8.5	160	7000	2D	3×32DCF
	275S	V-12	3322.3	100	72×68	Si	1	8	220	7200	2D	3×40DCF
	275F1	V-12	3322.3	100	72×68	Si	1	10	300	7300	2M	3×38DCF
	340F1	V-12	4104.6	101	80×68	Si	1	12	335	7000	2M	3×42DCF
	375F1	V-12	4493.7	102	80×74.5	Si	1	11	350	7000	2M	3×42DCF
	166 Inter	V-12	1995	166	60×58.8	Si	1	7.5	105	6000	2D	1×32DCF
	166MM	V-12	1995	166	60×58.8	Si	1	9.5	145	7000	2D	3×36DCF
1951	375F1	V-12	4493.7	102	80×74.5	Si	2	12	384	7500	4M	3×46DCF3
	166F2	V-12	1995.2	166	63.5×52.5	Tw	1	11	160	7200	2M	3×32DCF
	500F2	IL4	1984.9	131	90×78	Tw	1	12	170	7000	2M	2×50DCO
	212F1	V-12	2562.6	212	68×58.8	Si	1	12	200	7500	2M	3×32DCF
	195 Inter	V-12	2341	195	65×58.8	Si	1	7.5	135	6000	2D	1×32DCF
	212 Export	V-12	2562.6	212	68×58.8	Si	1	8	150	6500	2D	3×32DCF
	342 America	V-12	4104.6		80×68	Si	1	8	230	6000	2D	3×40DCF
1952	212 Export	V-12	2562.6	212E	68×58.8	Si	1	7.5	150	6500	2D	1×36DCF
	212 Inter	V-12	2562.6	212	68×58.8	Si	1	8	170	6500	2D	3×36DCF
	250 Europa	V-12	2963.4	103	68×68	Si	1	8	300	6300	2D	3×36DCF
	340 Mexico	V-12	4101.6		80×68	Si	1	8	280	6600	2D	3×40DCF
	340MM	V-12	4101.6		80×68	Si	1	8	280	6600	2D	3×40DCF
	342 America	V-12	4101.6	102 or 108?	80×68	Si	1	8	200	5000	2D	3×40DCF
	375 Indy	V-12	4493.7	108	80×74.5	Si	2	13	384	7500	4M	3×40IF4C
	250MM	V-12	2953.2	250/53	73×58.8	Si	1	9	240	7200	2D	3×36IF4C
	500F2	IL4	1984.9	131	90×78	Tw	2	12	180	7200	2M	2×50DCO
	225S	V-12	2715.4	225S	70×58.8	Si	1	8.5	210	7200	2D	3×36DCF
	735S†	IL4	2941.6		102×90	Tw	2	9	225	6800	2D	2×50DCOA
1953	212 Inter	V-12	2562.6	212	68×58.8	Si	1	8	170	6500	2D	3×36DCF
	250 Europa	V-12	2953.2	128B	73×58.8	Si	1	9	240	7000	2D	3×36DCF
	275MM	V-12	3322.3	100?	72×68	Si	1	8.5	270	7000	2N	3×40DCF
	375MM	V-12	4522.9	108	84×68	Si	1	9	340	7000	2M	3×40IF4C
	375 America	V-12	4522.9	108	84×68	Si	1	8	300	6300	2D	3×40DCF
	553F2	IL4	1997.2	105	93×73.5	Tw	2	13	190	7500	2M	2×50DCO
	340 Mexico	V-12	4101.6	101?	80×68	Si	1	8.5	280	6600	2D	3×40DCF
	625F1†	IL4	2498.3		94×90	Tw	2	13	240	7000	2M	2×50DCOA

<i>Year</i>	<i>Type</i>	<i>No. Cyl.</i>	<i>Total cc</i>	<i>Eng. Type No.</i>	<i>B/S (mm)</i>	<i>Cam</i>	<i>Plugs/ Cyl.</i>	<i>CR</i>	<i>bhp</i>	<i>rpm</i>	<i>Ign.</i>	<i>No. and Type Carb./Fuel Feed</i>
1954	700‡	IL4	2771.2		99×90	Tw	2	12	250	6800	2M	2×45DCOA
	250 Europa	V-12	2953.2	128	73×58.8	Si	1	8.5	220	7000	2Di	3×36DCF
	500 Mondial	IL4	1984.8		90×78	Tw	2	8.2	170	7000	2M	2×45DCOA/3
	750 Monza	IL4	2999.6	119	103×90	Tw	2	9.2	250	6000	2M	2×58DCOA/3
	625F1	IL4	2498.4		94×90	Tw	2	12	240	7000	2M	2×50DCOA
	555F1	IL4	2497.6		100×79.5	Tw	2	12	250	7500	2M	2×52DCOA
	625 Mondial	IL4	2498.4		94×90	Tw	2	9.2	220	6800	2M	2×46DCOA
	375 Plus	V-12	4954.4		84×74.5	Si	1	9.2	344	6500	2M	3×46DCF
	375 Spl	V-12	4962.8		88×68	Si	2	9	380	7000	4D	3×46DCF
	375 Coupé											
	America	V-12	4522.9	108	84×68	Si	1	9.2	350	7000	2M	3×42DCZ
	306S	IL6	2977.2		90×78	Tw	2	8.5	240	7000	2M	3×40DCO
1955	555F1	IL4	2497.6	131B	100×79.5	Tw	2	14	270	7500	2M	2×52DCOA
	(115) 256F1‡	IL6	2496	115	82.4×78	Tw	2	12	250	6500	2M	3×45DCOA
	(116) 252F1‡	IL2	2493.4	116	118×114	Tw	2	13	174	4800	2M	2×42DCOA
	(118) 376LM	IL6	3747.6	118	94×90	Tw	2	9	310	6000	2D	3×45DCOA
	250GT	V-12	2953.2	128B	73×58.8	Si	1	8.5	220	7000	2D	3×36DCF
	500 Mondial	IL4	1984.8	131 or 114?	90×78	Tw	2	8.5	170	7000	2D	2×40DCOA/3
	625 Mondial	IL4	2498.4	132	94×90	Tw	2	9.2	220	6800	2D	2×46DCOA
	750 Monza	IL4	2999.6	119	103×90	Tw	2	8.6	260	6000	2D	2×52DCOA
	410SA	V-12	4962.8	126/58	88×68	Si	1	8.5	340	6000	2D	3×40DCF
	(121) 446S	IL6	4412.5	121/446	102×90	Tw	2	8.5	330	6000	2D	3×50DCOA
	(123)‡	IL6	4241.1	123	100×90	—	—	9	330	6000		—
	(124)‡	IL4	3421.2	124	110×90	—	—	—	—	—		—
	(127)‡	IL6	3494.2	127	97.5×78	—	—	—	—	—		—
	250 Super‡	V-12	2963.5		68×68	Tw	2	6	510	7000	4M	1×40IF4C
	857S	IL4	3431.9	129S	102×105	Tw	2	8.5	280	5800	2M	2×58DCOA
1956	625F1	IL4	2498.4	132	94×90	Tw	2	12	250	7500	2M	2×50DCOA
	050/555											
	F1 Squalo	V-8	2496.8		76×68.8	Tw	2	12	231	8600	2M	4×40DCS
	500TR	IL4	1984.9	131	90×78	Tw	2	8.5	180	7000	2D	2×40DCO
	250GT	V-12	2953.2	128B/C	73×58.8	Si	1	8.5	240	7000	2D	3×36DCF
	410SA	V-12	4962.8	126/58	88×68	Si	1	8.5	340	6000	2D	3×42DCF
	290MM	V-12	3490.3	130S	73×69.5	Si	2	9	320	6800	4D	3×46TRA
	625LM	IL4	2498.4	132	94×90	Tw	2	9	225	6200	2D	2×42DCOA
	860 Monza	IL4	3431.9	129S	102×105	Tw	2	9	310	6200	2M	2×58DCOA
	446 Indy	IL6	4412.5	446/121	102×90	Tw	2	9	360	6300	2M	3×50DCOA
	500/750	IL4	2984.5		100×95	Tw	2	8.6	260	6000	2D	2×52DCO
	750/625	IL4	2999.6		103×90	Tw	2	9.5	280	6500	2M	2×50DCOA
	860/555	IL4	3431.9		102×105	Tw	2	9.5	310	6200	2M	2×58DCOA
	(128) 260‡	V-12	3117.2	260 (128)	75×58.8	—	—	—	—	—		—
	Exp‡	V-8	2484.2		74×72.2	—	—	12	—	—		—
1957	801F1	V-8	2494.8		80×62	Tw	2	11	285	8800	2M	4×40DCS
	156F2	V-6*	1489.3		70×64.5	Tw	2	10	180	9000	2D	3×38DCN
	156S	V-6*	1489.3		70×64.5	Tw	2	9.2	170	8500	2D	3×36DCN
	410SA	V-12	4962.8	126/58	88×68	Si	1	8.5	340	6000	2D	3×42DCF
	250GT	V-12	2953.2	128	73×58.8	Si	1	8.5	240	7000	2D	3×36DCF
	500TRC	IL4	1984.9	131	90×78	Tw	2	8.75	190	7500	2D	2×40DCO
	290S	V-12	3490.3	130 S	73×69.5	Tw	2	9	350	7200	4D	6×42DCN
	15S	V-12	3783.5	130S/56	76×69.5	Si	2	9	360	7200	4D	6×42DCN
	335S	V-12	4023.3	136	77×72	Si	2	9.2	390	7800	4D	6×42DCN
	(139) 298S‡	V-8	3000.8	139	81×72.8	—	—	11.5	—	—		4×Solex40PJ

Year	Type	No. Cyl.	Total cc	Eng. Type No.	B/S (mm)	Cam	Plugs/ Cyl.	CR	bhp	rpm	Ign.	No. and Type Carb./Fuel Feed
(1957)	196S†	V-6**	1983.7	135B	77×71	Tw	2	10	225	8600	1M	3×42DCN
	226S†	V-6**	2195.2		81×71	Tw	2	10	235	8000	1M	3×42DCN
1958	246F1	V-6**	2417.3	135	85×71	Tw	2	11	270	8300	1M	3×42DCN
	(326) 528MI	V-6**	3210.1		87×90	Tw	2	9	330	7500	2D	3×54DCN
	(412) 530MI	V-12	4023.3	141	77×72	Tw	2	9.4	415	8500	4M	6×42DCN
	250GT	V-12	2953.2	128	73×58.8	Si	1	8.5	240	7000		3×36DCF
	250TRS	V-12	2953.2	128LM	73×58.8	Si	2	9.8	300	7200	4D	6×40DCN
	196S (Dino)	V-6	1983.7		77×71	Si	2	9.8	195	7800	2D	3×42DCN
	296S (Dino)†	V-6	2962.1		85×87	Tw	2	9	300	8000	2D	3×46DCN
	312LM	V-12	2953.2	128?	73×58.8	Tw	2	10	280	8500	4D	6×42DCN
	410SA	V-12	4962.8	126/58	88×68	Si	1	8.5	340	6000	2D	3×42DCF
	196GT†	V-6	1983.7		77×71	Si	1	9	175	7500	1D	3×38DCN
	(144)†	V-12	3445.9	144	75×65	—	—	9	—	—		—
	256F1†	V-6	2474.5		86×71	Tw	2	9.8	290	8800	2D	3×42DCN
	(152)†	V-6	2394	152	84×72	—	—	9	—	—		3×42DCN
	(153) 156S†	V-6*	1575.6	153	72×64.5	—	1	9	165	8000	1D	3×38DCN
1959	256F1	V-6	2474.6		86×71	Tw	2	10	280	8500	1M	3×42DCN
	250TRS	V-12	2953.2	128F	3×58.8	Si	1	9.8	300	7200	2D	6×40DCN
	250GT	V-12	2953.2	128F	73×58.8	Si	1	8.5	240	7000	2D	3×36DCF
	410SA	V-12	4962.8	126/58	88×68	Si	1	9	400	6500	2D	3×42DCF
	410SF	V-12	4962.8	126/58	88×68	Si	1	9	400	6500	2D	3×42DCF
	(154S)											
	1500 Sport	V-6	1489.9	154	72×61	—	—	9.6	150	7000		—
	(155)†	V-6	2451.1	155	85×72	—	—	9.8	—	—		—
	(159)†	V-12	4190.4	159	77×75	—	—	9	—	—		—
	(161) 854†	IL4	849.5	161	65×64	Si	1	7.5	68	7000	1D	2×38DCO
	(162)											
	F. Inter Car	V-12	3764	162	75×71	—	—	—	—	—		—
	(163) 330GT†	V-12	3967.4	163	77×71	Tw	1	9.8	380	7000	2D	6×40DCN
	(164) 950†	IL4	973	164	67×69	Si	1	9	80	7000	1D	2×32DCN
	850 Coupé	IL4	849.5	161	65×64	Si	1	9	86	7000	1D	2×32DCO
	156F2†	V-6	1476.6		73×58.8	Si	1	9.2	150	8000	1D	3×38DCN
1960	246F1 LC	V-6	2417.3	135	85×71	Tw	2	9.8	280	8500	1M	3×42DCN
	246F1 SC	V-6	2417.3	135	85×71	Tw	2	9.8	280	8500	1M	3×42DCN
	256F1	V-6	2417.3		85×71	Si	2	9.8	250	7700	1M	3×42DCN
	296FL	V-6	2960.6		87×83	Tw	2	9.9	298	8200	1M	3×42DCN
	250TRS	V-12	2953.2	128F	73×58.8	Si	1	9.3	300	7500	2D	6×42DCN
	250 Inj†	V-12	2953.2	128F	73×58.8	Si	1	9.2	300	7500	2D	Bosch Inj.
	246 Inj†	V-6	2417.3	135	85×71	Tw	2	9.8	280	8500	2D	Bosch Inj.
	250GT Coupé											
	Cabriolet	V-12	2953.2	128F	73×58.8	Si	1	8.5	240	7000	2D	3×36DCF
	250GT Spyder	V-12	2953.2	128F	73×58.8	Si	1	9	280	7500	2D	3×36DCF
	400SA	V-12	3967.4	209	77×71	Si	1	9	400	7000	2D	3×46DCF
	256F1 (Rear)	V-6	2497.6		86.4×71	Tw	1	11	245	7600	1M	3×42DCN
	156F2 Exp.											
	(Front)	V-6	1484		73×59.1	Tw	2	9.8	180	9000	1M	3×38DCW
	156F1 (Rear)	V-6	1484		73×59.1	Tw	2	9.8	180	9000	1M	3×38DCW
	(164 bis) 1000†	IL4	1032	164B	69×69	Si	1	9	100	7200	1D	2×38DCOA
	(165) 1600GT†	V-6	1556.8	165	73×62	Si	1	9.8	160	7500	2D	3×42DCN
1961	156F1	V-6*	1481.4		73×59	Tw	2	9.8	180	9000	1M	3×38DCW
	156F1	V-6*	1480.7		67×70	Tw	2	9.8	185	9500	1M	3×42DCN

<i>Year</i>	<i>Type</i>	<i>No. Cyl.</i>	<i>Total cc</i>	<i>Eng. Type No.</i>	<i>B/S (mm)</i>	<i>Cam</i>	<i>Plugs/ Cyl.</i>	<i>CR</i>	<i>bhp</i>	<i>rpm</i>	<i>Ign.</i>	<i>No. and Type Carb./Fuel Feed</i>
(1961)	156F1‡	V-6*	1496.4		81×48.2	Tw	2	9.8	200	10,500	2M	3×42DCN
	156F1‡	V-6***	1476.6		73×58.8	Tw	2	9.8	190	9500	2M	2×40IF3C
	250S	V-12‡	2953.2	128	73×58.8	Si	1	9.8	300	7500	2D	6×42DCN
	276S	V-6	2710.2		90×71	Si	1	9.9	275	7700	1M	3×42DCN
	250GT 2+2	V-12	2953.2	128F	73×58.8	Si	1	8.5	240	7000	2D	3×36DCF
	250 Coupé											
	Cabriolet	V-12	2953.2	128F	73×58.8	Si	1	8.5	240	7000	2D	3×36DCF
	250 Berlinetta											
	+ Spyder	V-12	2953.2	128F	73×58.8	Si	1	9	280	7500	2D	3×36DCF
	400SA	V-12	3967.4	209	77×71	Si	1	9	400	7000	2D	3×46DCF
	246P	V-6	2417.3		85×71	Tw	2	9.8	270	8000	2D	3×46DCN
	296P‡	V-6	2924.9		87×82	Tw	2	9.8	310	7500	1M	—
1962	F1 120°	V-6	1476.6		73×58.8	Tw	2	9.8	200	10,000	2D	2×40IFC3
	F1 65°	V-6	1480.7		67×70	Tw	2	9.8	190	9400	2D	3×40DCN
	196 Sp	V-6	1983.7		77×71	Si	1	9.8	210	7500	1D	3×42DC
	248 Sp	V-8	2458.4		77×66	Si	1	9.8	250	7400	2D	4×40DC
	286 Sp	V-6	2862.9		90×75	Si	1	9.5	260	6800	2D	3×46DC
	250 Berlinetta	V-12	2953.2	128F/168	73×58.8	Si	1	9.8	300	7400	2D	6×42DCN
	246 Sp	V-6	2417.3		85×71	Tw	2	9.5	275	7500	2D	3×42DC
	268 Sp	V-8	2644.9		77×71	Si	1	9.6	265	7000	2D	4×40DC
	330TR	V-12	3967.4	209	77×71	Si	1	8.7	390	7500	2D	6×42DCN
	330LMB	V-12	3967.4	209	77×71	Si	1	8.7	390	7500	2D	6×42DCN
	400 Sp	V-12	3967.4	209	77×71	Si	1	8.8	340	7000	2D	3×40DCZ
	250GT 2+2	V-12	2953.2	128F/168	73×58.8	Si	1	8.5	240	7000	2D	3×36DCF
1963	156F1 120°	V-6***	1476.6		73×58.8	Tw	2	10		10,200	2D	Bosch Inj.
	158F1 Mono	V-8	1489.3		67×52.8	Tw	2	9.8	200	10,500	4D	Bosch Inj.
	156F1 Mono	V-6	1476.6		73×58.8	Tw	2	10	200	10,500	2D	Bosch Inj.
	186GT‡	V-6	1788.1		77×64	Si	1	9.2	156	7000	1D	3×38DCN
	196S	V-6	1983.7		77×71	Tw	1	9	200	7500	1D	3×42DCN
	250P	V-12	2953.2	168	73×58.8	Si	1	9.5	310	7500	2D	6×38DCN
	330LM	V-12	3967.4	209	77×71	Si	1	9	400	7500	2D	6×42DCN
	250GT 2+2	V-12	2953.2	128F/168	73×58.8	Si	1	9.2	240	7000	2D	3×36DCF
	250GTO											
	+ Spyder	V-12	2953.2	168	73×58.8	Si	1	9.2	250	7500	2D	6×38DCN
	400SA	V-12	3967.4	209	77×71	Si	1	8.8	340	7000	2D	3×40DCZ
1964	158F1	V-8	1489.3		67×52.8	Tw	2	9.8	200	10,500	4D	Bosch Inj.
	512F1	F12			56×50.4	Tw	1	9.8	220	12,000	2D	Bosch Inj.
	500SF	V-12	4962.8	208	88×68	Si	1	8.8	400	6500	2D	3×40DCZ6
	330GT 2+2	V-12	3967.4	209	77×71	Si	1	8.8	300	6600	2D	3×40DCZ6
	365P	V-12	4390.3		81×71	Si	1	9.5	380	7200	2D	6×38DCN
	330P	V-12	3967.4	209	77×71	Si	1	9	390	7500	2D	6×42DCN
	275P	V-12	3285.7	213	77×58.8	Si	1	9.8	320	7700	2D	6×38DCN
	250LM	V-12	2953.2	211	73×58.8	Si	1	9.7	300	7500	2D	6×38DCN
	275GTB	V-12	3285.7	213	77×58.8	Si	1	9.2	280	7500	2D	3 or 6×40DCZ6
	275GTS	V-12	3285.7	213	77×58.8	Si	1	9.2	260	7000	2D	3×40DCZ6
	250GTO/64	V-12	2953.2	168/Com	73×58.8	Si	1	9.8	300	7700	2D	6×38DCN
1965	275P2	V-12	3285.7	213	77×58.8	Tw	2	9.8	350	8500	4D	6×40DCN2
	330P2	V-12	3967.4	209/163	77×71	Tw	2	9.8	410	8200	4D	6×42DCN2
	166 Dino	V-6	1592.7		77×57	Tw	2	9.8	180	9000	2D	3×40DCN
	206 Sp Dino	V-6	1986.7		86×57	Tw	2	12.5	218	9000	2D	3×40DCN2
	158F1	V-8	1489.3		67×52.8	Tw	2	9.8	210	11,000	4D	Bosch Inj.

Year	Type	No. Cyl.	Total cc	Eng. Type No.	B/S (mm)	Cam	Plugs/ Cyl.	CR	bhp	rpm	Ign.	No. and Type Carb./Fuel Feed
(1965)	512F1	FL12	1489.6		56×50.4	Tw	2	9.8	220	12,000	4D	Lucas Inj.
	330GT 2+2	V-12	3967.4	209	77×71	Si	1	8.8	300	6600	2D	3×40DCZ6
	500SF	V-12	4962.8	208	88×68	Si	1	8.8	400	6500	2D	3×40DCZ6
	275GTB	V-12	3285.7	213	77×58.8	Si	1	9.5	280	7600	2D	3 or 6×40DCZ6
	275GTS	V-12	3285.7	213	77×58.8	Si	1	9.2	260	7000	2D	3×40DCZ6
	275LM	V-12	3285.7	213	77×58.8	Si	1	9.7	320	7600	2D	6×38DCN
1966	312F1	V-12	2989.5		77×53.5	Tw	2	11.8	360	10,000	4D	Lucas inj.
	330GT	V-12	3967.4	209	77×71	Si	1	8.8	300	7000	2D	3×40DCZ6
	275GTB	V-12	3285.7	213	77×58.8	Si	1	9.5	280	7600	2D	3 or 6×40DCN3
	275GTS	V-12	3285.7	213	77×58.8	Si	1	9.2	260	7000	2D	3×40DCZ6
	275LM	V-12	3285.7	211/com	77×58.8	Si	1	9.7	320	7600	2D	6×38DCN
	206 Dino/S	V-6	1986.7		86×57	Tw	1	10.8	218	9000	1D	3×40DCN2
	330P3	V-12	3967.4	209	77×71	Tw	2	11.4	420	8000	4D	Lucas Inj.
	330GTC	V-12	3967.4	209	77×71	Si	1	8.8	300	7000	2D	3×40DF1
	500SF	V-12	4962.8	208	88×68	Si	1	8.8	400	6500	2D	3×40DCZ6
	246F1	V-6	2417.3	135C/F1	85×71	Tw	2	9.5	275	8000	4D	Lucas Inj.
1967	312F1	V-12	2989.5		77×53.5	Tw	1	11.8	390	10,500	4D	Lucas Inj.
	330P4	V-12	3967.4	209	77×71	Tw	2	11	450	8000	4D	Lucas Inj.
	206 Dino Sp	V-6	1986.7	135B	86×57	Tw	2	11	220	9000	2D	Lucas Inj.
	206 Dino GT	V-6	1986.7	135B	86×57	Tw	1	9	180	8000	1D	3×40DCN
	Dino F2	V-6	1596.3		86×45.8	Tw	2	11	200	10,000	2D	Lucas Inj.
	330GT 2+2	V-12	3967.4	209	77×71	Si	1	8.8	300	7000	2D	3×40DCZ
	330GTC	V-12	3967.4	209	77×71	Si	1	8.8	300	7000	2D	3×40DFI
	275GTB	V-12	3285.7	213	77×58.8	Si	1	9.5	280	7600	2D	6×40DCN
	275GTS	V-12	3285.7	213	77×58.8	Si	1	9.2	260	7000	2D	3×40DCZ6
	CanAm	V-12	4176.5		79×71	Tw	2	11	480	8500	4D	Lucas Inj.
1968	312F1	V-12	2986.5		77×53.5	Tw	1	11.8	405	11,000	2D	Lucas Inj.
	166 Dino F2	V-6	1593.6		79.5×53.5	Tw	1	11.2	225	11,000	1D	Lucas Inj.
1966/8	275GTB4	V-12	3255.7	226	77×55.8	Tw	1		300	8000	2D	6×40DCH/17
1968	Tasman	V-6	2404.8		90×63	Tw	2	11.5	285	8900	2D	Lucas Inj.
	P5250	V-12	2989.5		77×53.5	Tw	2	11	400	9200	4D	Lucas Inj.
	330GTB	V-12	3967.4	209	77×71	—	—	—	—	—	—	—
	330GTC	V-12	3967.4	209	77×71	Si	1	8.8	300	7000	2D	3×40DCN
	330GTS	V-12	3967.4	209	77×71	Si	1	8.8	300	7000	2D	3×40DCN
	365GT 2+2	V-12	4390.3	245	81×71	Si	1	8.8	320	6600	2D	3×40DCN
	206 Dino GT	V-6	1986.7	135	86×57	Tw	1	9	180	8000	Dinoplex	3×40DCF
	612 CanAm	V-12	6221.6		92×78	Tw	2	10.5	620	7000	Dinoplex	Lucas Inj.
	212E Expl†	F12	1990.8		65×50	Tw	1	11	280	11,000	2D	Lucas Inj.
1969	312F1	V-12	2989.5		77×53.5	Tw	2	11.8	436	11,000	Dinoplex	Lucas Inj.
	166 Dino F2	V-6	1593.6		79.5×53.5	Tw		11.2	230	11,000	Dinoplex	Lucas Inj.
	246 Dino											
	Tasman	V-6	2404.8		90×63	Tw	2	22.5	290	9000	Dinoplex	Lucas Inj.
	312P Sport	V-12	2989.5		77×53.5	Tw	1	11	420	9800	Dinoplex	Lucas Inj.
	365GT 2+2	V-12	4390.3	245	81×71	Si	1	8.8	320	6600	2D	3×40DCN
	246 Dino GT	V-6	2418.4	135C'S'	92.5×60	Tw	1	9	195	7600	Dinoplex	3×40DCF
	365GTB4	V-12	4390.3	251	81×71	Tw	1	8.8	352	7500	2D	6×40DCNZO
	318W†	W18	2986.2		65×50	Tw	1	11	450	12,000	2D	Lucas Inj.
	365GTC	V-12	4390.3	245	81×71	Si	1	8.8	320	6600	2D	3×40DCN
	365GTS	V-12	4390.3	245	81×71	Si	1	8.8	320	6600	2D	3×40DCN
	212E	F12	1990.8		65×50	Tw	1	11	300	11,800	Dinoplex	Lucas Inj.
	612 CanAm	V-126	621.6		92×78	Tw	2	10.5	640	7700	Dinoplex	Lucas Inj.

Year	Type	No. Cyl.	Total cc	Eng. Type No.	B/S (mm)	Cam	Plugs/ Cyl.	CR	bhp	rpm	Ign.	No. and Type Carb./Fuel Feed
1970	312B	FL12	2991		78.5×51.5	Tw	1	11.5	455	11,500	Dinoplex	Lucas Inj.
	512S	V-12	4994	261B(?)	87×70	Tw	1	11	550	8000	Dinoplex	Lucas Inj.
	365GT 2+2	V-12	4390.3	245	81×71	Tw	1	8.8	320	6600	2D	3×40DCN
	365 Daytona	V-12	4390.3	251	81×71	Tw	1	9.3	350	7000	2D	6×40DCN
	246 Dino GT	V-6	2418.4	135CS	92.5×60	Tw	1	9	195	7600	Dinoplex	3×40DCF
1971	365 Daytona	V-12	4390.3	251	81×71	Tw	1	9.3	350	7000	Dinoplex	6×40DCN
	312B	FL12	2991		78.5×51.5	Tw	1	11.5	470	12,500	Dinoplex	Lucas Inj.
	312P Sport	F12	2991		78.5×51.5	Tw	1	11.5	450	10,800	Dinoplex	Lucas Inj.
	246 Dino GT	V-6	2418.4		92.5×60	Tw	1	9	195	7600	Dinoplex	3×40DCF
	512M	V-12	4923	261C	87×70	Tw	1	11.8	610	9000	Dinoplex	Lucas Inj.
	365GT 2+2	V-12	4390.3	245	81×71	Tw	1	8.8	320	6600	Dinoplex	3×40DCN
	365GTC4	V-12	4390.3	F101A	81×71	Tw	1	8.8	340	6800	Dinoplex	6×40DCOE
1972	312B2	FL12	2991.8		80×49.6	Tw	1	11	480	12,500	Dinoplex	Lucas Inj.
	365BB	F12	4390.3	102	81×71	Tw	1	8.8	360	7500	Dinoplex	4×40IDL3C
	312B2/F1	F12	2991		78.5×51.5	Tw	1	11.5	480	11,800	Dinoplex	Lucas Inj.
	312P	F12	2991		78.5×51.5	Tw	1	11.5	450	10,800	Dinoplex	Lucas Inj.
	246 Dino GTS	V-6	2418.4	135CS	92.5×60	Tw	1	9	195	7600	Dinoplex	3×40DCF
	246 Dino GT	V-6	2418.4	135CS	92.5×60	Tw	1	9	195	7600	Dinoplex	3×40DCF
	365GTB4 (Daytona)	V-12	4390	F101A	81×71	Tw	1	8.8	350	7000	Dinoplex	6×40DCF
	365GTC4	V-12	4390	F101A	81×71	Tw	1	8.8	350	6800	Dinoplex	6×40DCOE
1973	312B2	FL12	2991.8		80×49.6	Tw	1	11	480	12,500	Dinoplex	Lucas Inj.
	312B3	FL12	2991.8		80×49.6	Tw	1	11	485	12,500	Dinoplex	Lucas Inj.
	365GTB4 (Daytona)	V-12	4390	251	81×71	Tw	1	8.8	352	7000	Dinoplex	6×40DCF
	365GTC/4	V-12	4390	245	81×71	Tw	1	8.8	330	6200	Dinoplex	6×40DCOE
	Dino 246	V-6	2418	135CS	92.5×60	Tw	1	9	195	7600	Dinoplex	3×40DCF
	365GT4 2+2	V-12	4390	245	81×71	Tw	1	8.8	320	6200	Dinoplex	3× DCOE
1974	312B2	FL12	2991.8		80×49.6	Tw	1	11	480	12,500	Dinoplex	Lucas Inj.
	312B3	FL12	2991.8		80×49.6	Tw	1	11	485	12,500	Dinoplex	Lucas Inj.
	365GT4 2+2	V-12	4390	245	81×71	Tw	1	8.8	320	6200	Dinoplex	3× DCOE
	365GT4 BB	FL12	4390	102A	81×71	Tw	1	8.8	344	7000	Dinoplex	4×40IDL3C
	Dino 246	V-6	2418	135CS	92.5×60	Tw	1	9.0	195	7600	Dinoplex	3×40DCF
	Dino 308GT4 2+2	V-8	2926	F106A	81×71	Tw	1	8.8	255	7600	2D	4×40DCNF
1975	312B2	FL12	2991.8		80×49.6	Tw	1	11	480	12,500	Dinoplex	Lucas Inj.
	312B3	FL12	2991.8		80×49.6	Tw	1	11	485	12,500	Dinoplex	Lucas Inj.
	365GT4 2+2	V-12	4390	F106A	81×71	Tw	1	8.8	320	6200	2D	6× DCOE
	365GT4 BB	FL12	4390	F102A	81×71	Tw	1	8.8	344	7000	2D	4×40IDL3C (Triple Choke)
	Dino 308GT4 2+2	V-8	2926	F106A	81×71	Tw	1	88	255	7600	2D	4×40DCNF
1976	312T	FL12	2991.8		80×49.6	Tw	1	11	500	12,200	Dinoplex	Lucas Inj.
	312T2	FL12	2991.8		80×49.6	Tw	1	11	500	12,300	Dinoplex	Lucas Inj.
	365GT4 2+2	V-12	4390	F106A	81×71	Tw	1	8.8	320	6200		6× DCOE
	365GT4 BB	FL12	4390	F102AB	81×71	Tw	1	8.8	344	7000		4×40IDL3C (Triple Choke)
	Dino 308GT4 2+2	V-8	2926	F106A	81×71	Tw	1	8.8	355	7600	2D	4×40DCNF
	308GTB	V-8	2926	F106A021	81×71	Tw	1	8.8	255	7600	2D	4×40DCNF

Year	Type	No. Cyl.	Total cc	Eng. Type No.	B/S (mm)	Cam	Plugs/ Cyl.	CR	bhp	rpm	Ign.	No. and Type Carb./Fuel Feed
1977	BB512	FL12	4942	F102B000	82×78	Tw	1	9.2	340	6200	Dinoplex	4×40IF4C (Triple Choke)
	400	V-12	4823	F101C	81×78	Tw	1	8.8	340	6500	2D	6×38DCOE
	308GT4 2+2	V-8	2926	F106A020	81×71	Tw	1	8.8	255	7600	2D	4×40DCF
	308GTB	V-8	2926	F106A000	81×71	Tw	1	9.8	255	7600	2D	4×40DCNF
1978	12T3	FL12	2991.8		80×49.6	Tw	1	11.6	510	12,200	Dinoplex	Lucas Inj.
	BB512	FL12	4942	F102B	82×78	Tw	1	88	340	6200	1D	4×40IF4C (Triple Choke)
	400	V-12	4823	F101B	81×78	Tw	1	8.8	340	6500	2D	6×38DCOE
	308GT4 2+2	V-8	2926	F106A020	81×71	Tw	1	8.8	255	7600	1D	4×40DCNF
	308GTB	V-8	2926	F106A	81×71	Tw	1	8.8	255	7600	1D	4×40DCNF
	308GTS	V-8	2926	F106A	81×71	Tw	1	8.8	255	7600	1D	4×40DCNF
1979	312T4	FL12	2991.8		80×49.6	Tw	1	11.5	515	12,300	Dinoplex	Lucas Inj.
	BB512	FL12	4042	F102BB	82×78	Tw	1	8.8	340	6200	1D	4×40IF4C (Triple Choke)
	400	V-12	4823	F101B	81×78	Tw	1	8.8	340	6500	1D	6×38DCOE Bosch K
	308GT4 2+2	V-8	2926	F106A020	81×71	Tw	1	8.8	255	7600	Dinoplex	Jetronic
	308GTB	V-8	2926	F106A021	81×71	Tw	1	8.8	255	7600	1D	4×40DCNF
	308GTS	V-8	2926	F106A	81×71	Tw	1	8.8	255	7600	Dinoplex	4×40DCNF
1980	312T5	FL12	2991.8		80×49.6	Tw	1	11.5	515	12,300	Dinoplex	Lucas Inj.
	BB512	FL12	4942	F102B000	82×78	Tw	1	8.8	340	6200		4×40IF4C (Triple Choke)
	400i	V-12	4823	F10/C011	81×78	Tw	1	8.8	310	6400		Bosch K Jetronic
	308GT4 2+2	V-8	2926	F106A020	81×71	Tw	1	8.8	255	7600		4×40DCNF
	308GTB	V-8	2926	F106A020	81×71	Tw	1	8.8	255	600		4×40DCNF
	308GTS	V-8	2926	F106A020	81×71	Tw	1	8.8	255	7600		4×40DCNF
1981	126CX/CK	V-6***	1496.4		81×48.4	Tw	1	6.5	560	11,500	Transistor	Lucas Inj.
	BB512	FL12	4942	F102B	82×78	Tw	1		340	6200	4×40IF4C	(Triple Choke)
	400i	V-12	4823	F101CL	81×78	Tw	1	8.8	310?		6000 (OCT)	Bosch K Jetronic
	308GTBi	V-8	2926	F106B	81×71	Tw	1	8.8	214	7500	1D +	Bosch K Jetronic
	308GTSi	V-8	2926	F106A	81×71	Tw	1	8.8	214	7500	Dinoplex	Bosch K Jetronic
	Mondial 8	V-8	2926	F106B	81×71	Tw	1	8.8	214	7500	Dinoplex	Bosch K Jetronic
1982	126C2/C2B	V-6***	1496.4		81×48.4	Tw	1	6.5	580	11,000	Transistor	Lucas Inj.
	BB512i	FL12	4942	F110A	82×78	Tw	1	8.8	340	6000	1D +	Bosch K Jetronic
	400i	V-12	4823	F101CL	81×78	Tw	1	8.8	310	6400	Dinoplex	Bosch K Jetronic
	308GTBi	V-8	2926	F106B	81×71	Tw	1	8.8	214	7500	1D +	Bosch K Jetronic
	308GTSi	V-8	2926	F106A	81×71	Tw	1	8.8	214	7500	Dinoplex	Bosch K Jetronic

<i>Year</i>	<i>Type</i>	<i>No. Cyl.</i>	<i>Total cc</i>	<i>Eng. Type No.</i>	<i>B/S (mm)</i>	<i>Cam</i>	<i>Plugs/ Cyl.</i>	<i>CR</i>	<i>bhp</i>	<i>rpm</i>	<i>Ign.</i>	<i>No. and Type Carb./Fuel Feed</i>
(1982)	Mondial 8	V-8	2926	F108A	81×71	Tw	1	8.8	214	7500	1D + Dinoplex	Bosch K Jetronic
	Mondial Qv	V-8	2926	F108A	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
	308GTB Qv	V-8	2926	F106AB	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
	308GTS Qv	V-8	2926	F106AB	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
1983	126C3	V-6***	1496.4		81×48.4	Tw	1	6.5	580	11,000	Transistor	Lucas Inj.
	BB512i	FL12	4942	F102B	82×78	Tw	1	8.8	340	6000	1D + Dinoplex	Bosch K Jetronic
	400i	V-12	4823	F101C	81×78	Tw	1	8.8	310	6400	1D +	Bosch K Jetronic
	Mondial Qv	V-8	2926	F106B	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
	308GTB Qv	V-8	2926	F106B	81×71	Tw	1	8.8	240	660	1D + Dinoplex	Bosch K Jetronic
	308GTS Qv	V-8	2926	F106B	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
	308 Cabriolet		2926	F108B	81×71							
1984	126C4/C4M2	V-6***	1496.4		81×48.4	Tw	1	6.5	600	11,000	Transistor	Lucas Inj.
	BB512i	FL12	4942	F110A	82×78	Tw	1	8.8	340	6000	1D + Dinoplex	Bosch K Jetronic
	400i	V-12	4823	F101C011	81×78	Tw	1	8.8	315	6400	1D + Dinoplex	Bosch K Jetronic
	Mondial Qv	V-8	2926	F106B	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
	308GTB Qv	V-8	2926	F106B	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
	308GTS Qv	V-8	2926	F106B	81×71	Tw	1	8.8	240	6600	1D + Dinoplex	Bosch K Jetronic
1985	156/85	V-6***	1496.4		81×48.4	Tw	1	7.1	780	11,000	Transistor	Weber/Marelli digital
	Testa Rossa	FL12	4942	F113A	82×78	Tw	1	9.2	390	6800	Microplex	Bosch K Jetronic
	GTO	V-8	2855	F114B	79.76×70.99	Tw	1	7.6	400	7000	Microplex	Bosch K Jetronic
	412i	V-12	4942		82×78	Tw	1	9.6	340	6000	Microplex	Bosch K Jetronic
	328GTB Qv	V-8	3185		83×73.6	Tw	1	9.8:1	270	7000	Microplex	Bosch K Jetronic
	328GTS Qv	V-8	3185		83×73.6	Tw	1	9.8:1	270	7000	Microplex	Bosch K Jetronic
	328 Mondial Qv	V-8	3185		83×73.6	Tw	1	9.8:1	270	7000	Microplex	Bosch K Jetronic
	328 Mondial Cabriolet Qv	V-8	3185		83×73.6	Tw	1	9.8:1	270	7000	Microplex	Bosch K Jetronic

Notes

Cams – Tw (Twin overhead camshafts per bank of cylinders)

Cams – Si (single overhead camshafts per bank of cylinders)

IL – cylinders in line

FL12 – flat (or boxer) 12 cylinders

Angle of V engines – V-12s at 60 degrees

V-8s at 90 degrees

V-6s * at 65 degrees

V-6s ** at 60 degrees

V-6s *** at 120 degrees (1961 and 1964 156F1 cars)

‡ – Experimental engines

Appendix 6 Road Test Data

The following road test data has been drawn up at two quite distinct times. That covering the first 35 tests appeared originally as an article in *Ferrari*, the journal of the Ferrari Owners' Club in the United Kingdom, Vol. 1, No. 4 (Summer 1969). The remainder has been compiled recently to extend and bring up to date the range of cars covered.

During the years that intervened, road test reports underwent a number of changes with respect to their format and the type of data presented. The process whereby Ferrari cars became available for road testing also changed. Most of the first batch of cars reported on (Tests 1-35) were made available through the kindness of individual owners, as in the early years there were for the most part no cars available from Ferrari either direct or through their distributor network in the various countries where they were sold. Towards the end of the 1960s cars started to become available through the distributors and it is now very rare for any privately owned cars to be subjected to full road tests by the press.

The changes in the presentation, etc., of road tests and in the method of providing cars are responsible for certain unavoidable inconsistencies in the type of information provided in the notes accompanying the table. It is hoped that, understanding the reasons for these inconsistencies, the reader will make allowances for them.

The notes which accompany the table of road test data give in each case, for further reference, details of the publications in which the tests were originally published, together with some additional data that does not fit particularly well into the table. American sources quoted are: *Road and Track*, *Car and Driver*, *Sports Car Graphic*, *Sports Cars Illustrated*. UK sources are *Autocar*, *Motor*, *Sporting Motorist* and *Autosport*.

Notes to accompany data table

Test 1. Published *The Autocar*, 15 June 1951. Vignale-bodied spyder loaned by Ferrari works. At the time of testing it had only 400 km on the clock. The engine was not taken above 6500 rpm nor was the full potential of performance in bottom gear used. Weight quoted was given as 'in running trim with 5 galls of fuel'. Bhp per ton: 154. Following additional acceleration data given:

Mph	Time in seconds in each gear			
	5th	4th	3rd	2nd
10-30	7.5	6.8	4.9	4.4
20-40	5.6	5.6	4.1	3.5
30-50	5.9	5.1	4.1	3.3
40-60	6.5	5.5	4.2	3.6
50-70	6.9	6.2	4.2	—
60-80	6.9	6.3	4.6	—

Test 2. Published *Road and Track*, November 1952. Touring-bodied spyder belonging to Phil Hill. Car which had won the 1951 Tour de France, ran for many hours at Le Mans that year and had completed 400 miles of road racing in America. Following Tapley readings noted:

Gear	Mph	Pulling power
1st	45	780 lbs/ton
2nd	62	625 lbs/ton
3rd	72	445 lbs/ton
4th	85	350 lbs/ton
5th	95	250 lbs/ton

Gear shift points: 1st/53 mph, 2nd/74 mph, 3rd/102 mph, 4th/118 mph. Flying ¼ mile showed a speed of 123 mph but this could easily have been bettered with a more suitable drive ratio. Engine reported to have been misfiring at 6500 rpm during acceleration and speed testing.

Test 3. Published *Road and Track*, September 1953. Vignale-bodied coupé belonging to Masten Gregory. Car believed to have been that placed fifth overall at Le Mans in 1952 when driven by A. Simon and L. Vincent. The type is not positively identified but would appear to be a 340 America with a 'hotter' engine installed. Following Tapley readings noted:

Gear	Mph	Pulling power
1st	—	—
2nd	—	—
3rd	49	540 lbs/ton
4th	67	410 lbs/ton
5th	72	350 lbs/ton

Acceleration: 2nd gear, 10-60 mph in 7 seconds without exceeding 6000 rpm; 3rd gear, 15-90 mph in 12.3 seconds; 4th gear, 30-80 mph in 12.2 seconds and 30-125 mph in 32.6 seconds; 5th gear (o/d), 45-70 mph in 5.83 seconds and 45-90 mph in 13.4 seconds. Limit of 6000 rpm was used for all acceleration tests. Maximum

speeds listed in intermediate gears were those equivalent to 6500 rpm. A run at 128.57 mph was made at Bonneville Salt Flats but revs were still climbing at that speed. Gear shift points: 1st/41 mph, 2nd/66 mph, 3rd/91 mph, 4th/126 mph.

Test 4. Published *Road and Track*, May 1954. Vignale-bodied spyder belonging to Phil Hill who did quite a bit of the testing. Following Tapley figures given:

Gear	Mph	Pulling power
1st	—	—
2nd	—	—
3rd	64	500 lbs/ton
4th	77	380 lbs/ton

Top speed was estimated as 150 mph if 3.64 final drive used. With the 4.25 ratio in use during testing a speed of 135 mph was reached. Gear shift points: 1st/54 mph, 2nd/81 mph, and from 3rd at 109 mph.

Test 5. Published *Road and Track*, December 1957. Car, owned at that time by John von Neuman, was a special 2.5-litre-engined version of the normally 2-litre Testa Rossa, TRC, a model built to comply with Appendix C regulations of the time. Following Tapley figures given at 5000 rpm:

Gear	Pulling power
1st	—
2nd	—
3rd	530 lbs/ton
4th	425 lbs/ton

Gear shift points: 1st/47 mph, 2nd/77 mph, 3rd/103 mph. Top speeds in intermediate gears are at 6500 rpm.

Test 6. Published *Sports Cars Illustrated*, January 1958. Car was a 250GT coupé, Boanobodied. It was a 1956 car and had done almost 12,000 miles including being driven by Ritchie Ginther to a win in a GT event at Lime Rock in 1957. Equipped with 3 × 36 DC13 Weber carburettors. Final drive ratio used: 4.57. Available: 4.85, 4.25, 4.00, 3.77 and 3.66. Speeds in intermediate gears are at 7000 rpm. For top speed, the best 2-way average was 125.6 mph, with a one-way run at 127.2 mph.

Test 7. Published *Sports Cars Illustrated*, September 1958. Car was one exhibited at Turin in 1957. Its 410 Superamerica-type engine was placed in a 102.5 in.-wheelbase 250GT chassis,

the resulting 'mix' being typed '4.9 Superfast'. It was possibly the only one of its type and was brought into the USA by Jan de Vroom. Speed ranges in intermediate gears: 1st/9-65 mph, 2nd/13-93 mph, 3rd/18-128 mph, 4th/22-top. All at 900-6500 rpm range. Car had completed 20,000 km of running at time of testing. No top speed figure stated.

Test 8. Published *Road and Track*, December 1962. Car tested, a 1959 model, was the property of William Harrah at time of testing and had covered some 34,000 miles. Fitted with single-plate dry clutch in place of factory-fitted multi-plate type. Following Tapley figures given:

Gear	Mph	Pulling power
1st	—	—
2nd	60	520 lbs/ton
3rd	68	360 lbs/ton
4th	82	290 lbs/ton

Test 9. Published *Car and Driver*, April 1963. Car owned by Bob Grossman. The engine was equipped with 3 × 4 choke Solex carburettors. These were replaced with Webers on later versions. Weight quoted in tables is 'curb'. Tyre size listed is 6.50/6.70 × 15.

Test 10. Published *Road and Track*, June 1963. Car tested owned by William Harrah. Report said that when delivery was taken the output was closer to 300 bhp than the figure of 400 listed. Cams were then reground to Testa Rossa specifications, bore increased to 83.8 mm, forged true pistons fitted, heads ported, engine balanced and the 3 × 40 mm Solex carburettors replaced by 46 mm Webers. Maximum speed was not achieved: report said that if the peak power rpms of 7500 could have been taken in overdrive 185 mph should have been possible. Shift points of 1st/59 mph, 2nd/84 mph and 3rd/118 were given at 7500 rpm.

Test 11. Published *Sports Cars Illustrated*, September 1959. Car belonged to Harvey Schur, Scarsdale, New York. Additional final drive ratios available: 3.67, 3.78, 4.00, 4.25, 4.57 and 4.86.

Test 12. Published *Road and Track*, June 1960. Car belonged to Eleanor von Neuman. Test driving done mainly by Phil Hill. Report noted that car seemed to be suffering from slipping clutch and was a bit off tune. Tapley data given:

Gear	Mph	Pulling power
1st	—	—
2nd	53	540 lbs/ton
3rd	60	370 lbs/ton
4th	72	290 lbs/ton

Speeds in gears: 1st/50 mph at 7100 rpm, 2nd/75 mph at 7150 rpm, 3rd/102 mph at 7150 rpm, 4th/126 mph.

Test 13. Published *Sports Cars Illustrated*, September 1959. Car, which had completed a considerable racing mileage, belonged to George Arents of New York and Miami. Additional final drive ratios available are as listed for Test no. 11 above. Aluminium body.

Test 14. Published *Sports Cars Illustrated*, October 1960. Car tested, Charles Kreisler's, finished fourth overall at Sebring. Was driven for 1200 miles during testing. Optional final drive ratios available: 3.44, 3.55, 3.67, 3.78, 4.25 and 4.57. No speeds for individual gears listed. Following mph/1000 rpm given: 1st/7.8 mph, 2nd/11.7 mph, 3rd/15.8 mph and 4th/19.9 mph. Acceleration figures in table taken from graph.

Test 15. Published *The Autocar*, 29 May 1964. The report was not a full road test but was more in the nature of a personal report by the editor, M.A. Smith. The car, owned at that time by Richard Grant, had left the factory in 1960 and had done a considerable amount of competition work including gaining a first in the GT class for cars up to 3000 cc in the Nurburgring 1000 Km of 1962. At that time it was driven by Peter Nocker and Wolfgang Seidel. Test report said that it was equipped with a rear axle ratio more suited to short-course or hill-climb events. Maximum rev limit of 7500 used during testing. Following additional acceleration figures given in report:

Mph	Time in seconds in each gear			
	4th	3rd	2nd	1st
10-30	—	—	3.5	2.1
20-40	—	—	2.8	2.0
30-50	5.1	3.8	2.6	—
40-60	4.7	3.9	2.6	—
50-70	4.7	3.7	—	—
60-80	5.2	3.5	—	—
70-90	5.7	3.8	—	—
80-100	5.0	3.8	—	—
90-100	5.2	—	—	—
100-120	5.8	—	—	—

Test 16. Published *Road and Track*, August 1962. Tapley data given:

Gear	Mph	Pulling power
1st	—	—
2nd	65	550 lbs/ton
3rd	72	350 lbs/ton
4th	76	275 lbs/ton
O/d	81	195 lbs/ton

Speeds in gears noted in table are at 7000 rpm.

Test 17. Published *Sports Cars Illustrated*, January 1961. No speeds given for individual gears. Following mph/100 rpm figures listed: 1st/7.0 mph; 2nd/10.4 mph; 3rd/14.1 mph; 4th/17.7 mph; o/d, 22.7 mph. Acceleration figures taken from graph.

Test 18. Published *High Performance Cars 1963-1964*. Test carried out with the approval of Maranello Concessionaires on car loaned by John Dalton. Weight of 1 ton 5 cwt 3 qrs quoted without qualification. Maximum timed speed of 136.3 mph recorded but tester felt that this could have been exceeded.

Test 19. Published *Sporting Motorist*, September 1964. Car loaned by D.A. Clarke, Leicester. Data table in the report mentioned tyres as being 185 × 15 but these had been replaced with 205 × 15s at the time of the test. Weight quoted should be increased to 2800 lbs as being more true of the car in test conditions, i.e. with fuel, oil, water, etc., aboard.

Test 20. Published *Sporting Motorist*, April 1964. Figures for speed in gears taken at 6400 rpm. Standing kilometre time: 26.6 secs with speed of 125 mph. Acceleration 50-100 mph in 4th: 13.2 secs with a time of 19.0 secs required for the same with overdrive engaged. Time 0-100-0: 22.5 secs.

Test 21. Published *Sports Car Graphic*, August 1964. Car loaned by George Filipinetti, Geneva. Maximum speed recorded: 148 mph.

Test 22. Published *The Autocar*, 9 April 1965. Test carried out with the approval of Maranello Concessionaires on car loaned by T. Kane. Additional acceleration data:

Mph	Time in seconds in each gear	
	Top	O/d
20-40	6.0	—
30-50	5.6	—
40-60	5.7	7.9

50-70	6.0	8.4
60-80	6.4	9.0
70-90	6.8	9.0
80-100	7.9	9.0
90-110	9.6	10.6
100-120	12.4	12.2

Best maximum speed attained: 144 mph. Kerb weight put at 3180 lb. Tyres: Pirelli Cinturato HS tubed 205 × 15.

Test 23. Published *Car and Driver*, March 1965.

Test 24. Published *Sports Car Graphic*, October 1965. Car was 3-carburettor version. Loaned by George Filipinetti, Geneva. Best timed speed: 156 mph.

Test 25. Published *Autosport*, 25 March 1966. Car tested was a 6-carburettor version, owned by Patrick McNally. Tyres: Dunlop 205 × 14 SP HR on 6½J rims front and back. Standing kilometre time: 23.8 secs giving 136 mph. Acceleration time of 26 secs, recorded for 0 to 140 mph. Speeds in gears given are at 7600 rpm. Maximum speed quoted as 159 mph.

Test 26. Published *Car and Driver*, October 1967. Car, a 6-carburettor version, was loaned by Bob Peak. Tyres: 205 × 14 HR Dunlop Sports Radial. Speeds in gears are at 7500 rpm for 1st to 4th and 6500 for 5th.

Test 27. Published *Car and Driver*, October 1965.

Test 28. Published *Road and Track*, September 1966. Car loaned by Modern Classic Motors, Reno. Speeds in gears are at 7000 rpm. Frontal area: 19.0 sq. ft. Acceleration: 0-100 ft/3.4 secs; 0-500 ft/8.7 secs.

Test 29. Published *Road and Track*, September 1967. Car, one of a small series (25 planned), was raced at Sebring in 1967 by Denise McCluggage and Pinky Rollo. Finished seventeenth overall. It is virtually a spyder version of the 6-carburettor, 4-cam 275GTB, the limited series planned by Luigi Chinetti. Acceleration: 0-100 ft/3.6 secs; 0-250 ft/5.7 secs; 0-500 ft/8.2 secs; 0-750 ft/10.6 secs; 0-1000 ft/12.7 secs. Frontal area: 17.9 sq. ft.

Test 30. Published *Road and Track*, August 1968. Acceleration: 0-100 ft/3.1 secs; 0-250 ft/5.4 secs; 0-500 ft/8.0 secs; 0-750 ft/10.1 secs; 0-1000 ft/12.4 secs. Frontal area: 18.0 sq. ft.

Test 31. Published *Sports Car Graphic*, February 1967. Car loaned by William Harrah, Reno. Maximum speed recorded during this test was 153 mph. Car had only 1000 miles on clock at time of test. Acceleration data taken from graph.

Test 32. Published *Car and Driver*, July 1967. It would appear that the car tested was the same as that reported on in *Sports Car Graphic* in February 1967. Speeds in gears are those obtained during test using 7000 rpm for 1st to 4th and 6800 rpm for 5th overdrive. Tyres: 205 × 14 Pirelli Cinturato HS. Test conducted at altitude of 4500 ft above sea level.

Test 33. Published *Autocar*, 29 May 1969. Car loaned by Geoffrey Thomas of Rob Walker's Corsley Garage. Tests conducted over 1147 miles of running. Tyres fitted: Firestone Cavallino Wide Oval 205 × HR14. Additional acceleration figures:

Mph	Time in seconds in each gear				
	5th	4th	3rd	2nd	1st
10-30	—	6.1	4.3	3.3	2.3
20-40	7.3	4.8	3.6	2.6	1.6
30-50	7.1	5.0	3.7	2.6	1.8
40-60	7.0	5.0	3.8	2.8	—
50-70	7.4	4.9	3.7	2.7	—
60-80	7.8	5.0	3.8	—	—
70-90	8.2	5.2	4.0	—	—
80-100	8.7	5.5	—	—	—
90-100	9.3	5.9	—	—	—
100-120	—	6.8	—	—	—

Test 34. Published *Sports Car Graphic*, November 1968. Speeds in gears at 6600. Top Speed estimated at 152 mph. Tyres: 205 VR × 15 Michelin.

Test 35. Published *Motor*, 15 January 1969. This was not a full road test but was a personal report by Paul Frere following driving the first production model of the car which was loaned by Sergio Pininfarina, its owner. The car had nearly 7000 km on the clock.

Test 36. Published *Autocar*, 30 September 1971. Car on reg. no. GPK 83K. Maximum speeds in gears were taken at 7100 rpm for top and at 7700 rpm for the remainder. The following additional data on acceleration was given:

Mph	Time in seconds in each gear		
	Top	4th	3rd
20-40	—	—	4.1

30-50	—	4.7	3.3
40-60	6.7	4.3	3.3
50-70	5.9	4.3	3.3
60-80	5.8	4.3	3.0
70-90	5.5	4.0	2.8
80-100	6.0	4.1	3.4
90-110	7.0	4.7	4.3
100-120	7.2	5.2	—
110-130	8.0	5.2	—
120-140	—	7.2	—

Test 37. Published *Autocar*, 19 August 1978. Car used was the ex-Maranello Concessionaires competition Daytona, chassis 15681, which they had run at Le Mans in 1972. At the time of the test it was on reg. no. WRF 756L. The following additional data on acceleration was given:

Mph	Time in seconds in each gear			
	Top	4th	3rd	2nd
10-30	—	—	—	—
20-40	—	—	—	2.7
30-50	—	—	—	2.1
40-60	—	—	—	1.8
50-70	—	—	2.9	1.8
60-80	—	3.7	2.4	2.1
70-90	—	3.1	2.4	—
80-100	5.9	3.2	2.6	—
90-110	5.2	3.5	—	—
100-120	5.2	3.9	—	—
110-130	5.4	4.6	—	—
120-140	6.7	—	—	—
130-150	8.3	—	—	—
140-160	10.0	—	—	—

Test 38. Published *Motor*, 10 July 1971. Carried out on Maranello Concessionaires press car, reg. no. FPA 132J, chassis 01616. Maximum speeds in gears were taken at 7800 rpm. The following additional acceleration data was given:

Mph	Time in seconds in each gear		
	Top	4th	3rd
10-30	—	—	5.2
20-40	8.4	6.0	3.6
30-50	7.8	5.0	3.3
40-60	7.8	4.5	3.6
50-70	7.2	5.3	3.6
60-80	7.3	5.4	4.1
70-90	8.2	5.5	—
80-100	8.9	6.2	—
90-110	9.5	7.2	—
100-120	11.8	—	—

Test 39. Published in *Autocar*, 4 October 1975. Car on reg. no. MM 96. Maximum speeds in

gears taken at 6600 rpm for top and at 7000 rpm for the remainder. The following additional data on acceleration was given:

Mph	Time in seconds in each gear		
	Top	4th	3rd
10-30	—	—	—
20-40	—	5.9	3.9
30-50	7.0	4.8	3.6
40-60	6.4	4.6	3.9
50-70	6.6	4.6	3.9
60-80	6.6	4.9	4.4
70-90	6.8	5.3	6.0
80-100	7.5	6.1	—
90-110	8.9	7.2	—
100-120	10.7	9.7	—

Test 40. Published *Autocar*, 13 March 1976. Car on reg. no. LPE 417P. Maximum speeds in gears were taken at 7300 rpm for top and 7600 rpm for the remainder. The following additional data on acceleration was given:

Mph	Time in seconds in each gear		
	Top	4th	3rd
20-40	—	6.1	3.7
30-50	8.4	4.9	3.4
40-60	7.9	4.9	3.7
50-70	7.6	5.1	3.7
60-80	7.7	5.3	4.3
70-90	8.0	5.7	—
80-100	8.7	6.3	—
90-110	10.5	8.0	—
100-120	13.0	—	—

Test 41. Published in *Road and Track*. Issue detail not known but the test has been reproduced in Brooklands Books' publication *Road and Track on Ferrari 1975-1981*. Maximum speeds in gears were taken at 6700 rpm for top and at 7000 rpm for the remainder. The following additional acceleration data was given: 0-100 ft/3.0 secs; 0-500 ft/8.6 secs.

Test 42. Published *Road and Track*, June 1975. Maximum speeds in gears taken at 7300 rpm for top and at 7000 rpm for the remainder. The following additional data on acceleration was given: 0-100 ft/4.2 secs; 0-500 ft/9.0 secs.

Test 43. Published *Autocar*, 23 October 1976. Car used was a fibreglass version on reg. no. MPH 70P. Maximum speeds in gears were taken at 7050 rpm for top and at 7700 rpm for the remainder. The following additional data on acceleration was given:

Mph	Time in seconds in each gear			
	Top	4th	3rd	2nd
10-30	—	—	5.1	3.3
20-40	—	6.4	4.1	2.7
30-50	9.5	5.5	3.5	2.6
40-60	8.4	5.0	3.6	4.8
50-70	7.8	5.1	3.6	—
60-80	7.2	5.1	3.9	—
70-90	7.7	5.5	4.4	—
80-100	8.8	6.0	—	—
90-110	9.2	6.7	—	—
100-120	10.2	8.0	—	—

Test 44. Published *Road and Track*, July 1978. Speeds in gears were taken at 7500 rpm for top and at 7700 rpm for the remainder. The following additional data was given on acceleration: 0-100 ft/3.5 secs; 0-500 ft/8.9 secs.

Test 45. Published *Road and Track*, March 1981. Speeds in gears were taken at 7500 rpm for top and at 7700 rpm for the remainder.

Test 46. Published *Motor*, 29 October 1983. Car on reg. no. A980 CPL. Speeds in gears were taken at 7700 rpm. The following additional data on acceleration was given:

Mph	Time in seconds in each gear	
	Top	4th
20-40	8.1	5.5
30-50	7.4	5.0
40-60	7.3	5.1
50-70	7.2	5.1
60-80	7.3	5.1
70-90	7.4	5.1
80-100	7.4	5.1
90-110	8.0	5.7

Test 47. Published *Car and Driver*, November 1981. Maximum speeds in gears were taken at 6400 rpm for top and at 7700 rpm for the remainder. Top gear passing times were given as 13.1 secs for 30-50 mph and 11.8 secs for 50-70 mph.

Test 48. Published *Motor*, 21 April 1979. Car on reg. no. VYL 26S. The following additional data on acceleration was given:

Mph	Acceleration in kickdown: time in seconds
20-40	2.5
30-50	2.7
40-60	3.0
50-60	3.5
60-80	4.2
70-90	4.9

80-100	6.8
90-110	9.0
100-120	10.9

Test 49. Published *Autocar*, 6 May 1978. Car on reg. no. TPB 640S. Maximum speeds in gears were taken at 5975 rpm for top and at 6800 rpm for the remainder. The following additional data on acceleration was given:

Mph	Time in seconds in each gear			
	Top	4th	3rd	2nd
10-30	—	—	—	—
20-40	—	—	4.5	2.4
30-50	6.7	4.8	4.3	2.0
40-60	6.3	4.3	3.2	2.5
50-70	6.4	4.2	3.5	3.1
60-80	6.7	4.2	3.5	—
70-90	7.2	4.6	3.9	—
80-100	7.7	4.9	4.7	—
90-110	9.9	5.0	—	—
100-120	11.6	7.0	—	—
110-130	—	9.6	—	—

Test 50. Published *Motor*, 13 July 1985. Car on reg. no. B842 MPB. Maximum speeds in gears were taken at 6850 rpm. The following additional data on acceleration was given:

Mph	Time in seconds in each gear	
	Top	4th
20-40	6.9	4.5
30-50	6.9	4.4
40-60	6.8	4.4
50-70	7.3	4.5
60-80	8.0	4.6
70-90	8.9	4.7
80-100	10.0	4.9
90-110	—	5.7
100-120	—	6.7

Test 51. Published *Road and Track*, May 1976. Car used, chassis 011, was at the time owned by Harley E. Cluxton of Grand Touring Cars, Phoenix. According to the notes accompanying the test, the car had been entered in 21 races (9 times as a back-up) and had been driven at times by Ickx, Merzario and Regazzoni. Regazzoni gave it its best results with a second and third respectively at the 1974 Brazilian and Argentine Grand Prix.

The testing was undertaken at the Riverside track with Phil Hill at the wheel.

Test 52. Published *Road and Track*, August 1984. Maximum speeds in gears were taken at 7700 rpm for 1st, 2nd and 3rd; at 7215 for 4th and — official Ferrari data — 5785 rpm in 5th.

Test no.	Model or type	Engine configuration	Bore (mm)	Stroke (mm)	Displacement (cc)	Max. power (bhp)	Max. torque (lbs/ft)	Max. power (rpm)	Max. torque (rpm)	Gear ratios					Weight as tested (lbs)	Tyre size
										Overall or final drive Individual						
								1st	2nd	3rd	4th	5th				
1	212 Export	V-12	68.0	58.8	2562	140 159	6500 4000	11.23 —	8.11 —	5.92 —	4.66 —	4.28 —	2035	5.90 × 15		
2	212 Export	V-12	68.0	58.8	2562	170	7200	11.23 —	8.11 —	5.92 —	4.66 —	4.28 —	2235	6.00 × 15		
3	4.1 Coupé	V-12	80.0	68.0	4102	260	6500	12.3 —	7.60 —	5.52 —	4.00 —	3.70 —	2390	6.50 × 15		
4	250MM	V-12	73.0	58.8	2953	240 178	7200 5250	10.8 —	7.23 —	5.34 —	4.25 —	— —	2350	6.70 × 15		
5	2.5-litre Testa Rossa	In-line 4	94.0	90.0	2498	220 189	6500 5500	11.3 —	6.78 —	5.13 —	4.25 —	— —	1990	5.25/6.00 × 15		
6	Europa	V-12	73.0	58.8	1953	240	7000	Final drive ratio 4.57 2.53 1.70 1.25 1.00 —					2880	6.00 × 16		
7	4.9-litre Superfast	V-12	88.0	68.0	4962	380	6500	8.39 2.44	5.88 1.71	4.25 1.24	3.44 1.00	— —	—	6.50 × 16		
8	410 Superamerica	V-12	88.0	68.0	4962	360 311	7000 5000	8.44 2.45	5.93 1.72	4.27 1.24	3.44 1.00	— —	3850	6.50 × 16		
9	400 Superamerica	V-12	77.0	71.0	3967	320 235	7000 4500	9.58 2.54	6.40 1.70	4.75 1.26	3.77 1.00	2.93 0.78	3000	—		
10	400 Superamerica	V-12	83.8	71.0	4590	420 295	7500 5500	9.80 2.45	6.89 1.72	4.96 1.24	4.00 1.00	3.12 0.78	3710	6.50 × 15		
11	250GT California Spyder	V-12	73.0	58.8	2953	260 195	7000 5000	11.61 2.54	7.77 1.70	5.73 1.26	4.57 1.00	— —	3040	6.00 × 16		
12	250GT Coupé	V-12	73.0	58.8	2953	240 181	7000 5500	11.6 2.53	7.77 1.70	5.74 1.25	4.57 1.00	3.55 0.78	3020	6.00 × 16		
13	250GT Tour de France Berlinetta	V-12	73.0	58.8	2953	260 195	7000 5000	10.14	6.81	5.02	4.00	—	2840	6.00 × 16		
14	250GT Short-Wheelbase Berlinetta	V-12	73.0	58.8	2953	280 203	7000 5500	10.17 2.54	6.80 1.70	5.04 1.26	4.00 1.00	—	2595	175 × 400		
15	250GT Short-Wheelbase Berlinetta	V-12	73.0	58.8	1953	280	7000	—	—	—	—	—	—	—		
16	250GT 2 + 2	V-12	73.0	58.8	2953	240 181	7000 5000	8.48 2.45	5.93 1.72	4.27 1.24	3.44 1.00	2.68 0.78	3473	185 × 15		
17	250GT 2 + 2	V-12	73.0	58.8	2953	240 180	7000 5500	11.61 2.54	7.78 1.70	5.77 1.26	4.56 1.00	3.56 0.78	3810	6.50 × 15		
18	250GT 2 + 2	V-12	73.0	58.8	2953	235	7000	11.41	7.76	5.73	4.57	3.55	—	—		
19	250GT Berlinetta Lusso	V-12	73.0	58.8	2953	250 206	7500 5500	Final drive ratio 3.77 2.54 1.70 1.25 1.0					2408	185 × 15		

Acceleration time in seconds through gears										Standing start ¼ mile		Maximum speed in individual gears					
Zero to – mph										Secs	Mph	1	2	3	4	5	
30	40	50	60	70	80	90	100	110	120								
5.2	—	8.1	10.5	12.9	16.2	19.5	22.5	—	—	—		45	64	88	110	120	
3.4	4.0	5.2	7.05	9.2	11.8	14.2	18.1	—	—	15.3		—	—	—	—	—	
2.2	3.0	4.7	6.1	8.3	10.0	12.9	15.5	20.0	27.0	15.39		44	72	99	136	—	
2.2	3.1	4.0	5.1	7.1	8.5	11.0	13.7	—	—	14.4	104	56	84	114	—	—	
2.8	3.6	4.7	5.8	6.9	8.6	10.2	12.0	15.4	—	13.3	105	47	78	103	—	—	
2.0	3.1	4.3	5.9	7.9	10.1	12.4	15.5	—	—	16.1	102	54	76	102	126	—	
2.8	3.6	4.5	5.6	7.1	8.3	9.8	12.1	—	—	13.9	108	—	—	—	—	—	
3.5	4.4	5.3	6.6	8.5	10.0	—	14.5	—	—	14.6	101	69	99	132	165	—	
3.5	5.9	6.8	9.2	11.5	14.4	16.9	20.0	—	—	17.0		—	—	—	—	—	
3.7	4.8	6.0	7.8	9.7	12.0	15.0	18.7	—	—	15.8	92.0	—	—	—	—	—	
3.1	4.2	5.4	7.2	8.9	11.5	13.8	16.4	—	—	15.6	97.0	50	74	100	125	—	
3.2	4.0	5.4	7.1	8.8	11.6	14.2	17.5	—	—	15.5	94.0	—	—	—	—	—	
4.0	4.8	5.8	7.8	9.3	11.1	13.7	16.1	—	—	16.1	100	56	84	114	143	—	
3.0	4.0	5.0	6.8	8.0	9.7	12.6	15.5	—	—	15.0	97.0	—	—	—	—	—	
3.0	3.9	5.2	6.4	7.8	10.0	11.6	13.7	16.7	19.5	14.4		45	74	100	127	—	
3.8	5.0	6.3	8.0	10.5	13.4	17.5	22.8	—	—	16.3	88.0	62	89	123	—	—	
4.1	5.0	6.2	8.1	9.7	13.3	15.7	18.5	—	—	16.7	94.0	—	—	—	—	—	
2.0	4.0	6.0	7.5	10.0	12.9	16.0	20.0	25.0	—	15.9	89.5	46	68	93	116	—	
3.9	4.8	5.7	6.8	8.9	10.8	13.6	16.8	19.3	23.4	—		56	83	113	149	—	

Test no.		Model	Engine configuration					Gear ratios					Weight as tested (lbs)	Tyre size	
			Bore (mm)	Stroke (mm)	Displacement (cc)	Max. power (bhp) Max. torque (lbs/ft)	Max. power (rpm) Max. torque (rpm)	Overall or final drive Individual							
									1st	2nd	3rd	4th	5th		
20	330GT	V-12	77.0	71.0	3967	300 246	6600 5000	10.77 2.53	7.22 1.77	5.33 1.25	4.25 1.00	3.30 0.78		3024	205 × 15
21	330GT	V-12	77.0	71.0	3967	300 240	6600 5500	9.00 2.53	6.28 1.77	5.53 1.56	4.29 1.21	— —		3450	205 × 15
22	330GT	V-12	77.0	71.0	3967	300 288	6600 5000	Final drive ratio 4.25							
								2.53	1.68	1.26	1.00	0.78			
23	330GT	V-12	77.0	71.0	3967	300 415	6600 5000	10.80 2.54	7.21 1.70	5.35 1.26	4.25 1.00	3.31 0.78		3430	205 × 15
24	275GTB	V-12	77.0	58.8	3286	310 217	7600 5000	Final drive ratio 3.3						2980	195 × 14
								3.07	2.12	1.57	1.25	1.04			
25	275GTB	V-12	77.0	58.8	3286	300	7600	Final drive ratio 3.55						2912	205 × 14
								3.07	2.12	1.57	1.25	1.04			
26	275GTB/4	V-12	77.0	58.8	3286	300 202	8000 5500	Final drive ratio 3.55						2930	205 × 14
								3.08	2.12	1.57	1.25	1.04			
27	275GTS	V-12	77.0	58.8	3286	280 217	7500 5000	10.16 3.08	7.00 2.12	5.18 1.57	4.13 1.25	3.43 1.04		3393	185 × 14
28	275GTS	V-12	77.0	58.8	3286	260 202	7000 5000	10.2 3.08	7.00 2.12	5.20 1.57	4.15 1.25	3.43 1.04		3345	205 × 14
29	275GTS/4	V-12	77.0	58.8	3286	330 240	8000 6000	10.9 3.08	7.54 2.12	5.58 1.57	4.45 1.25	3.70 1.04		2718	205 × 14
30	330GTS	V-12	77.0	71.0	3967	345 277	7000 5000	10.60 3.07	7.30 2.11	5.45 1.58	4.30 1.25	3.31 0.96		3415	205 × 14
31	330GTC	V-12	77.0	71.0	3967	300	7000	8.35 3.08	5.84 2.12	3.38 1.57	3.30 1.25	2.54 1.04		3455	205 × 14
32	330GTC	V-12	77.0	71.0	3967	300	7000	Final drive ratio 3.44						3455	205 × 14
								3.08	2.12	1.57	1.25	1.04			
33	365GTC	V-12	81.0	71.0	4390	320	6600	10.60 3.08	7.29 2.12	5.40 1.57	4.30 1.25	3.30 0.96		3573	205 × 14
34	365GT	V-12	81.0	71.0	4390	320 267	6600 5000	2.53	1.70	1.26	1.00	0.80		3945	205 × 15
35	Dino 206GT	V-6	86.0	57.0	1986	180	8000	—	—	—	—	—		—	185 × 14
36	365GTB/4	V-12	81.0	71.0	4390	362 318	7500 550	Final drive ratio 3.30						3890	215/70 VR 15
								3.07	2.12	1.57	1.12	0.964			
37	365GTB/4 Comp.	V-12	81.0	71.0	4390	440	8300	Final drive ratio 3.88						—	See notes
								—	—	—	—	—			
38	Dino 246GT	V-6	92.5	60.0	2418	195 165.5	7600 5500	Final drive ratio 4.44						3035	205/70 VR 14
								3.075	2.11	1.524	1.125	0.857			

Acceleration time in seconds through gears										Standing start ¼ mile		Maximum speed in individual gears				
Zero to – mph										Secs	Mph	1	2	3	4	5
30	40	50	60	70	80	90	100	110	120							
2.9	4.1	5.6	7.1	9.7	11.2	13.0	15.4	19.8	24.5	—		50	74	100	125	—
3.2	4.0	4.8	6.4	8.0	11.2	13.0	16.2	—	—	15.4	99.0	50	75	100	125	—
3.5	4.5	5.9	7.4	9.1	11.9	14.6	17.6	22.6	29.8	15.5		48	73	100	125	—
2.5	3.4	4.7	6.3	8.1	10.6	12.8	15.5	—	—	14.6	97.0	51	76	104	130	152
3.0	3.6	4.5	6.0	7.4	10.0	12.5	14.6	—	—	14.0	98.0	56	87	112	130	—
2.8	4.0	5.2	6.4	7.2	9.2	10.7	12.5	14.8	17.7	—		53	76	103	129	—
2.2	3.2	4.3	6.2	7.8	10.1	12.2	14.5	—	—	14.5	100	52	75	101	127	135
3.5	4.2	5.0	6.0	7.6	10.0	12.6	15.6	—	—	14.0	95.0	48	70	95	119	144
2.6	4.1	5.7	7.2	9.5	11.9	—	18.8	—	28.6	15.7	91.0	44	65	87	108	145
3.0	4.0	5.4	6.7	8.0	9.8	12.2	15.0	—	21.6	14.7	99.0	44	64	87	109	155
3.0	4.0	5.5	6.9	8.0	10.3	12.7	17.1	—	26.4	14.9	95.0	49	71	97	124	146
3.2	4.5	6.0	7.6	10.2	13.2	16.3	19.0	25.0	28.5	—		—	—	—	—	—
2.2	3.3	4.6	6.8	8.7	11.3	13.6	16.7	—	—	15.1	96.0	50	72	97	122	143
2.6	3.6	4.9	6.3	7.9	9.9	12.1	14.7	17.8	21.8	14.5	99.0	50	73	98	123	151
3.5	4.5	5.9	8.1	10.2	13.0	16.1	20.8	—	—	—		50	75	100	125	—
—	—	5.6	7.5	9.8	12.2	15.3	19.2	24.0	30.6	15.5		—	—	—	—	—
2.5	3.3	4.3	5.4	7.1	8.6	10.6	12.6	14.8	18.0	13.7	104	59	86	116	146	174
2.1	2.8	3.6	5.0	5.7	7.1	8.7	10.1	12.4	14.4	12.8	112	—	—	—	—	—
2.6	3.6	5.5	7.1	9.2	11.4	14.5	17.6	22.0	28.5	15.4		41	59	81	110	148

Test no.	Model or type	Engine configuration	Bore (mm)	Stroke (mm)	Displacement (cc)	Max. power (bhp)	Max. torque (lbs/ft)	Max. power (rpm)	Max. torque (rpm)	Gear ratios					Weight as tested (lbs)	Tyre size
										Overall or final drive						
										Individual	1st	2nd	3rd	4th		
39	365GT4 2 + 2	V-12	81.0	71.0	4390	320 318	6200 4000	Final drive ratio 4.30	2.59	1.706	1.254	1.0	0.814	4300	215/70 VR 15	
40	308GT4 UK	V-8	81.0	71.0	2927	250 210	7700 5000	Final drive ratio 3.71	3.42	2.35	1.69	1.24	0.95	3585	207/70 VR 14	
41	308GT4 USA	V-8	81.0	71.0	2927	205 181	6600 5000	Final drive ratio 4.11	3.23	2.18	1.52	1.12	0.86	—	207/70 VR14	
42	365GT4/BB	V-12	81.0	71.0	4390	344 302	7200 3900	Final drive ratio 3.75	2.64	1.89	1.43	1.08	0.82	3784	215/70 VR 15	
43	308GTB	V-8	81.0	71.0	2927	255 210	7700 5000	Final drive ratio 3.71	3.418	2.35	1.693	1.244	0.918	3220	205/70 VR 14	
44	308GTS	V-8	81.0	71.0	2927	205 181	6600 5000	Final drive ratio 3.71	3.59	2.35	1.69	1.24	0.95	3362	205/70 VR 14	
45	308GTSi	V-8	81.0	71.0	2927	205 181	6600 5000	Final drive ratio 3.71	3.58	2.35	1.69	1.24	0.95	3423	220/55 VR 390	
46	308GTB Qv	V-8	81.0	71.0	2927	240 192	7000 5000	Final drive ratio 3.82	3.419	2.353	1.693	1.244	0.919	3281	220/55 VR 390	
47	Mondial 8	V-8	81.0	71.0	2927	205 181	6600 5000	Final drive ratio 3.71	3.59	2.35	1.69	1.24	0.95	3560	240/55 VR	
48	400GT	V-12	81.0	78.0	4823	340 347	6500 3600	Final drive ratio 3.25	2.48	1.48	—	—	1.00	—	215/70 VR 15	
49	BB512	Flat-12	82.0	78.0	4942	360 332	6200 4600	Final drive ratio 3.2	2.94	2.10	1.59	1.20	0.91	3854	225/70 VR 15	
50	Testarossa	Flat-12	82.0	78.0	4942	390 361	6300 4500	Final drive ratio 3.21	3.12	2.01	1.52	1.16	0.87	4032	280/45 VR 415	
51	312B3 Formula 1	Flat-12	80.0	49.6	2992	490 300	12500 9000	Final drive ratio 4.27	2.67	2.08	1.73	1.39	1.14	1666	16.2/26.0.13 Goodyear Racing	
52	288GTO	V-8	80.0	71.0	2855	400 366	7000 3800	Final drive ratio 2.90	2.77	1.72	1.23	0.96	0.77	2720	255/50 VR-16	

Acceleration time in seconds through gears										Standing start ¼ mile		Maximum speed in individual gears					
Zero to – mph										Secs	Mph	1	2	3	4	5	
30	40	50	60	70	80	90	100	110	120								
2.8	3.9	5.6	7.1	9.0	11.7	14.1	18.0	21.9	28.3	15.2	92.0	50	76	104	130	150	
2.5	3.6	5.4	6.9	9.1	11.4	15.2	18.1	22.4	30.3	14.9	89.0	45	64	90	123	154	
2.4	—	5.7	7.8	10.1	12.8	—	20.5	—	—	16.0	89	38	59	82	109	138	
4.2	—	5.8	7.2	—	10.5	—	14.8	—	20.5	15.5	102.5	53	75	103	126	175	
2.3	3.3	5.1	6.5	8.7	10.8	13.8	17.0	20.4	25.0	14.8	93	44	65	92	124	154	
3.5	—	5.3	7.3	—	12.2	—	19.8	—	—	15.8	90	42	64	90	123	145	
2.9	—	6.1	7.9	10.6	13.4	—	22.1	—	—	16.1	88	41	63	87	122	147	
2.1	3.0	4.5	5.7	7.5	9.2	11.6	14.3	17.2	20.5	14.2	100	42	62	85	117	157	
3.1	4.6	7.1	9.3	12.9	16.0	21.7	27.8	37.7	—	16.9	83	44	67	93	126	138	
3.7	5.0	6.5	8.0	10.0	12.3	14.8	18.7	24.0	29.8	16.0		—	—	—	—	—	
2.9	3.8	4.7	6.2	7.6	9.5	11.5	13.6	17.3	21.3	13.6	100	—	—	—	—	—	
2.6	3.4	4.3	5.8	7.1	8.8	10.6	12.7	15.5	14.2	14.2	120	51	79	105	137	180	
1.2	—	2.0	2.4	—	3.2	—	4.3	—	5.5	9.0	159	82	105	126	157	192	
2.3	—	4.1	5.0	6.2	7.7	—	11.0	—	16.0	14.1	113	70	112	157	189	189	

Bibliography

Published books

The introduction to this book indicates that the text on each model is limited because the publication is intended for use as a reference work. It is assumed that the reader will already possess a number of books on the marque containing greater detail on individual cars should it be required.

The following bibliography in no way encompasses all the books which have been published on the marque and is intended only to highlight those which the author feels are of any significance.

The Ferrari – Hans Tanner (*G.T. Foulis*, 1959) Now in its sixth edition and still generally accepted as the Ferrari 'bible'. Since its first appearance in 1959 it has grown immensely in content, size and price. Doug Nye has been responsible for a general 'clean-up' and the correction of earlier errors.

The Enzo Ferrari Memoirs – Enzo Ferrari (*Hamish Hamilton*, 1963)

Originally published in Italy as *My Terrible Joys*, and a disappointment in many ways. Enzo gives away about as much as a pro poker player, but reading it can help one to understand what makes him tick.

Ferrari: The Sports and Gran Turismo Cars – Warren W. Fitzgerald and Richard R. Merritt (*Bond Publishing*, 1968)

Probably still the best book on the subject and a must for anybody seeking an overall knowledge of the sports and GT machines. Latest edition (from CBS Publications) is the fourth but the original 1968 version is the classiest, with rich cloth covers and good-quality glossy paper.

The Ferrari V-12 Sports Cars 1946-1956 – Anthony Pritchard (*Lionel Leventhal*, 1970)

Quite a handy little book for those interested in the early sports racers, although the treatment is rather shallow and there are a number of factual errors.

Cars in Profile No. 1: 246SP-330P4 Ferraris – Paul Frere (*Profile Publications*, 1972)

Potted history of all the rear-engined sports prototypes up to 1967. Good technical infor-

mation and reasonably well illustrated.

15 Ferrari Road Tests – (*Road and Track Magazine*, 1972)

Road tests of a wide assortment of Ferraris, collected from issues of the famous American monthly.

The Ferrari – Gianni Rogliatti (*Hamlyn*, 1973) First published in Italy as *Le Ferrari* in huge landscape format; the English-language edition by Hamlyn is more manageable. Lots of good pictures and a fair amount of duff information in stilted English.

Ferrari: 25 Years of Formula 1 – John W. Barnes Jr (*John W. Barnes Jr Publishing Inc.*, 1975)

Rather expensive when first published, this is a slender volume of pen-and-ink drawings of the principal single-seater types, with brief comments. Takes you from the 125F1 to the 312B3.

Grand Prix Ferrari – Anthony Pritchard (*Robert Hale*, 1974)

Not bad at the first reading, but a closer look reveals a complete lack of original research. There are also quite a number of factual errors.

Ferrari: the Early Berlinettas and Competition Coupés – Dean Batchelor (*Haessner Publishing*, 1974)

Various Ferrari 'tin-tops', both competition types and road cars, are discussed in this attractive soft-cover book. A good photo selection plus line drawings.

Ferrari: The Early Spyders and Competition Roadsters – Dean Batchelor (*Haessner Publishing*, 1975)

The early sports racers up to and including the TRI/61 looked at in some detail. The same format as the author's earlier berlinetta book, and a useful reference source.

Ferrari: The Man, The Machines – edited by Stan Grayson (*Automobile Quarterly Publication*, 1975)

A stylish pot-pourri of interesting articles, good photographs and good-quality colour drawings. Not to be missed by any Ferrari addict. Has recently been re-issued with new dust jacket.

Ferrari – L.J.K. Setright (*Foulis Mini Marque Series*, 1975)

First published in the USA by Ballantine with soft covers. If you can put up with the author's affected writing style this is quite a useful book. Well illustrated, but poor-quality binding.

Ferrari: Operating, Maintenance and Service Handbooks 1948-1963 – R.F. Merritt (*John W. Barnes Jr Publishing Inc.*, 1975)

Useful reading not only for owners of the older cars but also for anybody interested in early Ferrari technicalities. Soft covers and the usual American large format.

The Spyder California: A Ferrari of Particular Distinction – George M. Carrick (*John W. Barnes Jr Publishing Inc.*, 1976)

A soft-cover large-format book which takes a detailed look at one of the most desirable of all Ferraris. Written by an ardent enthusiast this is an informative additional work on the many variations of the 250GT theme.

The Ferrari Formula 1 Cars 1948-1976 – Jonathan Thompson (*Aztex Corp.*, 1976)

Comprehensive coverage of the single-seaters, in mainly photographic form, plus full technical specifications and line drawings by the author. A few errors, but a useful book to have.

Ferrari Brochures and Sales Literature: A Source Book 1946-1967 – Richard F. Merritt (*John W. Barnes Jr Publishing Inc.*, 1976)

An invaluable reference work compiled by a well-known Ferrarist.

Ferrari: The Gran Turismo and Competition Berlinettas – Dean Batchelor (*Haessner Publishing*, 1977)

The third in the series of soft-cover books from this author, this has the same format as before and continues the story of the closed racing and road cars as far as the 365 Boxer. Previous comments apply, and the 3 books together form a handy collection.

The Ferrari Legend: The 250GT Competition Berlinettas – Jess G. Pourret (*John W. Barnes Jr Publishing Inc.*, 1977)

Possibly the most complete coverage of one particular series of Ferrari and a veritable feast for berlinetta lovers. The author is well known for the high standard of his research, and this is unquestionably the definitive work on these

cars. Profusely illustrated.

The Berlinetta Lusso: A Ferrari of Unusual Elegance – Kurt H. Miska (*John W. Barnes Jr Publishing Inc.*, 1978)

Another book dealing with a 250GT variant. Similar format to the book on the Spyder California from the same publisher, with soft covers.

Ferrari Sports et Prototypes – Antoine Prunet (*Editions EPA*, 1978)

A very detailed study of the sports and prototype machinery. Well illustrated, and written by a respected Ferrari expert and enthusiast. Available in English or French.

La Scuderia Ferrari 1929-1939 – Luigi Orsini and Franco Zagari (*Editoriale Olimpia*, 1979)

In a word – magnificent! Not a great amount of text but the hundreds of photographs are beautifully reproduced and vividly capture the romantic atmosphere of motor racing in the 1930s. An English-language edition (the work of Doug Nye) is available from Osprey Publishing Ltd.

Ferrari Berlinetta Boxer – Mel Nichols (*Osprey Publishing Ltd*, 1979)

The first of Osprey's popular Auto History Series devoted to a Ferrari model, this is a fairly slim but useful guide to Ferrari's flat-12 flagship. Attractive format, well illustrated and modestly priced.

Dino: The Little Ferrari – Doug Nye (*Osprey Publishing Ltd*, 1979)

One of the best of all Ferrari books with full details of all the V-6 and V-8 competition and road cars. Painstakingly researched, nicely written and well illustrated. The layout, however, might not be to everyone's liking as there is a fair amount of blank paper, and the racing history is dealt with on a chronological basis and not by type.

Ferrari Dino 206GT, 246GT and GTs – Ian Webb (*Osprey Publishing Ltd*, 1980)

Another in the Auto History Series, with details of all the Dino V-6 road cars. The many owners and prospective owners of these desirable cars will find something of interest here.

Ferrari Testa Rossa V-12 – Joel E. Finn (*Osprey Publishing Ltd*, 1980)

The 250TR is undoubtedly one Ferrari which merits a book to itself. Competition record, full technical details and individual chassis histories are all here, together with many good photos.

The Colonel's Ferraris – Doug Nye (*Amperсанд Press*, 1980)

If you remember the good old days when Maranello Concessionaires were involved in national and international racing, you'll want

this one for instant nostalgia. A rather slim offering, but well written by Mr Nye.

Great Marques: Ferrari – Godfrey Eaton (*Octopus Books*, 1980)

The text is particularly useful for those wanting to know more about Ferrari in general, and the colour photography is quite superb. Remarkable value for money.

The Ferrari Legend: The Road Cars – Antoine Prunet (*Patrick Stephens*, 1980)

An in-depth history of all the Ferrari road cars from 1946. Well researched and written, with hundreds of photos, this is a book with great appeal. The writer, who is well known to Ferrari enthusiasts, has done a first-class job. Highly recommended.

Ferrari 275GTB and GTS – Ian Webb (*Osprey Publishing Ltd*, 1981)

The third Auto History dealing with a Ferrari model, the author of this one making no attempt to conceal his admiration for the 275GTB. The same format as before and the usual good value for money.

The Survivors Series: Ferraris for the Road – Henry Rasmussen (*Haynes Publishing*, 1981)

A large-format book which looks at a number of the better-known road cars. You might not go for the writing style but there are plenty of good colour photos. One for the coffee table?

Flat-12 – Alan Henry (*Motor Racing Publications*, 1981)

One of 2 works on the flat-12 cars, this one deals solely with the F1 cars and sports prototypes. Being written by a respected professional journalist, the story is told in an interesting and entertaining fashion, and the price is moderate. Reasonably well illustrated.

Boxer – Jonathan Thompson (*Osprey Publishing Ltd*, 1981)

Looks at the same cars as Alan Henry's *Flat-12* but in a much more lavish manner, and there are also 2 chapters on the boxer road cars. Large format with many fine photos, full technical details and competition history.

Ferrari 250GTO Super Profile – Chris Harvey (*Haynes Publishing*, 1982)

Another book about a specific model, but the format is new and inexpensive. Like the other Super Profiles it does not go into too much detail, but is reasonably informative and well illustrated.

Enzo Ferrari: 50 Years of Greatness – Piero Casucci (*Haynes Publishing*, 1982)

Quite an interesting study of Enzo Ferrari, his cars, engineers, team managers and drivers. The so-called English edition suffers from such Americanisms as 'Enzo Ferrari in suspenders'. Perhaps lacking in detail but well

illustrated and very reasonably priced.

The Ferrari 365GTB/4 Daytona – Pat Braden and Gerald Roush (*Osprey Publishing Ltd*, 1972)

This will tell you just about everything you could possibly want to know about the delectable Daytona, regarded by many as the last real Ferrari road car. Highly informative with a good photo selection.

Illustrated Ferrari Buyer's Guide – Dean Batchelor (*Osprey Publishing Ltd*, 1982)

A fairly comprehensive guide to Ferraris, with details of various types plus comments from the author. Obviously written with the American market in mind but might also be of interest to those who have recently caught the Ferrari 'bug'. Soft covers and reasonable price.

Ferrari Turbo – Jonathan Thompson (*Osprey Publishing Ltd*, 1982)

There are just 6 chapters, 3 of which outline in detail the development of the 126C and 126C2 Formula 1 cars. There is also a brief and not entirely accurate account of the 125F1 cars of 1948-50, plus further chapters on the Renault F1 cars and the turbo versions of the 208, 308 and 512 Ferraris. Well illustrated.

Ferrari 308 and Mondial – Geoff Willoughby (*Osprey Publishing Ltd*, 1982)

There can be no doubt about the accuracy of this latest Auto History. Nicely written and illustrated, with plenty of detail. A bargain at the price.

The Complete Guide to the Ferrari 308 Series – Wallace A. Wyss (*Dalton Watson*, 1982)

Published at the same time as Geoff Willoughby's *Ferrari 308 and Mondial*, this book tackles the subject in a rather different manner although in size and price it is very similar. As both books are moderately priced, fans of the 308 series will probably buy the pair.

Ferrari Year Books (*Ferrari Automobili*)

Published by the factory from 1949 until the late 1960s. Reasonably good documentation of Ferrari history, but certainly not worth the ridiculously high prices now being asked. Several editions have been reprinted in the USA and these are much better value for money.

Brooklands Books – edited by R.M. Clarke (*Brooklands Books*)

Reprints of road tests, race reports, technical appraisals and other articles from a variety of magazines covering the years 1946-81 in 7 books. Also *Ferrari Collection No. 1* covers the years 1960-70. Further offerings are *Road and Track on Ferrari 1968-74*, *Road and Track on Ferrari 1975-81*, *Motor and Classic Cars 1966-76 and 1976-84* and 3 issues from *Car and Driver on Ferrari* covering 1955-62, 1963-75 and 1976-83.

soft-bound with much useful information and inexpensive.

Ferrari Album – edited by Jonathan Thompson (*The Color Market*)

A novel and welcome idea from Ferrari expert Jonathan Thompson. A little on the pricey side for a soft-cover publication, but a stylish production all the same. Each issue contains articles on a variety of topics, both historical and contemporary. Informative and packed with good-quality photos. There have been 3 issues to date.

Ferrari – The Sports/Racing and Road Cars – Godfrey Eaton (*Consumer Guide International*, 1982)

A 60,000-word text to guide the reader through the Ferrari maze. Not so detailed as the Fitzgerald/Merritt book but it does have the advantage of later and more detailed research. Written with the bias on the American market. Over 500 illustrations (black/white and colour).

I Love GTO – edited by Arnoldo Mondadori (*Libreria dell'Automobile*, 1983)

An unusual book with minimal text in English, Italian and French. Many excellent colour illustrations including the evolution of the 250GTO. Not to be missed.

Ferrari 4-Seaters – David Owen (*Osprey Publishing Ltd*, 1983)

Another of the Auto History Series. Concerns itself with the V-12 Pininfarina-designed and built 2 + 2s, starting with the 250GTE and finishing with the possible (?) Pinin.

Ferrari 250GTO (1962-64 Competition Berlinetta) – David Clarke (*Osprey Publishing Ltd*, 1983)

The author is respected throughout the world not only for his expert knowledge on Ferraris but also for his expertise as a restorer of cars of the marque. A superb book on possibly the Ferrari's favourite car. A must from the Auto History Series.

Ferrari 250LM – Marcel Massini (*Osprey Publishing Ltd*, 1983)

A well-researched publication giving the complete history of this first rear-engined gran turismo car which had a relatively good racing career. Price above the norm for Osprey motor books but well worth the extra!

410 Superamerica Series III – Dyke Ridgley (*Dyke Ridgley*)

The author is a well-known and highly respected expert on the marque and this book deals with one of his favourite cars. A complete history of the type with engine/chassis numbers, etc. Large-format soft-cover of 100 pages and well illustrated (some colour).

Ferrari – The Grand Prix Cars – Alan Henry (*Hazelton Publishing*, 1984)

An excellent book which not only traces the history of the cars but also records the opinions of those concerned with them including the drivers. At times the story is brutally frank – good reading but some errors in chassis numbers, etc., of the earliest cars.

Ferrari – 275GTB/GTS and 275GTB-4A – Jess Pourret (*Publi-Inter*, 1984)

A book on Ferraris by Jess Pourret can never be passed over. His knowledge of the marque is unrivalled and here is the complete story of these road and racing gran turismo cars. Text in French but an English version is expected.

Piloti Che Gente – Ing. Enzo Ferrari (*Limited edition*, 1984)

A very remarkable book which is a pot-pourri of unpublished photos, posters, drawings and old and odd documents in black/white and colour. The text, which is minimal and large-print, is candid and pulls no punches. Excellent value even if the price is high.

Ferrari Tipo 166 – Gianni Rogliatti and Lorenzo Boscarelli (*Libreria dell'Automobile*, 1985)

This book has been extensively researched and gives a complete insight into one of the earliest types, dwelling mainly on the sports and gran turismo models but not forgetting the highly successful racing cars. Many hitherto unpublished photographs are included. Text in Italian but English and French versions will shortly be available.

Ferrari Cabriolets and Spyders – Jonathan Thompson (*Osprey Publishing Ltd*, 1985)

Covers all the types from the 166 to the Mondial Qv with a concise text and a number of photos illustrating 'one-off' coachwork cars.

The Ferrari Tipo 625 and 555 – Anthony Pritchard and Keith Davey (*Profile Publications No. 12*)

Brief history of 2 not very successful racing cars of the 1950s. Illustrations include 10 excellent colour drawings.

The Ferrari Tipo 340 and 375 Sports Cars – Anthony Pritchard and Keith Davey (*Profile Publications No. 84*)

History and useful specification of 2 of the more successful sports racers. Illustrations include 10 colour drawings.

Ferrari 'P' Series – Nathan Beehl (*Sapphire Publications*, 1985)

A useful guide to the highly successful prototype sports racing cars. Plenty of illustrations both black/white and colour. Large format, soft cover. Recommended.

Ferrari 250GT SWB – Ken Gross (*Osprey Publishing Ltd*, 1985)

Another of the Auto History books which always give the reader a good insight into any particular model. This is no exception and deals with a type which was not only a very successful racing car but could be driven on the road too.

Club magazines

The following are magazines produced quarterly by a number of Ferrari clubs. Apart from feature articles all, at one stage or another, give valuable data on the various models:

Prancing Horse – journal of the Ferrari Club of America, 6101 Burger Avenue, Dearborn Heights, Michigan 48127, USA.

Ferrari – journal of the Ferrari Owners' Club (USA), Suite 1201, 15910 Ventura Boulevard, Encino, California 91316, USA.

Gli Amici della Ferrari – journal of the Ferrari Club Nederland, Postbus 30, 1390 AA Abcoude, Nederland.

Australian Ferrari Register – journal of the Australian Ferrari Register, 8 Sweetgum Street, Bellbowrie, Queensland 4070, Australia.

Ferrari – journal of the Southern Equatorial Ferrari Automobile Club, PO Box 7198, Johannesburg 2000, Republic of South Africa.

Ferrari – journal of the Ferrari Owners' Club (UK), 10 Whittox Lane, Frome, Somerset BA11 1BY, England.

The following are magazines produced annually by Ferrari clubs:

Ferrari – journal of the Club Ferrari France, Club Ferrari Belgio and Club Ferrari Suisse, 109 Rue Aristide Briand, 92300 Levallois-Perret, France.

Ferraristi Svezia – journal of Ferraristi Svezia, Tvarskecet 26, S-415 60 Gothenburg, Sweden.

The following is another magazine exclusively Ferrari:

Cavallino – published by John W. Barnes Jr, Box 323, Scarsdale, New York 10583, USA. An excellent and informative bi-monthly magazine with articles from a selective group of contributing editors.

In addition to the foregoing there is a great wealth of material from the factory in the way of handbooks and brochures all containing useful information, not forgetting special booklets and brochures printed by concessionaires. However, these are not easily obtainable.

Production

<i>Year</i>	<i>Number of cars produced</i>	<i>Total to date</i>
1947	3	3
1948	5	8
1949	21	29
1950	26	55
1951	33	88
1952	44	132
1953	57	189
1954	58	247
1955	61	308
1956	81	389
1957	113	502
1958	183	685
1959	248	933
1960	306	1,239
1961	441	1,680
1962	493	2,173
1963	598	2,771
1964	654	3,425
1965	740	4,165
1966	665	4,830
1967	706	5,536
1968	729	6,265
1969	619	6,884
1970	928	7,812
1971	1,246	9,058
1972	1,844	10,902
1973	1,772	12,674
1974	1,436	14,110
1975	1,337	15,447
1976	1,426	16,873
1977	1,798	18,671
1978	1,939	20,610
1979	2,221	22,831
1980	2,470	25,301
1981	2,565	27,866
1982	2,209	30,075
1983	2,366	32,441
1984	2,850	35,291

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The author, Godfrey Eaton, was born many years ago in Kuala Lumpur where, after pedalling around in his Model T Ford, he learnt at the age of eight to drive his father's Austin 20 and ride his uncle's Douglas Wheel vehicle.

As a young man he found his life was bound up in Bugattis until Ferraris made their debut in 1947. He became fascinated by Ferraris and followed their fortunes closely through the years. Today he is particularly interested in the history of the man Ferrari as well as his car.

He started writing at prep school, producing a two-sheet rag lampooning his teachers, and since then has written many articles and pamphlets on the automobile.

In 1947 he became editor of the Bugatti Owners' Club world-acclaimed publication *Bugantics* and then became secretary of the club. The year 1967 saw the formation of the Ferrari Owners' Club of which he was a founder member. In the same year he founded and produced the club's quarterly international magazine, *Ferrari*, and remains its editor today. He also runs the club's general secretariat and has found the time to write four general books on his favourite subject—Ferraris.

Geoff Willoughby, purely as a Ferrari enthusiast and working on his own initiative at the time, started to compile a Register of Ferrari Cars in Great Britain in 1964. Following the formation of the United Kingdom-based Ferrari Owners' Club in 1967, he became the club's registrar and concentrated on the sports, sports prototype and GT cars owned by members. He has written extensively for the club's journal, *Ferrari*, and is the author of a book devoted to the 308GT series of cars.



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