

# SILVER DREAM MACHINE

With four camshafts, four valves per cylinder (hence the "Quattrovalvole" tag), and fuel injection, the Ferrari Mondial now produces a claimed 240 bhp. It is a beautifully made and practical 2-plus-2, but it is as quick as you'd expect for a price of nearly £26,000? Jeremy Sinek investigates

Photographs by Peter Burn





Far left, top: the Mondial is surprisingly commodious, with a good driving position, though space in the rear is limited. Far left, below: access to the engine is better than in most mid-engined cars. Left: all the lids are opened by buttons on the fascia, activated only with the ignition on



## Silver Dream Machine continued from colour



FERRARI ARE fighting back. After a debilitating few years when ever-stiffening emissions regulations sapped the strength of Maranello's three-litre V8 screamer, the progress chart has turned-upwards again. A magic ingredient code-named *Quattrovalvole* has effected a miracle cure, and Ferrari's mid-engined trio are back running strongly in the supercar league where they belong.

Ferrari fans could be excused if for a time their loyalty had wavered. A Ferrari without real performance is about as unthinkable to followers of the prancing horse as alcohol-free lager is to a real ale connoisseur, and it was following the launch of the Mondial 8 in 1980 — a 2 + 2 replacement for the unlovely yet popular 308 GT4 — that their loyalty was put to the toughest test. The Mondial's debut coincided with developments to the classic four-cam V8 that may well have cleaned up its exhaust, but which also slashed its power from a one-time 255 to a comparatively puny 214 brake horse power. The adoption of Bosch K-Jetronic injection and Marelli Digiplex fully electronic ignition did wonders for the engine's tractability and social acceptability, but softer cam timing knocked hell out of the engine's top end bite, and to compound the felony the Mondial was substantially heavier and bulkier than the car it replaced. The result was a supercar hard pressed to exceed 135 mph, and which could be matched on sprinting power by quite a few full sized luxury saloons. That the new car had a superbly well sorted chassis served merely to sharpen the awareness of its comparative lack of performance. And although when fitted with the same engine, the lighter 308s GTBi and GTSi were quicker than the Mondial, they were still only shadows of their former selves.

Appropriately, it was the Mondial that benefited first from the development that has now remedied the situation, making its appearance this summer with a discreet *Quattrovalvole* badge on its tail denoting a new four-valves per cylinder layout which, according to Ferrari, owed much to the company's Formula 1 programme. In conjunction with a compression ratio increase from 8.8 to 9.2:1, power was boosted from 214 bhp (DIN) at 6,600 rpm to 240 bhp at 7,000 rpm, and torque from 179 lb ft at 4,600 rpm to 192 lb ft at 5,000 rpm — not, on paper, quite back to square one but, as we shall see, it seems a fair bet that 1982's horses are bigger than those of the mid-seventies when trades descriptions legislation wasn't as inhibiting as it is today.

Otherwise the Mondial is unchanged from the car we reported on in December last year. The 2,927cc engine is an all-alloy 90 deg V8 and is installed transversely, just ahead of the rear wheels which it drives via a five-speed transmission and limited slip differential. The suspension is by a classic double-wishbone layout front and rear with coil springs and Koni dampers, an anti-roll bar at each end, and anti-dive geometry at the front. The steering is by rack and pinion, and there are massive ventilated disc brakes at both ends. All this is installed on a tubular steel chassis frame, which is in turn clothed in a mostly steel body (the boot lids and engine cover are of aluminium), styled by Pininfarina and built by Scaglietti. For the first time in a Ferrari, the power train and rear suspension are all assembled on a separate, detachable sub-frame.

Like most supercars, the Mondial is a deceptively large machine — one inch longer than an Austin Ambassador, for example, and a full two inches

wider, it's a heavy car, too: at 28.5 cwt, it tips the scales at about 150 lbs more than a 2.8 litre Ford Granada. In that context, an engine displacing just over 2.9 litres doesn't look over-generous when you're aiming at performance in the supercar league, and to achieve it, something has to give. In the Mondial, the price Ferrari's engineers have elected to pay is refinement and economy on the motorway. At just 19.7 mph per 1,000 rpm in top the Mondial is by modern standards absurdly low geared — most rivals have a longer stride in fourth than the Mondial does in fifth. In an era when many car manufacturers are relying on high torque, low weight and minimal aerodynamic drag to be able to pull ultra long-legged gearing, the Ferrari's rev-forever engine and sprint gearing are like a throw-back to another era.

The fact is, however, that it works. On a blustery day with the barometer hanging low we lapped Vauxhall's Millbrook high speed bowl at 146.1 mph, making the manufacturer's claim of 149 mph seem if anything on the conservative side given a good day and a long straight where there's no power absorbed in cornering forces. Our car felt capable of pulling the red line in fifth, which corresponds to 151.3 mph.

Conditions on the acceleration straights were far from ideal too, and the need for a second-to-third gear-change at 59 mph wasn't going to do the 0-60 mph time any favours. Even so, the times are impressive: 0-60 mph in 6.4 sec and 0-100 mph in 16.2 sec are virtually identical to those of the lighter 308GT4, and firmly re-establish the Mondial in the supercar league. So too do such fourth gear pick-up times as 30-50 mph in 5.6 sec, 50-70 mph in 5.2, and 70-90 mph in 5.7 sec. Only when left to accelerate in top gear does the Mondial lag behind the stan-

dards of its class, though even then the corresponding times for the same increments — 8.5, 8.6 and 9.3 sec — say that it's far from sluggish.

What the bald figures cannot convey is the way this performance is delivered. The Ferrari formula of a relatively small, high-revving screamer of an engine may be an anachronism, but what a magnificent one. The breadth of its power band is simply breathtaking. In town you can stuff it in top and the engine will accelerate whistle-clean from below 1,000 rpm. In your moments of forgetfulness, it'll pull away from rest in third gear. It's as tractable as a steam engine when conditions demand it.

Yet show it an open road and it's transformed. From 5,000 rpm, when the power comes in hard and the engine's note becomes an exultant howl, it's a classic thoroughbred of the kind only the Italians know how to build. The tachometer red line is at 7,700 rpm and the engine will spin to it so eagerly, so utterly smoothly, that it's just as well that Ferrari also fit an electronic rev limiter that cuts in at 7,800 rpm ...

Needless to say a Mondial engine when given its head is far from quiet — who in their right minds would want it to be? But driven with moderation — kept below about 3,500 rpm, say — the engine is nicely muted. And at higher speeds its smoothness, its lack of strain, does much to mitigate the effect of low gearing. Even so, 100 mph corresponds to a very busy 5,100 rpm in top gear, and an effortless stride on the autobahn is what you sacrifice to achieve stout-hearted performance from a small engine.

The price in economy, however, is not as great as you'd expect. Admittedly the 14.8 mpg returned by the Mondial over its first few hundred miles with us is poor, but we suspect

that at that stage the engine was suffering from a mystery power loss that was also affecting its performance, if our early subjective impressions are anything to go by. By the time we took our figures, however, this had evidently cleared itself, and it's significant that over the second part of our test, which included performance testing, the Mondial returned a very respectable 18.6 mpg. Achieved without the benefits of low weight and high gearing, this speaks volumes for the engine's inherent efficiency. Just think what might be possible in a car 20 per cent lighter and correspondingly higher geared... Nonetheless, it's a major step in the right direction, and suggests that more than 20 mpg should be attainable given only a modicum of moderation.

You could also say that moderation is a part of the Mondial's appeal in a broader sense. As a Ferrari should, the Mondial has the power to thrill in the short term; but it's also, to a greater degree than any previous Ferrari, a sensible car — an undemanding, even gentle car to drive, and an easy one to live with in the long-term. For a start there's that flexible and utterly untemperamental engine. Then there's the clutch, which is moderately weighted

pendulous oversteer that affects some supercars if you inadvertently enter a corner too fast and react by lifting sharply off the throttle.

For the serious driver, the Mondial is at its least endearing in the wet, when the grip of its 240/55 VR 390 Michelin TRXs is modest, and the consequent lack of loading on the suspension leaves the steering short on feel just when you need it the most.

On a dry road it all comes together. As you start to explore the high outer limits of its roadholding and get some load onto the suspension, the steering gains in both weight and feel. There is scarcely any body lean, and the chassis is marvelously well balanced. Mild initial understeer can be balanced out on the throttle to give a virtually neutral attitude, or even, through tighter curves, it can be powered out into an easily held tail slide. Lifting off or braking deep into a bend tightens the car's line without upsetting its poise or its balance and the suspension takes mid-corner bumps in its stride, though steering kickback can become tiresome on lumpy secondary roads and makes it tricky to hold the car accurately on line at speed.

One of our testers also found the Mondial a handful under hard braking in



Above: redesigned central console houses the stereo, electronic check panel, and air conditioning controls, and electric controls for windows, glove box, aerial fuel filler. Rear seats, right, are comfortable but short on legroom

and as gentle in its engagement as any small saloon's. And its steering is easy on the arms.

Only the Ferrari-typical metal gated gearchange still demands conscious inputs from the driver. Almost impossibly obstructive when cold — especially the dog-leg shift from first to second — it retains a notchy, heavy-metal quality when warm that won't tolerate limp-wristed treatment. Handle it with the appropriate authority, however, and it rewards you with tremendously fast and positive upshifts. There's something enormously satisfying about the metal on metal clackety-clack — like a train's wheels passing over points — as you slam the lever through from slot to slot.

Conversely, while the Mondial's handling also responds satisfyingly to firm and skilled treatment, it is also forgiving and manageable for the less skilled or the lazy driver. The steering is beautifully precise, and if it doesn't transmit a great deal of feel in gentler motoring it does compensate with its direct gearing and moderate weighting. There is little sign of the heavy, understeery numbness that afflicts many mid-engined cars through tight, low speed corners. Equally, there's little likelihood of provoking the

wet, complaining that it locked up its front wheels prematurely and then twitched sideways. Perhaps it was a freakishly greasy surface, though, since we were unable to reproduce the problem at the test track even under deliberate provocation. In the dry the brakes are simply fabulous, delivering immensely powerful and fade-free retardation through a firm and progressive pedal action.

As a driving machine, then, the Mondial is rarely found wanting. Just as important, however, is that with the Mondial Ferrari have achieved a measure of practicality and useability that makes it as pleasant to drive in the daily urban grind as it is thrilling to drive on a fast and winding country road.

Although always firm, the suspension's efficient damping and the low levels — by exotic standards — of tyre rumble and thump ensure that the ride is never harsh or uncomfortable, while at motorway speeds it smooths out beautifully. With a steering wheel adjustable for both reach and height, the driving position can be tailored to suit most sizes and shapes of driver — even our resident 6ft 4in beanpole could find little to complain about. Although offset to the left, the pedals are well sited in relation to each other



— heel and toe gearchanges come easily — with plenty of space around them and a rest for your left foot. Sensible shaping of the seats holds you firmly in place despite their slippery leather upholstery. The minor switchgear is logical and conveniently located, and includes touch-sensitive electric switches to open the bonnet, engine and boot lids. The instrumentation is comprehensive and clearly marked, though the individual glass covers do catch stray reflections and our tallest tester found that part of the tachometer was shrouded from view.

For a mid-engined car the Mondial is exceptionally easy to see out of. With plenty of glass there are no serious blind spots, the wipers and lights are excellent, and the two electrically adjustable door mirrors give a panoramic view to the rear. Only in tight spaces, when you cannot easily position the nose of the car, is special care required.

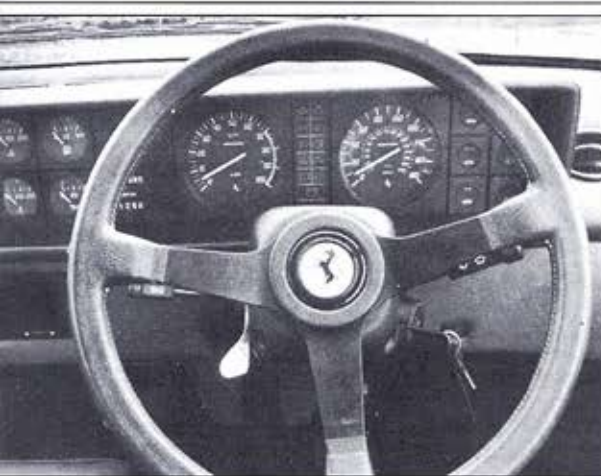
As a two-seater the Mondial is very spacious, with ample front legroom and headroom, a fair sized boot, and the option of carrying further luggage on the rear seats. Oddments space is not over-generous however (though the provision of a small cassette rack is a nice touch) and for longer journeys

the rear seats are only suitable for children. It is possible to accommodate a medium sized adult behind a similarly proportioned driver, but only if he is prepared to splay his knees either side of the front seat backrest. Access to the rear is facilitated by a tilt and slide mechanism for the front seat.

Perhaps it would be too much to ask any Italian car to have an efficient and versatile heating and ventilation system. The Mondial has air conditioning as standard, which is fine when the weather outside is hot enough to warrant it. Like most such systems, however, it is unable to supply stratified air — cool above and warm below — and is only designed to maintain a steady overall temperature. In practice, even that function proved beyond the capabilities of the Mondial's system: its output varied between too hot and too cold in the cool autumnal weather of our test, and it proved almost impossible to achieve a happy medium.

Perhaps the system was in need of adjustment. If so, it was the only thing we could find wrong with the test car's finish. We couldn't fault the fit or quality of the interior trim, the external paintwork was superb, and the car structure was solid and squeak-free.

That much, of course, is only as it



Instrumentation is comprehensive and clearly marked. Touch-switches to the right electrically open the engine cover and boot lids. Chrome lever on steering column is for wheel adjustment

should be when you are paying £25,851.20 for a motor car. Yet the plain fact is that too many high-priced exotica are fragile, temperamental, scrappily finished, difficult to drive in traffic, hard to see out of, cramped and impractical. Fine for short-term thrills, a pain in the proverbial in the long run.

Not so the Mondial Quattrovalvole. When you're in the mood, it's as excit-

ing to drive as any Ferrari should be — as Ferraris always have been. The difference with this Ferrari, though, is that if your mood changes, if traffic or road conditions force a change of tempo, the Mondial is still a friendly car in which to drive and to ride. When your weekend in the country is over and you're back in the workaday routine, that matters.



## PERFORMANCE

### MAX SPEEDS

	Ferrari Mondial 2.9	Porsche 928S 4.7	Maserati Mirak 3.0
Mean in top	146.1*	155e	150e
in 4th	112	119	124
in 3rd	82	91	88
in 2nd	59	65	60
in 1st	41	44	40

\* See text

### ACCELERATION

mph	sec	sec	sec
0-30	2.2	2.4	3.1
0-40	3.3	3.3	4.3
0-50	4.7	4.9	6.1
0-60	6.4	6.2	7.8
0-70	8.2	7.8	10.3
0-80	10.2	9.7	12.4
0-90	13.0	12.0	16.0
0-100	16.2	14.8	19.8
0-110	20.7	17.9	24.9
0-120	—	22.1	32.9
St'g 1/4 mile	14.5	14.2	16.0
St'g km	26.7	25.8	28.9

### IN TOP

mph	sec	sec	sec
20-40	9.3	7.6	—
30-50	8.5	7.7	9.5
40-60	8.6	7.6	10.7
50-70	8.6	7.3	10.8
60-80	8.7	7.6	10.4
70-90	9.3	8.4	11.0
80-100	10.6	8.7	11.8
90-100	12.5	10.2	13.6
100-110	—	10.6	—

### IN FOURTH

mph	sec	sec	sec
20-40	5.9	5.2	7.0
30-50	5.6	5.2	7.2
40-60	5.5	5.3	7.3
50-70	5.2	5.2	7.1
60-80	5.4	5.0	7.2
70-90	5.7	4.9	6.7
80-100	6.1	5.1	7.3
90-110	—	5.7	9.0
100-120	—	7.2	—

### FUEL CONSUMPTION

Overall	18.6	16.0	13.3
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## GENERAL SPECIFICATION

### ENGINE

Cylinders	Vee 8
Capacity	2,927cc (178.5 cu in)
Bore/stroke	81/71mm (3.19/2.80 in)
Cooling	Water
Block	Aluminium alloy
Head	Aluminium alloy
Valves	Dohc, 4 per cylinder
Cam drive	Toothed belts
Compression	9.2:1
Fuel system	Bosch K-Jetronic injection
Bearings	5 main
Max power	240 bhp (DIN) at 7,000 rpm
Max torque	192 lb ft (DIN) at 5,000 rpm

### TRANSMISSION

Type	5-speed manual
Clutch dia	N/A
Actuation	Hydraulic
Internal ratios and mph/1000 rpm	
Top	0.920:1/19.7
4th	1.244:1/14.5
3rd	1.693:1/10.7
2nd	2.353:1/7.7
1st	3.419:1/5.3
Rev	3.248:1
Final drive	4.063:1

### BODY CHASSIS

Construction	Tubular steel frame with steel, aluminium and glass-fibre body panels
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### SUSPENSION

Front	Independent by double wishbones and coil springs; anti-roll bar
Rear	Independent by double wishbones and coil springs; anti-roll bar

### STEERING

Type	Rack and pinion
Assistance	No

### BRAKES

Front	Ventilated discs, 11.0 in dia
Rear	Ventilated discs, 11.8 in dia
Park	On rear
Servo	Yes
Circuit	Split front/rear
Rear valve	No
Adjustment	Automatic

### WHEELS/TYRES

Type	Alloy, 180 TR 390
Tyres	Michelin TRX, 240/55 VR 390
Pressures	33/35 psi F/R

### ELECTRICAL

Battery	12V, 66 Ah
Earth	Negative
Generator	Alternator, 80 Amp
Fuses	23
Headlights	type dip main
	Rectangular retractable
	110W total
	220W total