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A Four-Cylinder Inheritance

With an engine designed by Lampredi for the Formula 2 single-seaters and a body produced by the young Scaglietti, the 500 Mondial immediately took the lead in races throughout the world.

By Cristiano Zaffaroni

t was a late Sunday mon ing at Maranello in the summer of 1951 and designer Aurelio Lampredi was sitting at his drawing board. Lampredi, a young man of great talent, often worked very long hours and often outside the normal working day. There were no free Saturdays and Sundays for Lampredi so far as his work at Ferrari was concerned, although that particular Sunday was a special one for he had planned to spend the rest of the day with his family. For some time he had been going home only to catch a few hours sleep in the early hours of the morning and sometimes not even that. Fate had something very different in store for him on that day because the Commendatore himself, Enzo Ferrari, came to see him. "Lampredi", he said, "you must design me a new engine because next year I want it to race in Formula 2."

That afternoon the idea and first drafts for a 2-litre 4cylinder engine were born. It was an engine which was to dominate the scene in all singleseater races throughout the world during 1952 and 1953. After which it was fitted to competition sports cars, boasting a successful career which spanned many years. One of these sports cars was the Testa Rossa, often considered to be one of the most beautiful series of competition cars produced by Ferrari. The 1954 and 1955 seasons were to be memoreable and unique.

To abandon the already famous twelve cylinder engine might have seemed like a foolish decision, particularly for a man like Ferrari who was instinctively drawn to multi-cylinder engines. But the proliferation of four and six cylinder engines produced by rival constructors made the little Ferrari V12 engine seem almost obsolete, so that it became apparent that some action was required. The technical solution



was obvious and history was to vindicate this very important decision.

The sports cars destined for Ferrari's customers were named the "500 Mondial", which had a 2-litre engine and the "750 Monza" which was just under 3litres. The former owed its name to the two world championships won by Alberto Ascari in Formula 1 in 1952 and 1953. At the time Ferrari's "private" clients were a kind of guaranteed income for the company, the Commendatore used the profits derived from the sale of competition cars to subsidise the works Ferrari race entries.

The task of testing these 4cylinder engined cars in compe-

Because of its rounded shapes and tapered body the 500 Mondial successfully combines the characteristics of a competition and a road car.



500 MONDIAL

tition was entrusted to highly experienced drivers such as Ascari and Villoresi during the last few months of 1953. The first encouraging result for the 2litre version came in December when the two Milanese drivers were second overall, behind the more powerful Ferrari 375MM driven by Farina Scotti and ahead of the works Aston Martins and Talbots on the Anfa circuit in Morocco. Although held on a circuit which is almost unknown, even to serious connoisseurs of the history of motor sport, this race was quite exhilarating because of the various famous drivers who were among those taking part.

The body of Ascari and Villoresi's car has quite an interesting history, it was the work of a young man who was to become very famous in the future, one Sergio Scaglietti. The Mondial marked the beginning of a close collaboration between Scaglietti and Ferrari and many years would pass before Ferrari started to build their own bodies.

In 1954 the 500 Mondial proto-

type

took part in a series of races in Africa which resulted in a large number of overall or class victories. In May Paolo Marzotto came second overall in the Mille Miglia much to the displeasure of Enzo Ferrari, after six years of uncontested domination of this classic race Ferrari were forced to hand over the title to Lancia.

The first development of the 500 Mondial at this time was a rearrangement to its appearance.

new spider body, the work of Pinin Farina who adapted it from a 1/16th scale model of the 375MM. The first production cars were delivered to private clients in this almost definitive design, in all just over 20 of this First Series of Mondial were made. About half of these had a barchetta body produced by Scaglietti, while the the rest were by Pinin Farina.So far as the mechanics were concerned, the 500 Mondial First Series was

All the Mondials

Chassis I	No. Body	Chassis N	o. Body
FIRST	SERIES	0454 MD	Scaglietti
0404 MD	Scaglietti	0458 MD	Pinin Farina
0406 MD	Scaglietti	0462 MD	Scaglietti
0408 MD	Pinin Farina	0464 MD	Scaglietti
0410 MD	Pinin Farina	0468 MD	Scaglietti
0414 MD	Pinin Farina	0470 MD	Scaglietti
0418 MD	Pinin Farina	0474 MD	Scaglietti
0422 MD	Pinin Farina	SECOND	SERIES
0424 MD	Pinin Farina	0506 MD	Scaglietti
0426 MD	Pinin Farina	0512 MD	Scaglietti
0428 MD	Scaglietti	0528 MD	Scaglietti
0430 MD	Pinin Farina	0534 MD	Scaglietti
0434 MD	Pinin Farina	0536 MD	Scaglietti
0438 MD	Pinin Farina	0556 MD	Scaglietti
0440 MD	Scaglietti	0560 MD	Scaglietti
0446 MD	Scaglietti	0562 MD	Scaglietti
0448 MD	Pinin Farina	0564 MD	Scaglietti
0452 MD	Pinin Farina	0580 MD	Scaglietti







-20-



fitted with a 4-cylinder engine with bore of 99 mm and stroke of 78 mm. The total cylinder capacity was 1984.8 cc with a compression ratio of 8:1, developing a maximum power of 155 bhp at 7000 rpm. The engine block and head were made of light alloy with hemispherical combustion chambers, two sparking plugs per cylinder, Weber 40 DCOA/3 twin-choke carburettors and dry sump lubrication. The car had a four- speed gearbox, independent front suspension and a De Dion rear axle. The small number of Mondial First Series cars sold out immediately as a result of the resounding competition victories the car had achieved. In the Conchiglia d'Oro at the Imola circuit, Umberto Maglioli and Giulio Musitelli came first and respectively, while second Robert Manzon obtained the fastest lap. Then in the Supercortemaggiore Grand Prix at Monza, Hawthorn and Maglioli won in a 3-litre car, heading a procession of Mondials. At the12 Hours of Reims, Picard and Pozzi came first in their class. Picard also dominated the In the early 1950s the characteristic steep nose of the Mondial revolutionised the styling tradition in which the front of the car was always more imposing and less tapered.

Technical specifications 500 Mondial

Engine

4 cylinders arranged in line -Bore and stroke 90 x 78 mm -Individual cylinder cabacity 496.21 cc - Total capacity 1984.86 cc - Compression ratio 8:1 - Maximum power 155 bhp at 7000 rpm -Monobloc cylinder block of silumin with inserted liners - 5bearing crankshaft - Connecting rods with white metal bearings -Overhead values operated by twin camshafts with roller bearings – Gear-driven valvegear, water pump and oil pump -Lubrication by two gear-type pumps: one for the valvegear and one for the gearbox – Dry sump - Twin ignition by two coils with automatic advance -Two spark plugs per cylinder -Mechanical fuel pump - Two Weber 40/DCOA/3 twinchoke carburettors (type 45/DCOA/3 in the Second Series) - Dry two-plate clutch with flexible hub - Water cooling with tubular radiator.

Chassis

Gearbox and differential are located in the same casting, five speeds and reverse, operated by central gear lever between the two front seats – Floating De Dion rear axle with radius rods. Independant front suspension with transverse springs and oleodynamic shock absorbers. Chassis with tubular longerons – Right hand drive – Brakes on all four wheels with twin oleo-



dynamic operation, operated by pedal with twin servos – Mechanical hand brake operating on the rear wheels – Wheelbase 2250 mm – Front track 1278 mm – Rear track 1284 mm – Weight empty 720 kg – Light alloy fuel tank of 45 litre capacity – Light alloy oil tank of 15 kg capacity – Light alloy wheels – Front tyres 5.25 x 16, rear 6.00 x 16. Pena Rhin Grand Prix in Spain, these and other victories (it was not unknown for Ferrari to win several races in the same day) enabled the House of Maranello to win the world title in the Sports category. However, the following year the World Championship was won by Mercedes leaving Ferrari to make do with the 2-litre class title.

In 1955 Ferrari launched the 500 Mondial Second Series. The main differences from a technical point of view were the twin- plate clutch, the type 45 Weber carburettors and 5-speed gearbox. These and other minor changes provided the Mondial with an increase in power and flexibility from 155 to 170 bhp, ensuring its status at the forefront of technology. Naturally these changes were introduced gradually which is why it is not unusual today to find cars withintermediate features or older cars which have been updated. All the





While all ten Series II Mondials bore Scagletti's signature, the Series I hurchettas were divided between the Monese coachbuilder (11 cars) and Frain Farina (13).

cars in the Second Series had Scaglietti bodies with very similar lines to those of the First Series cars, but much more rounded and with a lower, wider air inlet at the front.

Technical development was extremely rapid in those days because rivals like Maserati had started to cause Ferrari some problems in the 2-litre category, the House of Maranello was therefore forced to take measures in retaliation. In the meantime Lampredi had left Ferrari to join Fiat and a new team of engineers had been moved in to replace him. These were Alberto Massimino, Vittorio Bellentani and Andrea Fraschetti. Later they were joined by Luigi Bazzi who was in charge of testing and Ing. Vittorio Jano, who came to Maranello in 1955 together with the Lancia







Formula 1 cars when the Turinbased company decided to leave the world of racing.

FUPFOF

The 2-litre Sportscar launched for the 1956 season was called 'Testa Rossa' after the colour of the cylinder head. Largely designed by Massimino, it was in practice a serious development of the Mondial, but with a new body built by Scaglietti to a design by Pinin Farina.

