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At last! Juan Pablo tells it like it is – warts 'n' all

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> **MARK WEBBER**

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Contents

July 2003

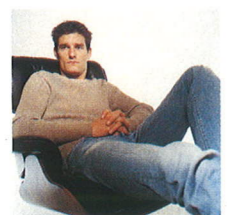
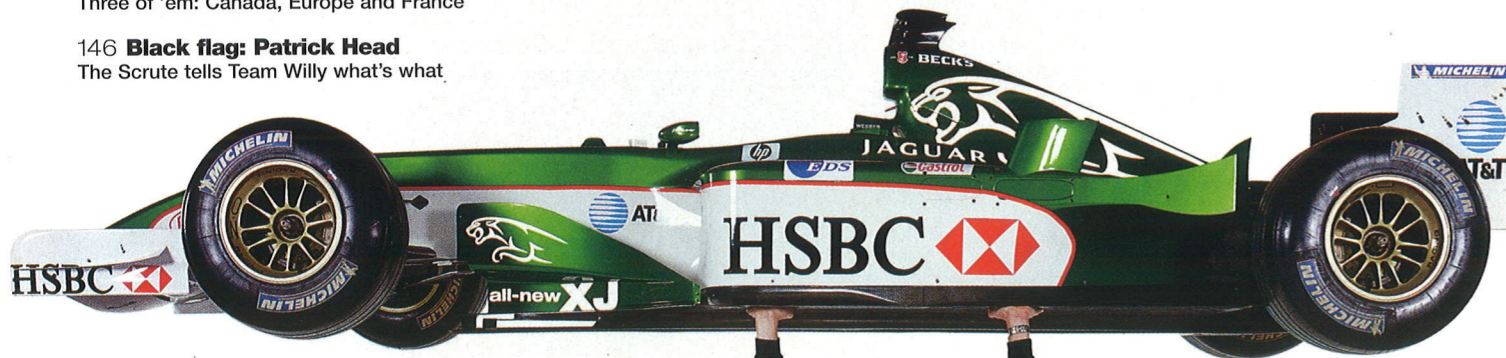


>Regulars

- 10 **Parade**
F1 Racing's very own version of the Tate
- 18 **Peter Windsor**
Come worship at the fount of F1 wisdom
- 20 **Alan Henry**
Sees all, hears all and tells... all he can
COVER STORY
- 22 **Pitpass**
Exclusive! Secrets of McLaren's MP4-18A
- 28 **Backfire**
You tell us what's right and what's wrong in F1
- 70 **F1-to-one: Flavio Briatore**
On wonder boy Alonso and a bright future
- 72 **F1-to-one: Ron Dennis**
He's very confident about MP4-18A
- 74 **F1-to-one: Frank Williams**
On Berger, BMW, and *not* selling up
- 117 **Grand prix reports**
News and analysis from Austria and Monaco
- 140 **Grand prix previews**
Three of 'em: Canada, Europe and France
- 146 **Black flag: Patrick Head**
The Scrute tells Team Willy what's what

>Features

- 30 **Monaco: cornered**
The most detailed insight ever into creating a hot lap of Monaco. Only in F1R – where else?
COVER STORY
- 38 **Webber: Jag's new superman**
In Mark Webber's hands, there's only one direction for Jaguar Racing: up, up and away!
- 46 **Mark Webber's favourite things**
A sneak peek into Webbo's world: his books, his bike, his TV... and his views on the Poms
- 50 **How good is Jaguar's R4?**
The cat has leapt up the grid in '03. How? We go behind the scenes on this year's chassis
- 56 **Michelin's big three teams**
McLaren, Renault or Williams? F1R hacks go head to head to head over who's best.
- 64 **Renault R23 in pieces**
Exclusive! The surprise package of '03 taken to bits and photographed – just for you
- 78 **The GPWC explained**
Confused about F1's future? Unsure about the rival series? We cut through the jargon
COVER STORY
- 84 **Montoya on life at Williams**
JPM turns journo and tells you what it's *really* like being an F1 driver. No holds barred
- 90 **Fisichella drives a GT40**
Inspires lust, this car. Even in F1's elite. We let Fisi loose at the wheel. Hold on tight
COVER STORY
- 94 **Schumi's secret diary**
How does it feel to win Ferrari's first drivers' title for 21 years? Read this and find out
- 104 **The men behind the engines**
These guys unleash F1's horses. We grilled 'em to discover the secrets of (horse)power
COVER STORY
- 112 **Justin Wilson drives a tank**
Challenger II. Slightly slower than a Minardi. Justin races it... and wins! Sort of



38 Mark Webber: Jaguar's new superman
No worries, mate! Webbo's been lifting Jags all year, so lifting one more for F1 Racing's contents page was no problem. Ripper!



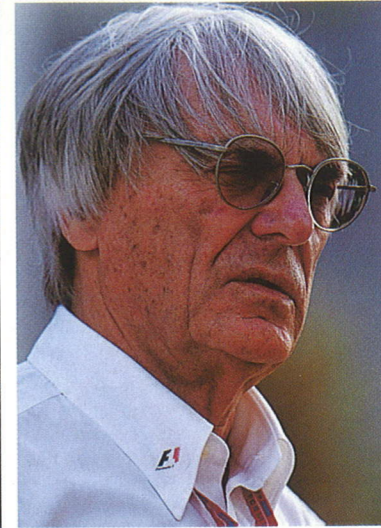
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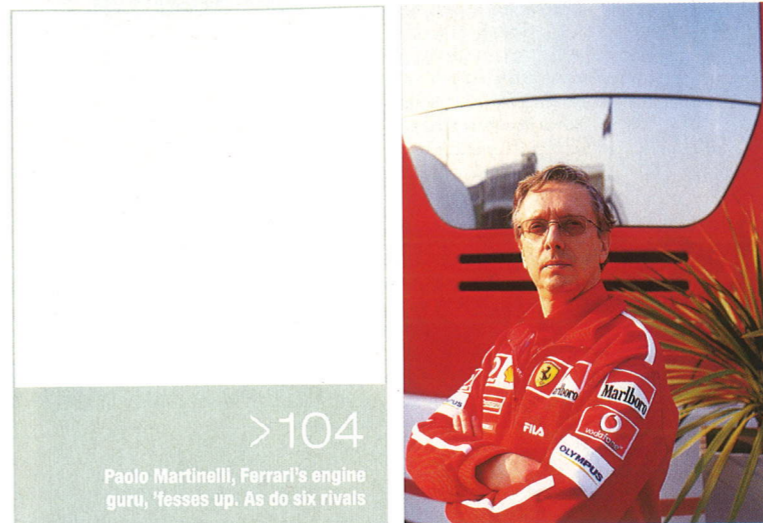
>94

In Schumi's own words, the story of the race that won the 2000 title



>78

Where does Bernie fit in to a rival F1 series? All is revealed here



>104

Paolo Martinelli, Ferrari's engine guru, 'fesses up. As do six rivals



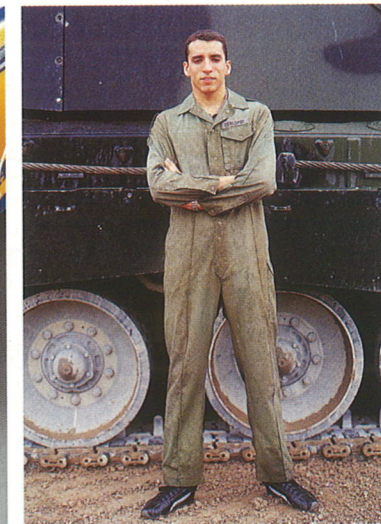
>90

Fisi, flat-out, in a Ford GT40. Mega!



>64

We take you right under the skin of Renault's svelte R23



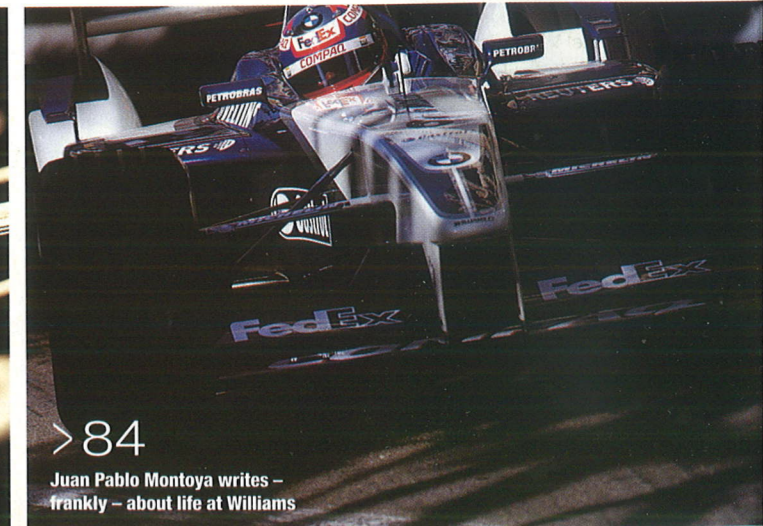
>112

Tiger in the tank. Justin drives a Challenger II. Stand *well* clear!



>56

Michelin's best team – McLaren, Renault or Williams? Read on...

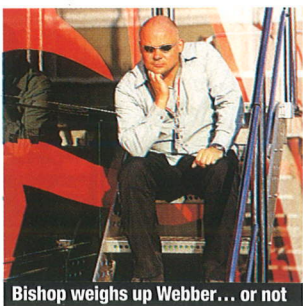


>84

Juan Pablo Montoya writes – frankly – about life at Williams

How much does Mark weigh?

If we knew the answer, we'd know exactly how quick Mr Webber was... and is



Bishop weighs up Webber... or not

'I ASK MAX MOSLEY WHAT HE THINKS OF WEBBER'S LAP. TROUBLE IS, HE KNOWS SO MUCH... THAT HE CANNOT ANSWER!'

Saturday evening, Monaco pitlane, no-one about. Well, almost no-one. As I stroll past the sulking muzzled rottweilers whose slavering unmuzzled keepers have been charged with the task of preventing impish mechanics from righting the odd skew-whiff wingnut (heaven forbid!), I fall into idle conversation with a group of friendly Jaguar mechanics – all of whom are super-anxious to tell me just how good Mark Webber is.

As usual Mark has qualified very well – 0.866 seconds quicker than his hapless team-mate – so when an incongruously tie-less Max Mosley saunters up, and I take my leave of the Jag men to fall into step with Mosley's famous loose-limbed swagger en route to the paddock, I ask him what he thinks of Webber's lap.

Trouble is, Max cannot answer. And the reason he cannot answer is not that he lacks the vocabulary via which to express his thoughts (hardly!)... but that he knows *too much!* For, unlike me (and you and almost everyone in the whole wide world), he and a handful of very senior FIA men know exactly how much

Webber's car – and all the other cars, too – weigh. In other words, he knows how much fuel the number-14 Jaguar has on board, which means that he cannot express an opinion about Webber's qualifying lap for fear of communicating classified information about Jaguar's likely fuel strategy for the morrow.

Which, to my mind, is ludicrous – especially as there is such an obvious solution. "Why, Max," I begin, "can't the FIA publish all the weights after qualifying? Then we – the press, the fans, everyone – would know who was quick and who wasn't."

As usual, Max doesn't say no – but he doesn't say yes, either. He allows, however, that he thinks I "have a point". Gee, thanks, Max – I think I've got a *helluva* point! And so, via the leader page of the world's best-selling Formula 1 magazine (yes, you're reading it), I hereby appeal to the 26 gentlemen who make up the F1 Commission – the 10 team principals, the four bigwigs from the engine manufacturers, the eight race promoters, the Bridgestone man, the Michelin man, the Bernie and the Max – to club together to cast the 18 votes that the constitution of that august body would require in order to effect such a rule change. You know it makes sense, guys. Now... *do it!*

Matt Bishop editor in chief

contributors

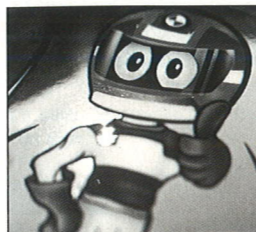
> Mark Webber

Ask some F1 drivers to do a Superman impersonation, and they'd give you one of two answers: either (a) "Go forth and multiply" or (b) "I don't need to do an impersonation – I'm already there." Mark, however, is different. Mark, you see, is neither rude nor conceited. Pages 38-49



> Juan Pablo Montoya

Just over two years ago JPM burst onto the F1 scene in a blaze of Schumi-bashing glory. Then things began to go not quite so brilliantly. Then, at Monaco this year, over 78 *banzai* laps, he bounced back. This, then, is his extraordinary riches-to-rags-to-riches story – in his own words. Page 84



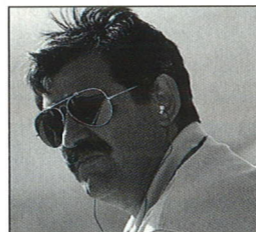
> Allan McNish

Renault's R23 is not only radical – it's also very quick. So you'd like to know what it looks like under the skin, right? Your wish is our command: we've disassembled it for your delectation (page 64), while test driver *extraordinaire* Nishy describes it in detail



> Sergio Rinland

McLaren's MP4-18A is the most extreme evolution yet of the 'twin keel' revolution started by design genius Rinland at Sauber a couple of years back. Who better, then, to get to spy on the car during its first test? Why... 'our Serge', of course! Page 22



> Sabine Kehm

Schumi's press aide is a clever lady. Better still, she's a mean writer – which is why her new book, *Michael Schumacher: driving force* is such a 'right riveting read'. We've dug out one of the best bits: the inside story of how – exactly – Michael won his first ever Ferrari title. See page 94



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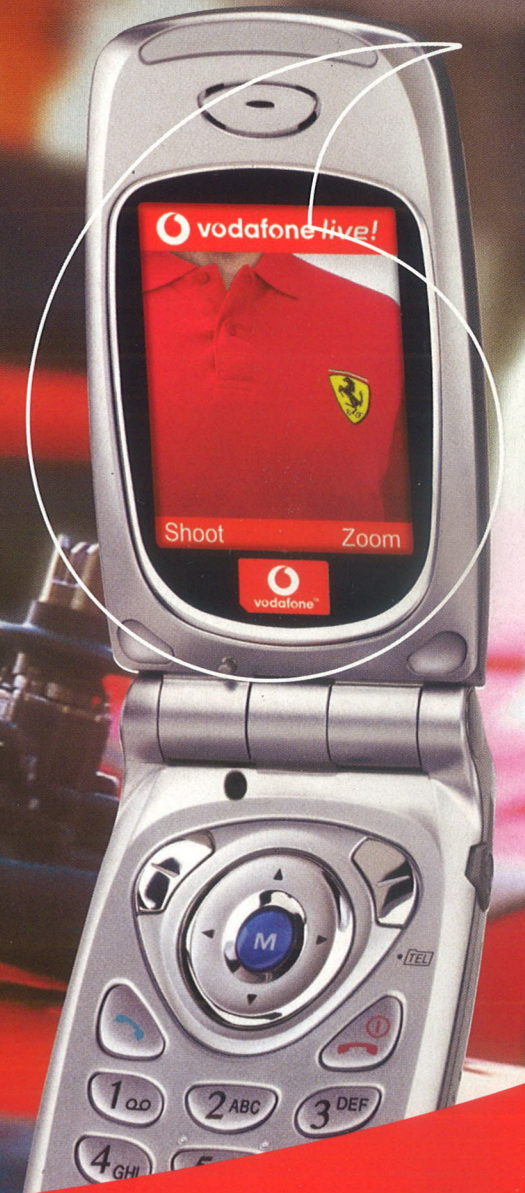
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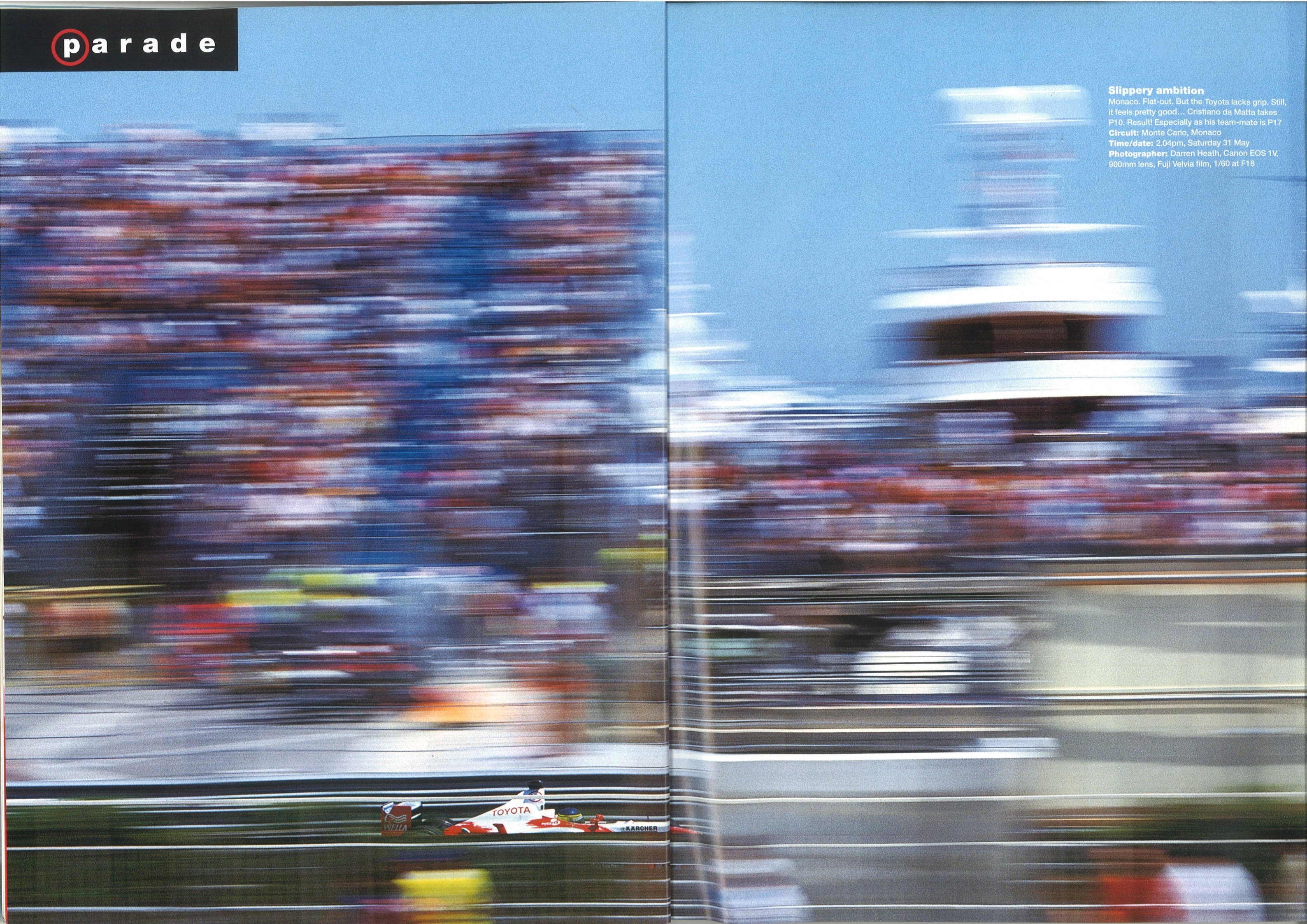
More fun & info



live!

Slippery ambition

Monaco. Flat-out. But the Toyota lacks grip. Still, it feels pretty good... Cristiano da Matta takes P10. Result! Especially as his team-mate is P17
Circuit: Monte Carlo, Monaco
Time/date: 2.04pm, Saturday 31 May
Photographer: Darren Heath, Canon EOS 1V, 900mm lens, Fuji Velvia film, 1/60 at F18





Basking in reflected glory

And you thought you had trouble with the missus! This guy must have major arm-ache from so much polishing. All part of Ferrari's silky-smooth, ultra-slick PR job

Circuit: A1-Ring, Austria

Time/date: 6.01pm, Friday May 16

Photographer: Michael Cooper/LAT, Canon EOS 1V, 300mm lens, Fuji Velvia film, 1/500 at F2.8

Punning stunt

As a Ferrari brakes for Turn One, a B.A.R. mechanic readies his lollipop. A chance juxtaposition, frozen for posterity by an ultra-alert photographer

Circuit: A1-Ring, Austria

Time/date: 2.46pm, Sunday May 18

Photographer: Lorenzo Bellanca/LAT, Canon EOS 1V, 500mm lens, Fuji Velvia film, 1/60 at F11



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Complete a tough multiple-choice quiz, on driving skills, the World Rally Championship and the Peugeot 206 GTi 180. If your score is one of the top 36 you will be selected for a fabulous finals day at an exclusive private test track.

Phase three – live challenge

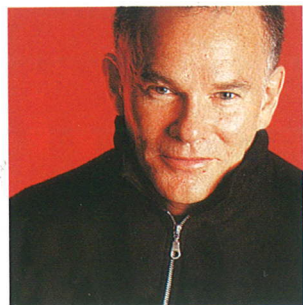
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Peter Windsor

Drivers' racing egos are fragile things – easily broken, but easily fixed. So why don't teams look after them better?

Like everything else in Formula 1, it is in reality absurdly simple: racing drivers are as easy to read as the soiled copies of *Hello* in your dentist's waiting room. Their requirements may be somewhat awkward, of course – make that irritating – but this should not be a problem – not when your average front-running F1 team is employing upwards of 400 people and spending between \$100 million and \$250 million per year to solve huge technical problems. Compared with that, catering to the whims of the delicate superstars falls amongst the easier of the tasks on the weekend's job-list.

(Below) Ralf S and manager Willi Weber get on well... but perhaps Ralf needs more. To feel secure, a driver needs to be treated like a king by his team. Just look at Jenson Button...

I'm constantly amazed, therefore, at how difficult the whole business of driver-massaging has become – particularly as Ferrari have shown the rest of the world how to do it for the past seven and a half seasons. You would think that their opposition would have learned.

Instead, it's still chaos out there – as Jenson Button is proving. One season (2002) he is struggling to stay afloat in the Benetton (Renault) team, nervous from Monaco onwards that he is about to lose his place; the next ('03) he is the happiest guy in the pitlane, blessed as he is by a team owner (David Richards) who thinks he is the next best thing to... Michael Schumacher, probably. And it shows in his driving. Jenson is now on the limit everywhere, toying with disaster at virtually every corner – as we saw, spectacularly, at Monaco. He is extremely fast as a result – which is what he is paid to be, of course.

Conversely, his team-mate at B.A.R.-Honda, Jacques Villeneuve, is sinking virtually without trace, his ego battered by a huge double-whammy: not only is he without the support of the guys who have polished his life for the past

four and a half years but also he now has to watch young Jenson stealing his glory. With Jenson now having the audacity to

have bigger shunts, as well, what chance does Jacques have?

At Williams it is similarly clear. Juan Pablo Montoya is still quietly simmering about the negative comments given to the press over the winter by his immediate bosses. His driving isn't suffering, but you sense that he's itching for an opening to appear at Ferrari – and *that* isn't good for long-term planning, particularly when his team-mate, Ralf Schumacher, has been similarly caned by the Williams management. It was only the other day that Patrick Head was explaining that the problem with Nigel Mansell was that he was unable to put a "damper" on his emotions and wanted everyone around him to ride the roller-coaster – to be up when he was up and down when he was down.

So what? If that's what it took to keep the guy centred – to win races and world championships – then why not jump aboard for the ride? Given the money that teams like Williams pay drivers like Ralf Schumacher, Ralf is about as likely to change his attitude to life – to find an 'emotional damper' – as he is to fly EasyJet to Luton. You can see the days when Ralf is distracted, when he is thinking that he deserves better, that he should always be treated like the gigastar that he is – and you can see the days when he is out there just happy to be driving a racing car extremely well and to be paid many millions of dollars for doing so. The secret is to treat him accordingly.

There are patterns throughout the pitlane: DC is twitchy these days and is thus probably more concerned than he should be when he doesn't have the front end he needs in order to be mega-quick. Conversely, Kimi Raikkonen is in some ways the perfect racing driver – calm, quiet, quick and able to sleep at night in the knowledge that everyone in the team thinks he's wonderful.

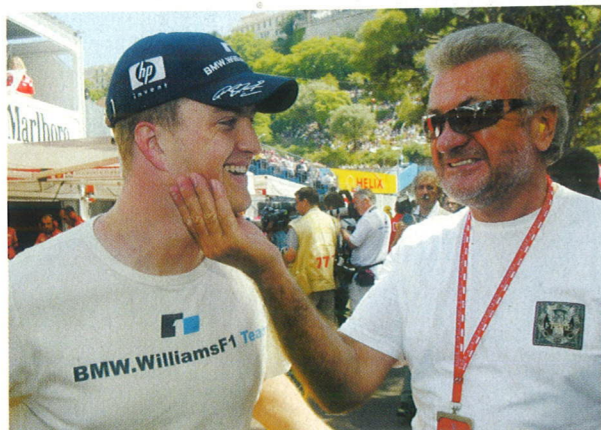
Forget the managers, too: it doesn't matter how many times Willi Weber tells Ralf that he is a great racing driver – to Ralf, the only things that matter are (a) does the car feel right and (b) are the engineers and team managers listening to him, showing him respect and making him feel important?

Michael, of course, has no such dramas, which is why he is able to concentrate on the things that will directly affect his performance – the engineers he wants around him, the second driver he wants with him, the management teams he needs, the tyre company with whom he works and the facilities and the budget that his team are able to generate. He speaks, they listen.

Simple.

Except that virtually everyone else gets it wrong. Most drivers may not have the answers the way Michael has the answers, but how difficult would it be to do the Richards/Button thing when a driver needs it most – to make him *believe* he rules the world? **1**

'I'm constantly amazed at how difficult the whole business of driver-massaging has become – particularly as Ferrari have shown the rest of the world how to do it'



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Alan Henry

Axe the British GP! Er, hold on, Silverstone is on the up and Bernie knows the race is far too valuable to drop

Right, prepare yourself for a shock. If the British Grand Prix were wiped from the Formula 1 world championship calendar, it would not make one iota of difference to the sport. If UK race fans were deprived of the privilege of spending around £200 for the right to queue to get into Silverstone, nobody would give a damn. Its departure would cause no more than a momentary blip on motorsport's radar. Nothing, you must understand, lasts for ever in this business.

(Below) Brazil's Interlagos is one of F1's less luxurious circuits, yet it doesn't attract the criticism Silverstone suffers

Of course, before you conclude that I have taken leave of my senses, let me assure you that this is not my viewpoint at all. But it most certainly is that of several senior members of the F1 fraternity. They feel that Silverstone is a tip, populated by myopic blue-blazered buffoons. They are, of course, quite wrong.

I raise this issue simply because long-term doubt over the future of the Silverstone race remains a lingering concern in the back of many minds. Four years have now passed since Ecclestone described Silverstone as "all a bit run-down, a bit Battle of Britain-ish." This, lest we forget, was at the time when the cost of staging the race was about to be hiked from \$8 million to \$11.5 million per year – with punishing 10-per-cent annual escalators built in over the initial five-year period of the new contract.

Ecclestone has always made the point that if countries such as Malaysia, Australia, China and Bahrain can be beneficiaries of their governments' sponsorship, why not the UK? Well, there's the fact that many members of Tony Blair's government equate F1 with Ecclestone's highly controversial £1 million political donation in 1997. Others believe that the sport is simply synonymous with

conspicuous consumption, wall-to-wall private jets and multi-millionaires with nothing better to do than argue over whose pencil it is during interminable team principals' meetings.

Not being a millionaire, I have to say that I am personally extremely uncomfortable with the notion of public money being invested in the F1 business. On the other hand, why should the football industry be given any financial help for rebuilding Wembley stadium? And what's the merit of the estimated \$33 billion deficit involved should Britain be successful in its bid for the '12 Olympic Games?

The answer, of course, is the tangential commercial benefits, the economic spin-off. With that in mind, an ongoing Department of Trade and Industry motorsport initiative, the result of some high-level schmoozing of political contacts by BRDC president Jackie Stewart, is taking a close look at the whole spectrum of British motorsport and has apparently concluded that, among other things, the British Grand Prix has an essential role on the calendar as a magnet for the interests of global sponsors and other major investors.

It has also identified a need to progress the interests of UK motorsport across a broad and wide-ranging front, not merely focusing on the F1 business, in a bid to renew and strengthen the sport's infrastructure at lower levels. All of which makes solid good sense to my mind.

However, given how much we have heard over recent months about how the planned new GPWC series (see page 78) will offer a better deal for the competing F1 teams, perhaps the car makers might like to keep the interests of the race promoters in mind.

One hopes that, when they reach the inevitable compromise which will lead to a new Concorde Agreement, there will be enough left on the corner of the plate for races such as the British GP – which survive purely on the basis of a sound commercial bottom line – to invest for the future.

A modest amount of governmental support may ultimately be judged welcome but, either way, at the end of the day I firmly believe that Ecclestone and Max Mosley have too much political savvy to risk being cast in the role of F1 pariahs by ditching the British race.

It is not only Silverstone which has failed in the past to conform to Ecclestone's exacting and uniformly five-star standards. Imola, Monza, the Hungaroring – and, of course, that legendary dump Interlagos – are also a bit on the shabby side. Ultimately, you, the reader, will decide whether Silverstone's latest upgrade fits the bill on July 20. Don't forget to let us know your verdict. **1**

'Imola, Monza, the Hungaroring – and, of course, that legendary dump Interlagos – are also a bit on the shabby side. Does Silverstone's latest upgrade fit the bill? Don't forget to let us know your verdict'



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MP4-18A INSIGHT

Scoop! Aero secrets of new McLaren

The MP4-18A takes the twin-keel chassis design philosophy to a new extreme. We sent Sergio Rinland – who, at Sauber, was the architect of twin-keel design – to the McLaren's first test. This is his exclusive report

McLaren's MP4-18A is the ultimate expression of one of the most hotly debated areas of Formula 1 chassis design: the twin-keel. Not only has technical director Adrian Newey continued with a philosophy shunned by other top teams, but he has taken it to its next logical stage – defying sceptics who claim the twin-keel layout compromises a car's front-end structural rigidity (as it did on MP4-17). Newey's latest adaptation of a concept first raced on the 2001 Sauber C20 appears to have been designed to overcome the increased pitch sensitivity associated in the past with the twin-keel layout.

When Sauber first ran the system on the C20, it became evident there were serious advantages to be gained from the clear passage of air behind the front wing into the central part of the car. But they soon found increased pitch sensitivity was the downside.

With the front wing so close to the ground, and with the air working powerfully behind it, a dip in the nose (under braking, for example) would bring a sharp increase in downforce at the front. When the nose lifted, however, the opposite would occur – the centre of pressure would move backwards and the car would begin to understeer. Most designers strive to control the car's centre of pressure in relation

'MCLAREN HAVE CONTINUED WITH A PHILOSOPHY SHUNNED BY OTHER TEAMS'



> MP4-18A first test: Paul Ricard circuit

Day	Driver	Laps	Best time
Wednesday May 21	Alex Wurz	17	1m16.121s
Thursday May 22	Alex Wurz	10	1m14.621s
Friday May 23	Alex Wurz	30	1m33.562s

(Main, inset and right) MP4-18A at speed; McLaren third driver Alex Wurz carried out all testing duties on the car's first run. Alex only pushed on day three, with the track in a slower layout. Expect MP4-18A's lap times to come tumbling down

to its centre of gravity, so the twin-keel layout obviously had lots of scope for improvement. When the track was smooth, and the car wasn't moving around a lot, it provided a clear advantage – as Sauber proved in '02 at Barcelona (where they finished four-five). But in less-than-perfect conditions, pitch sensitivity was always an issue.

AERODYNAMICS The design of MP4-18A's wings shows a good understanding of airflow control with aero-elasticity, a subject that Ferrari have mastered in the past few years. Their peculiar shape, especially that of the front wing, suggests an all-new design approach. Rather than being a development of something inherited, it has been generated from scratch through a systematic variation of

parameters such as the chords of the main plane and flaps, the twist, the flap gaps and the aerofoils throughout the span. Their shape suggests they have been designed by a kind of 'inverse method': having established the flowfield the rest of the car requires to work best, a geometry is then derived for the wing. If so, the MP4-18A has taken a big step away from standard F1 design practice towards the norm in the aircraft industry.

THE NOSE The front-wing centre section is much farther from the ground but with a high, arcing section that takes the air upwards and then back between the two suspension pillars, generating additional speed and thus recapturing (and perhaps even exceeding) the downforce lost with the higher wing

'THE SUM OF ITS PARTS FAR EXCEEDS THEIR INDIVIDUAL STRENGTHS'

centre section. It is almost certain the 18A will not be as pitch sensitive as are other twin-keel cars. It's significant, too, that the wing is almost flush-mounted to the nose, in effect 'sealing' the airflow under it. The main plane runs through under the nose cone while the double slotted flap doesn't. With this trade-off solution they probably avoid the blockage generated by a high lift device, like the double flap, installed at a short distance under the nose, still keeping the central part of the wing generating enough downforce but with not too much upwash under the nose. They have to pay for the additional drag deriving from the vortex that will be present at the junction of the flaps with the nose.

PACKAGING/SUSPENSION The

sidepods, unlike those on the new Ferrari, are relatively wide and square. Adrian Newey and Mike Coughlan (with whom Rinland worked at Arrows) have packaged as many ancillaries (such as electronics and cooling systems) as possible right up against the chassis. This benefits weight distribution and polar moment of inertia (the ease with which a car moves about its axis) and is probably made possible by the effectiveness of the 18A's front end.

As tight and well-packaged as the 18A's rear appears to be, McLaren have concluded they are not losing anything aerodynamically by having the radiator ducts right out on the extremities of the pods: the clever development of the twin-keel layout has allowed this luxury.

It also looks as though MP4-18A, like the Ferrari F2003-GA, has suspension parts mounted directly onto the engine, thus increasing the car's structural integrity and reducing the mass of the gearbox.

OVERALL The McLaren MP4-18A looks like a car designed without fear of change (unlike certain rivals, which look as though the opposite is true). If the car is mechanically reliable, the logic of its aerodynamics and the execution of those concepts should give it a marked advantage over its Michelin competitors and give Ferrari a good fight. It is an integral, unique design from front to rear. The sum of its parts far exceeds their individual strengths.

• See Michelin's best team, page 56 ►
• See Ron Dennis F1-to-one, page 72 ►

> But when will it actually race?

Bold and beautiful MP4-18A may be, but a number of factors have conspired against its making a race start.

Technical director Adrian Newey has admitted to "production problems" in its development, such as the concurrent design and construction of two gearbox

types, which has done nothing to hasten the car's introduction.

F1 Racing understands also that the first monocoque suffered a minor crash-test failure – not unusual for a new chassis, but almost certain to cause further delays.

In addition, its first test at Paul Ricard revealed problems

with exhaust temperatures and hydraulic systems.

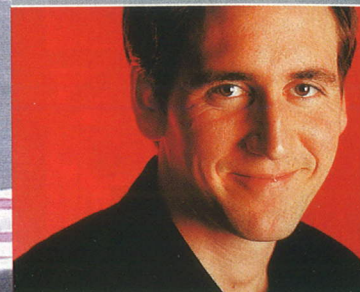
The car is now slated for a Nürburgring race debut on June 29 – but will McLaren risk racing the car for the first time in Germany, with hundreds of Mercedes VIPs present? France is a week later, leaving no time for testing

between races, so the British Grand Prix on July 20 could, in fact, be 18A's first race.

Those looking to the new McLaren as the saviour of this year's title fight will therefore have to hope that MP4-17D remains competitive – and that 18A can be made race ready as soon as possible.

On the inside

McLaren need this car to be a winner like never before



Who wants McLaren's MP4-18A to succeed more: Bernie Ecclestone or Ron Dennis? The outcome of this year's world championship – and, with it, Formula 1's marketability – depends upon its being immediately competitive, as does McLaren International's respectability.

No car in recent F1 history has had such an overlong and overhyped gestation period as has the McLaren MP4-18A. The huge resources of one of F1's foremost teams have been generously poured into its development over the past 12 months, allowing technical director Adrian Newey carte blanche to indulge his genius.

As yet, the car has completed too few laps for any judgement to be made on its absolute pace. During its first tests at Paul Ricard, it turned just 57 laps, but I was still surprised by the judgement of one senior rival driver. "It's not a radical car at all," he said. "The rear end is Ferrari, the sidepods are Williams and the nose is Minardi. It's a bit disappointing."

MP4-18A's first race now seems likely to be the European Grand Prix at the Nürburgring on June 29, which puts McLaren out of sync with their rivals – who will by then be working on their 2004 designs. If McLaren continue to introduce their new cars mid-season, their title challenges will continue to be compromised – as is the case this year – by the need to run dual development programmes of old and new cars alike.

It's not by accident that Ferrari launch their new car each winter. It gives them January and February to iron out reliability glitches, when the strain of the racing season isn't sapping resources. McLaren, of course, will have pondered this point – but one has to wonder at their wisdom in bucking a long-established trend. Time will tell.

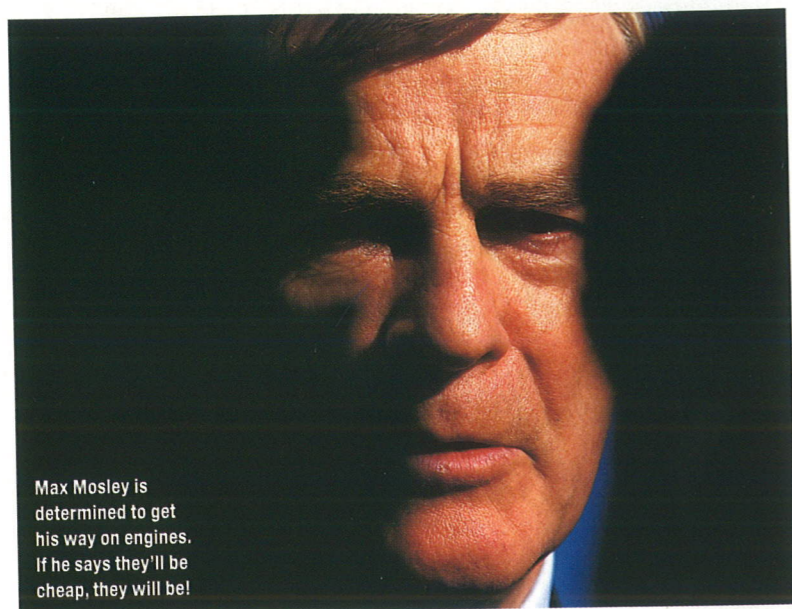
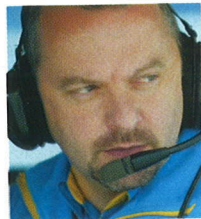
TOM CLARKSON

LORENZO BELLANCA/LAT

Splash 'n' dash

Gascoyne to turn Japanese?

Toyota may have found a solution to their recent chassis troubles – but it won't come cheap. Word on the pitlane is that Renault's Mike Gascoyne has signed a \$6.5 million deal to join the struggling Cologne-based giant, to work alongside technical director Gustav Brunner. Expect friction...



Max Mosley is determined to get his way on engines. If he says they'll be cheap, they will be!

Williams tune in to wireless

Williams and Ferrari used wireless data transfer technology at Monaco. Sender 'guns' and aerials enabled them to communicate in Formula 1's first wireless 'corridor' from pitwall to truck to factory via satellite. "Monaco is perfect for wireless technology," said Hewlett Packard's Sergio Fuesell



Art for sport's sake

Allan McNish admires the work of artist Knud Tiroch. His studies of wee Al, Alex Wurz and Michael Schumacher were displayed over the Monaco GP weekend at the Vista Palace Hotel. Tiroch is an ambassador for the World Health and Sports Foundation, a charity which supports disadvantaged and disabled sportsmen



V-TENSION

Engine noise becomes deafening

The high price of customer engines is now the most contentious issue in Formula 1 – and, at Monaco, FIA president Max Mosley fanned the flames by stating that the manufacturers had "lost touch with reality". How much does Mosley think an F1 engine should cost? "Less than \$10 million." How much less, Max? "Well, five would be sensible."

Earlier this year DaimlerChrysler chairman Jürgen Hubbert told teams that Mercedes-Benz customer engines would in future be available for \$10 million. Since Jordan currently pay Cosworth \$18 million and Sauber pay Ferrari \$24 million, Eddie Jordan and Peter Sauber were both understandably excited by the news. Since then, however, Mercedes motorsport director Norbert Haug has said that the likely price would be "more like \$11 million or \$12 million". At Monaco he said that the figure suggested by Renault's

Patrick Faure – "about \$15 million or maybe a little less" – was "probably more realistic". He also confirmed that Mercedes would be in a position to supply only one team in addition to McLaren in the foreseeable future.

So what will happen? A compromise is most likely. Mosley has told the engine makers that unless they supply engines for \$10 million, teams such as Minardi, Jordan and Sauber will go to the wall. Compassion for F1's little guys has never been high on the priority lists of F1's big guys, so Mosley has also felt the need to resort to threats. Unless "fully affordable" engines are made available – and soon – he says he will bring in a traction control ban for 2004 after all... which would cost the manufacturers many millions of dollars in re-engineering their engines.

As ever, Max has the teams by the gonads, and he ain't about to let go.

CAUGHT ON CAMERA: (DEMI)GOD TAKES ON BISHOP!



Omnipresent and omnipotent he may be, but Bernard Charles nevertheless likes to remind the press who's boss every now and again. Here's Mr E keeping editor in chief Matt Bishop on his toes in the paddock. The Cheshire Cat grin belongs to Jaguar PR guru Nav Sidhu, incidentally



LACK OF RIG-OUR

We're no fuels, say rig makers

Fuel rig manufacturer Intertechnique have hit back at criticism of their equipment in the wake of Michael Schumacher's fiery refuelling incident at the Austrian Grand Prix.

They have accused teams of failing to maintain their rigs correctly and of operating them outside specified procedures.

A spokesman said: "After Austria we found a pinched seal on Ferrari's rig. They made a mistake with their maintenance." He added that the fire was the "worst possible", because the fuel nozzle design prevents significant spillage. A blaze such as that which engulfed Jos Verstappen at Hockenheim in 1994 is no longer possible, he said.

A Renault source said teams did their own maintenance because Intertechnique charged "a ridiculous fee" to service their rigs and hoses.

REGIE GOES REGULAR

Renault wide 'V' signs off

Renault are to ditch their 108-degree V10 motor in favour of a less radical 72-degree unit for 2004. The decision to 'go conventional' was taken in March, and engineers at Renault's Enstone factory are already working on Supertec mock-ups from '00. An evolution version of this V10, using many of the tricks learned from the wide-angle engine, will be tested in November – and the new RS24 is due to be ready by mid-January '04.

The team have never made the complex wide-angle design deliver as much power as its rivals. While its shape conferred some advantages in terms of packaging, low centre of gravity and aerodynamics, other aspects of chassis design suffered. Plus the champion of the wide-angle concept has left: former Renault engine chief Jean-Jacques Hils.



Pole man Ralf Schumacher used the wide square-shouldered Michelin to great effect in Monaco qualifying – but Williams' tyre supplier would love to make a narrower carcass in order that the exposed front wheel has a less disruptive effect on the airflow over the rest of the car. But narrow tyres and soft compounds don't last...



... so how is it that Bridgestone are able to produce a round-shouldered front tyre (tailor-made for the Ferrari F2003-GA, above), so much narrower than the Michelin, which is able to last a race stint even with a comparatively soft compound? Well, they didn't last too well at Monaco – but was that because they ran them harder than before?

RUBBER BALLS-UP

Bridgestone attract compound interest

For some time Michelin have been stumped as to how rival Bridgestone can run narrower (and thus more aero-friendly) front rubber without compromising their performance. In Austria and Monaco they asked some awkward questions...

Over the Austrian Grand Prix weekend it emerged that certain Michelin bigwigs had become suspicious of Bridgestone's ability to equip their teams with notably narrow yet highly robust front tyres this year. Indeed, such was the Michelin men's bafflement that they put a series of only mildly veiled questions to the FIA's race director, Charlie Whiting, the subtext of which was clear: Michelin reckon Bridgestone just might have been cheating.

How so? Well, exposed front tyres create an unavoidable aerodynamic disaster area for all designers of single-seater racing cars – none more so than in aero-critical Formula 1. The aero men would ideally like their cars' front tyres to be smaller than they are (but not so small as to adversely affect mechanical grip); the smaller the tyre, however, the more likely it is to degrade... which irritating detail, combined with the importance of maintaining high levels of mechanical grip, has meant the tyre companies – and Michelin in particular – have been forced to continue to supply bluff, aero-inefficient front tyres.

So how can Bridgestone get away with supplying such comparatively narrow fronts? By running harder

compounds at the front than at the rear, Michelin's enquiries to Whiting would seem to imply... which is forbidden by F1's sporting and technical regulations.

But are Michelin's suspicions correct? When *F1 Racing* asked a leading engineer from a Michelin-contracted team whether being in breach of this rule could confer a significant performance advantage, his reply was unequivocal: "Oh yes. No question about it. Ideally, your rear tyres should be soft and grippy, because traction is the key issue there; for your fronts you'd ideally want something harder, to avoid the graining caused by steering against the direction of travel – especially during understeer situations. But, since it's illegal to run mismatched compounds, front to rear, we have to err on the hard side in order not to destroy the fronts – at the expense of rear-end grip and good traction. Well, Michelin do, anyway..."

At Monaco, *F1 Racing* presented its findings to the FIA. When we asked whether they had received a complaint from any party with regard to Bridgestone's alleged transgressing of the same-compound-front-to-rear rule, an FIA spokesman answered,

"No." When we pressed him, he said: "We conducted tests throughout the Monaco weekend to ensure that the regulations were being enforced."

In other words, no formal complaint was made, but, confirming *F1 Racing's* suspicions, Michelin had indeed spoken to the FIA about the issue. They had not, however, made any specific allegations, in the hope that a more subtle course of action would lead the FIA to take a careful look at what Bridgestone had been doing.

So did the FIA take heed? Well, perhaps they did, yes. At the start of the Monaco weekend the Bridgestone teams had been delighted with their rubber. "To be honest, we've been nicely surprised at their performance," said one B.A.R. engineer on Thursday evening. "We'd expected Michelin to be really strong here, as they were in 2002, but Bridgestone have done a fabulous job."

Strangely, by Saturday qualifying, Bridgestone no longer looked quite as strong as they had just 48 hours previously. Four Michelin-shod cars from three different teams qualified faster than the fastest Bridgestone runner (Michael Schumacher's Ferrari, fifth). And even though a relatively heavy fuel ballast might – just might –

have had something to do with the red cars' relative sloth, the look of disappointment on the faces of Ferrari's senior pitwall management as Michael's and Rubens Barrichello's times flashed onto the screens was unmistakable: clearly, they had expected better.

It was in the last sectors of their laps that each man was perhaps most disappointing. "Not bloody surprising, that, was it?" commented one senior chap from a Michelin-contracted team immediately after qualifying. "They'd been rumbled, hadn't they? And they knew it. So they'd reverted to fronts of the same compound as the rears. No wonder their fronts were graining like hell at the end of their laps."

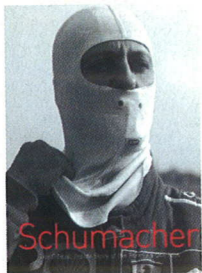
So what will happen now? Nothing, probably. It looks as if someone at the FIA has had a word in the embarrassed shell-like of someone at Bridgestone, and that the desired effect has been achieved. But if Michelin's suspicions were correct – and the fluctuations in Bridgestone's Monaco form did nothing to dispel them – then perhaps Ferrari's all-conquering F2003-GA will not have it all its own way from here on in. Especially with Williams finding form again – and especially against the McLaren MP4-18A. On Michelin's.

DARREN HEATH; STEVE ETHERINGTON/LAT. ARCHIVE; BRUNO LINDVIG/GETTY IMAGES; CLIVE ROSE/GETTY IMAGES; CLIVE MASON/GETTY IMAGES

F1 RACING

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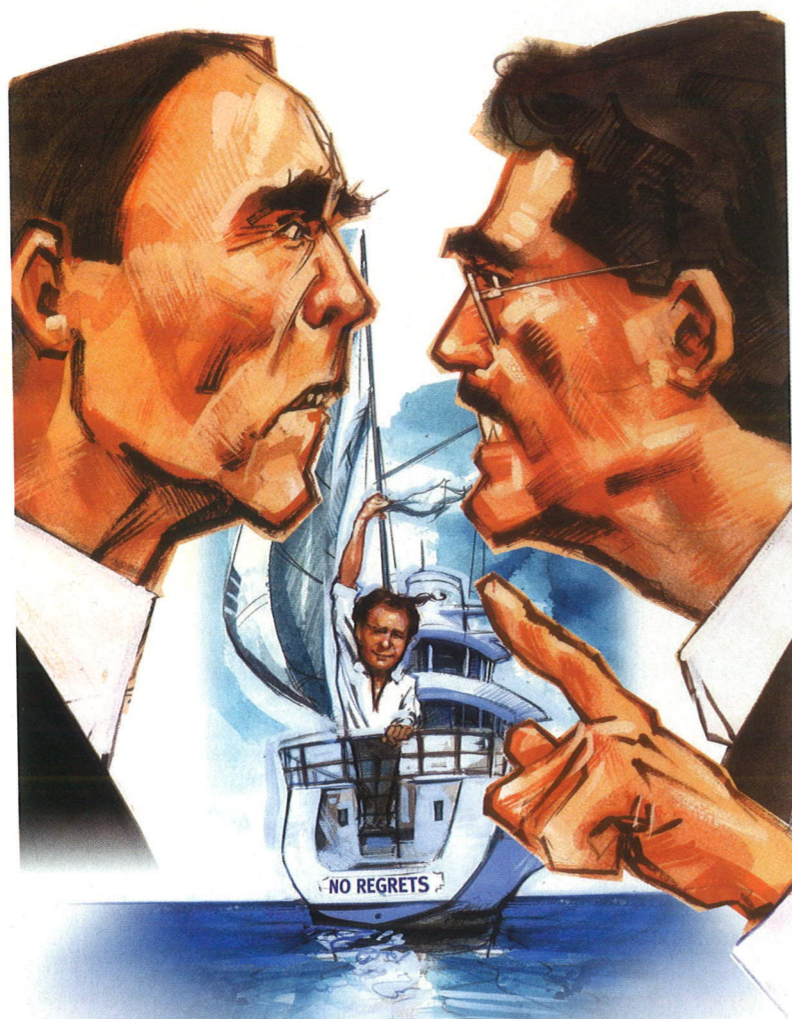


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That's it. He's Berger-ing off

Relations are tense between BMW and Williams, and the last salvo from outgoing BMW motorsport director Gerhard Berger didn't help. "We're always slowed down by Williams cars," he said. A fond farewell, then, from a man off to sail his yacht around the world...

LOOKY-LIKEY No 39: FISI IS AN X-MAN!



Giancarlo Fisichella
Jordan man with killer throttle control



Cyclops
X-Man with killer eyes

The boy's a bit special

Your guide to F1's next hot property: Bjorn Wirdheim

Another blond Swedish star?
In the making. And, in keeping with Swedish sporting tradition, he's called Bjorn. He was b(j)orn in 1980, the year Bjorn Borg last won Wimbledon. **And Abba topped the charts...**
That's enough about Abba. Bjorn ain't no Bjorn Again. Let's talk racing: all those great Swedish Formula 1 drivers of the past – Ronnie Peterson, Gunnar Nilsson and Formula 1's most recent Swede, Stefan Johansson...



Ronnie Wirdheim?

Eh? Oh, I see. It's a bit early to say whether Bjorn is *that* good, but he has certainly been doing the business in the junior formulas. He won numerous kart titles and has taken wins in Formula Ford, Formula 3 and now Formula 3000. He's odds-on to win this year's F3000 championship. **But who cares about F3000?**

The F1 team bosses for starters. No fewer than 14 drivers on the current F1 grid have raced in Formula 3000 or its Japanese equivalent en route to the top. So less of your lip!

Is he an honours graduate of the Scandinavian school of charm?

He's in a completely different league from F1's other Scandi, young Kimi Raikkonen – hardly tricky! He lives in Viareggio, Italy and some of that Latin passion has rubbed off on him already. Anyway, Swedes are way more outgoing than Finns.

Was he b(j)orn to be an F1 driver?

Too early to say, but if he wins the F3000 title this year, it will only be a matter of time before he gets a test. B.A.R boss David Richards is already known to have expressed an interest. **So, Swede dreams of F1?**

'Course! But he'll have to get himself into a decent chassis if doesn't want to end up looking like a turnip

NOT IN THE GROVE

BMW-Williams: no smoke without ire

Juan Pablo Montoya's smoky exit from the lead of the Austrian Grand Prix highlighted the on-track troubles Williams are having with FW25. But those technical woes are dwarfed by the behind-the-scenes grief they're getting from BMW...

BMW could walk away from Williams and forge a deal with another company to continue in Formula 1 beyond the end of 2004.

That's the nerve-wracking bottom line for these two eminent partners, who have been at loggerheads like never before over the past couple of months. A succession of disappointing performances from the Williams FW25, driven by Ralf Schumacher and Juan Pablo Montoya, has strained relations and forced Williams somewhat onto the back foot as BMW attempt to impose different ways of working on them.

BMW want a more integrated engineering structure between the two companies – which is corporate gobbledegook for "we want a bigger say in how the whole team is run." Yet the signs are that they may have come to the wrong shop. Frank Williams and Patrick Head are certainly not the sort of people who take too kindly to being told how to run their F1 team – which is why the relationship with their highly respected partners is currently so tense.

As the two sides have attempted to inch towards a mutually acceptable deal, which might extend their partnership beyond the end of '04 (when their current contract expires), they have had plenty of "robust debate" and "frank exchanges" of views. Not that Williams need to be told they're not doing the best of jobs right now – least of all by a road car manufacturer, however

'FRANK IS THE HARDEST TEAM PRINCIPAL IN THE PITLANE. HE'D DITCH BMW IF HE HAD TO'

good their V10 racing engines may be.

"The situation we're in at the moment is not acceptable," said Patrick Head firmly. "We're not doing the best of jobs here at Williams and, while BMW are not perfect either, you'd have to say they're generally doing a better job with their part of the equation than we're doing with ours."

"But these things happen and it's just a case of working through them to reach a satisfactory conclusion."

Despite all this, BMW motorsport director Mario Theissen insists that complex, wide-ranging issues remain unresolved.

"We're not happy with our position and competitiveness at the moment," he said. "We still have several options if we don't extend the partnership with Williams – but we're currently talking [with them] to see how the team need to be structured in the future in order to get to the top."

"This is an issue of how people work together, the competence of the people concerned and the resources available."

Whatever euphemisms may be hidden within Theissen's remarks, BMW can kiss

goodbye any notion that Patrick, a 30-per cent shareholder in the team, is about to leave F1 to spend more time sailing. There is a Churchillian pugnacity about PH when his back's against the wall and he has made it crystal clear that he won't ease off until Williams are back to winning ways.

To that end, they are in the final phase of commissioning a second wind tunnel – and only a few months ago senior aerodynamicist Jason Somerville was replaced by former Ferrari technician Antonia Terzi. Then, last month, Williams signed up Frank Dernie, the veteran engineer who worked on the aero development of the title-winning Williams-Hondas during the '80s. Team insiders have suggested that his role will be to help technical director Head organise the overall engineering package.

Cynics maintain that Frank feels most comfortable surrounding himself with people whom he knows and feels at ease with. Yet this is a simplistic view. He's the hardest team principal in the F1 pitlane. If he doesn't get the deal he feels his team are due, he is quite capable of ditching the partnership with BMW – just as he has ditched drivers who did not deliver consistently in the past. A historical fact which should concern Ralf Schumacher, given his recent form.

- See *Michelin's best team*, page 56 ▶
- See *Frank Williams F1-to-one*, page 74 ▶
- See *Black Flag*, page 146 ▶

Austrian GP, lap 33, and it's 'goodnight Vienna' from JPM's FW25. He qualified third and led the race – this was one result Williams needed not to go up in smoke

STEVE EATHERINGTON/LAT; MOVIESTORE COLLECTION; ILLUSTRATION BY GRAHAM HUMPHREYS



(Above) You've suggested we print this shot on a poster; (above right) ITV thought Austria was Schumi's best ever recovery, but you disagree; (below right) our very own Peter Windsor and his beloved fleece

star letter

Jag faster than Ferrari!

I'm looking forward to the annual *F1 Racing* Man of the Year awards in a few months and, in particular, to the gong for 'most improved team'. Mark Webber's Jaguar R4 put in a 1m8.966s in Austria this year; Michael Schumacher's Ferrari F2002 last year managed a 1m9.627s as the fastest lap in that race. Makes you think...

James Hindhaugh
Via email

Indeed it does. Enjoy our Webber extravaganza on pages 38 to 53. Ed

Schumi's best moment?

I couldn't help but smile during the fantastic Austrian Grand Prix when ITV's Martin Brundle and James Allen described it as Michael Schumacher's greatest recovery. Think back to Canada 1998, when he drove like a man possessed after collecting a 10-second stop-go penalty and went on to win by 16 seconds from Giancarlo Fisichella and a whole minute from team-mate Eddie Irvine. Surely a greater recovery?

Neil Grande
Via email

Don't sanitise Rossi

It was great to see *F1 Racing* recognise the supreme talents of Valentino Rossi in June's edition. However, Formula 1 would not be

for him. The demands of sponsors, corporate guests and political correctness would kill all that makes Rossi the charismatic champion he is. I'd rather see Schumacher and Rossi go head-to-head in a one-off road car race. That would be worth tuning in for.
Sheridan Webb
Warrington, Cheshire

Windsor's secret Ally

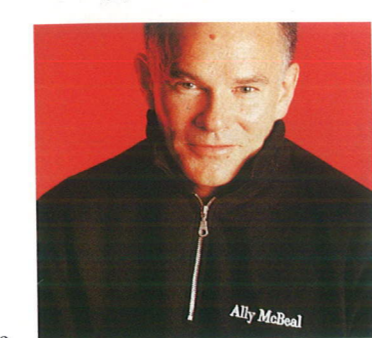
Was it Peter Windsor, whose contributions to *F1 Racing* have enhanced my enjoyment of F1 for so long, whom I saw enjoying an alfresco cappuccino on the afternoon of May 22 in London's Kings Road? And, if so, why was he wearing an Ally McBeal fleece?
Vanessa Hill-Stuart
London

Correct. Windsor is rarely seen without some sort of Ally McBeal/Calista Flockhart attire. No, we don't know why, either. Ed

Sic joke

I enjoyed Matt Bishop's fascinating Max Mosley interview (*F1 Racing*, June), but was disappointed that Mosley was prepared to perpetrate the following solecism: "I often feel I'm doing all this work, and all I get is this aggravation." Since the verb 'to aggravate' means 'to make worse', this sentence is bunkum. Indeed, in line with normal FIA procedures when quoting from the pronouncements of senior F1 personages, surely Bishop should have inserted the word 'sic' after Mosley's illiterate misuse?

Jack Puttick
Pulborough, West Sussex



In support of the A1-Ring

I disagree with Tom Clarkson's comments on the A1-Ring [*F1 Racing*, June]. He says spectators can't get a good view and that the race won't be missed. Well, I'm sorry that it's leaving the calendar. I've travelled to several grands prix and the view in Austria is spectacular. From my vantage point this year, I could see more than 60 per cent of the track. It's one of my favourite circuits to visit.

Tony Wuidart
Via email

Wanted: the big picture

I'd like more fair and objective writing in Peter Windsor's race reports. There were 19 drivers besides Schumi at Imola [*F1 Racing*, June], but he seems to be all Windsor was interested in. Of course Schumi is an accomplished driver, but when you write about him almost exclusively, the readers miss the big picture of the race.

Robert C Ristuccia
Via email

The art of decoration

What an incredible eye! Alex Puczyniec's photos of Kimi Raikkonen's McLaren, in your May issue, are worth a year's subscription to *F1 Racing*. It's a shame you didn't print the cover shot on a huge poster.

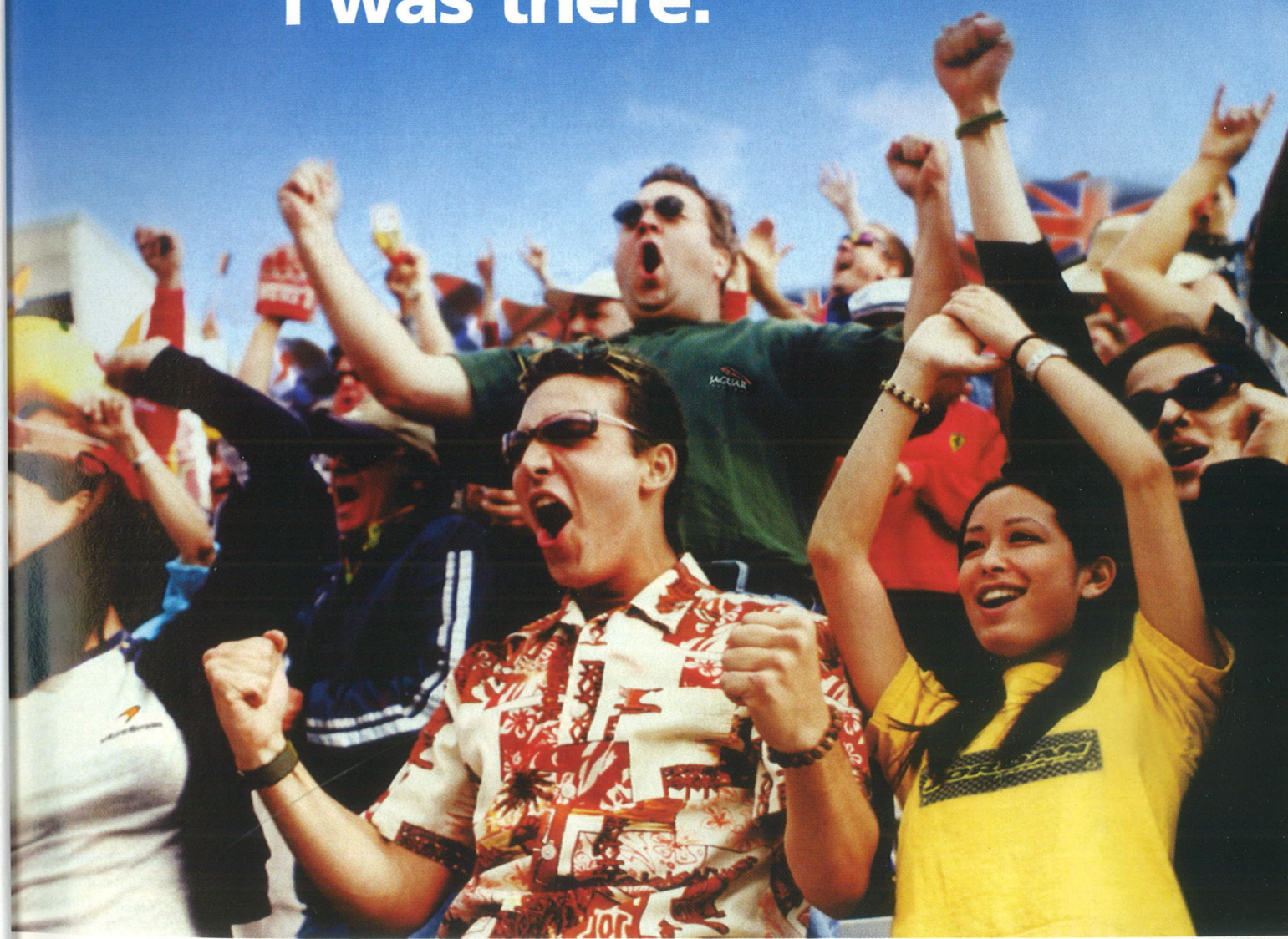
Jim Watt
Via email



• The writer of our star letter wins a Castrol Racing jacket

BEN WRIGHT; ALEX PUCZYNIC; LAT ARCHIVE

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MONACO

CORNER BY CORNER

DRIVER BY DRIVER

There are seven corners a driver *must* get right if he's to put in a fast lap at Monte Carlo: Sainte Devote, Casino Square, Mirabeau, the Harbour Chicane, Tabac, the Swimming Pool Entry and Rascasse. *F1 Racing* stationed one journo at each spot during Saturday's qualifying session to tell you who did what, where. With a driver's perspective on each corner

Photographs by Darren Heath



Coulthard, just post-apex. It's vital to get the power on early, but easy to clout the wall on the exit

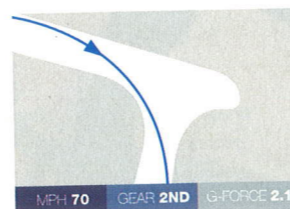
1. Sainte Devote

Patrick Tambay could have won the 1983 Monaco Grand Prix. If his team – Ferrari – had decided to go for slicks instead of rain tyres, he reckons he would have finished first. Easily. But Keke Rosberg and Williams eventually won: they were the only ones brave enough to use the correct tyres right from the start.

We stand at Sainte Devote, Patrick and I, when most other journalists and photographers seem to prefer somewhere else.

"This corner is *the* place to be," Patrick says. "If you get through Ste Devote okay, you gain confidence and your lap can be blindingly quick. If you lose time under braking, though, your lap is just finished."

As he talks, the session starts. This corner's layout has changed slightly since last year's race: the roundabout is gone and Ste Devote is a little wider.



MPH 70 GEAR 2ND G-FORCE 2.1

Tambay catches his breath when Jarno Trulli's R23 comes past. "Perfect," he says. "That guy really knows how to be quick around here."

He doesn't speak again until Michael Schumacher arrives. Michael is on the edge: hard braking, whipping down the gears. The Ferrari's left rear wheel licks the rail. In a second it's gone through Beau Rivage.

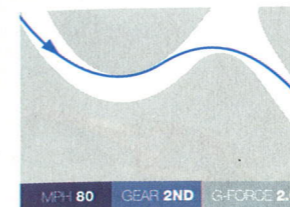
"Pole, for sure," Tambay whispers. He's wrong: after a mega-quick first sector, Michael will suffer bad tyre graining.

Stéphane Samson

2. Casino Square

The scent of the white jasmine planted close to the little police station is intoxicating as the lunchtime temperature soars. This moment, here in Casino Square, is the pinnacle of the Monaco weekend. With the sound of the first car drowning out the plutocrats' chatter on the balconies of the Hotel de Paris, an orange-suited marshal beside me fishes out a Kit-Kat and starts taking pictures with it. It's a throwaway camera, not a chocolate bar.

This was where you used to see the cars on tiptoe, drivers gambling with their tyres' adhesion in rubber-smoking slides. Now, it's all traction control and that horrid ignition-cutting mechanical tattoo: the Mercedes V10s smoothest, the BMWs all muffled staccato, the Renaults weirdly monotone. Nobody even gets close to



MPH 80 GEAR 2ND G-FORCE 2.6

the Armco after the famous crest – at least not until Michael arrives. There's a heavy crackle of TC as he boots the F2003-GA before the crest, and he so nearly whacks the iron wall.

By the time he gets to the finish, though, Michael is only fifth – and nobody can explain it. "We'll see tomorrow," say Ferrari. That's the worst of this new-fangled qualifying. Nobody is willing or able to explain today. Give me back the old Monaco Saturdays of empty tanks and tyre smoke. Please.

Mike Doodson



Schumi powers his F2003-GA over the Casino 'crest' – a split-second later he is shaving Armco



'A CHALLENGING CORNER WORTH TWO OR THREE TENTHS IF YOU GET IT RIGHT. YOU USE ALL THE ROAD OVER THE CREST ON THE ENTRY. THEN YOU HUG THE INSIDE BARRIER, AND THE MOMENT YOU SEE YOUR EXIT YOU'RE HARD ON THE THROTTLE' DAVID COULTHARD

Ralf on the way to pole. He enters Mirabeau on a shallow line, but apexes perfectly



3. Mirabeau

You've gunned it out of the Casino, and now you're fighting 'ends swap' all the way down the steep, bumpy 'straight' that follows. You hook fourth as you dive under the Marlboro bridge, hitting 130mph, then you face one of Monaco's sternest tests: late-braking for the 'beau.

Some drivers – Nick Heidfeld, Antonio Pizzonia – hug the Armco on the left, deafening supermodels and their 60-year-old 'boyfriends' as they sip 30-Euro espressos in the Tip Top. Others – Ralf Schumacher, Giancarlo Fisichella – stay mid-track, aware that the key to the 'beau is getting to its eye-of-a-needle apex as quickly as possible.

As you nail the brake pedal, you aim for the 'eye' – and watch your right front tyre 'freeze', in mid-air, as the crazily cambered road drops away. If



MPH 50 GEAR 2ND G-FORCE 2.1

you're Kimi Raikkonen or Fernando Alonso, you miss the apex wall by no more than 10 centimetres. If you're FA or KR, you get on the power mega-early, too, dialling in all 800-plus horses for the split-second blat down to Loews (or Grand). You do this even though all you can see is the shimmering Med hundreds of metres beyond what you *cannot* see, but know is there: the unforgiving three-tier Armco, curving invisibly around, just a few feet in front of you...

Matt Bishop ▶

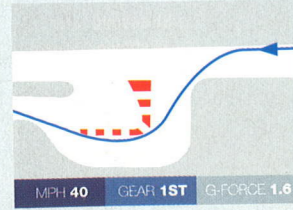


'YOU HAVE TO BE VERY SMOOTH IN THE ENTRY BECAUSE THE FRONT RIGHT WHEEL ISN'T ON THE GROUND. THERE'S USUALLY SOME UNDERSTEER IN THE MIDDLE SO YOU WAIT FOR THE EXIT AND, AS SOON YOU CAN, YOU GO FLAT-OUT' GIANCARLO FISICHELLA



'IT'S EASY TO GET STE DEVOTE WRONG. YOU HAVE TO BRAKE HARD, WHICH IS TRICKY BECAUSE OF A BIG BUMP ON ENTRY. THE EXIT IS IMPORTANT. THERE'S AN UPHILL STRAIGHT AFTER IT – AND, IF YOU LOSE TIME HERE, YOU'RE SLOW ALL THE WAY UP THE HILL' JARNO TRULLI

4. Harbour Chicane



As I wait for the opening run of one-shot qualifying, Heinz-Harald Frenzen's, how it will pan out is not the question occupying me. My eyes linger on the lines of the sleek, clean yachts moored directly behind the apex of the Harbour Chicane's newly surfaced area. What I'm wondering is, in fact, this: how will new-format qualifying affect the way drivers attack this left-right-straight that forces a speed reduction from Monaco's maximum 180mph to around 40mph? How different will this be from

last year, when they had four attempts at it? The Hermitage, towering sky-high above, offers no answers; nor, unsurprisingly, do the three beauties in bikinis on the Passionata.

H-HF comes through twice, okay... ish on his hot lap. Then Cristiano da Matta on his out-lap, before Frenzen sort of freewheels down from the Tunnel, making short change of the Chicane. Saving fuel for Sunday, you see...

Fuel loads having rendered qualifying hollow, maximisation becomes my benchmark. H-HF, though 15th at the end of the session, is the one to compare them with for now.

Mark Webber goes straight on on his in-lap, too, but under power, and pole-man Ralf Schumacher creeps, slowly, the long way round.

Dieter Rencken



'96 Monaco winner Panis nibbles just the right amount of apex kerbing; even so, he ends up 17th



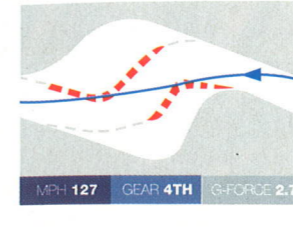
'IT'S EASY TO LOCK A REAR BRAKE BECAUSE IT'S DOWNHILL, SO IT'S DIFFICULT TO OUTBRAKE OTHER CARS. YOU TURN LEFT, CLOSE TO THE END OF THE BARRIER, THEN RIGHT OVER THE KERB. WHEN THE CAR IS STRAIGHT, YOU STAMP ON THE THROTTLE' **OLIVIER PANIS**

6. Swimming Pool Entry

On the right is a huge grandstand bustling with Schumi fans; on the left are the beautiful people, sipping, sunning and slurping on their floating castles. For the drivers, there is nowhere to hide on what is one of the most demanding sections of the lap.

On the approach, the track curls to the left, taking the cars over the slippery white lines of a parking lot. The entry is fourth gear and blind, the drivers' reference point a white section of barrier on the outside of the track. With the car almost kissing the right-hand barrier at this point, they ease the car to the left-hand apex.

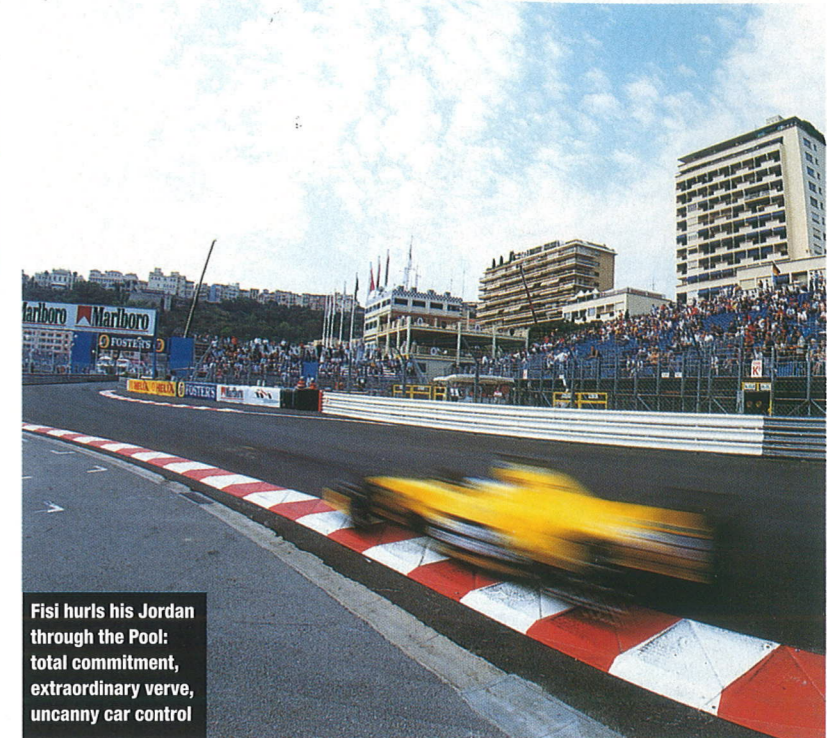
To be quick you have to use the kerbs, without unsettling the car. But use too much kerb – half a car's width or more – on the left and you will induce mid-corner oversteer, à la



Justin Wilson and Ralph Firman. Use too little, like Rubens Barrichello, and you will be slow – because you are being too conservative.

Unsurprisingly, Michael looks mega, as does Jarno Trulli – both the epitome of controlled aggression. But Montoya is something else. His Williams doesn't look good – bouncing from one kerb to the next – but he keeps his boot nailed, his steering input all reflexes, his balls strapped to the wall.

He looks good for Sunday. **Tom Clarkson**

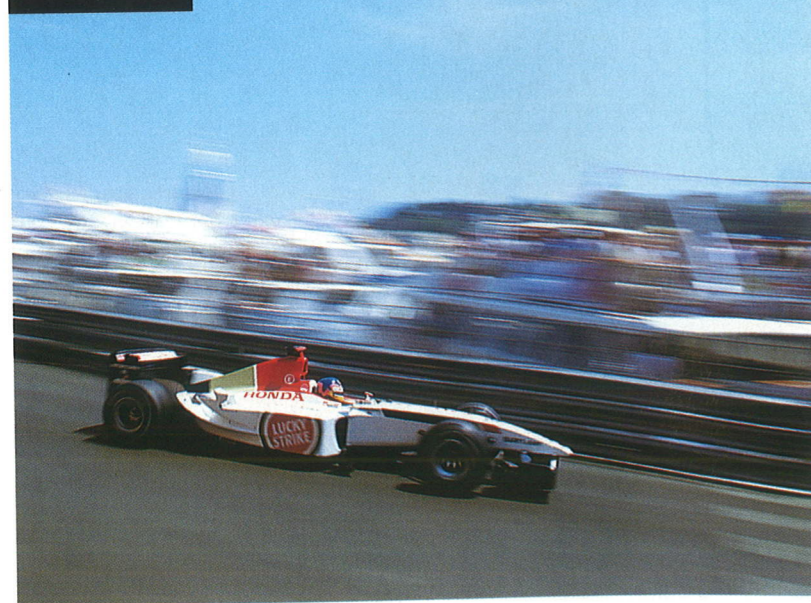


Fisi hurls his Jordan through the Pool: total commitment, extraordinary verve, uncanny car control



'YOU TURN IN AS CLOSE TO THE OUTSIDE WALL AS IS POSSIBLE WITHOUT HITTING IT. THEN LIFT INTO THE APEX AND, THE MOMENT YOU SEE YOUR EXIT, YOU'RE FLAT AGAIN. IT'S FAST, EXCITING AND VERY SATISFYING WHEN YOU GET IT RIGHT' **JUAN PABLO MONTOYA**

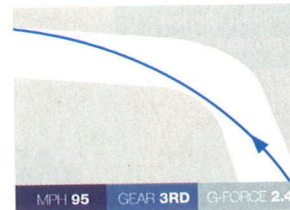
JV's Tabac turn-in is wide and ultra-committed. But other drivers were neater – and quicker



5. Tabac

Tabac is a difficult corner from which to watch: it is neither fast nor slow. There is no obvious vantage point. Instead, it is all sun and super-efficient marshals. At the *poste de secours* the ACM *intervention* guys mix with the *téléphonistes*. At the nearby Restaurant du Port – as the famous Tabac is now known – comfortable-looking punters sip wine and peruse menus. Across the way, a group of Fisco supporters await their man on the deck of their boat.

Kimi Raikkonen skims the outside turn-in guard rail, maximising the radius of the corner. There is a flash of opposite lock and then full third-gear Mercedes power. The McLaren squirms away towards the Swimming Pool Entry – to what, with Tabac behind him, is in effect the second half of one long, decreasing-radius left-



hander. Ralf Schumacher, by contrast, is his trademark half-metre in from the outside as he eyes up his apex. He tucks in the front of the Williams, squeezing the Michelins with brakes and steering, finding what appears to be mega-grip close to the apex guard rail. Kimi is smooth and flowing, Ralf darty and precise.

And then Ralf blasts towards the Pool, changing up a gear as he does so, the better to settle the car. In an instant he is gone. Only the sound of the BMW engine now defines his pole lap. **Peter Windsor**

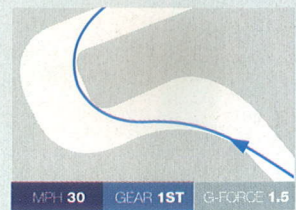


Trulli qualified well – as he usually does at Monaco. But race day would be a very different story...

7. Rascasse

What was previously a stop-start section of circuit that tended to unsettle a car's balance is now a more flowing, fluid section thanks to the wider track and more gentle left-hand approach.

The Ferraris are businesslike and crisp, describing a precise arc through the 180-degree right-hander with absolute accuracy. Trulli, relishing his role as Monaco's traditionally impressive outsider, looks more convincing than his celebrated team-mate Fernando. Alonso, perhaps slightly intimidated after removing the right-front wheel from his Renault in practice, looks urgent and anxious, slightly overdriving. By the final exit he seems to have lost the fine edge of his momentum and is hard pressed to sustain his speed as he squirts towards the acrobatic



Virage Anthony Noghes right-hander which leads onto the start/finish straight.


Pole winner Ralf Schumacher displays economy of style and brisk efficiency, pitching his Williams through the turn with just a shade of oversteer. Yet the most elegant performer is unquestionably David Coulthard. His McLaren might be heavy with fuel and less delightful to drive than it was in the morning, but it shimmers through like a silken banner in a gentle breeze, steering input barely noticeable. **Alan Henry**



'IT'S MORE FUN – AND EASIER – THIS YEAR. PREVIOUSLY, IF YOU MADE A MISTAKE, YOU CRASHED. NOW YOU GET AWAY WITH IT. IT'S A BIT LIKE RALLYING – YOU'RE GOING FROM SIDE TO SIDE. AND IT SAVES YOU ABOUT HALF A SECOND A LAP' **RUBENS BARRICHELLO**



'TABAC IS ALL ABOUT THE ENTRY: YOU HAVE TO BE CONFIDENT AND PUSH AS HARD AS YOU CAN ON THE WAY IN BECAUSE IT'S BLIND. IF YOU GET THE ENTRY RIGHT, YOU CAN NORMALLY JUST COLLECT IT ALL UP ON THE EXIT AND YOU'RE THROUGH' **JENSON BUTTON**



Tear free from the darkness of the Channel Tunnel and you have two tarmac choices for Paris: the A26 or the A16, but as time is not on ration – the French GP is a few days away yet – go for the latter. Stop at leisure and poke around at will... as soon as you see a large gathering of modern wind-generators dive off and wander – clamber a grassy bank and you'll be stunned by a surprising, breathtaking coastal vista. (How different can this be from one of Britain's concrete service stations?)

Return to the autoroute, let the turbo fill its lungs and continue southbound. This may take a few hours but as long as you're packing some tunes – good driving music and French radio stations are not synonymous – then this won't be a chore. Incredibly, over here they haven't appeared to have invented vertebrae crushing potholes yet.

When in Paris's city limits, keep your wits on their maximum setting because here the locals are switched on and traffic is fast which means

that cars appear from all sorts of strange directions. Yes there is the Arc de Triomphe, Notre Dame and the Louvre, but unless you like mingling with the masses of white-socked tourists who flock to the capital's most visited hotspots, don't make these sites the focus of your Parisian sojourn. Delve deeper and enjoy a taste of the city which the Parisians know and love. You'll discover a whole new experience.

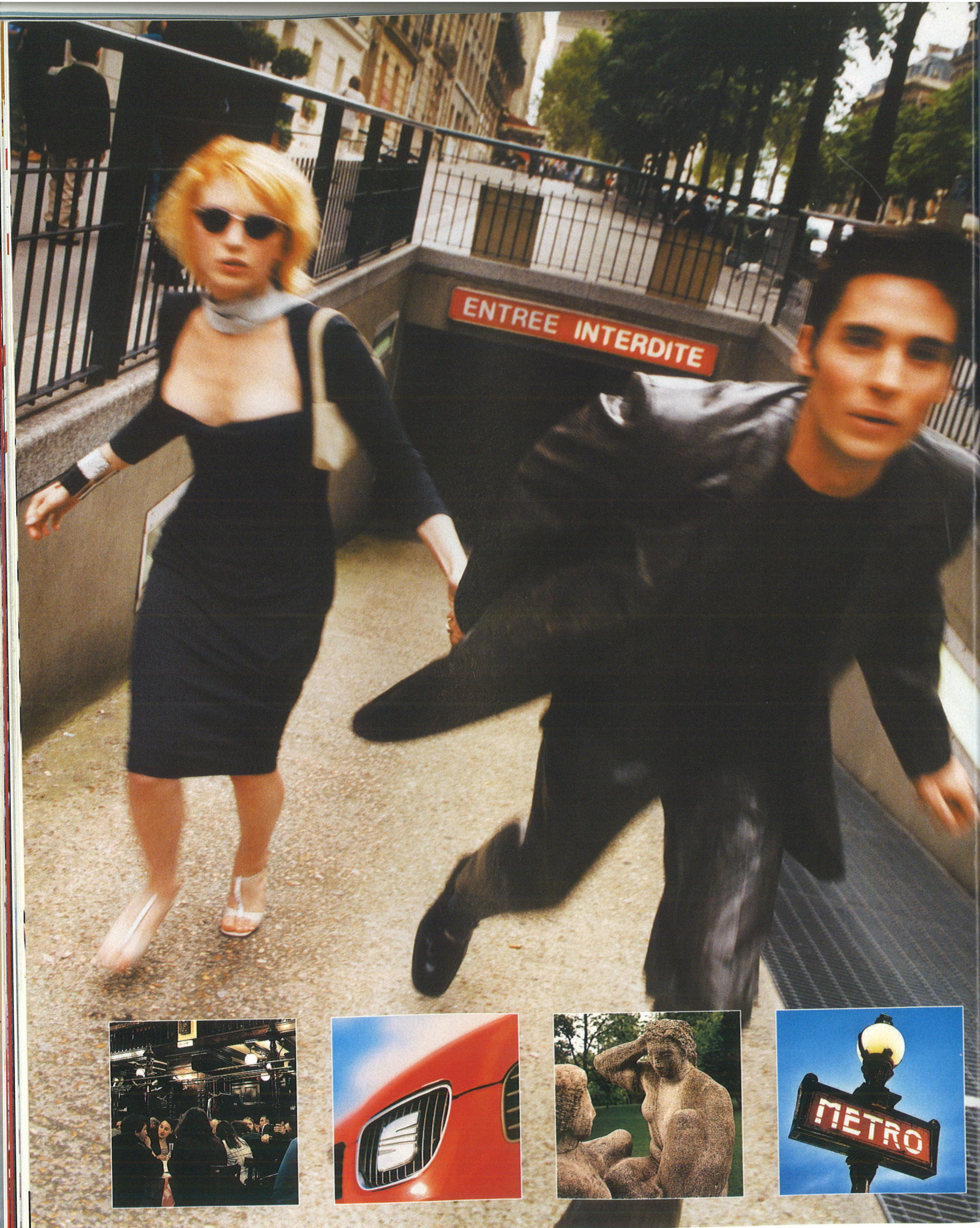
Induce a good bout of vertigo collywobbles whilst enjoying a great view of Paris from the top of the 196-metre tall Montparnasse Tower in the 14th arrondissement, it may be a huge glass monolith but it does offer something that the Eiffel Tower can't – and that's a great view of the Eiffel Tower... If Montparnasse has given you a taste for bricks and mortar, then make for La Défense. Head north east and you'll find yourself submersed in a world of concrete underpasses and dark subterranean 'multi-stories' – park the car (the rates shame London's)

'INDUCE A BOUT OF VERTIGO COLLYWOBBLES FROM THE MONTPARNASSE TOWER. It offers something even the Eiffel Tower can't – a great view of the Eiffel Tower'



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French Grand Prix

BYPASS PARIS' TOURIST TRAPS LIKE THE EIFFEL TOWER AND THE LOUVRE. INSTEAD FOLLOW THE PARISIAN'S LEAD WITH A MESMERISING CHOICE OF PLAZAS, EATERIES AND AVANT-GARDE DESIGN



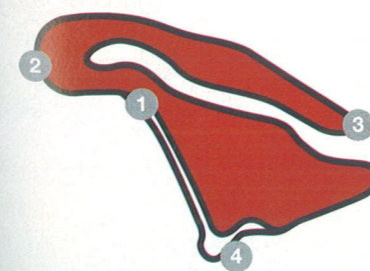
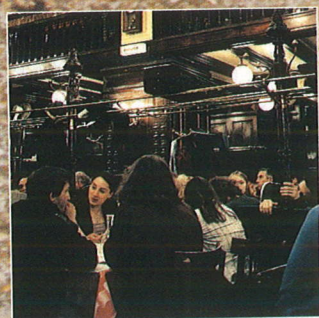
and head up to daylight and what can only be described as an awesome contemporary zoo for architecture.

There's a huge plaza, plenty of eateries, the obligatory dodgy sculpture and fantastic buildings. Dominating the place though is Le Grand Arche de la Défense; resembling a giant cross between a Polo mint and a Rubik's cube, you can take the lift for another big view or just climb the main steps and turn around. Not only does this viewpoint offer a great view of La Défense, but you'll also see over in the distance and in perfect alignment, the Avenue Charles de Gaulle and the Arc de Triomphe... If that doesn't put a 'wow' on your lips then nothing will.

Return to the car and make for the more central parts of the city. Where to next? Well, there's the bustle of the flea market at Port de Clingnancourt for a French take on Camden, or the olde worlde formality of the Jewish quarter which hides behind the Pompidou Centre.

When in Rome, as the saying goes, you should make the effort – especially when eating – so for something genuine and full of life a Chartier-style restaurant is a must. There's one on the Rue du Commerce and one on the Rue du Faubourg Montmartre – the latter is a bit more touristy but it's up to you. You'll get the waistcoated 'n' aproned waiters nipping around tables whilst balancing an entire table's orders on a tray the size of a milk bottle top; you'll get charmed by the art deco backdrop; and you'll witness Gallic gesticulation by the bucket load.

Following your feed, roam the back streets where you'll find many intimate bars and perhaps an odd out-of-the-way club – but look carefully because they are often concealed by stern, fly-postered double-doors. Had enough of Paris? Well, continue south for cheering F1 fans and the screaming V10s of the Magny-Cours circuit near Nevers where things couldn't be more different from the urban buzz of the night before...



Magny-Cours

1 Grand Courbe: The first two corners are very important to a quick lap; the super-quick left-hander followed by the very long right really test the drivers' skills.

2 Estoril: This sweeping right-hander requires equal amounts of bravery and precision, vital for any overtaking manoeuvre into the Adelaide hairpin.

3 Adelaide: One of many second-gear hairpins that punctuate the high-speed straights. Here, the cars are braking from top gear and 185mph, to just 50mph.

4 Lycée: The racing line on the exit of the final corner takes the cars very close to the pitwall and, as a result, there is an armoured glass screen to protect the crews.

Straight talking: that's how Webber got into F1. Never once did his self-belief fail him – he *knew* it was going to come together in the end

The boy done good

Once upon a time, in Australia, a young lad called Mark decided he wanted to be a Formula 1 driver. And now he is one. Simple, right? No, not at all. His journey involved hard graft – and a touch of magic

Interview by Peter Windsor; photographs by Andy Earl

Looking back now, with his Jaguar contract signed through to the end of 2005, and with all his mates telling him that perhaps he should have waited longer before committing long-term to Jaguar because there are plenty of other teams out there who would have wanted his services, too... looking back on this, it's clear that it all happened the right way – the way, of course, that it should. Mark Webber is what he is not

only because of his gifted, natural talent – but also because of the way this talent has been honed. His brilliance in the cockpit is matched only by his logic and perception in the debrief room. His calmness under pressure is complemented by his wit and turn of phrase in the media centre or the Formula 1 sponsors' Paddock Club. He is one minute the archetypal Great Australian Sportsman – a modest team player, a hard worker, an ►

WEBBER'S WORLD

achiever in the Steve Waugh tradition – the next he is a thrusting and aggressive founder member of F1's Brave New World.

For a long time, though – for so long that lesser guys would have given up in disgust – Mark Webber was a nobody who couldn't get a drive. People who didn't know him back then, or didn't rate him, are astonished today at the way this new superstar has suddenly pulled things together. It doesn't normally happen like that. The Michaels and the Kimis and the Juan Pablos are noticed pretty early in their careers and therefore drive competitive cars virtually all of their lives.

Mark Webber, though, was born and raised in Queanbeyan, New South Wales, on the rolling hills near Canberra, Australia. He was lucky in the sense that the Australian Grand Prix joined the calendar in 1985, when Mark was nine, which meant that his dad, Alan, could actually see the F1 races on TV for the first time and there was generally a bit of a buzz about the business – but that's about all there was. While the Kimis and the Fisis were swapping nappies for kart seats, Mark Webber was working for... Mal Meninga. And Laurie Daly, Ricky Stuart, David Furner and Bradley Clyde – for the stars of the Canberra Raiders, in other words – for the world's greatest rugby league team. Mark Webber, ball-boy, learned early about working until he dropped and about never giving up.

His dad, though, loved motor racing. He drove to Warwick Farm to watch the

'MERCEDES ASKED HIM TO RACE A SPORTSCAR. MARK SAID NO. HAD HE JUST BLOWN HIS BIGGEST CHANCE?'

Tasman races as a kid in the early '60s. He saw the great Australian drivers almost beating the internationals – he saw Frank Match, David McKay, Frank Gardner, Bib Stillwell, Leo and Pete Geoghegan, Spencer Martin and Greg Cusack. And, in Mark, who was born long after the Farm had closed – to be replaced by a housing estate – he saw the spark.

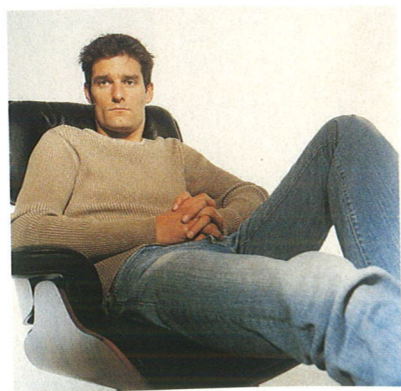
They didn't race karts for long; Mark was relatively old when he started (14 to 15) and in those days too many dads were throwing money at karts for too little return. No, Alan Webber spent his money with discretion and in '94 bought the ex-Craig Lowndes Van Diemen FF1600. Mark was quickly on the pace, showing his talent and his speed, and worked as a driving instructor at Oran Park, a dustbowl of a circuit west of Sydney, when he wasn't actually racing. It was at Amaroo Park, though – where the car was garaged amidst the gum trees, that he met two people who would change his life.

The first was the father of the guy with whom he shared a garage – Spencer Martin. While Spencer's son, Matthew, battled with his Swift, Alan Webber befriended his childhood hero. Spencer was impressed with Mark and thus began to introduce him to useful contacts in Australia (the leading journalist, Mike Kable, for example).

At Amaroo Mark also met one of the FF Championship co-ordinators – Ann Neal. Ann already knew the British club racing scene and believed immediately in Mark Webber. She accompanied him on an exploratory trip to England, raising money and generating publicity – just as she does today – and introduced him to other significant Aussies: to the Formula 3 team owner, Alan Docking, and to Van Diemen's Ralph Firman (Sr).

One Snetterton test convinced Firman that Mark was worthy of support. He finished third in his first Formula Ford Festival in '95 and won it outright in '96. As close, competitive racing goes, with sudden-death heats and semi-finals leading up to a wheel-banging, millisecond-defined final, the FF festival is the mother of all motor races. Mark Webber had arrived! At Brands Hatch! Where champions are made!

The phone, however, never rang. He watched it nervously, for day after day –



before the gym, during a cycle ride, after the gym, waiting, waiting... for calls to be returned, for the sponsor to say yes, for the team to sign him up. But... nothing.

What he wanted, of course, was a good F3 drive – preferably with the Silverstone-based Alan Docking, an Australian who knew great drivers when he saw them (as he did Mika Salo, for instance). What Mark didn't have, despite his Brands success, was money. In Australia, where Mark's success should have had an impact, the dollar supply was about as dry as the Canberra bushland. Craig Lowndes, ironically, was the only guy they spoke about – and his European foray was also about to fail.

Australian friends stepped in – as they do when good-bloke Aussies have shown they have the talent. 'Docko' Docking would run the F3 car for cost, helped massively by his Aussie partner, Dick Puxty. Sydney's Mike Eagles would provide low-cost insurance and would keep tabs on the Australian business community in London. Another friend gave Mark's name to the Aussie rugby union icon, David Campese, who was in the process of retiring and setting up a sports management agency. Worried that Campese wouldn't be able to find the time to meet, Mark obtained his travel schedule from his office, caught a train to Heathrow and walked up to Campese as he was about to climb into a car. Impressed by Mark's tenacity and self-belief, Campese put his own money into Mark's F3 season.

It was at the Australian Grand Prix ball in March, though, that things genuinely began to change. Ann saw Mercedes' Norbert Haug sitting at the top table and suggested to Mark that he go right over and introduce himself.

"G' day. My name's Mark Webber. I've won the Formula Ford Festival and would just like to leave my name with you as a possible driver if ever the opportunity arises."

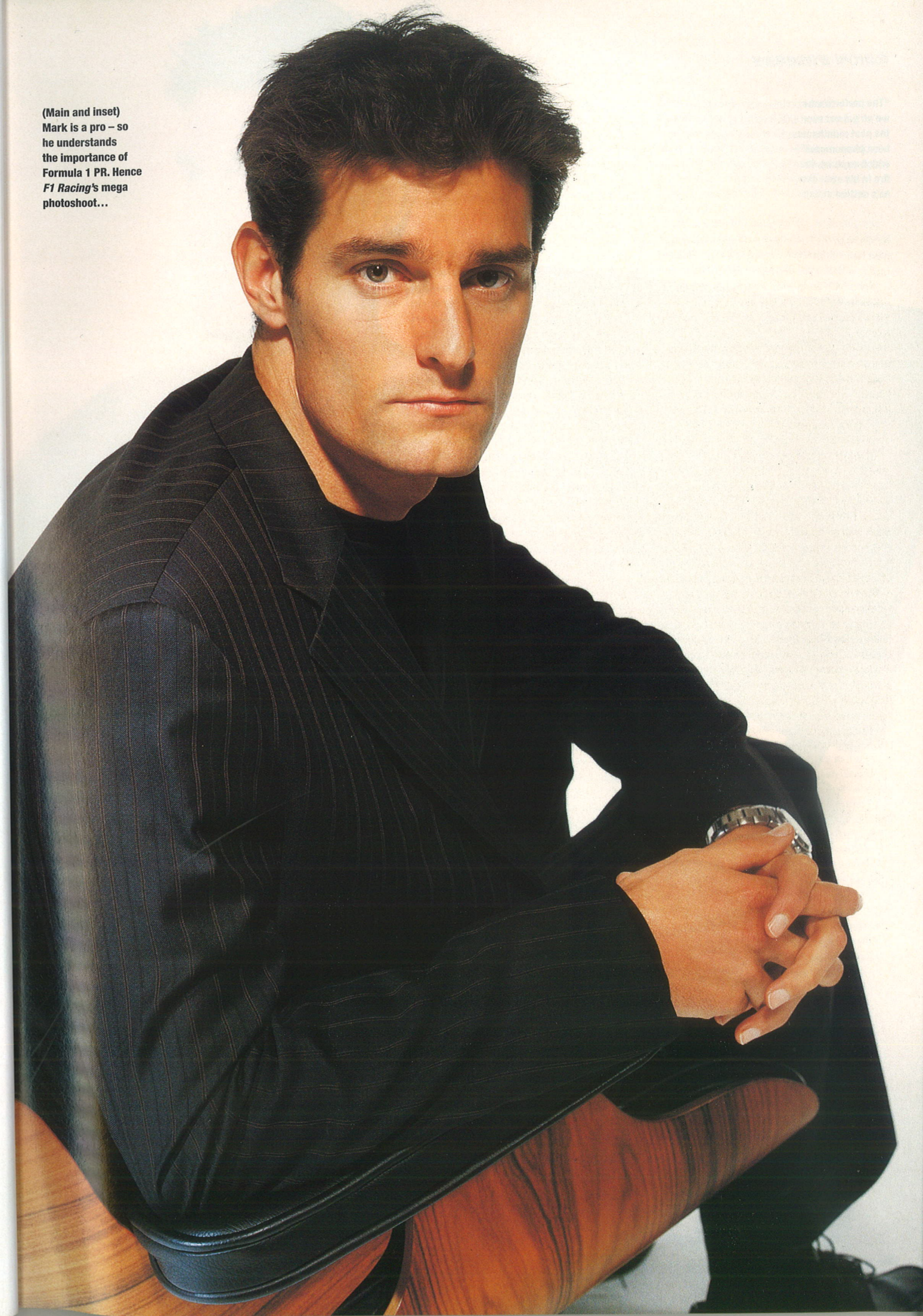
"Okay. Thank you. Maybe we will be in touch."

Mark was at home in Aylesbury a few weeks later, savouring a win for Docko at Brands Hatch, when the phone rang. It was Mercedes, wanting him to race a sportscar in a week's time. They had been following his progress and had been impressed by his results.

Mark said no. He couldn't see the overnight jump from F3 to sportscars ending in anything other than tears. What he would prefer, he said, would be tests followed by races. They said they would get back to him.

Had Mark Webber blown the biggest chance of his career? Would some other ▶

(Main and inset)
Mark is a pro – so he understands the importance of Formula 1 PR. Hence F1 Racing's mega photoshoot...



"The performance we've gained over the past months has been phenomenal" – which explains the fire in his eyes now he's settled at Jag

guy be hired? He kept his cool and continued to shine in F3. And, in time, Mercedes did come back to him, inviting him to test. He was up and running in the (Mercedes sportscar) world that had helped to create Michael Schumacher.

He was quick, he earned the respect of one of the fastest men ever to drive a Mercedes – Bernd Schneider – but ultimately it led to another low. At Le Mans, the only race the team tried to win in '99, Webber's Mercedes took off on the straight and somersaulted into destruction on two separate occasions – during practice and then on race-day warm-up. Mark survived but decided that he'd had enough of two-seaters. There was Mercedes talk of CART and maybe of a McLaren test but now was the time for solid, Australian pragmatism. Regardless of the cost, he had to get back into open-wheelers. On his terms.

He pestered Eddie Jordan for a ride, for at that stage Damon Hill was on the wane. Eddie listened, said no but suggested that Mark speak to another Australian, Paul Stoddart. Stoddart, said Eddie, was talking Formula 3000; more importantly, he added, he seemed to have money.

Even so, Stoddart still required a minimal F3000 budget – \$750,000 to you and me. That was the bad news. The good news was that Stoddart, being an Aussie and also being someone interested in helping young talent, was prepared to underwrite Mark's season. F3000 was a huge gamble for Mark, because at that stage he was 24, he had "been around for a while" and he was stepping sideways from the international sportscar stage into F1's B-division. He committed to it, though, and he made it work. Stoddart's new team became regular visitors to the podium.

Towards the end of that year, Ann also badgered Benetton's Gordon Message into persuading Flavio Briatore to give Mark a Formula 1 test. Mark flew, impressing Benetton's Pat Symonds, and was offered a test contract for '00. Sensing a real chance for F1, Mark put a counter-proposal to

Briatore: in return for settling Mark's debts and financing another F3000 season – this time with David Sears' Championship-winning Supernova team – Briatore would take a percentage of Mark's future earnings.

Overnight, Mark became a Briatore driver. It was probably the best decision he ever made.

He won F3000 races in '01, including the blue-riband Monaco event, and he established himself not only as an F1 test regular but also as one of the fittest guys in the pitlane.

You know the rest: Flavio put together a Minardi deal for '02, enabling Mark to do his thing in Melbourne, if you please, in front of... everyone. With no traction control, no power steering – no *baseline* – he hurled the beast around Albert Park to finish fifth in his first grand prix. Afterwards, even Michael walked to the cheaper end of the paddock to offer his congratulations...

And then, towards the end of '02, with some people still insisting that Mark wasn't "that special" or – worse – suggesting that Eddie Irvine should keep his place at Jaguar, Flavio dived right in and did another great deal – convinced Niki Lauda that he should sign Mark Webber while Mark was still available to be signed. Flavio might have added that Jaguar had already missed too many other opportunities (Juan Pablo Montoya, Kimi Raikkonen, Fernando Alonso, Jenson Button etc etc) for Mark Webber to disappear, too – but I'm not sure. Maybe he didn't need to. Maybe Niki was ready at least to make one strong decision. Whatever. He did it.

Over the winter of '02-03 there were of course plenty of observers – Williams-orientated observers, admittedly – who predicted that Jaguar would go well in the new season because they had signed... Antonio Pizzonia.

They still thought that, indeed, in the weeks leading up to the Australian Grand Prix, for testing (where Mark instantly showed his class) is one thing; racing is another.

And again Mark shone. He raced right up there with them in Melbourne, looked pretty good in Malaysia, maximised a pretty good car and favourable weather conditions to be fastest on Friday in Brazil and converted that into P3 in qualifying on Saturday.

In the rain, on race day at Interlagos, Mark was always a factor until his wet Michelins began to burn on the drying track. He was obliged to use the damp edges to keep the rubber cool... and lost it late in the race, grip zero, car off line. ▶

'F1 IS A SPORT. WE SHOULD BEHAVE AS SPORTSMEN, NOT AS CHARACTERS THAT WE MAKE UP FOR OUR IMAGE'

WEBBER'S WORLD

Barcelona, a month later, was typical Webber: boring circuit, scratchy car but a strong points finish. The polished pro.

Now, with that extension to the Jaguar contract confirmed, he can relax for the first time since the days of Amaroo Park. He knows what he's doing for the immediate, foreseeable future. Jaguar will be the focus of his life – will be the object of everything he knows and everything he does. Keep his options open? Try to join a better, race-winning team? For Mark, there was no decision. What would be the point of working hard with Jaguar, of growing with them from the depths of late '02 – and then of not being around when the first real results begin to come through? To do that would be to misunderstand completely not only the essence of being a racing driver but also to ignore the ethos of team sport in general. It would be to forget about those days with the Canberra Raiders.

Some Markisms: he can completely understand someone like Michael going off in the wet in Brazil because "sometimes, when you are completely blinded by the spray and you genuinely can't see a thing, you actually lose the other senses in your body – your touch, your balance, your orientation. Only momentarily, mind – but you lose them. It's spooky."

'MICHAEL DOESN'T TALK TO ME AS MUCH AS HE USED TO. I SUPPOSE THAT'S SOME KIND OF COMPLIMENT...'

On losing the rear wing of his Minardi during the Sunday morning warm-up in Spain last year: "They told me that they were going to try a different engine mixture setting, so when the revs picked up a bit I thought to myself, 'Hey, that's some mixture change.' Then I saw the rear wing flying over my head..."

On playing sport: "I like playing with other Aussies because they just turn up, kick a ball or hit a tennis ball or something, grab their bag and then leave. None of this English 'let's-talk-about-everything-for-three-hours' stuff. Sport is sport. End of story."

On the absence of street circuits: "I just wish there were more of them. You need the challenge of walls and barriers. It's what it's all about. As Stirling Moss says, 'What's the point of being a tightrope walker if the drop to the ground is only a couple of feet?'"

On meeting his idea of how it should be done: "I still get goose flesh thinking about

it now – about meeting Steve Waugh at The Oval a couple of years ago. He was quiet, self-effacing – almost withdrawn – but he had this aura of complete confidence and control about him. People talk a lot about image in F1, and I guess I think about it sometimes, but, if I'm really honest about it, F1's a sport and that's the way we should behave – as sportsmen, not as some character parts that we make up. Steve Waugh, Mick Doohan, George Gregan – they're classic examples of just doing the job well."

He drives beautifully, using a classic, geometrical apex when things are right but adapting his line to variables when he needs to. (He was annoyed, for instance, to find that a rough piece of Tarmac has now been removed from the inside of Tabac at Monaco; he used to love turning in to it early, the better to use its grip.) His steering and throttle inputs are at one with the car; his judgement is razor-sharp. He is laid back, under-awed and totally on top of his game – as you would be when you've had a pretty ragged road up to where you are now.

How good is he?

Another Markism: "Yeah, I get on pretty well with Michael, which is great, because the guy is just awesome. Mind you, he doesn't talk to me as much now as he used to. I suppose that's some kind of compliment..."

(Below) "Well, it's vaguely like the driving position... but rather more comfortable." Mark swaps R4 for a day as a fashion model



Pages 40 and 42: Mark wears beige ribbed crew top and jeans by Gas Jeans (www.gasjeans.com)

Trainers (just out of shot) supplied by Puma; see also page 48 (www.puma.com)

Eames chair and ottoman supplied by The Chair Company; +44 (0)20 7091 1100 (www.thechair.co.uk)

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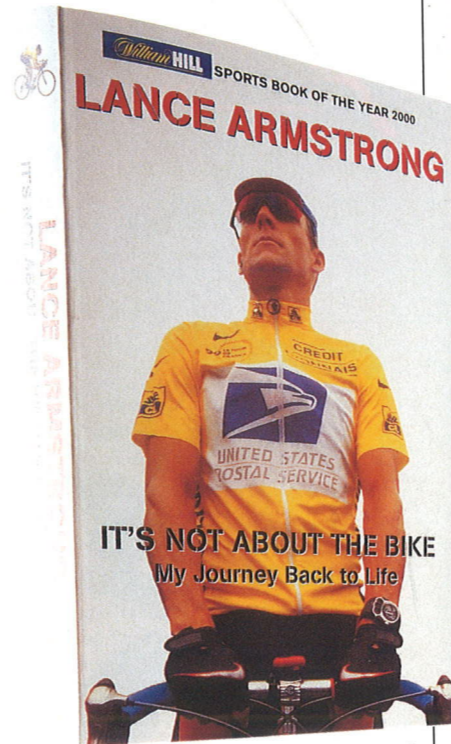


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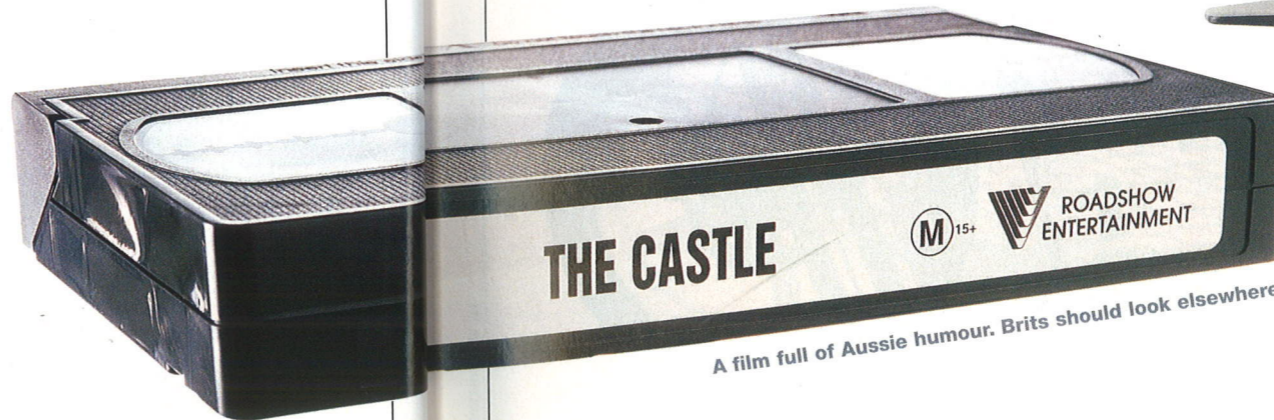
Webbo as a kid in Oz: same smile – same need for speed



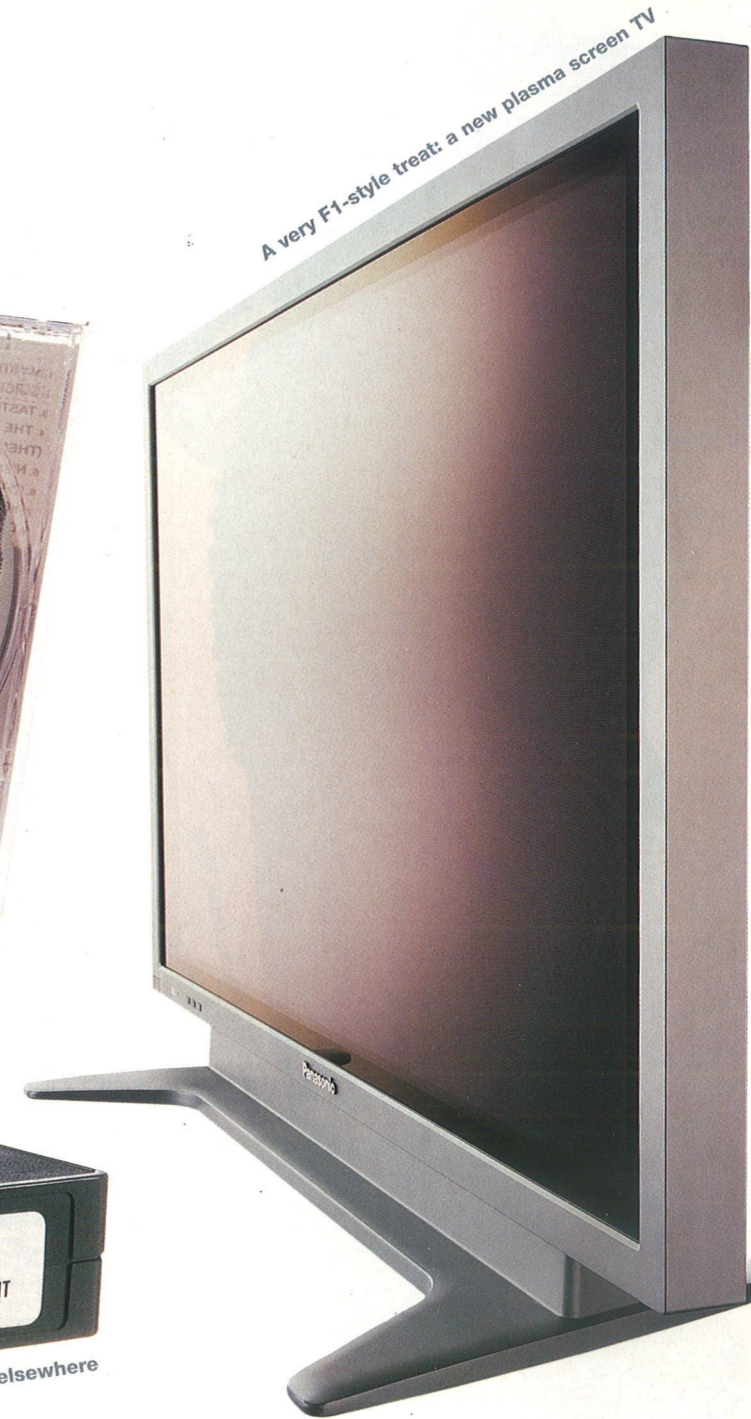
Armstrong is an inspiration for Mark



Mark says he likes music. And INXS. Confusing, huh?



A film full of Aussie humour. Brits should look elsewhere



A very F1-style treat: a new plasma screen TV

A few of my favourite things

Want to know what Mark Webber values most highly in his life (well, apart from his R4)? So did we – so we decided to ask him. His answers, as you might expect, are highly revealing. Why, this patriotic Aussie even admits to developing a liking for ol' Blighty...

Photographs by Ted Humble-Smith

1. What music do you like?

(a) Favourite band? "INXS, because they were years before their time. Edgy, classy, unique – and, best of all, Australian!"
(b) Musical instrument? "I can't play one to save my life! I'll leave that to the Poms when the weather's bad and they've got nothing else to do! With all our good

weather at home, it's sport, sport and more sport for me."

(c) Gigs? "I don't go to many gigs because I don't really like crowded places."

2. What's your favourite film and why?

"The Castle. It's an Aussie movie which sums up country life in Australia by sending it up in a very humorous way. The film was

made on a shoestring, and it's very simple and very, very funny – although I've watched it several times with Poms and the Aussie humour goes straight over their heads!"

3. And your favourite book?

"It's not about the bike by Lance Armstrong. He's an amazing individual – and, against total adversity, he came back from cancer

and kicked arse. As the title suggests, it's not just about cycling – the book blends the sport of cycling with a very humane story which means it can appeal to anyone."

4. Were you academic at school?

"No!"
(a) Your favourite subject? "It depended on how good-looking the teacher was. If she was a good sort, it was my favourite subject! Seriously, though, I enjoyed science and agriculture because I had good teachers. It was very important that the teacher knew how I operated."

(b) Were you naughty? "Quite mischievous, yes, and I did wreck a few of my mates' schooling as well as my own. But it was great fun! I remember some of my mates' mums telling them not to hang around with me. But we always stayed together."

(c) Did you play truant?

"No, not really. There was too much fun to be had at school."

5. Favourite holiday destination and why?

"Langkawi, in Malaysia. I went there for the first time after this year's Australian Grand Prix and loved it. The weather, the location and the people were all absolutely amazing."

6. How about gadgets?

"I'm not a gadgets man at all. The only thing I've bought in recent months is a Panasonic plasma screen for my lounge room."

7. And fashion?

"Again, sorry, I'm very boring when it comes to fashion. Very simple, very classic clothing pleases me when it comes to fashion. My wardrobe is actually a bit of a disaster – heaps of sportswear but only about four or five suits!"

'I WAS MISCHIEVOUS AT SCHOOL. MY MATES' MUMS TOLD THEM NOT TO HANG AROUND WITH ME'

8. Five adjectives to describe you?

"Impatient, focused, humorous, healthy and caring."

9. Are you religious?

"I'm not a church-goer, but I was brought up on good Christian values and principles."

10. Care to comment on politics?

"No idea – I'm not interested."

11. How's life with money and fame?

"Money can make things a bit easier, for sure, but that's about as far as it goes for me. I live ▶



Gets through a few pairs of these, does fitness freak Mark



Well, he's a Formula 1 driver - of course he likes bikes!

'I THINK THE UK'S CLASS SYSTEM REALLY SUCKS. IT'S NOT SOMETHING WE HAVE IN AUSTRALIA'

a very simple life - and if I can make things easier for the people close to me, I will. I do struggle with people admiring me for the job I do, though. Yeah, it's a bit different, but there are some real heroes out there we never hear about and who've achieved a lot more than people like me."

- 12. What are your favourite sports?** "I like cycling, rugby union, motorcycle racing... I'm generally a fan of all sports."
- 13. Do you enjoy watching Formula 1**

- or do you only enjoy driving in F1?** "Yeah, I watched a lot from the mid-1980s to the mid-'90s. But, these days, when I'm away testing but not actually out on track or when I'm out of a race, I don't much enjoy watching it."
- 14. What kind of exercise do you like?** "I enjoy cycling and I'm just getting into some kayaking."
- 15. Who were your childhood heroes?** "Alain Prost and Kevin Schwartz."
- 16. How important are friends to you?** "It's very important to have mates to spend good quality time with - especially those who have nothing to do with my sport but share my interest in other sports. I've made many good mates in Europe, but obviously my lifelong mates are back at home."
- 17. Tell us about Australia...**

"There's no place like home. I do enjoy going back there a lot - the standard of living is very easy and comfortable, and I'll definitely spend a good part of my retirement there."

18. England? "I've lived in England since '96, and I think the English are very courteous and friendly people. I have some really good English mates - and, when there's a summer to speak of here, there's nowhere better in the world. The long, balmy evenings are just fantastic. But the one big thing I do have a problem with in the UK is the class system, which I think really sucks. It's not something we have in Australia. England is also one of the most expensive countries in the world - for no good reason - and the traffic is a joke. Apart from that, it's a great place!"

19. How important are family to you?

From left: dad Alan, sister Leanne, Mark and mum Dianne



Mark has a mean first serve - and a fierce competitive edge



Cycling: fresh air, peace and fitness. Perfect combo

"Very, very important. The Webbers are a very close family - and, despite the distance between us, we manage to stay in touch quite well with regular phone calls and visits. Dad is over in the UK for pretty much most of the European season because he just loves the racing and has made a lot of friends. Mum comes over once or twice a year to see me, but she's not so interested in the racing."

20. What are your thoughts on marriage? "I had a Christian upbringing. If you want to have children, I can see that marriage helps create the feeling of a family unit. But every couple and every situation are different."

21. What about success and failure? "It's really pretty easy to diagnose when you've done well and when you've underperformed. The most important thing is to have no regrets - and, if you've given it your

absolute best, you can't do any more than that. It really depends on what level of success you want to achieve - the higher you set your goals, the higher the failure rate. Yes, I'd love to be world champion and win many grands prix, but I have a lot more work to do before I get myself into that position."

22. How's your manager Flavio Briatore? "He has super vision with all his business ventures. He has given me some great opportunities to prove myself. He's definitely a character, and you always have to perform well to keep him happy - no matter what you're doing for him."

23. And what about the Jaguar guys? "There's a huge amount of work still to be done. The team have some good people, all trying to make success forthcoming, but it's phenomenally difficult to get every

department within an F1 team working efficiently. I believe it's something that can happen in the long run at Jaguar, though."

24. How about Minardi? "Passion is the word that springs to mind. Mr Minardi has been in F1 for so long with all his little Italians running around flat-out all weekend. And, of course, Paul [Stoddart, team principal] played a huge role in my life by giving me the chance to drive for a super little team. It's one of the most friendly, if not the friendliest, in F1 - and, if Stoddy had more of the folding stuff, he'd run a very good ship. I wish them all well."

25. Ten drivers you'd like to race against? "Alain Prost, Ayrton Senna, Greg Moore, Nelson Piquet, Jean Alesi, Rick Mears, Emerson Fittipaldi, Mika Hakkinen, Gilles Villeneuve and Niki Lauda." 1

THANKS TO ALAN AND DIANE WEBBER, TRAINERS FROM PUMA, WWW.PUMA.COM; MODEL FROM GRAND PRIX LEGENDS, WWW.GRANDPRIXLEGENDS.COM

Race pace. And grace

Jaguar's R4 has been the revelation of the season. Quick, neat and efficient, it is the perfect vehicle for rising star Mark Webber – quite a turnaround from the dire R3. Why, resplendent in BRG, it even *looks* the part. But how did Jag suddenly come good? *F1 Racing* investigates

Words by Anthony Rowlinson; photographs by Darren Heath

The odd thing about R4 is that it has suddenly made everything seem normal, straightforward. Okay, it was a bit of a surprise to see Mark Webber running as high as fourth in Australia and seventh at Sepang.

But by Brazil, where he qualified third, his pre-shunt run through the Interlagos

torrents to a likely podium looked natural, confident... easy.

Suddenly, come Imola, the paddock was expecting fireworks from the boy in BRG. P5 on Friday remained P5 on Saturday. And we weren't surprised.

So when, in Barcelona, Webbo could manage only P12 with the green machine,

the mood was one of some disappointment (although his eventual finish – seventh, for Jag's first 2003 points – was most welcome).

Pinch yourself. Is it just smoke and mirrors? A trick of the light that's making green seem mean? Well, no.

Make no mistake: R4 is a Good Little Car. Stable, competent, well engineered, sound

aerodynamically, strong mechanically and with enough talent in the engine department to lift it well above mid-grid mediocrity. In footballing terms, R4 is Portsmouth FC. Not yet the complete, finished article, worthy of outright champion status – but promising enough to earn promotion and to bag a notable scalp every now and again.

No-one expected R4 to perform *this* well. Yes, Mark Webber is good – but it can't all be down to him, can it? Indeed not: R4 really *is* a fast and competent chassis

For the first time since Stewart Grand Prix became Jaguar Racing over the winter of '99-00, Ford's principal Formula 1 effort (for so Jag Rac are) has achieved what it most craved: respectability. And it has done so through a fleeter than expected turn of speed. Had Jaguar turned out a solid, but completely predictable, machine this year –

a Sauber C22, say, a chassis good enough to run somewhere between seventh and 10th and pick up points where others failed – then few would have complained after the blancmange that was '02's R3.

The R4 is much, much better than that, however. In Mark Webber's hands it has shown pace enough to nibble at the McLarens, Williams and Renaults, carving a little niche of its own ahead of B.A.R., Toyota and Sauber, but not – quite – up with the big boys. Thus, for the first time, a Jaguar is exceeding expectations rather than hurling itself over the cliff face of despair.

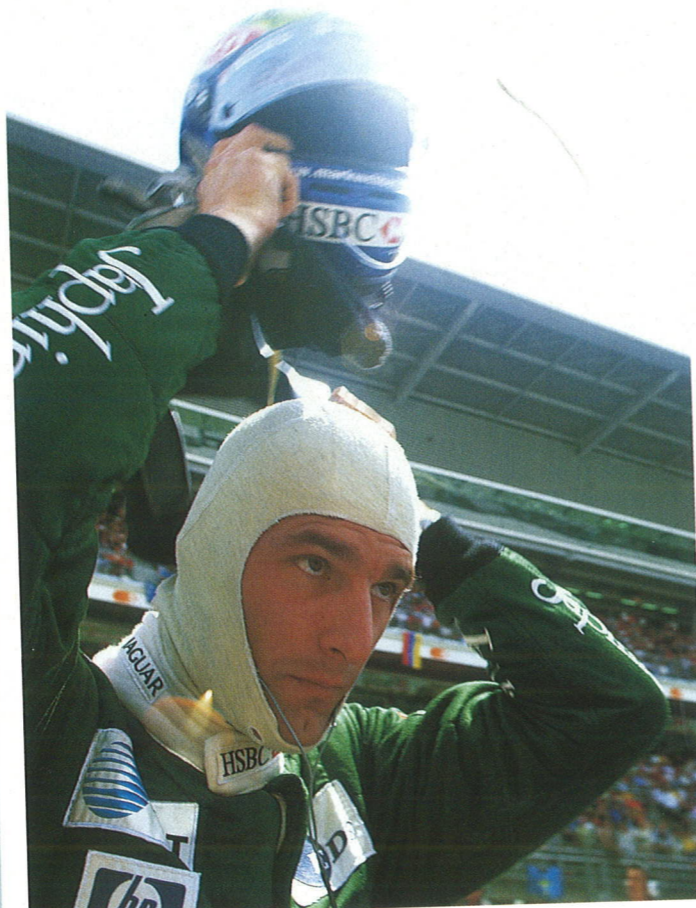
This is impressive in itself, but it is all the more remarkable in the context of what

'THIS JAGUAR IS EXCEEDING EXPECTATIONS, NOT HURLING ITSELF OVER THE CLIFF FACE OF DESPAIR'

went before – the Jaguar R3, a machine described by one leading technical director as "very possibly one of the worst F1 cars ever produced".

The R4 and the technical team behind it stand in monochrome contrast to the Jaguar Racing that F1 came to know and ▶





(Above) The R4 is capable and fast – as ably proved over and over again by Mark Webber (right); (left) the gloves are off. Jaguar are more efficient this year, and it's their clear intention that R4 carry on improving

> R4: THE GUBBINS

Still need convincing? In Austria Mark Webber's R4 put in a faster race lap than anyone else's (except Ferrari's, natch). Make no mistake: this Jaguar is a beauty. And there's more to come

Illustrations by Patricia Soler



Webber took Friday 'pole' in Brazil

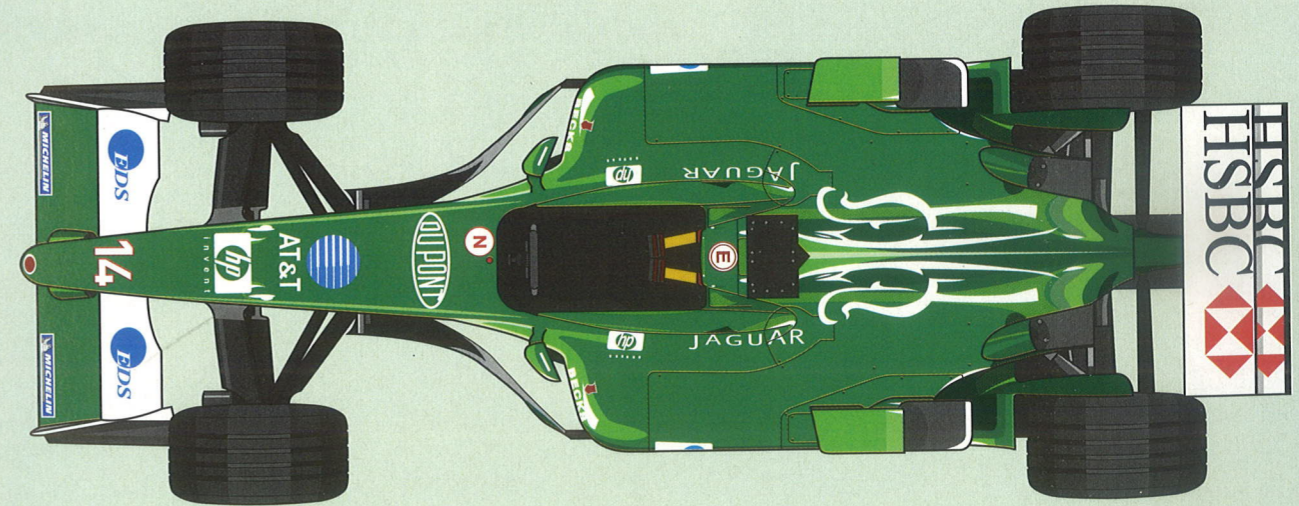
Mark Webber took pole in Brazil. Yes, okay, it was in the Friday session, not final qualifying – but even so, it would have been unthinkable a year ago. And here are the stats to prove it (right). By averaging the two drivers' qualifying positions, and by comparing 2002 qualifying with '03 Friday qualifying (the only time the cars now run with their fastest set-ups), we get as fair a comparison as possible. R4 is on average seven places higher up the grid than was R3. Add that massive chassis improvement to Webber's mega driving and you get a Brazil 'pole'.

> R3 v R4: flat-out improvement

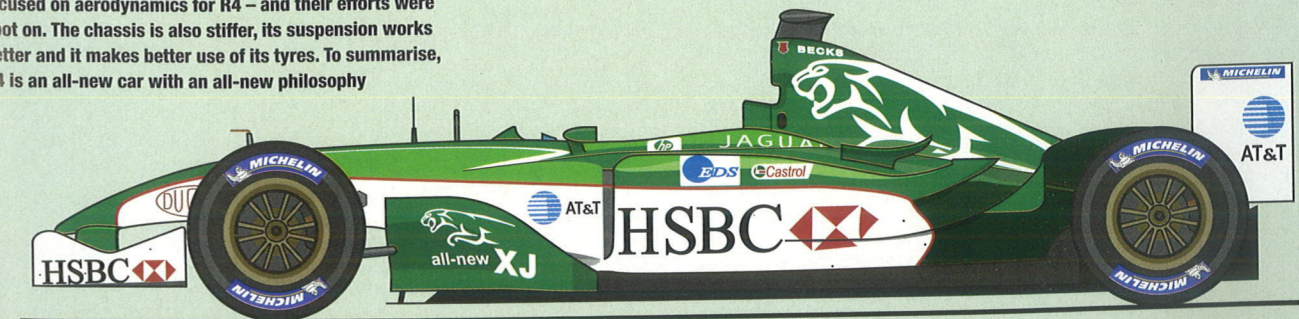
	R3 average qualifying	R4 average (Friday) qualifying
Australia	19.5	17
Malaysia	18.5	18
Brazil	12	4.5
San Marino	19.5	10
Spain	18	10
Austria	19.5	6
Overall average qualifying position	18	11

Jaguar R4: technical specification

ENGINE	CHASSIS	and lower carbon
Layout: V10 (90°)	Brakes: AP Racing	wishbones and pushrods;
Cubic capacity: 2,998cc	Brake pads: Carbon	torsion bar springing and anti-roll bar
	Industrie or Brembo	Rear suspension: cast titanium uprights; upper and lower carbon links and pushrods; coil springs and torsion anti-roll bar
TRANSMISSION	SUPPLIERS	Dampers: Jaguar/Penske
Gearbox: Jaguar	Fuel: Castrol Racing	
Forward speeds: 7	Tyres: Michelin	
Clutch: AP Racing	SUSPENSION	
	Front suspension: cast titanium uprights; upper	



After the disaster that was R3's aero package, Jaguar focused on aerodynamics for R4 – and their efforts were spot on. The chassis is also stiffer, its suspension works better and it makes better use of its tyres. To summarise, R4 is an all-new car with an all-new philosophy



“RUN IT WHEN IT'S READY” IS THE NEW MAXIM. AND IF THAT SOUNDS A BIT LIKE McLAREN, THAT'S NO BAD THING

lampon '00 thru '02. During those dark years, wayward management seemed intent on turning the best efforts of the backroom crew to dust, with grandiose claims of seas of green fans to rival the tifosi and talk of three-year plans to bring the world title.

It sounded like nonsense then – and so it proved. It was scarcely any surprise that R3 as it left the factory early in '02 was as bad as it was. The merry-go-round of personnel changes, exits, arrivals and lack of direction that preceded its birth could only ever spell disaster in an environment dependent on stability, clear thinking and good leadership.

One engineer who closely observed the gestation of R3 told *F1 Racing*: “I pitied the guys who were working there at that time. There was zero continuity, and it led to a car that even non-engineers would look at and say: ‘It shouldn't be like that, should it?’”

Almost everything, he said, was wrong: there were serious structural weaknesses in the chassis; the steering rack moved independently of the monocoque; the aero package was “dead”; individual components had not been properly stress-tested... the list goes on. All of

this was compounded by a blame culture in which perfectly able people were made scapegoats for others' lack of leadership.

The car was, nevertheless, improved considerably throughout the year, which says much for the resilience of Jaguar's race team. Even so, when Mark Webber first sat in an R3, late in '02, he described it, privately, as “the worst car I've ever driven [Mark, you will recall, had recently completed his first F1 season in a Minardi]”.

Why all this (recent) history? Because it puts into clearer perspective the great achievement of those responsible for pulling the team out of what appeared to be a terminal nose dive. In fact (fingers crossed), Jag Rac seem to have climbed clear of the typhoons and hurricanes that have bedevilled them to date.

The R4 ain't perfect, not by any means. Its reliability, for example, has been weak. But as Mario Andretti once said, “You can tidy up speed – but you can't speed up tidiness.” And R4 has speed; it's now the job of men like MD Dave Pitchforth, aero chief Ben Agathangelou and engineering director Ian Pocock to do the tidying up... while finding still more speed, of course.

Pitchforth was brought in last July from Ford's Pi Research electronics wing to head up the aero department – and soon found himself in charge of the entire R4 programme. He swiftly appointed Agathangelou head of aerodynamics – and it is in this area that R4 has made its biggest gains.

The chaps at Milton Keynes (Jag Rac HQ) have been helped greatly by having

a wind tunnel almost on their doorstep, in Bicester. R3's aero package was developed in... California.

“That wasn't a problem in itself,” says Pitchforth, “but, with the demands of an F1 team, it was just never going to work. We had guys this end wanting to test parts while the guys in the US were in bed, so there was always this massive logistical problem. Bicester is still 40 minutes away, but at least it's in the same time zone.”

At every stage of R4's development, a rigorously devised plan has been adhered to – new parts being put on the car only once every conceivable factory test has been applied. ‘Run it when it's ready’ is the new maxim. And if that sounds a little like McLaren's approach to introducing their MP4-18A, well, that's no bad thing, is it?

Pitchforth describes his baby, modestly, as “a five-out-of-10 car” – and harbours no illusions (in stark contrast to some of his predecessors) that the team are ready to topple Ferrari: “In terms of how far along the road we are from where we want to be,” he says, “we're only 10 per cent there. There's still a lot of work to do. It's a solid little car, but there's a lot of room for improvement. We want to get it up to a seven or eight car, and that's where we should be within the constraints of our budget and resources.”

Ambition, then, yes – but tempered with a large slug of realism. And that, right now, is just how Jaguar Racing need to be: a no-nonsense team, with a no-nonsense car and a no-nonsense lead driver.

Guess what? They score on each count. 1

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THE LOW-DOWN

Will Ferrari and Bridgestone win the championship again? Not if McLaren, Renault or Williams can help it. But which of the three top Michelin-contracted teams have the best chance of raining on the usual Italian-Japanese parade? Over the next few pages three *F1 Racing* jourmos lock horns in frenzied debate...

Photographs by Darren Heath



THE CASE FOR McLAREN

Matt Bishop explains why MP4-18A, designed to suit Michelin's new tyres, will blow the others away

Although it pains them to admit it, the task facing McLaren's Ron Dennis, Renault's Flavio Briatore and Williams' Frank Williams in 2003 is to match the achievements of Jean Todt – whose Ferrari team, co-led by Michael Schumacher, has redefined long-established parameters of Formula 1 excellence over the past 50-odd grands prix.

In F1 circles Todt is known by his few friends as 'Napoleon' – a jocular reference to his nationality, his small stature and, doubtless, his ability to channel his pathology to constructive (or, from his enemies' perspective(s), destructive) ends. But Ferrari under Todt are in my view most Napoleonesque because they have taken on board, learned by rote and vowed to live by one of the Bonaparte's most piquant of his many military bons mots: "When regarding your enemy, never ascribe to malice what can easily be explained by incompetence," he wrote.

In other words, in an only mildly extrapolated F1 context, do not scrutinise your competitors' actions too assiduously. Instead, look to your own laurels and get the basics right. Do that, and you will probably leave your less-than-competent rivals straggling in your wake.

And that is what Ferrari have done, and do...

... on Bridgestones, of course. But this article and the two that follow it (by, respectively, Stéphane Samsen and Anthony Rowlinson) are about Michelin – and, specifically, about the way in which Michelin's three principal teams utilise the products of that most quixotic of tyre companies.

And it is McLaren, in my view, who have made the best fist of it so far this year. Okay, as Stéphan explains on page 60 (he is a Frenchman, which should 'explain' everything), Renault have improved greatly in '03; even the tragically misguided Ant has managed to make some intelligent

McLAREN ON MICHELIN

"Michelin have done a very good job this year, no question – but don't underestimate the steps that we've also made with our chassis and engine. There's no magic in tyre development any more. The days of finding half a second a lap from a special compound are long gone."

Ron Dennis
Chairman and CEO

(Above) McLaren entered 2003 determined to be more competent than their rivals. The result was a brace of early wins, including a first for the impressive Kimi Raikkonen (above)

points in his vain attempt to prove that Williams are doing a good job at the moment (see page 62); but it was McLaren's acceptance that a well-sorted and reliable MP4-17D (for 'development') would be a better early-season points-scorer than either of their Michelin rivals' weird and not-quite-wonderful new machines that has made them the pick of this particular crop. Bluntly, like Ferrari, like Todt – like Napoleon – they have understood that the most important thing is to be less incompetent than their rivals. And they have been. And are.

McLaren's managing director, the very technically adept Martin Whitmarsh, puts it another way: "The more competitive you are, the more risk-averse you become." In other words, it is fine and dandy for a success-starved whippersnapper such as Renault to have fun with eccentric fuel loads and ultra-soft tyres and whatnot, and only too understandable that the once-mighty Williams might try to fight their way out of their increasingly embarrassing uncompetitiveness via ever more adventurous race strategies; but if wins are your quarry, you play it safe and by the book – as McLaren did, with knobs on, and with great success, at the three fly-away races at the beginning of the year.

Even so, differences between F1 cars

are often exaggerated by their creators. In Austria, for example, McLaren, Renault and Williams pre-selected the same two tyres from the multiple choice available to them the previous week, despite their much-trumpeted technical differences of approach and philosophy. But that should come as no surprise. When, in the late '90s, McLaren and Ferrari dominated a Bridgestone-monopolised F1, they lobbied the Japanese relentlessly to provide tyres custom-tailored to their cars' respective idiosyncrasies – and were later interested to learn that they had in fact provided Bridgestone with more or less precisely the same-spec requests. Yet when Bridgestone duly produced tyres as instructed, the other teams found them more or less unusable. In other words, good cars tend to perform well on the same kinds of (good) tyres; bad cars tend to struggle on them.

Inevitably, then, Michelin have done more tyre testing this year with McLaren than with anyone else. And, when the time comes, MP4-18A will be the proof of the pudding. It has been designed around the next generation of Michelin tyres – and vice versa, which is just as important. It should be able to run two-stop strategies without inducing graining on the ultra-soft compounds that Renault have only made work on three-stoppers. Why? Because

> AND THE OTHERS?

McLaren, Renault and Williams aren't the only Michelin teams. There are two others – and they're doing very nicely, thank you, too...

Until recently Jaguar and Toyota were, mathematically speaking, operating in a realm of only marginal significance to Michelin. They scored but 10 points between them in 2002 – hardly enough to earn a seat close to the development fire. Under the new points system, however, they will play a more important role in Michelin's efforts to lower Bridgestone's fortnightly points haul – because they stand more chance of scoring now that points are awarded down to eighth. Even so, it will not be enough to make their voices louder than those of McLaren, Renault or Williams.

Suspension failures in early races and the ongoing row over the second driver's long-term employ notwithstanding, Jaguar at least have a good platform from which to work. But they are short on money, and that is likely to stifle development of the nifty R4.

Money is not a problem for Toyota, but their TF103 has struggled to deliver on its early promise – enough for them to amend subtly their targets for '03 (regular top 10 finishes, plus the odd podium). Regular top 10s? Surely they should aspire to the top eight...

Robert Holmes

it has been designed to be light, stable under braking and consistent in terms of both cornering mode and traction control 'feed-in': competent, in other words.

Renault's R23, too, looks good in these departments, and that is why it is gentle on its tyres. But it is not the only reason. No, when it comes to being kind to rubber, having a puny 810bhp engine is a bonus because it does not provide the accelerative 'twist' out of slow corners that causes tyres to degrade. Trouble is, it is less helpful on the straights...

Williams' problems are precisely antithetical to Renault's. Their BMW V10 provides plenty of oomph – but, combined with the FW25's devotion

Tyre degradation (below), as suffered by some Michelin runners when using 'softs'. McLaren take fewer risks than most, which has lessened the problem for them

'McLAREN UNDERSTAND THE NEED TO BE LESS INCOMPETENT THAN THEIR RIVALS. AND THEY ARE'

to turn-in understeer followed by exit oversteer, its 900 horses munch rubber like there's no tomorrow.

In short, Renault have no power and Williams have no grip. McLaren, therefore, are the only Michelin team who will be able to take the battle to Ferrari and Bridgestone this year. ▶



MICHELIN'S TOP THREE



THE CASE FOR RENAULT

Stéphane Samson explains why Renault's close ties with Michelin give them such an advantage

Those who use Michelin tyres fit nicely into two distinct categories: teams who ruin their rear tyres, and teams who can preserve them. Simple. In the first category are Williams and Jaguar. In the second, McLaren and Renault, with Toyota somewhere in between. And if we have to choose a winner – and let's face it, we do – then Renault are the undisputed champions. No doubt about it. Michelin's hopes should be placed on the team with the diamond-shaped logo.

Okay, Renault used the softest tyres that Michelin took to Spain, where R23 all but matched

the Ferrari F2003-GA. But the comparison is deceptive. Forget the 'prime' or 'option' choices made for each race. They make only a marginal difference and account for a mere 10 per cent of the tyre superiority that Renault have ratcheted up this year. Yes, *superiority*.

Even if they had been using the hardest tyres, the Renaults would still have recorded the same result at Barcelona – just as they would have done almost everywhere else. And Michelin's engineers will tell you as much. In Spain the R23s were the only Michelin cars that managed not to overheat their rubber in the very tight Turns 10 and 11, as a result of which their tyres were still in perfect condition in the final two corners – which, lap after lap, allowed them to bag the best time in the third sector.

Renault took a huge leap forward over the winter. The R23 is 17 per cent more efficient from an aero point of view than last year's R202. The monocoque is lighter and stiffer, too. The wide-angle V10 is better integrated within the chassis, but the engine itself lets the side down somewhat: heavier than its 2002 counterpart (at 120kg as opposed to 95kg), it produces no more power (810bhp).

"This handicap actually ended up being an advantage," confides technical director Mike Gascoyne. "Lack of power combined with a lot of downforce gives you a car that doesn't slide in the corners and doesn't therefore ruin its tyres."

But that doesn't mean that reverting to a

RENAULT ON MICHELIN

"They've done a good job – we're working very well together. Michelin have improved a lot – although, for us, no improvement will ever be enough. We're moving in the right direction and they've done a good job for for us."

*Flavio Briatore
Managing director*

(Above) Fernando Alonso has been one of the stars of 2003. But a driver is only as good as his car – and the R23 is a corker. Next year's Renault could be even better – with Michelin's help

more traditional, more powerful and narrower V10 will destroy this equilibrium next year. "If you didn't need a lot of power to win," says Gascoyne, "we'd already have cracked it. We have faith in the progress made elsewhere."

Elsewhere? Consider this: the R23's suspension was made to measure for its tyres. It was also tweaked before Barcelona. The camber and toe-in settings were adapted to suit Michelin, of course.

But that's not all. The huge effort put into spreading energy loss between the dampers and the tyres themselves means new heights can be reached. The aim is to keep the tyre actually *on* the Tarmac as much as possible. Where other cars tend to yump over bumps or pop a front wheel up over kerbs, the Renault glides over them and stays glued to the track. Its suspension works. And its Michelins' aero efficiency in both slow corners and at high speed leads to a tangible advantage in front-wing efficiency – an area where Bridgestone are still a good many lengths behind.

But Renault's secret weapon is still to be found still elsewhere. Its name? Traction control. Perfected by leading engineers poached from their rivals and also by stalwarts of Renault's touring car department, it works miracles. Only Renault software controls wheelspin as sensitively as does Ferrari's. Indeed, the system allows the car's limits of adhesion to be defined precisely and never exceeded – whereas most other cars'

'NEITHER WILLIAMS NOR McLAREN HAVE DEMONSTRATED THE INGENUITY SHOWN THIS YEAR BY RENAULT'

software has to take considerable margins of error into account.

I should also mention the Friday-morning test sessions Renault take part in at the beginning of each grand prix weekend. At Barcelona, for example, the R23s tested tyres for the A1-Ring. In the end, what Renault wanted from Michelin for Austria was very specific: a new tyre which itself required a specific compound. Neither Williams nor McLaren have demonstrated such ingenuity.

In fact Michelin and Renault share many long-term projects. One is OCP (optimum contact patch suspension). Still at the developmental stage, it optimises rear tyre performance. Michelin have recommended it to all their partners, but only Renault have so far taken the plunge, signalling commendable open-mindedness. It could be in use as early as '04, and Renault will have at least a year's head start. So forget what Matt has said (see page 58); forget also what Anthony will say (page 62). And go with the diamond. ▶



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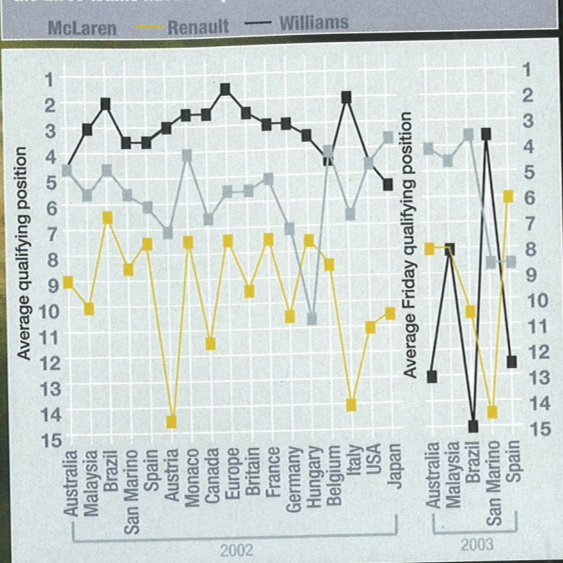


MICHELIN'S TOP THREE



> And the statistics?

When McLaren switched from Bridgestone to Michelin for 2002, they joined Williams and Renault on the same rubber. Here's how the three teams have compared since having the same tyres:



THE CASE FOR WILLIAMS

Anthony Rowlinson explains why no-one can match Williams in terms of performance gains

Received paddock wisdom has it that BMW-era Williams chassis are tyre-chewing dragsters, lacking the grip to match their grunt or the finesse to harness their firepower. Which is why, say paddock sages, McLaren and Renault – with their more subtle aerodynamic packages – will be able to run softer-compound Michelins on any given 2003 race weekend to help them outperform the FW25s.

It also explains, the sages insist, why Juan Pablo Montoya's pole-quick FW24 ran out of rear rubber at last year's European Grand Prix and spun into David Coulthard's McLaren MP4-17, which was shaping to pass him on the outside of Turn One. On the same tyres...

It further explains, they say, why at both Imola and Barcelona, in '03, promising early pace from the Williams faded come Sunday. But they're wrong.

Of the top three Michelin teams, Williams have pushed hardest for development of softer race rubber, as a result of lessons learned with Michelin's engineers during a development year in '00. Thousands of miles spent honing compounds as a prelude to Michelin's F1 race return in '01 convinced the Grove team that Michelin would succeed best by pushing their compound 'envelope' – ie by experimenting with softer rubber.

This has on occasion had dramatic effects. At Hockenheim in '02, for example, Renault – supposedly better able to use softer compounds – chose to run Michelin's option tyre (the softer one) and spent Sunday slithering gripplessly back through the pack. Their gamble on 'soft' proved nothing except that they had chosen wrong: they needed the harder 'prime' compound, just like Williams and McLaren.

What is true is that last year's FW24 used its rear tyres harder than did either McLaren's MP4-17 or Renault's R202.

To a lesser extent this remains true of FW25 against R23 or MP4-17D. The corollary, however, is not that Williams are unable to run soft rubber; it is simply that when they do, they will wear it somewhat

WILLIAMS ON MICHELIN

"We're very, very happy with them. Yes, sometimes they're better than Bridgestone and sometimes it's the other way round, but things are good. The Michelin people are terrifically hard-working. I'm sure Bridgestone are too, but Williams have no complaints."

Frank Williams
Team principal

Williams have greatly improved FW25 (above) so far this year. By year's end, they'll have gained 0.5 seconds in aero pace, says Rowlinson. Their rivals can't match that, can they?

quicker than do either Renault or McLaren.

Michelin competition director Pierre Dupasquier explains: "It's simply not the case that McLaren and Williams, for example, use their tyres very differently. The top cars are so similar to each other that if one of our partners suggests a development direction which shows a performance gain, that gain is almost always replicated for the other teams."

"The only difference is that the quickest team is usually best placed to ask us to pursue a particular line of development."

Which brings us back to Williams – who, until McLaren's notably strong start to '03, were Michelin's top team (both as regards performance and corporate loyalty). It was with them, after all, that Michelin re-entered F1 in '01 – winning at their fourth attempt (at Imola) and taking three more wins that year.

Last year was leaner, with just a single (Ralf Schumacher) Williams win – but JPM took seven poles, proving that in terms of sheer, outright speed FW24 was a mighty quick car.

Any claim, therefore, that Williams can't make a chassis to suit soft rubber is nonsense: those poles were usually earned on the softer of the weekend's two tyre choices.

Problems came, however, over a race distance – where factors such as downforce and traction control efficiency compromised the softer compounds' durability.

Sam Michael, Williams' chief operations engineer, says: "Tyres wear when they're

sliding laterally [cornering] and longitudinally [under braking and acceleration]. If the chassis isn't harnessing their grip effectively, for some reason, they slide and wear more quickly."

Any chassis less 'planted' than the effortlessly stable R23 and MP4-17D is almost bound to ask more of its tyres – all the more so when it has a rampant BMW P83 sitting in the back as does FW25.

Under '03's new regs, however, this is less of a problem than before. Race strategies are devised around two or three stops, so there's never any doubt over whether a compound can last a 'stint' of up to 25 laps. Even at a high-abrasion track such as Barcelona, none of the Michelin runners (Williams included) complained of high tyre wear.

Williams' pace has, admittedly, been inconsistent so far in '03, but that FW25 chassis almost won on its debut and it showed winning speed in Austria. Race by race it is being honed to meet the standards set by BMW and Michelin, and if the aero team can find just half a second (as seems likely, given the gains already made), Juan and Ralf will be right on Ferrari's 'pipes.

Will the excellent Renault chassis be blessed with half a second of 'engine' speed by the end of the year? Unlikely.

Will McLaren's new MP4-18A 'wonder car' significantly better its predecessor's performance and reliability? Unknown.

The smart money is on Williams. **1**

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NAKED AMBITION

You've read our analysis of Michelin's top three teams (starting on page 56). You've seen our graph (page 62), showing that Renault have come on in leaps and bounds. Now find out *why*. Test driver Allan McNish introduces the car... which we've taken apart... giving you the best possible view

Photographs by Wake Upp



The R23 and I have become pretty well acquainted.

Okay, Renault chose to stick by the Heathrow Agreement which limits private testing, but the

Friday sessions have given me the chance to find out how the car reacts to different situations. Some cars are temperamental;

others are easy to live with. Some are shifty; others are much more predictable. I'd put R23 in this last category. She responds positively to a driver's touch, reacts well to any set-up adjustment, puts my mind at rest. As soon as I got behind the wheel the first time, I felt relaxed enough to worry the stopwatch and improve the set-up. She's a good friend.

You can tell at first glance that Renault's manufacturing quality has taken a big leap

(Below) Our cut-away illustration shows the very neat installation of Renault's 108-degree V10; this is the last year for the wide-angle V10; (left) a happy 'Nish'

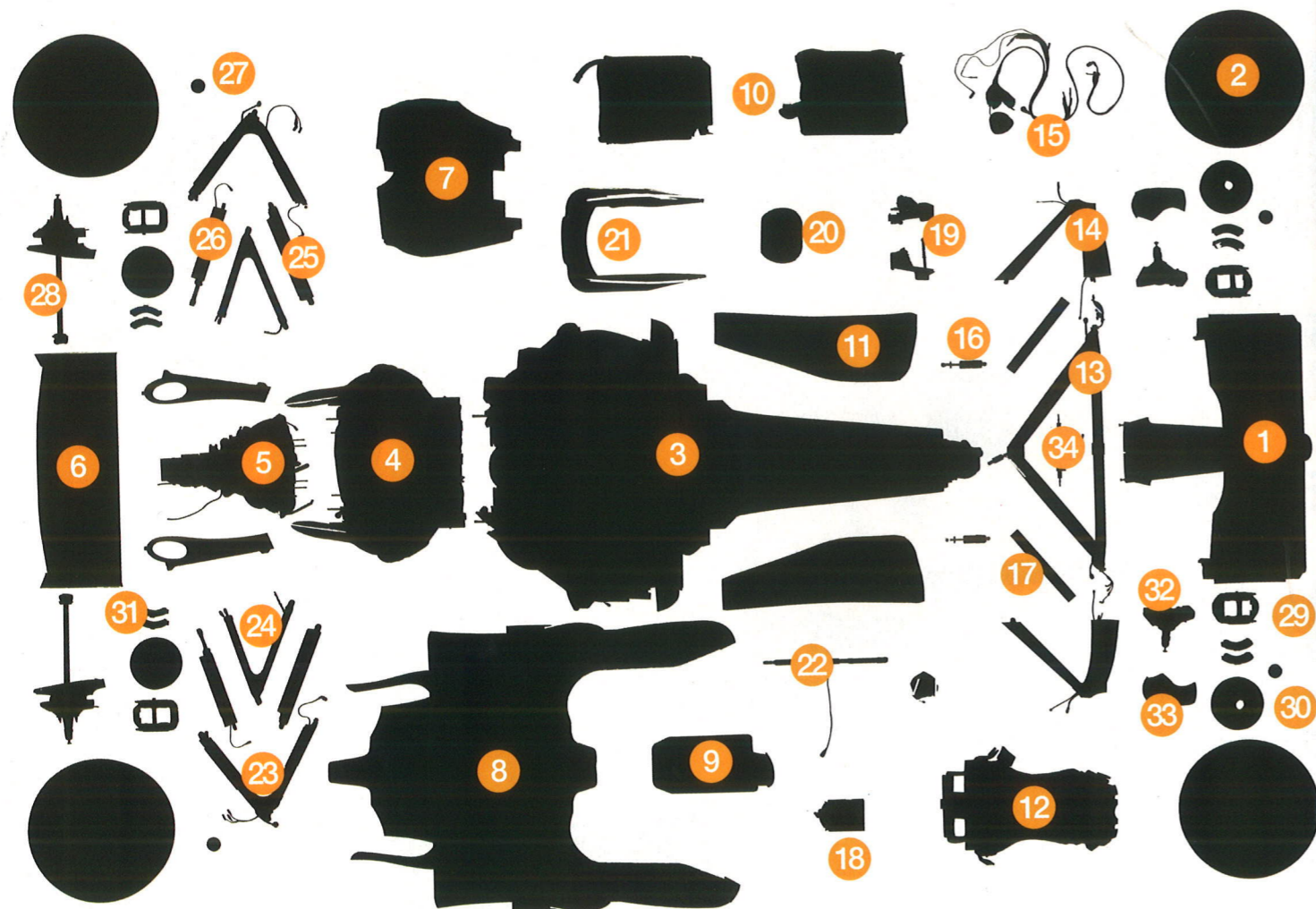
forward. The finish on even the smallest component deserves a round of applause. One-way ticket to the Tate! The brake calipers, the titanium-carbon gearbox, the wishbones... even without driving the car you know from close examination that it's a bit special, that it won't let you down.

The system that Renault have put in place, with two design teams working concurrently, has clearly borne fruit: the R23 programme got going in October 2001; ▶



'R23 RESPONDS POSITIVELY TO A DRIVER'S TOUCH, AND PUTS MY MIND AT REST. SHE'S A GOOD FRIEND'

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> Renault R23: the naming of parts

1. Front wing plus nose/crash assembly. Renault have chosen to terminate the main wing early, adjacent to the inside wall of the tyre. The remaining space is used to attach a series of winglets to the endplates

2. Wheel rim and tyre

3. Monocoque. Lighter and narrower than the 2002 version. It has also been altered to suit HANS (head and neck safety system)

4. The RS23 engine still has a wide angle (around 106 degrees). Its timing gear was changed just before the Melbourne race to achieve greater reliability. Unfortunately, the cylinder heads are aluminium, not magnesium – which is what Renault originally wanted.

As a result, the RS23 weighs 125kg (last year's RS22 was 95kg). The centre of gravity is higher than expected – and this is another reason for Renault's using another concept next year. The 'spec D' evolution used in Austria produced only 810bhp

5. Gearbox. All new, made of titanium and carbonfibre. Has six speeds plus reverse

6. Rear wing assembly

7. Fuel tank. The two large holes are to house the refuelling valve. The valve's positioning (left or right) depends on the direction of racing and pitlane position at each circuit

8. Engine cover – now featuring two chimneys. They are not exhaust exits, just hot air exits

9. Airbox

10. Radiators. The R23 has two distinct routes for water (on the left) and oil (on the right). This allows cooling to be done asymmetrically

11. Barge boards. These are much smaller than the '02 version and no longer clash with the front wishbones

12. Seat

13. One-piece front-lower suspension wishbone. This part services both sides of the chassis. It saves weight and, more important, allows a narrower chassis. Ferrari use the same concept

14. Front upper wishbone

15. Electronics harness

16. Front suspension damper

17. Front suspension pushrod

18. Magneti Marelli engine management controller

19. Brake and throttle pedal assembly

20. Steering wheel

21. Cockpit-mounted head and neck protection (foam)

22. Steering column

23. Lower rear suspension wishbone

24. Upper rear suspension wishbone

25. Rear trackrod

26. Rear suspension pushrod

27. Wheel nut

28. Driveshaft and rear axle upright assembly

29. Brake caliper (limited to six pistons by the FIA)

30. Brake disc

31. Brake pads. These are limited to two per wheel by the regulations

32. Front axle upright

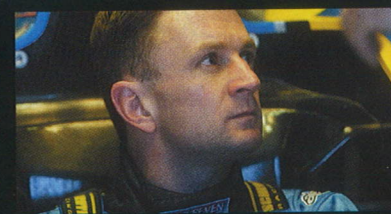
33. Front brake duct

34. Steering rack assembly

R
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'HAVING THE CHANCE TO DRIVE ONE OF THESE OTHER-WORLDLY CARS FLAT-OUT IS A RARE PRIVILEGE'



McNish (right) can't praise R23 highly enough. The design, the manufacturing, the performance... he loves this car. As does Fernando 'star of 2003' Alonso (in Austria, above)

the R24 project began late last year. And the team will start designing the '05 car from the end of this season.

If I had to describe the way this Renault behaves, I'd choose one simple image. Barcelona, Turn Three. It isn't the easiest section, and you have to approach it with the right technique. I was able to take it flat this year for the first time ever. And it was easy. This car inspires in me, as a driver, so much confidence. I could hardly believe it.

The chassis is magic. Its aerodynamic subtlety means it's unruffled on fast bends, and the suspension adjustments make it kart-like when changing direction. The braking stability is exemplary, and the traction control is incredibly sensitive. It's no surprise that R23 is so easy on its tyres.

And if I had to name a fault... I can see your smile. You think I'm going to say the engine. Well, yes... but also no. Okay, the RS23 V10 isn't the most powerful thing I've ever driven – a few extra horses certainly wouldn't go amiss. But then who can boast

of having enough power? This V10 and R23's monocoque are well integrated. Moreover, weaker 'kick' equals better tyre wear. And the engine is less thirsty, which is very handy when it comes to strategy. Mind you, we've got a newer engine specification these past few races which is much more powerful than at the start of the season.

On a personal front, this '03 season is very important for me. When I chose to become a test driver for Renault, I knew I wasn't making a mistake. The team seem satisfied with my technical abilities, and I'm contributing to their efforts to knock Ferrari off the top spot. I see this as a real chance. I have to prepare physically and mentally just like a grand prix driver does – and it doesn't all just come to a halt on Friday afternoon. The team require me to attend all technical briefings, and they ask for my opinions. It would be hard to feel any more involved – although I admit my hands itch on Sundays.

Make the most of these pictures. An F1 car is a technological box of tricks. Even the tiniest component needs the deliberations, meetings and arguments of many engineers. The shape of the mirrors; the outlines of the antennae; the contours of the wheel nuts. Everything. Having the chance to drive one of these other-worldly cars flat-out is a rare privilege. I wouldn't want to change places with anyone – except for Jarno Trulli and Fernando Alonso, of course! **1**

TEAM PRINCIPAL: RENAULT

Flavio Briatore

On Fernando Alonso's brilliance, being 'unromantic' about F1 – and exciting days ahead

Renault are at the centre of Formula 1's attention at the moment, not least because of the achievements of Fernando Alonso. When did you first become aware of him?

At one point I had two possibilities for the team: either to do it in the same way as happened with Michael Schumacher – find a guy who can motivate everybody and build a team around him – or to buy in someone new. So I was looking around and thinking about this during my time away from F1 in 1998 [after managing Benetton for a decade], and when I was asked back to run the Renault team [in '00] I was already looking around for a new star, because I'd signed the deal to run the team seven months before it was publicly announced. In '99 Alonso came and saw me at my house in London. I was very impressed with the calm temperament of this young guy – who was only 19, remember. After I signed a management contract with him, I placed him with Minardi for his first season in F1.

So why did you make him a test driver last season rather than promoting him straight to Renault's race team?

I wanted him to spend a year as test driver so that he could get acclimatised to the differences between a small and a large F1 team. The guy was so cool, he never complained – not once. He was mature enough to handle the challenge. For a kid of 20 it was the right strategy, I think.

Renault are emerging as one of the top teams. That must be satisfying to you.

We're still "the Friday morning track cleaners", according to some other team owners [McLaren's Ron Dennis first used this phrase to describe the four teams who selected the limited testing option].

But what about the benefits of that extra testing time on Friday mornings?

I think some of my colleagues may have mistakenly got it into their heads that the Friday morning test session was only there to benefit some of the smaller teams who are short of money. For us, of course, it wasn't a question of budget. We figured out that it was a huge benefit for the race on Sunday, particularly with the test programme run

properly with an extra car for our tester Allan McNish. Plus, the 20 car days of additional testing we can have should be plenty.

How long did it take you to decide in favour of the Friday testing sessions?

We decided soon after the Suzuka meetings last year when everybody was discussing reductions in testing. I was also reminded by an engineer about what had happened the previous year at Imola when Jarno Trulli had spun in a session and lost 45 minutes of track time, which was almost impossible to make up. It reminded me that concentrating on race performance was the absolute priority.

How do you feel your collaboration with Michelin has progressed?

I'm very pleased. They've done a good job and we're working very well together.

Perhaps they've even improved a little more than you expected they might?

They've improved a lot – although, for us, no improvement is ever enough. We're going the right way and they've done a lot of good for us. The Friday extra testing session has been particularly helpful.

When you first came into F1 in '89, you said it needed to be more appealing to the public. Have you been satisfied with the progress on that score?

Yes, I think so. We're in a very competitive business and we needed to brighten it up.

Do you have a romantic view of F1?

No. We're all entrepreneurs, and – with some teams now employing almost 1,000 people

between the engine and chassis side – it's no longer possible to have a romantic view of the sport. The teams have to make a profit so that they can keep going, even in the difficult years. You really can't be a romantic motor racing enthusiast if you're trying to manage a company on this scale.

How do you think the dispute over the proposed GPWC series will eventually be resolved?

I really hope that Bernie [Ecclestone], the car manufacturers and the banks will be able to find a solution to all this. For me, the way F1 is now is the best way. I don't believe in the prospect of two separate championships. But, in the end, it's not my big problem. We have a Concorde Agreement until the end of '07 – and I think, above all, we need stability in our sport for the future.

Back to Alonso: do you think he will eventually achieve the success which Michael Schumacher has?

Dealing with Fernando is like watching a movie for the second time. No problem. Every time you see a movie you've seen before, you keep being reminded of little bits which caught your attention first time around.

So is he a champion in the making?

Sure he is! How many youngsters with that sort of talent do you see in 20 years? In fact, F1 is in a very good state at present – with really good young guys such as Fernando, [Kimi] Raikkonen and [Mark] Webber coming up. It looks great for the sport's future. **1**



Life chez Renault is a whole lotta fun right now, as the team enjoy their best spell since returning to F1. Thank two quick drivers and a sweet chassis

DARREN HEATH



'YOU CAN'T BE A ROMANTIC RACING ENTHUSIAST IF YOU'RE RUNNING A COMPANY THIS BIG'

CHAIRMAN & CEO: McLAREN-MERCEDES

Ron Dennis

On delaying his new car, its funky new gearbox – and predicting the future

What's the latest situation with regard to the continued GPWC discussions?

It's not something I can comment on in detail. But SLEC [Bernie Ecclestone's company which holds a controlling interest over the commercial rights to Formula 1] and the banks that have invested in it have been involved in talks. The teams would like to enjoy more revenue than they do under the existing Concorde Agreement. We're contracted under that agreement through to 2007. The talks are complex and there's a lot of money involved. It will take time to sort out.

Can the teams take any more money under the existing agreement?

What we have is what we receive under an agreed percentage [of the income from the sale of F1 TV contracts]. If the base amount goes up, the amount we get as a percentage goes up, too. We know that Bernie has done a particularly good job of negotiating the latest round of TV deals, so the money will go up. Of course, it would be nice to have more – but it wouldn't go very far to helping some of the pressures that the teams are under.

Why didn't we see MP4-18A sooner?

There's really no point in taking a new car to Monaco for its first race, no matter how quick it is in testing. Monaco is very much a driver's circuit, so the car's performance doesn't play a big role there in determining the outcome. What you need is total reliability and a known quantity. Using the 18A there would not have been the smart thing to do. But our plan for the 18A is on target. We were encouraged by the 17D's performance in the first two races [McLaren won in Australia and Malaysia], so we changed the dates for the new car. The first tests weren't for performance; they were systems checks and measurements to verify details. We didn't expect to go to Paul Ricard and set quick times. We want reliability – and we'll race 18A only when we're happy with its performance and reliability.

But haven't you left it rather late?

Our objective is always to win races and the world championship. Our strategy for doing that in '03 has been a little unorthodox and different from that of most other teams, but it's a deliberate one. Ferrari's is somewhat

similar, you may have noticed, which has been made possible because of technical rule stability. If the rules change significantly, you have to build a completely new car. When the rules are stable, however, the design and development cycles depend totally on when we press the button on a new design. At this stage in the MP4-17's life we're getting very little back in terms of new data – and that's when we need a new car. A longer period in which to develop a car means that it can benefit more from 'blue sky' thinking, as the MP4-18A has: you can explore the results that might arise from a particular line of development. Then you get a car that has a bigger performance step relative to its predecessor. Hopefully, the 18A's step will reflect the effort that has gone into it.

How do you "put in more effort"?

We've had an internal restructure over the past year which means that we can operate on a much broader technical battlefield. We've developed 18A and 17D in parallel by giving each car a 'champion': Mike Coughlan [chief designer] has championed the 18A, and Neil Oatley [director of engineering] has championed the 17D. It's a new approach – but we think it's the right way forward.

Does MP4-18A have a 'trick' gearbox?

It takes a very long time to design and build a gearbox. It's not so much the casings as the internal components: the lead time is months. We decided more than six months ago to build the car with two gearbox configurations,

one of which is a more traditional 'box based on the one in the 17D. We did that to ensure that the new-concept gearbox did not interrupt the race debut of the 18A. Both will go into full production, and they went to dyno testing within a few days of each other. The chassis is designed to accept both types of gearbox, and both can be raced.

So which 'box will 18A start with?

It will start with the more conservative 'box. We've tested it on a dyno – where, from a functionality point of view, it thinks it's in a grand prix car. This 'X' gearbox is bulletproof; it's a development of what we're running now, and it's a safe but still racy solution.

How do you think it'll go in anger?

Our strategists work very hard on planning for different scenarios over a race weekend. We build a model and test it against various scenarios – and in most races we know what to do. As the race unfolds, we're proved right or wrong. We didn't get very far at Barcelona, but we're comfortable with what our analysis allowed us to extrapolate after that race.

So where would you have finished?

Second – with David [Coulthard].

What's your view of increasing the number of GPs to 18 or 20 per season?

The current agreement provides for only 16 or 17. Every race we go to loses us [the teams] money. All the teams will tell you that – it's incredibly expensive, so there's no financial incentive for us to go... although that's not necessarily the case for the promoters. **1**



(Right) Paul Ricard, May 21: Alex Wurz pilots MP4-18A on its track debut. "Everything feels great," he says of McLaren's radical and curvaceous new challenger

MAIN: DARREN HEATH; INSET: LORENZO BELLANCA/LAT

'WE'LL RACE THE MP4-18A ONLY WHEN WE'RE HAPPY WITH ITS PERFORMANCE AND RELIABILITY'

TEAM PRINCIPAL: BMW-WILLIAMS

Frank Williams

On trouble with Germans, retaining Team Willy independence – and fast Jags

What's the latest with regard to the ongoing GPWC discussions?

Well, there has been quite a lot of movement behind the scenes recently, which is probably not apparent to anyone not closely involved with the talks. But Bernie [Ecclestone] and the banks are very close to making a revised offer to the teams. If that's something that we can agree on, there's every chance that Formula 1 will continue in a form that we recognise now. Our view is similar to that of BMW, in that we don't know exactly how F1 will be a few years from now. It's unpredictable, but there's a lot of movement in the paddock. I wouldn't want to say that we're in a hurry – but I think the sooner this is done, the better.

There's been a lot of speculation over your relationship with BMW. What can you tell us about it?

I'm not going to fuel that speculation, but there's been a lot of negotiation over the past few months on a broad range of issues to do with our partnership – not particularly commercial ones – and these are now coming to an end. I'm very confident that they'll be successful, but it ain't done until it's done [Williams' contract to run BMW engines expires at the end of '04]. I spent two days in Germany with BMW before the Austrian Grand Prix, and achieved a great deal.

Gerhard Berger [BMW's recently departed motorsport director] has been extremely outspoken of late in his criticism of Williams. What's your reaction to those comments?

I was mildly surprised by what Gerhard had to say, but astute observers will recognise that Williams are approaching a crucial stage in their negotiations with BMW. There's one major problem to settle, which is not unusual with such a major deal, but we'll sort that out.

If the partnership with BMW continues, will it be long-term – beyond the end of the current Concorde Agreement ['07]?

That's what we're talking about.

Do BMW want to buy a stake in the team – as Mercedes did with McLaren [of which Mercedes own 40 per cent]?

They haven't made any approach of that sort. I don't think they'd have anything to gain from

it. BMW are a much smaller company than Mercedes, and even they [Mercedes] had to think very carefully about the commercial implications of buying into an F1 team.

You've always been reluctant to sell a stake in the team...

This isn't a question of equity; it's a question of working together.

So would you consider selling shares in the team?

That's just not relevant. Whatever may occur in the future may well occur after my time, for instance. I just don't know.

BMW have said they have four options for their future in F1 – to stop, to go it alone, to partner with another team or to continue with Williams. How many options do you have?

I never discuss my options. I learned from Bernie many, many years ago to say nothing to anybody.

Are BMW asking you to surrender some operational independence?

Not at all. It's great to be independent – but, if people offer us help for free, it's natural that we should want to work together. Ron [Dennis, McLaren boss] has amalgamated his team pretty closely with Mercedes, and it seems to work well for them; Ferrari are in total integration, and I'm sure Toyota will start being a nuisance to everybody at the front of the grid at some point. Given that we can't switch geographies and work entirely out of Grove or entirely out of Munich, integration to

share the best of each other's facilities and abilities is likely to be for the best. But that doesn't involve surrender at all.

How are you pushing the team to improve the performance of FW25?

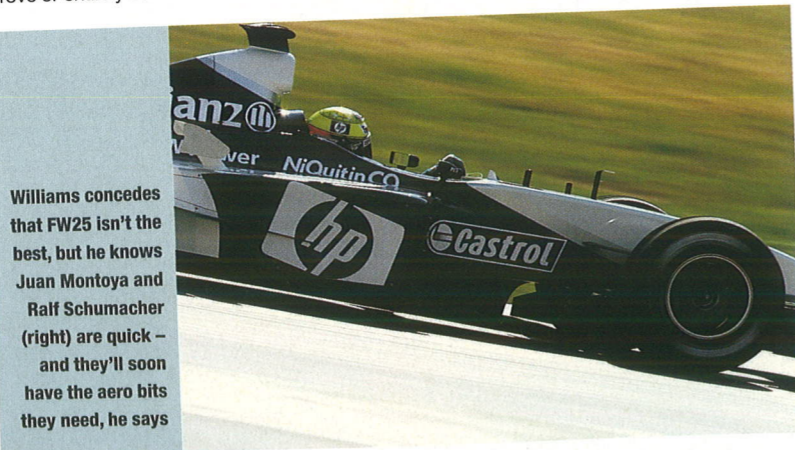
Well, we're disappointed with where the car is, but we're working tremendously hard to improve it. I don't influence it personally: I've never been one to interfere with the design of the car or anything directly related to its performance, because I know that's an area where I'm out of my depth. There has been so much hard work, but I know it's going to take a little while. Our position is partly a reflection of the good job the other teams are doing – Ferrari, of course, but McLaren, Renault and Jaguar as well. They're all making life much harder. Jaguar are doing a pretty amazing job for such a small team.

Is it correct that FW25's main problem is a lack of high-speed stability?

That's about right, yes. But there's no perfect car out there. I can tell you that even Michael [Schumacher] is with his engineers right now complaining his Ferrari isn't quick enough.

Why have you re-employed Frank Dernie [as technical consultant on a 12-month contract with Williams]?

We haven't re-employed him as such. He'll be working with us for a period as a technical consultant with a brief to look at specific areas of the car. He's targeted on two or three projects. He brings with him a lot of experience and technical knowledge. 1



Williams concedes that FW25 isn't the best, but he knows Juan Montoya and Ralf Schumacher (right) are quick – and they'll soon have the aero bits they need, he says

DARREN HEATH



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GPWC? WHAT'S IT ALL ABOUT?



What indeed? Ask *one* set of Formula 1 bigwigs (Max Mosley and Bernie Ecclestone), and they'll tell you it's "a bargaining ploy"; the *other* lot (Ron Dennis, Frank Williams et al) insist it's what F1 will be called in 2008. So who's right? Luckily, *F1 Racing's* editor at large, Alan Henry (above), keeps his ear to the ground on such matters. It's very complicated – but utterly fascinating. Read on...

Photographs by Alex Puczyniec

Formula 1 is revolting – and the revolution, which is due to take place in 2008, will send seismic tremors through the entire fabric of the sport. It could be that, after more than a quarter of a century, Bernie Ecclestone's iron grip is to be prised from grand prix racing's levers of power. The world's top car manufacturers are on the warpath.

Although they have been making massive investments in the sport for many years, they have become ever more disillusioned by the increasing imbalance between the income of their partner teams and that of Ecclestone's

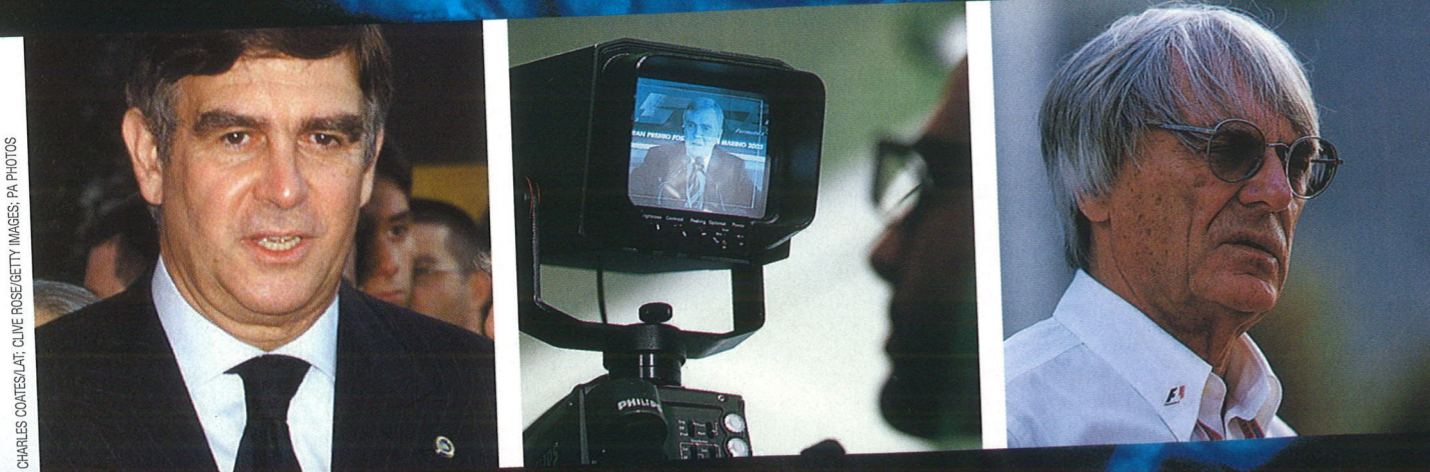
own SLEC empire. As a result, five of them – BMW, Ferrari-Maserati, Ford (Jaguar), DaimlerChrysler (Mercedes-Benz) and Renault – have now banded together to launch a bold new initiative called GPWC (Grand Prix World Championship), which they hope will reshape the entire business.

But will it happen? *Can* it happen? What will Bernie do to head it off? And can the car makers maintain a unified front? Here follows *F1 Racing's* world-exclusive guide to everything you need to know about the sport's most crucial rift since the FOCA/FISA wars of the early '80s.

• SO WHAT'S THE ARGUMENT ABOUT? It centres on the manufacturers' insistence that Ecclestone cannot be permitted to continue to take 53 per cent of the TV rights income – and 77 per cent of the *overall* income stream from commercial sources – out of the F1 equation.

Their second complaint is that they don't like the way Bernie and FIA president Max Mosley run F1 without (much) consultation. In turn, Ecclestone and Mosley view the manufacturers as a necessary evil, bringing resources into F1 but getting in the way of the administration of their lucrative private fiefdom. ▶

(Left to right) Paolo Cantarella, Fiat boss and the first chairman of the GPWC; Max Mosley, FIA president (not a GPWC fan); Bernie Ecclestone (ditto)



CHARLES COATES/LAT; OLIVE ROOSE/GETTY IMAGES; PA PHOTOS

BEHIND THE BREAKAWAY



'WHO DECIDES IF YOU CAN HOLD A CHAMPIONSHIP ROUND? THE FIA. WE'RE GIVING THE MEANS OF MAKING THIS MONEY'
MAX MOSLEY

• WHAT ARE THESE 'COMMERCIAL RIGHTS'? HOW COME THE FIA OWN THEM AND LEASE THEM TO BERNIE?

At first glance F1's commercial rights can be a difficult entity to understand or rationalise – but the key issue is that they were established as a notional commodity within the gift of F1's governing body (the FIA, of which Mosley is president), which could be devolved at the FIA's behest to a third party – in this case Ecclestone. A bit of conundrum, that...

"This was a central question as to the way F1 operates, and was central to our negotiations," says Mosley. "Before the teams started negotiating as a body, each team would do a separate deal with each race organiser before each individual race. If it was a non-championship event, it was a straightforward commercial deal: 'How much is it worth to you to bring your car to run at my non-championship event?' In those days organisers could pay enough in relation to the overall cost of F1 to make it viable."

According to Mosley, therefore, the commercial rights have in effect become the premium value generated by staging a round of the world championship rather than a non-title race: "Who decides whether or not you can have a world championship round? The FIA. So, in the final analysis, the FIA are giving the organisers the means of making this money. Therefore the right to do that or not do

that is extremely valuable – and those are the commercial rights to the F1 championship."

Mosley is correct, of course – which is why Ecclestone paid \$313.6 million to the FIA to lease the commercial rights for 100 years. That is a lot of money, of course – but, bearing in mind that SLEC (an Ecclestone company) earn around 75 per cent of that figure in a single season, it looks like a pretty good deal... providing, of course, Bernie has a Concorde Agreement (governing how F1 is run) beyond the end of '07... which, at the moment, the GPWC is threatening to ensure that he has not.

It is also worth recalling that, during the FOCA/FISA wars of the early '80s, the FIA handed the teams the commercial rights to exploit under Ecclestone's control, but these reverted to the FIA during the '90s. It was only when McLaren, Williams and Tyrrell refused to sign the '97 Concorde Agreement that a row ensued in which the rights were restored to the teams.

• SO... WHEN, HOW AND WHY DID THE GPWC GET OFF THE LAUNCHING PAD?

The car makers' dissent was first signalled towards the end of '01. At a meeting in Geneva on November 27, a new Dutch-registered company, GPWC Holdings BV, was established (with Fiat chief Paolo Cantarella named as its chairman). The first thing the manufacturers did was to send a message

to the Kirch Group, the German media empire who had purchased 75 per cent of Ecclestone's F1 empire, warning that if they (Kirch) did not increase the share of F1 commercial rights payable to the competing teams, they (the GPWC) would press ahead with their own independent series from '08.

• SO IS IT ALL JUST ABOUT MONEY?

Not quite. As things stand, the top 10 teams share 47 per cent of the television revenue generated by the F1 world championship, with the 53 per cent balance split between Kirch (75 per cent) and the Bambino Trust, acting for Ecclestone's SLEC empire (25 per cent). In reality, what the teams get is more like 23 per cent of F1's overall commercial rights income, because they get nothing from the Paddock Club, in which Ecclestone is understood to have a controlling interest, or trackside signage.

AllSport (the events company in charge of Paddock Club and all trackside signage) pay Ecclestone's companies a \$50 million annual licensing fee out of revenues believed to be about \$130 million per annum. The teams get none of this. Thus, while the competitors share a maximum of around \$200 million between them per season, Ecclestone and his associates earn at least twice that figure.

• SO THE MASONIC SECRET OF THE ECCLESTONE ERA WILL BE SWEEPED ASIDE BY THE GPWC... AND WE'LL SOON BE ENTERING A PERIOD OF

(Right inset) Ferrari president Luca Montezemolo is the GPWC's biggest cheese. Why? Because whichever series gets Ferrari will be the one to flourish... which is why Bernie (centre inset, with Michael Schumacher) and the GPWC are both cuddling up to the Scuderia, hoping to win their favour

(Opposite inset left) B.A.R boss David Richards is among those who criticise Ferrari's 'special' treatment; all team principals regard FIA president Max Mosley (above) as a potentially dangerous thorn in the GPWC's side

MAGNIFICENT STABILITY AND TOTAL TRANSPARENCY, RIGHT?

Er, sort of. One of the GPWC's beefs is that Formula One Administration (an Ecclestone company) has kept the business's finances absolutely secret for the past 20 years. The manufacturers said GPWC would change all that... but then shot themselves in the foot when it emerged that they were offering a \$50 million up-front incentive for Ferrari to join their new party. It appears that Goldman Sachs, the bankers handling the GPWC's business affairs, had inadvertently omitted to reveal the clause relating to Ferrari's payment. The matter was quickly corrected.

This is nothing new. Ecclestone currently pays Ferrari four per cent of the commercial rights, out of SLEC's 53-per-cent share, in recognition of the Scuderia's special position within F1. Put simply, whichever faction ends up with Ferrari on board will win the day. It is not surprising, then, that rumours at the Austrian Grand Prix had it that Bernie had upped the ante with the offer of a \$100 million advance to keep the most famous team loyal to the F1 championship as it now stands.

B.A.R's David Richards, for one, is not happy about that: "Nobody would argue against the fact that Ferrari have a unique place in F1's history – and awareness of Ferrari is greater than that of any other team," he says. "But if we're starting a

new regime, we need fresh debate. We must fully understand how it'll all work."

Ferrari's \$50 million is to come out of a 'special fund' provided by the car makers for the express purpose of getting Ferrari on side; it is not therefore due to come out of the teams' proposed income stream. (Incidentally, some GPWC insiders believe the \$50 million is necessary to guarantee Ferrari's long-term health in the face of their being forced to become a public company.)

• SO WHAT WILL GPWC OFFER F1 THAT BERNIE CANNOT DELIVER?

The GPWC's bankers Goldman Sachs are predicting that the overall gross revenues from F1 under the GPWC will rise from around \$670 million in '08 to \$1,280 million in '13. Operating costs are set to become, respectively, \$120 million and \$224 million in those two years, leaving a net share for the teams rising from \$231 million through to \$590 million at the end of that period.

Neither DaimlerChrysler nor Ford, the two GPWC members *F1 Racing* spoke to, were able to offer any explanation of where this 100 per cent growth over five years could be expected to come from at a time when pressure on the consumers' leisure time attention has never been higher. Some F1 insiders concede that these predictions are "optimistic"; others say that they are simply "not feasible".

• WHO ARE THE KIRCH BANKERS WE KEEP HEARING SO MUCH ABOUT?

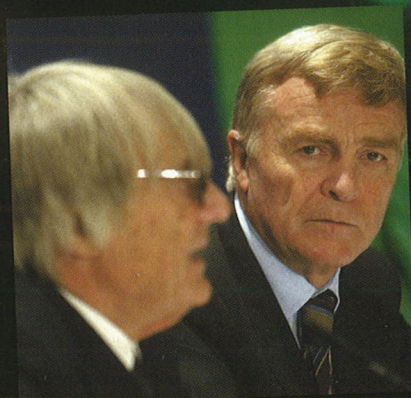
They are JP Morgan, Lehman Brothers and Germany's Bayerische Landesbank – who, between them, loaned around \$2.4 billion to enable media magnate Leo Kirch to purchase a 75 per cent stake in Ecclestone's SLEC organisation. Kirch subsequently went bust in what was the biggest bankruptcy in post-war German business history.

However, before any of the 75 per cent income can be distributed, provision for paying both interest and capital off the original \$1.4 billion 10-year bond – launched on Ecclestone's behalf in '99 – has to be allowed for. That means that while the teams were duly receiving their 47 per cent of the television revenue, split 10 ways, the Ecclestone side of the equation was taking little, if anything, out of the pot.

The banks are therefore stuck with an investment they don't want, which may look acceptable on their books valued at around \$2 billion (but which will not do their balance sheets any good at all if the investments have to be realised for bargain-basement sums). F1 insiders say the GPWC might be prepared to pay \$200-\$400 million for those rights – a figure which would not be acceptable, particularly to Bayerische Landesbank, a small company alongside the other two.

Kirch's bankers initially offered the car ▶

BEHIND THE BREAKAWAY



'ULTIMATELY, THE GPWC IS NOTHING MORE THAN A NEGOTIATING TOOL WITH WHICH THE TEAMS INTEND TO PRISE OPEN BERNIE'S WALLET'

makes a 30-per-cent stake in their business, which they optimistically claimed was worth as much as \$2.4 billion. But it was only on the condition that the manufacturers scrapped their plans for a separate series and swore unconditional allegiance to the existing F1 infrastructure. It was not hard to detect the guiding hand of Ecclestone on the tiller at this point, for the bankers were very keen to get out of the debris of the Kirch empire. Yet Ecclestone had already enjoyed his personal payday and could afford to take a strategic view of the mounting chaos.

Yet, while DaimlerChrysler are perceived as the GPWC's leading light, the most influential voice is that of Ferrari's Luca Montezemolo – even though Merc's motorsport director has described DaimlerChrysler director Jürgen Hubbert as "actually leading the GPWC". But it was Montezemolo who in May this year told the banks that, if they don't cut a deal by the end of December '03, all bets are off and it's full steam ahead for GPWC.

He warned: "In no other sport are teams deprived of a share of two of the three main revenue streams – trackside advertising and ticket sales – while having to share just 47 per cent of the TV income." He added that if the Kirch bankers did not become more receptive to sharing out more of the commercial income, their stake would shrink to nothing when GPWC took off. "They know nothing about F1," he said. "How can we accept that?"

• SO... WHAT IS BERNIE'S ANSWER?
Bernie has suggested a deal whereby the teams in effect mortgage F1's future income streams in order to pay off the outstanding debt to the Bambino Trust and the Kirch bankers. He will be selling, in effect, the residual benefits under the Concorde Agreement and the rights to exploit the balance of the commercial rights term which he leased from the FIA.

"But why would we want to do that?" ask the teams... when instead they can wait until '08, when the manufacturers will fund the start-up costs of GPWC and deliver them around 85 per cent of the commercial rights income.

• SO WHERE DO THE FIA STAND?
The FIA claim impartiality – although the teams are sceptical about Max Mosley's close relationship with Bernie Ecclestone. Mosley has already said that the FIA will administer both classes of racing even-handedly – but he has also stated that the GPWC will only be permitted to run on properly sanctioned circuits, presumably those which do not have long-term contracts in place with Bernie. Could be tricky for the GPWC... with only Valencia, Estoril and Mugello obviously available.

• SO WILL GPWC RACE THE SAME KINDS OF CARS AS F1?
Maybe not. Max has stated that Bernie owns the copyright to the current F1 regulations – and therefore that the cars competing in the new series must be demonstrably different

from F1's 3.0-litre V10-engined machines. Mosley, of course, studied copyright and patent law during his legal training and knows his stuff. Yet it seems that this arcane matter could soon become academic.

"The current F1 technical regulations are crap," said one senior team director at the Austrian GP, "so by starting the GPWC we've got a good opportunity to sweep them aside and start with a clean sheet of paper. The rules have developed into an arbitrary set of regulations, so why not try a new formula of our own? By the end of '08 we'll have 1,000bhp V10s in low-downforce packages, so perhaps we should try something new."

• AND WHAT WILL HAPPEN IN THE END?
Ecclestone will cut an acceptable deal with the F1 teams. Why? Well, he and Mosley reckon time is on their side – but the teams and the manufacturers believe that that is incorrect. With no Concorde Agreement in place beyond the end of '07, Bernie's investment is worth less with every race that passes. So, ultimately, the GPWC is nothing more than a negotiating tool with which the teams intend to prise open Ecclestone's wallet – which, by all accounts, has more locks on it than the Grand Union Canal.
• You can read more on the GPWC in Alan Henry's latest book, *The powerbrokers: the inside track on the controllers of F1*, to be published by Motorbooks International in September '03. 1

Some say Bernie Ecclestone (left) and Max Mosley are too friendly for comfort – despite Mosley's firm assurances of his (and the FIA's) total impartiality

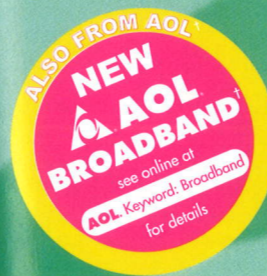
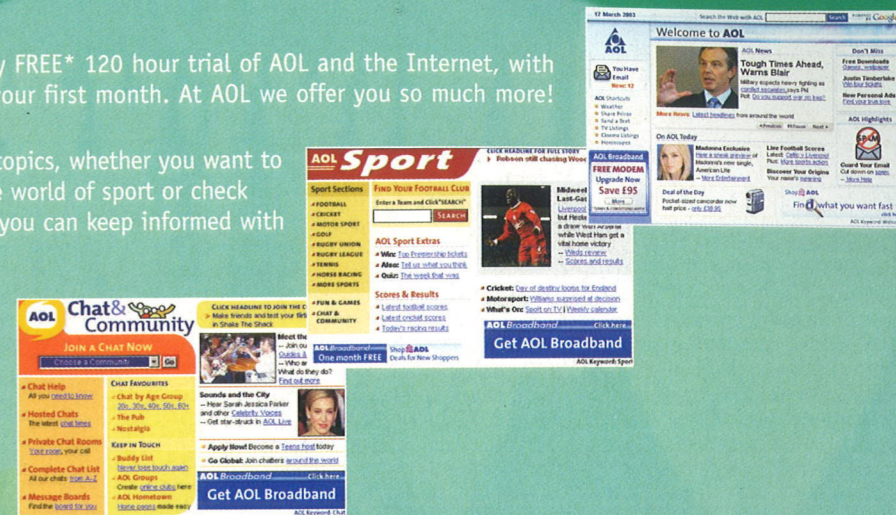
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JPM: my life in Formula 1

Two years ago, Juan Pablo Montoya hit F1 like a tidal wave. Almost immediately he started giving Schumi a mighty hard time, and he soon took his first win. Since then things have been a little tougher. But is he down? Not at all, as he tells *F1 Racing*, exclusively, in his own words

I have to take my hat off to the guys at *F1 Racing*. I'm sitting in my apartment in Monaco, having just got back from the Austrian Grand Prix, and I have no idea how to begin this article! Writing is definitely harder than it looks.

Anyway, they've asked me to write about my experiences so far in Formula 1. Well, before I start, let me say that I've enjoyed my two and a half years

at Williams very much. They're a great team, and I have more and more respect for Frank Williams and Patrick Head the more I get to know them. They're very competitive – which is what you need in F1.

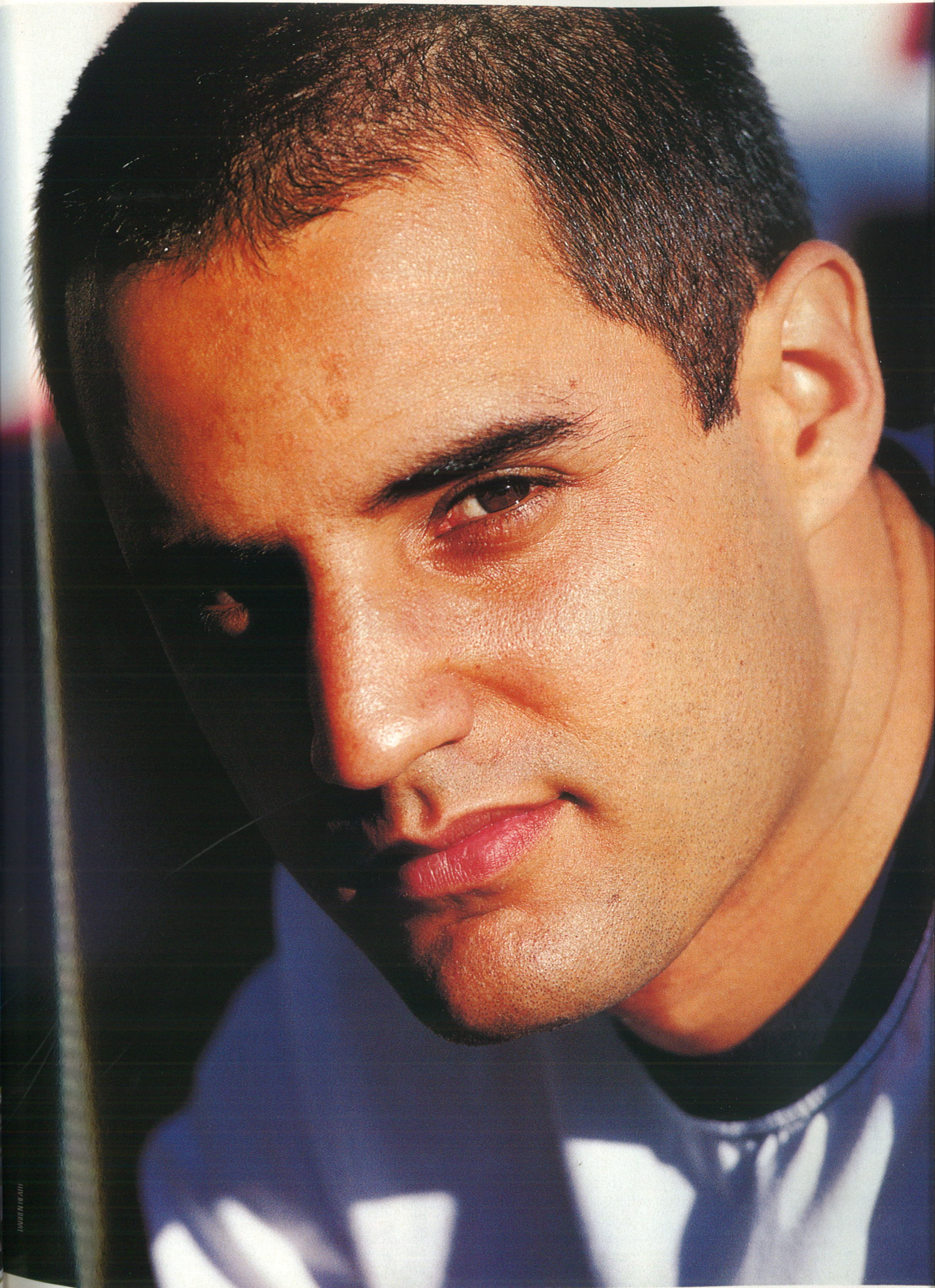
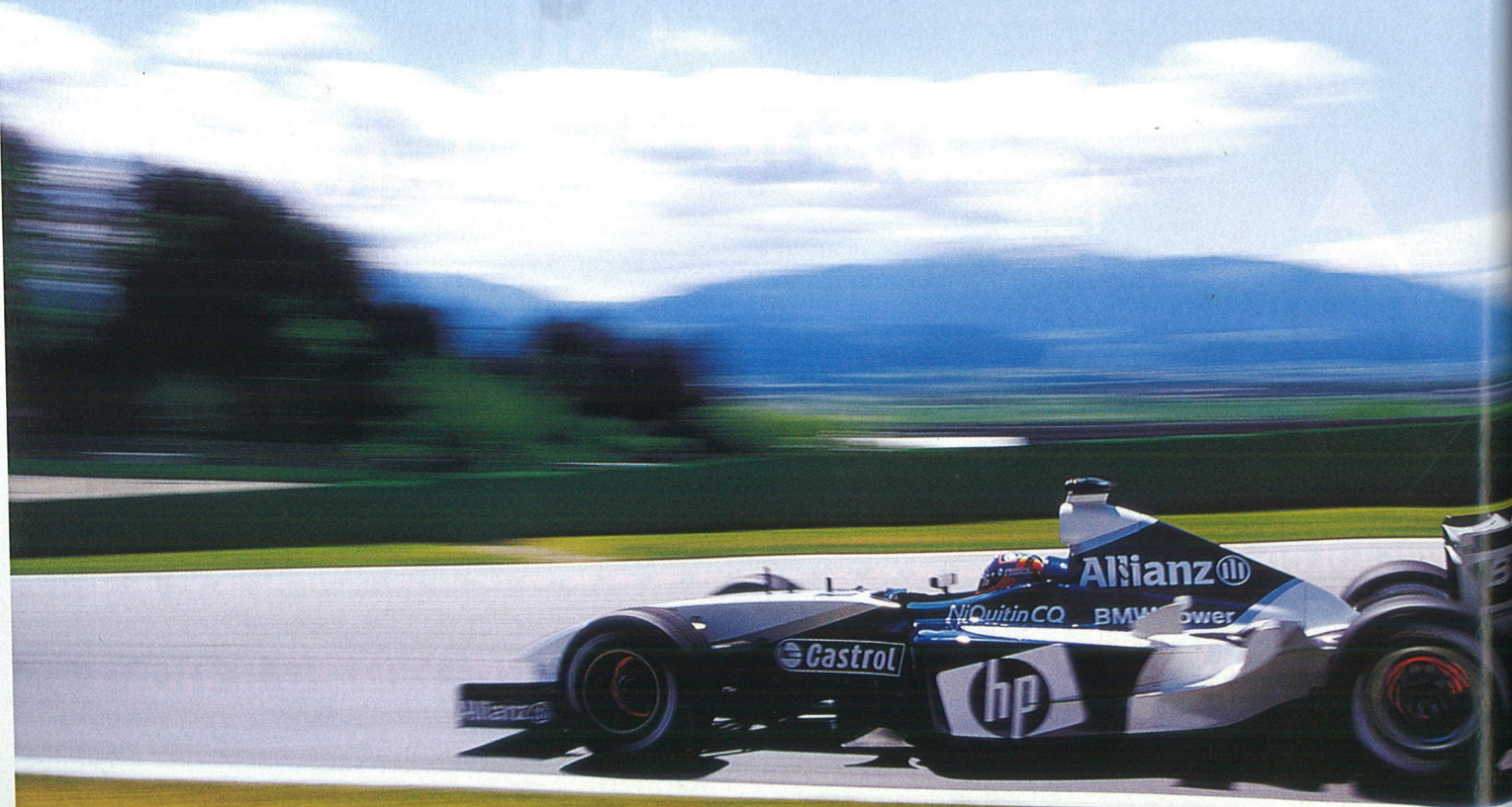
As a driver, you want more of everything all the time. So to have scored only one race victory so far – a day that I will never forget, at Monza in 2001 – is more than a bit frustrating. But you have to work with

(Opposite) F1 loves Montoya's Latin passion, but his career hasn't yet been the win-fest many expected. A DNF in Austria '03 (below) meant that another one got away...

what you've got and I'm sure the team's fortunes will change very soon. The FW25 is not as bad a car as people like to say it is – and it's certainly the best Williams I've ever driven. So my aim is still to win races – plural! – this year, and to reward the faith that Frank and Patrick have shown in me over the years.

I have been associated with Williams for a long time. I was test driver back in ▶

MARK THOMPSON/GETTY IMAGES



JANIS WOOD

AS TOLD BY JPM



'98 and stayed under contract with them while I raced in CART in America for two years. Then I got the nod for an F1 race seat with Williams for '01, which was a dream come true. All those years of hard work in the junior formulas had been worth it because F1 is what I've always wanted. My first laps in the Williams FW22 (at Jerez in December '00) were very special, and I remember being so amazed at how much F1 cars had improved in the two years that I'd been away. It had a lot more power than I remembered, and the grooved tyres had come on hugely, too. We did a lot of testing in the build-up to my first race, and it was pretty exciting to be on the grid in Melbourne in '01. There was a real buzz, even though the weekend had been pretty difficult because the FW23

wasn't handling very well. I qualified only 11th, made a bad start – my first standing start for more than two years – and then retired on lap 41 with a blown engine.

At this stage, my relationship with the team was quite difficult. I was the new kid and didn't want to upset anybody – but they kept trying to tell me how to drive the car, which annoyed me a bit. When I said, say, that I had turn-in understeer, they started asking me to change my driving style – which made me even slower!

As the season went on, the engineers began to listen to me – and when they did, the pace came. Instead of asking me to drive around understeer, they changed the car. If they'd listened to me from the start, I think I would have been on the pace immediately – because it didn't take me long to get the hang of an F1 car.

The main difference between F1 and anything I had experienced before was the race pace. It was much faster than I was used to, and that came as quite a shock at Melbourne.

The second race of '01 was Malaysia. Sepang is my favourite track on the calendar because it has every type of

(Left) Montoya, looking sharp in Ganassi team overalls, chews the fat with his future boss Frank Williams. FW popped over to the US CART series to check on the progress of his former test driver

'PASSING MICHAEL SCHUMACHER AND LEADING IN BRAZIL FOR 36 LAPS WAS A GREAT BOOST TO MY CONFIDENCE'

corner you could wish for: fast, slow, great sequences that punish mistakes hard. My race there was a bit of a disaster, though, because I spun out on lap four in the rain. But then came Brazil...

Overtaking Michael Schumacher and leading the grand prix for 36 laps (until Jos Verstappen crashed into me) was a great boost to my confidence. I knew then that I could do it, that I *could* be competitive in F1. Oh, and, by the way, I never said anything to Jos after the race... but I did talk about him a lot to my wife Connie!

When we got back to Europe, I had a couple of bad races – for one simple reason: I wasn't happy with the car's balance. Okay, I finished second in Spain, which wasn't too bad for my first F1 finish, but I still wasn't quick enough in qualifying. We did more testing and set-up work, and only then did the situation improve. In Austria I outqualified my team-mate Ralf Schumacher for the first time – and, after that, there was no looking back.

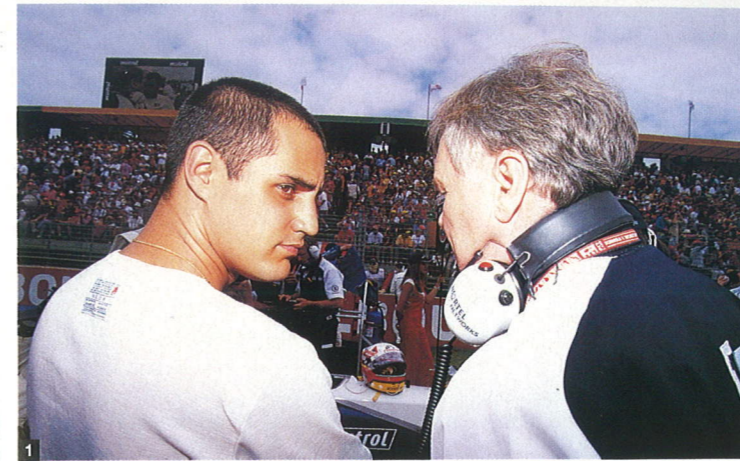
Reliability problems cost me a lot of good finishes in the middle of the season, including a possible victory in Germany. When we went to Monza for the Italian Grand Prix, I reckoned it was my last realistic chance of a win that year. We had a good engine, which is important there, but I was also really nervous about reliability. After my poor run of luck, I expected something to go wrong.

Until I actually crossed the line to win, I didn't believe it would happen. My first reaction wasn't one of joy... but of relief, because for the last 10 laps of the race I'd been listening to the engine's every revolution and feeling the jolt of every bump like never before!

Having got my first win under my belt, I decided to rearrange my business affairs. Over the winter of '01-02 I changed my personal management from David Sears to Julian Jakobi. David had done a great job with me: we'd won the Formula 3000 championship together in '98 – and, with Frank's help, he got me the drive with Chip Ganassi in CART. But I felt that he was too busy to give me the attention I needed, which is why I chose Julian. He has a great record in F1, and we get on very well.

As you know, I failed to win a race in '02, despite taking seven poles. There are endless reasons why I didn't win, which I won't go into here, but at least I proved to the world that I was quick. Every pole position lap has to be a good one, but two from '02 stand out above the rest: Monaco and Silverstone.

My first year at Monaco was a disaster. I didn't get a hold on the track at all, so I went there in '02 determined to set the record straight. You have to drive with real precision there, but you can't be too



(1) Montoya gets the low-down from Williams' technical director Patrick Head on the grid before his first grand prix; (2) Spain '01 – his fifth grand prix and his first F1 finish – in second place; (3) by Italy, JPM had well and truly found his feet, was confident in the car – and was ready to bag his first F1 victory (4). He could have won sooner if it hadn't been for reliability woes, such as the engine failure which took him out of the lead in Germany (5); 2002 brought no wins, but plenty of poles – seven, in fact. His favourites were Monaco (6) and Silverstone (7)



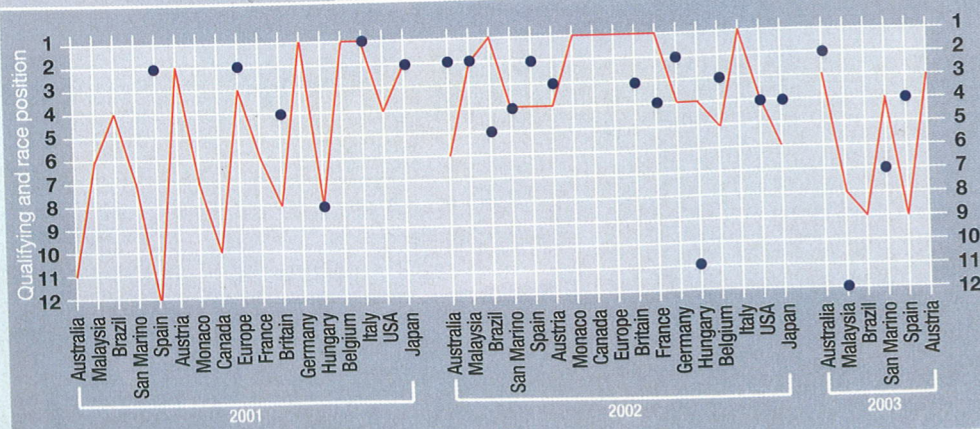
>The rise and stumble of Montoya

The graph shows JPM's F1 qualifying and race record. It's very good in parts...

Year	Quali	finish
2001		
Australia	11	R
Malaysia	6	R
Brazil	4	R
San Marino	7	R
Spain	12	2
Austria	2	R
Monaco	7	R
Canada	10	R
Europe	3	2
France	6	R
Britain	8	4
Germany	1	R
Hungary	8	8
Belgium	1	R
Italy	1	1
USA	4	R
Japan	2	2
2002		
Australia	6	2
Malaysia	2	2
Brazil	1	5
San Marino	4	4
Spain	4	2
Austria	4	3
Monaco	1	R
Canada	1	R
Europe	1	R
Britain	1	3
France	1	4
Germany	4	2
Hungary	4	11
Belgium	5	3
Italy	1	R
USA	4	4
Japan	6	4
2003		
Australia	3	2
Malaysia	8	12
Brazil	9	R
San Marino	4	7
Spain	9	4
Austria	3	R

Correct up to and including Austria 2003

Key to graph:
— QUALIFYING
● RACE



AS TOLD BY JPM



'I DID HAVE ONE VICTORY LAST YEAR: MY MARRIAGE TO CONNIE. I HAD A GREAT TIME AND GOT VERY DRUNK!'

cautious otherwise you'll be slow. My pole lap was almost perfect - I actually skimmed a few barriers on the way round - but the car held together and the result was very satisfying.

At Silverstone there was some drizzle starting to come down when I went out to start my last run, but I was pumped up and managed to pip my good friend Rubens



Barrichello to the pole. I like Silverstone's fast sweepers - especially Copse and Becketts at the start of the lap - and my lap was good. Given the weather, I couldn't have done much more.

I did have one victory last year, however, which was my marriage to Connie. She is a great woman and someone whom I love very much. We had a fantastic wedding in Cartagena, Colombia, and I think all of our guests had a good time. Me? I had a really great time and got very drunk indeed!

Expectations surrounding this year's FW25 were very high. We all hoped the car would be quick out of the box - and, when it wasn't, everyone in the team was a little disappointed. It's such a new design concept that it has taken longer to get

(Above) In Austria JPM was a potential winner, but his race was doomed by a faulty water valve; (far left) eyes on the times, JPM readies himself for one of his trademark *banzai* qualifying laps; (left) with the delightful Connie, whom he married in October last year

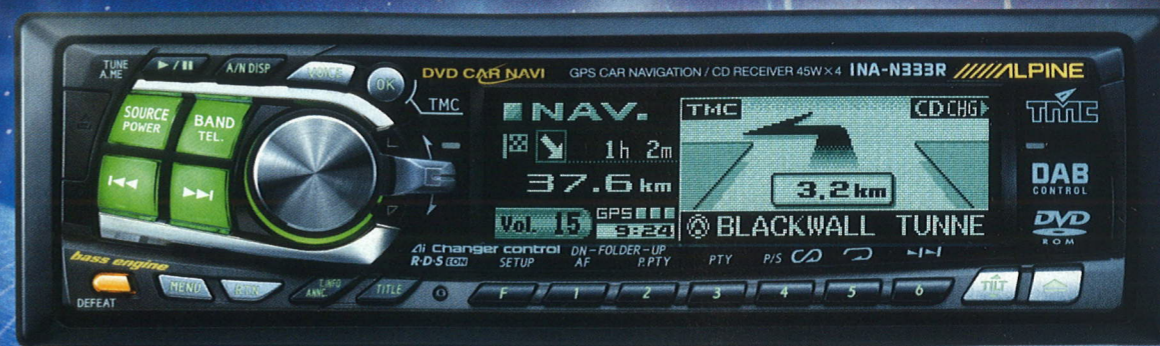
the most out of it than we had hoped. But I've been really impressed with the way the team have developed the car this year. Everyone is doing a fantastic job, and we've recently hired some new people to help improve it further. I don't see that as a show of desperation by Patrick, but as a great move. The more brainpower you have tackling a problem, the quicker you're likely to find a solution.

Okay, I didn't get the year off to a great start by throwing away victory in Australia. My spin at Turn One was totally my mistake - and, yes, I beat myself up over it for a few days. But then I got on with my life. With something like that, you either move on or let it hang over you - and I chose to move on as soon as possible.

As for the future, I've already said that I think wins (plural) are possible this year. I hope this car will be a great springboard into '04, when we should be genuine championship challengers. I'm not sure when Patrick plans to retire, but he gives me the impression that he only wants to bow out after Williams have dominated again. I want to be here for that! **1**

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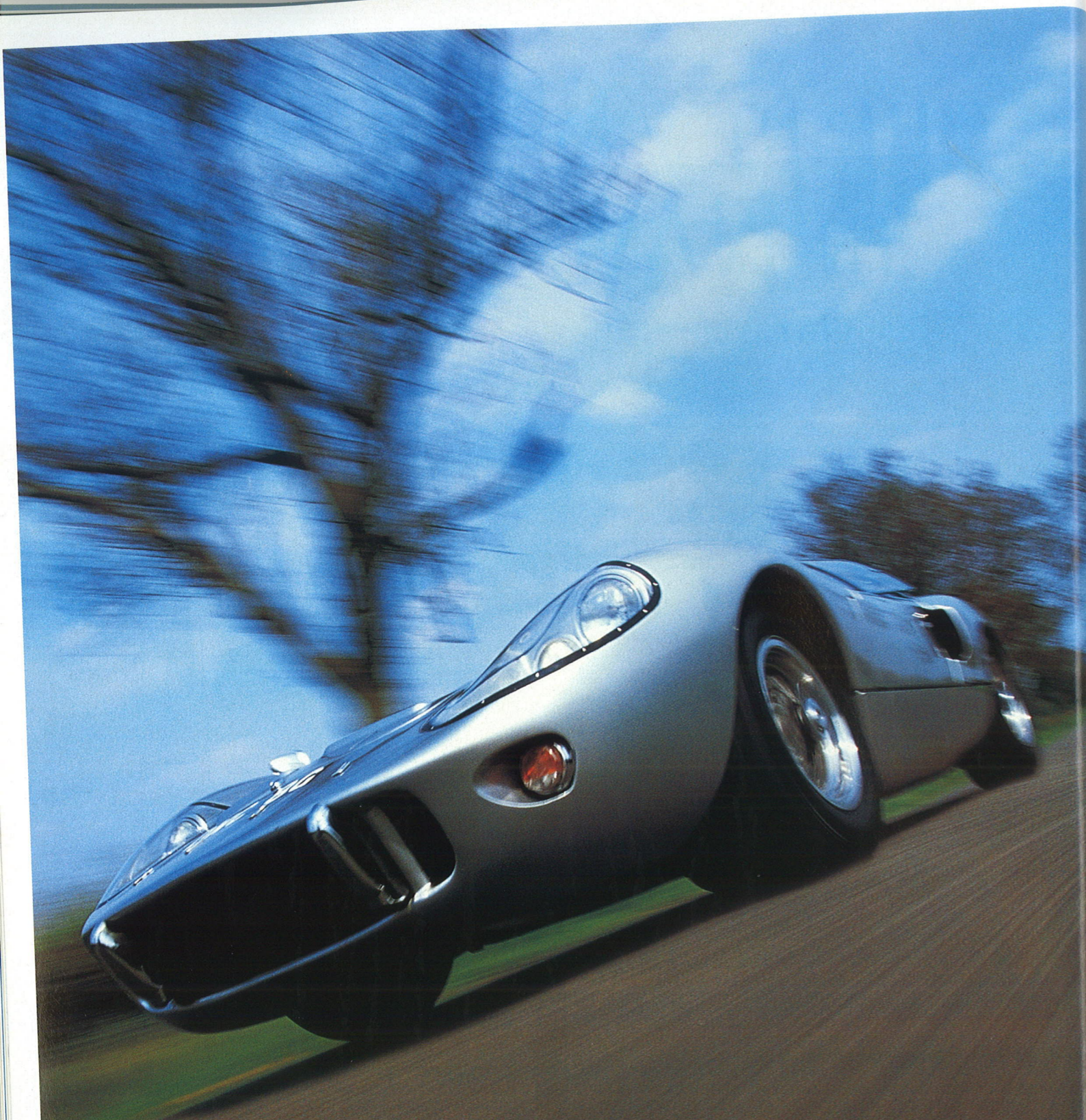
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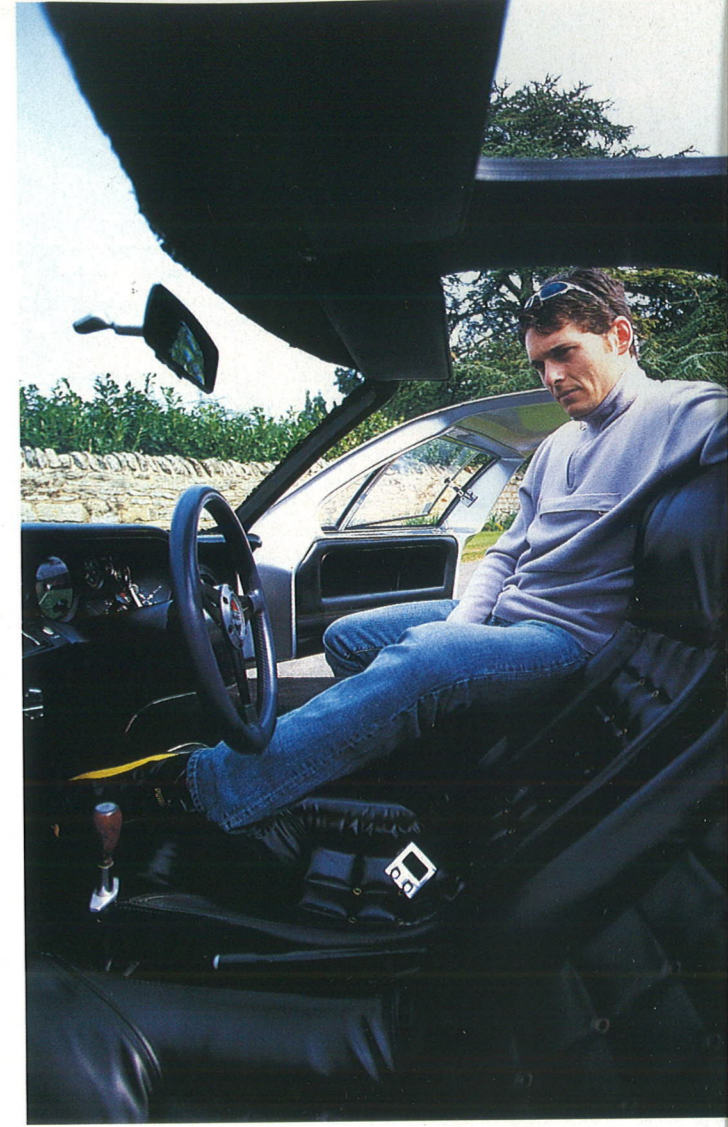
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FLAT CHAT!

Giancarlo Fisichella's first Jordan-Ford win was really special – so F1 Racing gave him something almost as fabulous: a *banzai* blast in Ford's legendary 1966 GT40

Words by Peter Windsor; photographs by Darren Heath



(Main) This is how a GT40 is meant to be driven – flat, by an ace. Fisi (above) loved it – once he had made himself comfortable (above right). At just 40 inches from roof to Tarmac, it's a tight squeeze... but Giancarlo soon found the throttle pedal – big time!

There were plenty of GTs back then – from Ferraris to Cortinas to Vauxhall Vivas to Mustangs. And then there was the Lola GT, a car specifically built to win Le Mans in 1963. It failed in France – because it was too beautiful, probably, ever to be a successful racing car – but in the long term it won a deeper, more lucrative victory: it won Lola's contract with Ford, beating into minor places such names as Lotus and Cooper. The car they built? The Ford GT40 (so named because its roof-line was a mere 40 inches from the road). The prize? Victory at Le Mans in '66, '67, '68 and '69 – a run that ended Ferrari's ownership of the world's greatest sportscar race.

On another level, Ford also conclusively brought to a close a series of discussions with Ferrari about a different sort of ownership. Enzo Ferrari had proposed a majority sale of his production factory (thereafter to be known as Ford-Ferrari); Ford were prepared to allow Ferrari still to run his racing department (to be known as Ferrari-Ford). In the end, though, in late '63, Enzo Ferrari called off the talks: he felt suffocated by Ford's bureaucracy. Ford retaliated, if you like, with the GT40.

You can tell the real ones from the fakes, they say, by the ventilated upholstery – by the tiny, ringed holes that covered the

surface of the very reclining seats so that the drivers at Le Mans could work in relative comfort. There is no doubt, then, about the silver car that sits outside the factory of Jordan-Ford. It may look strange with its long-tail lines, with its higher ride height and with its muffled, low-line exhausts; all the same, it is a genuine, '66 Ford GT40. It is still owned by Ford, to be sure – as it has been from the start. It is a rare, road-going GT40. The engine bay includes a storage box (which explains the longer tail) and the cockpit area a centrally mounted gearchange (the racers had gear levers on the right) and proper door handles (the racers had pull-cords).

Giancarlo Fisichella, who has just won Ford's first grand prix since '99, when Johnny Herbert stole the European Grand Prix for Stewart, arrives direct from Rome, where he lives when he is not in Monte Carlo or travelling the world as one of the best five or six grand prix drivers on the planet. He is quiet and self-contained. There is no entourage, no PR adviser, no private plane. And, even though he is not due to test at Silverstone until the following day, Giancarlo has – for one reason only – said goodbye to his family and flown to England a day early: he wants to know what it is like to drive a GT40 over the country roads of England.

He grabs some pasta from the nearby

'GIANCARLO JABS THE THROTTLE IN QUICK BURSTS – AND SMILES APPROVINGLY'

Jordan motorhome – Ralph Firman is testing the Formula 1 car at Silverstone – swaps his Pradas for black and yellow Puma driving boots and lowers himself in.

Pretty comfortable – shrugging his shoulders into position – Giancarlo turns the key and blips the throttle; 4.7 litres of Ford V8 grumble into life. And now he is nursing the big Ford out of the Jordan car park and onto the new Silverstone access roads, jabbing the throttle in quick bursts so as to get a feel for the power and the acceleration. He smiles approvingly and runs the Ford up through the gears – from first (bottom left), to second, to third, fourth and then, almost as an overdrive, up to fifth. The Ford is surprisingly fast. He settles back, hands pinching the wheel at 10-to-two.

The steering wheel – leather-bound, with Ford central logo – is separated from its binnacle by a spacer, obliging Giancarlo to drive with arms bent at about 60 degrees, which is fine for him, but his body language suggests that he would like the seating ▶

>Ford GT40: one of the great cars

As my learned friend Peter Windsor has so elegantly explained, the GT40 was the product of a grudge match between two of the great automotive autocrats of the 1960s: Enzo Ferrari and Henry Ford II.

The first GT40 appeared at the Le Mans test just eight months after the project had been given the green light (having been tested by experienced Formula 1 drivers such as Roy Salvadori, Bruce McLaren and Richie Ginther). Ford ran three in the 24-hour race that June. All retired with transmission difficulties.

Ford's response was to invest even more in the programme. Carroll Shelby's US-based workshop took over development of the GT40, hoping to cure its transmission and aerodynamic problems. Victory at Daytona early

in '65 suggested that they had succeeded. Ford entered six cars for Le Mans '65 – four privateer Mk1s and two works Mk2s – but again all failed to finish.

It wasn't until '66 that the GT40 hit its winning stride in a big way. Only three of the eight cars entered for Le Mans made it to the finish, but they did so in one-two-three formation, led by Bruce McLaren and Chris Amon.

AJ Foyt and Dan Gurney won in '67 in a Mk4 – then Ford pulled out. Mission accomplished: they'd won on Ferrari's turf.

But the GT40's race career wasn't over. The same Gulf-sponsored GT40, run by John Wyer's privateer JW Automotive team, won in '68 (with Pedro Rodriguez and Lucien Bianchi) and '69 (Jacky Ickx and Jackie Oliver). The Ickx-Oliver victory

is still in the record books as the closest ever competitive finish at Le Mans – Ickx beat Hans Hermann's 908 Porsche by just 100 metres.

GT40 enjoyed far less success as a road car: fewer than half found buyers. Ford held on to four for PR purposes, two of which Henry Ford II used as runabouts. The one you see here, chassis M3/1107, was the last one off the production line and was used by Ford chairman Walter Hayes as his company car.

Robert Holmes

TECH SPEC

Engine: 4.7-litre V8
 Maximum power: 306bhp at 6,000rpm
 Maximum torque: 329lb ft at 4,200rpm
 Kerb weight: 900kg
 Power-to-weight ratio: 366bhp per tonne
 Maximum speed: 136mph
 0-60mph: 5.1sec



position to be more upright. The Ford's semi-reclined non-adjustable seats, it is clear, are as '60s as a Kelvinator fridge.

No matter. We turn off the new dual carriageway and head into the rolling hills of Northamptonshire. The grass is a lush green, the villages quiet and seemingly empty... until the GT40 arrives, of course, with its engine note piercing the calm. A postman wobbles and all but falls off his bicycle. Two farmers, sheep at their feet, crane their necks as the silver bullet blasts past.

Giancarlo is precision in motion, his orchestration definite but unhurried. The gearchange of the GT40 is long-ish and slow, obliging him to nurse the lever through the gate, double declutching from second to third, heel-and-toeing back through the ratios as he brakes for a sharp left-hander. His head is tilted back slightly; he is looking a long way ahead.

In today's Jordan-Ford, of course (and, before that, in the Benetton and then the Renault), Giancarlo gives the impression of being a silky-smooth early-apex man. As with Michael, and with DC, it is difficult to pinpoint the exact moment that he begins to turn the steering wheel: his approach is that soft, that inside the line.

And so it is here, in the GT40, as he pinches the wheel between thumb and forefinger, 'outside' hand raised slightly as he nurses the car towards the apex.

At this moment – in this millisecond, in the case of the Jordan-Ford – he balances brakes against front-end grip against steering; oversteer is about the last thing he needs. Today, on these bumpy, narrow roads, he brakes hard, bringing down the nose, and then he brakes harder still, squeezing the GT40 into the corner.

"It's a shame," I say, "that you cannot do that braking thing in the F1 car. I guess you just have to brake as hard as possible, all the time..."

"No, no!" he says, amazed. "Sometimes I can brake very softly if I need to balance the car. You don't always slam your foot on the pedal. You can still use the brakes for cornering."

What he does slam, though, is his right foot: apex reached, nose where it should be, Giancarlo flattens the throttle, catches a small rear-end slide, feathers the power slightly with the right foot – and then flattens the accelerator again as he thrashes the GT40 through the gears. You try to imagine what it was like to drive this thing around the old Nürburgring long circuit, over blind brows and negative-camber falls – or through the early hours of a Le Mans morning, with the mist rising and slower cars suddenly jumping into your path. I mention the images to Giancarlo, who takes the time to smile ruefully: "Very dangerous. Very dangerous..."

'HE IS PRECISION IN MOTION, HIS ORCHESTRATION DEFINITE BUT UNHURRIED'

We go on – for corner after corner, straight after straight, with Giancarlo improvising on an English spring day, playing an instrument he doesn't know well with the brilliance of a maestro who naturally adapts to anything. It is only when the water temperature begins to creep over 90 that he decides to rest it for a while – to take in the moment. The GT40 crackles. A passing motorist stops to enquire. Giancarlo, polite and humble, fills them in. For once, it is the car they are interested in, not him.

Later, back at the Jordan factory, Giancarlo hands back the keys. Ralph Firman has heard about the car and wants to have a run, too. Giancarlo says goodbye and walks to the shop floor to see the guys and to thank them for the part they played in his first grand prix win.

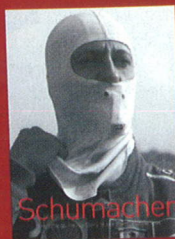
Outside, in a setting sun, its perfect day now over. It sits there, casting shadows – one of the few things in the world that could persuade a highly paid Italian F1 driver to leave home for anything other than work. 📍

(Above) For a car that is almost 40 years old, the GT40 is mighty quick – Fisichella is soon very much 'on it', conjuring real speed in very unfamiliar surroundings; excuse the cheesy pose (opposite), but they do look good together, don't they?



THE SECRET DIARY OF MICHAEL SCHUMACHER, AGE

303
304



In Japan, in 2000, Michael Schumacher brought Ferrari their first world drivers' championship for 21 years. In this exclusive extract from a new biography of the great man, he reveals via his own diary his emotions from that unforgettable weekend

Extract from *Michael Schumacher: driving force* by Sabine Kehm, published by Ebury Press, price £18.99 (see page 26 for special offer exclusive to F1 Racing readers)



(Main) Schumi gives Ferrari boss Jean Todt a champagne shower. They've got every reason to celebrate: Michael has just ended Ferrari's 21 years of pain by winning their first drivers' title since 1979. The partying is about to ruin lots of clothes

Late evening on October 8 2000 at the Suzuka race track in Japan: it is drizzling and pitch black outside. The newspapers are finalising their headlines on 'the moment of truth'. This afternoon, 2.30pm local time, Michael Schumacher crossed the finish line at Suzuka in his Ferrari. As the victor. And as the world champion. Michael has won the past three races and become the first driver for 21 years to win the championship for Scuderia Ferrari.

As the mechanics jumped for joy in front of the podium, hands on the shoulders of the man next to them, they were singing: "Chi non salta, è tutto nero" (the ones who aren't jumping are all in black), a reference to their rivals at McLaren-Mercedes, the deposed world champions. Up on the podium, the euphoric world champion was jumping up and down with them.

Now, here, in front of the Ferrari pits in the paddock, there is a buzz of happiness and excitement. The predominant colour is red. Wooden tables have been set up, partly hidden behind large red packing

boxes. The simple trestle tables hold the banquet for the Scuderia Ferrari team. Champagne, red wine, white wine, water, pizza, pasta, Lambrusco. Everything is improvised, nothing prepared beforehand – that would bring bad luck. More boxes are piled up in front of the entrance to each of the competing teams' garages – like a large, brightly coloured sight-screen of red, silver, blue, turquoise, yellow and green. They will later serve as seats but now they are covered with standing photographers, journalists, cameramen and fans. And the broad-shouldered Ivano and Salvatore.

Ivano and Salvatore grew up together in the same village and have worked for Ferrari for many years. Salvatore is a supremely gifted cook, but few know it. He has prepared the spaghetti aglio olio e peperoncino which Michael loves so much and eats every evening before a race. Ivano is joviality in person, and he talks rapturously about the love of his life whom he is about to marry and for whom he will give up his Formula 1 job at the end of the '00 season. Both look very serious and would be ideal casting as bodyguards in a movie about the Mafia. They have the alert look they always adopt on occasions

'MICHAEL HAS JUST BECOME THE FIRST DRIVER FOR 21 YEARS TO WIN THE CHAMPIONSHIP FOR SCUDERIA FERRARI'

like this. Hostile. *Attenzione!* The message is conveyed to the observers in their raised eyebrows: this far, and no further.

Meanwhile, in the paddock, the noise level is rising. The technical director, Ross Brawn, who normally looks as if he wouldn't hurt a fly, pours a bottle of champagne down the back of his star driver with a gleeful grin. Michael hollers and writhes in vain, with the bottle stuck down the neck of his dark-blue pullover. This is already the third pullover to get wringing wet. It belongs to Ralf, as do the jogging pants Michael is wearing. His own clothes have long since been discarded: too much champagne, beer and cola... mixed with cream, mustard and ketchup.

Michael runs up and jumps on Ross's back. He is big and strong enough to take it. Michael, with a blissful, distant look on



his face, clings on to him – almost taking his breath away. The photographers are frantically trying not to miss a trick. Euphoric silliness is rare in the technocratic world of F1. The shutters are clicking away, and Ivano and Salvatore pump up their shoulders to even more impressive proportions. Michael is really getting into the swing of things. Partying brings out the Rheinlander in him. He likes to drink, to sing, but also to get the others going. "It's hard to believe, but the Italians take time to warm up and let themselves go," he says, grinning round at the group. So those who can't escape in time get champagne poured all over them.

Ross takes off his glasses for the fourth time and painstakingly re-polishes them. Team boss Jean Todt's wet hair is plastered to his head. Michael's race engineer at the time, Luca Badoer, has no hair at all. It has been shaved off, the result of a bet about the world championship. He is pulling one of the aerodynamicists over to a chair which, in the course of the evening, will see several other members of the team leave with their heads shaven. Michael's wife Corinna has completely lost track of

just who has given her a kiss on the cheek. Michael, certainly, more than once, as he tirelessly cavorts amid all the excitement. But that was then. Soon after this, the most decisive race weekend of his career, Michael made the following diary entries.

THURSDAY OCTOBER 5 2000

"The question was always the same: 'Getting nervous?' I was constantly confronted with it from the moment I arrived in Japan. And the worst of it was... I wasn't at all on edge. Left to myself, I was well able to suppress any thoughts about the world championship. It was just that these questions repeatedly brought the thought back to the surface, and started making me nervous.

"We knew that this could be the decisive moment, and I remember the race very well – in fact, I remember the entire weekend which saw the fulfilment of the dream of the world championship with Ferrari. It was undeniably a special weekend; the

whole season had been geared towards it, although all the team were desperately behaving as if it were a weekend like any other. You have to do this. I believe there is no other way. After the race at Indianapolis, I had gone back to Mugello for two solid days of testing. It was quite strenuous, not least because of the time difference, but I was willing to do what was necessary. Because I was absolutely determined to be world champion.

"The testing had gone very well. We even set a new lap record for Mugello, and this gave me a feeling of security – for, naturally, I knew that the chances were good: an eight-point lead is nothing to sniff at. It would, however, have been the biggest mistake ever to have assumed that we had already won. It was clear from what had happened to Mika [Hakkinen, whose engine failed] at Indianapolis how quickly things can change in F1. It is never 100 per cent certain that you won't have to drop out. It could have been on the cards that I would leave Japan two points behind the winner. That's the way I have to approach such matters. It's simply the way I am: always start by being pessimistic.

>The man behind the machine

Life can be hilarious when Michael lets his hair down, as Dom Taylor finds out



Will the real Michael Schumacher please stand up? After Schumi raced – and won – at Imola this year, on the weekend of his mother's death, a German newspaper branded him a "heartless android". The paper was not the first to perceive Michael as being somehow less than human in his lack of emotional display.

But, according to Marco Corrent – a Ferrari man in Australia and personal assistant to Michael at every Australian Grand Prix from 1996 to '00 – there is a very real, very human Michael in there somewhere. It's just that he doesn't come out when Michael is working or being watched by the world. Usually.

Corrent, however, well remembers Malaysia '00, the last GP of the season. At that race, he finally saw Michael letting down his



(er... Ferrari-red) hair. Michael had won the drivers' championship in Japan two weeks earlier, but the constructors' title wasn't wrapped up until Ferrari finished first and third at Sepang.

Afterwards, everyone at Ferrari, including Michael, donned comedy red circus wigs in celebration. Michael turned up to the post-race press conference wearing his. What the world didn't see, however, was the end-of-season party that night. After a few shandies and a bizarre clothes-tearing ritual, Michael, brother Ralf, Rubens Barrichello and Mercedes boss Norbert Haug(!) – all in wigs – ended up on stage singing along with the band.

"I think it was *Play that funky music (white boy)*" Corrent says. "The whole thing was very surreal. By this point Rubens was

wearing nothing but his shredded trousers, with his underpants showing, and was smoking a very large cigar. It's something I'll never forget... although sometimes I wish I could! It was flippin' hilarious!"

So Schumi clearly does know how to have fun. It's just that his sheer professionalism at grand prix weekends means that, for the most part, all we, the fans, get to see is a very stern, very focused, very 'German' racing driver.

If he seems arrogant, distant, cold even, Corrent insists that it's a persona that Michael has adopted in order to avoid distraction and to get the job done.

"It sounds kind of strange, but at heart Michael is a family man. His dedication to work is totally matched by his utter commitment to his wife and kids. I used to drive Michael to and from the circuit. That was his 30 minutes alone, away from the hectic schedule, and he'd be constantly on the phone to them, talking baby language and laughing."

A soulless automaton? Not our Schumi. Just an ice-cool professional.

(Below) If there were any nerves, they were shrugged off as soon as Schumi got into the car: he reckons his drive was one of his best ever. Even serious Schumi (far left) acts daft sometimes (left)

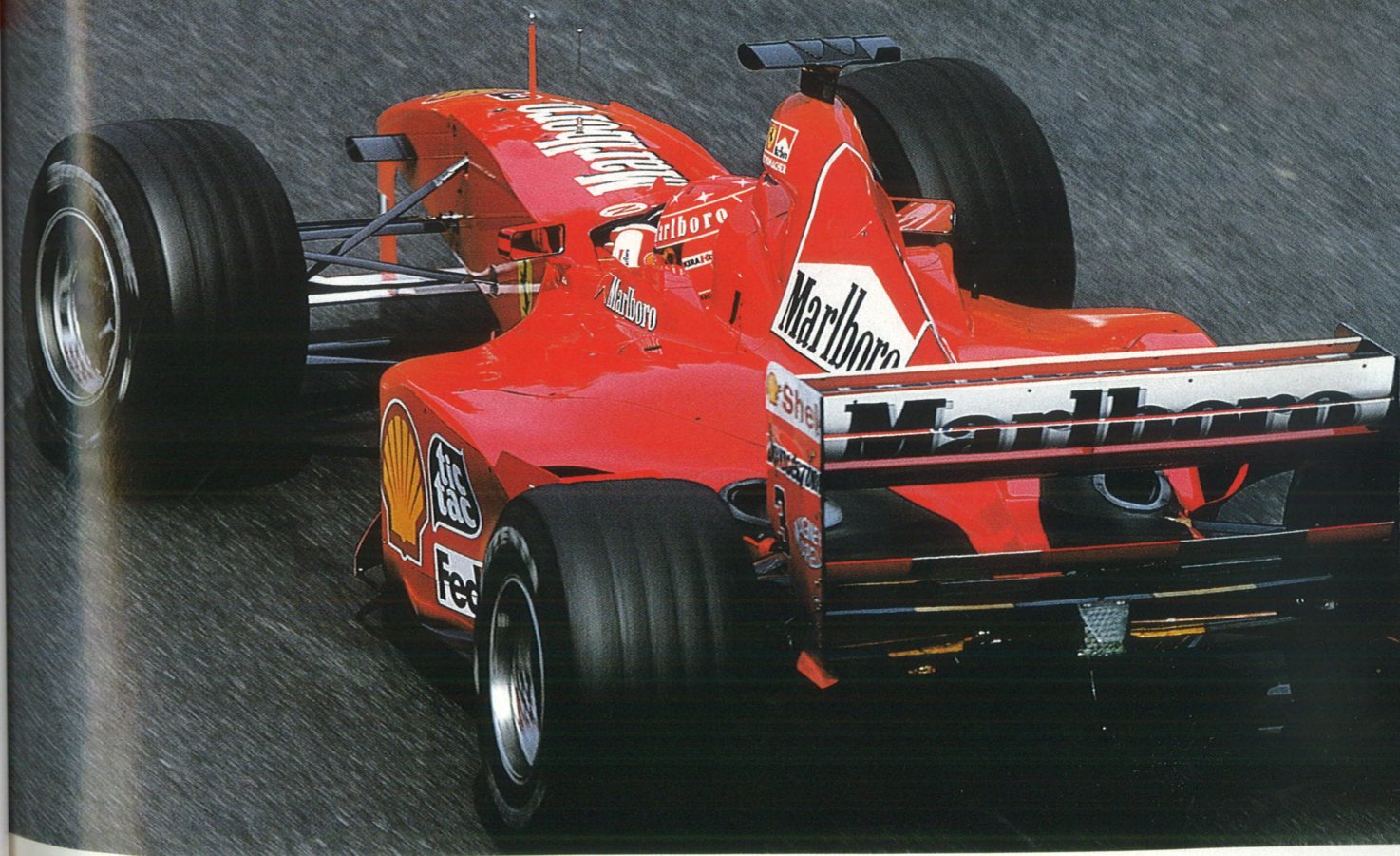
"Immediately after the Ferrari Race Days at Hockenheim, I had flown with Corinna to Asia to acclimatise as soon as possible to the change in time zone and the different weather conditions. We travelled to a hotel in Thailand, and then on Wednesday on to Suzuka. When we got there we had a good long lie-in. This weekend, of all weekends, I had to be fit."

FRIDAY OCTOBER 6 2000

"I slept so badly – one or two hours at most. Everyone would say that it's because of the championship, but I don't think so. It wasn't as if my head was so full of thoughts that I couldn't switch off. I think it was more to do with the time change. I have phases where I find it hard to come to terms with it. And then when a lot of things come together – such as the flight back from Indy, the testing and the Ferrari Days – it tends to throw you a little off balance and you sleep badly. But I knew I would somehow get back on course.

"That day everyone was talking about the earthquake, which was fine by me. At last there was another topic of conversation, and not the same question again and again: 'Are you nervous?' I didn't have much to ▶

'I SLEPT SO BADLY – TWO HOURS AT MOST. I THINK IT WAS TO DO WITH THE TIME CHANGE, NOT WORRY'



(Above) The strain shows in his face as the media ask Schumi – again – if he's nervous about the title. No, he says, he just hasn't had much sleep



'I DIDN'T FEEL THE EARTHQUAKE AT ALL IN THE CAR, BUT IT MUST HAVE BEEN VIOLENT IN THE PADDOCK'



MAIN: LAT. ARCHIVE; INSETS: DPPI

say about the earthquake because I didn't feel it at all in the car. Corinna was walking along the side of the track during the second practice session and said she didn't feel anything either, but it must have been pretty violent in the paddock.

"The car was in good fettle from the start. The data from the very promising test of the previous week seemed to be confirmed, although I was honestly not relying on us having six-tenths of a second's advantage over the McLarens. A lot of journalists were asking about the times, and in Mugello we'd been going much faster with the new tyres. Thankfully at Suzuka it was no different.

"Everything was going well. The team were incredibly concentrated and you could see they were working calmly. There was a fantastic tautness in the atmosphere which you could almost take hold of. It was a real pleasure to see everyone so focused. The briefings were lengthy because everyone was absolutely determined that there would be no mistakes on Saturday or Sunday.

"There was no point driving back to the hotel, so Corinna and I stayed at the track and ate supper with the team. It was already late enough."

SATURDAY OCTOBER 7 2000

"Another largely sleepless night. But the next day I didn't notice it because I was so focused. Achieving pole position was a first step, although it was extremely close: just nine-thousandths of a second separated me from Mika. But qualifying was really enjoyable because Mika and I were goading each other on. Later that afternoon, following all the press conferences, excited rumours were rife, particularly in the press, but they were also being discussed among the team. Ron Dennis had apparently complained that there was an Italian among the Suzuka race stewards. He seemed to be questioning his neutrality. Apparently, he had also suggested to certain journalists that we were using traction control – and this meant that a possible protest was in the offing. He also seemed to be annoyed by the FIA appeal to the drivers not involved in the battle for the world championship not to intervene. If it came to the worst, according

to the FIA, a driver could be punished. But neither Mika nor I were relying on the help of other drivers, especially our team-mates. It was quite clear that we would try from the beginning to take off and drive our own race from the front.

"But the rumours went through the paddock like wildfire. I didn't care; I just didn't want to be distracted and I noticed that everyone's concentration was already intensifying. Everyone knew exactly what was at stake. We wanted this title. I wanted to finally win this title.

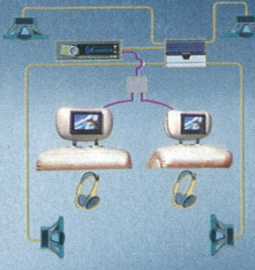
"Once again our briefings were so thorough and lengthy that Corinna and I stayed at the track and had supper with the mechanics and engineers. It was far too late to go anywhere else. And, in any case, I didn't want to. I wanted to be there, with the team. I tend to do this on the Saturday before the race.

"There was a further sleepless night to follow. Those three nights at Suzuka were the most disrupted of my life. Physically, I felt completely shattered – but, nevertheless, as soon as I was at the track and in the race, I felt no after-effects at all." ▶

(Main) While the paddock buzzes with speculation, Michael focuses on driving. His arch-foe Mika Hakkinen (right inset) is still in contention for the title, so it's flat out, no-holds-barred from lights to flag; (left inset) with wife Corinna, manager Willi Weber and press aide Sabine Kehm, author of the book from which this extract is taken



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SCHUMI'S DIARY

Michael crosses the line to win (left inset) – and years of pent-up emotion break free (main). The impromptu party (right inset) is now legendary



'IT'S ONE OF THE BEST RACES I'VE EVER DRIVEN, IF NOT THE BEST. TO WIN ONE LIKE THAT IS VERY SPECIAL'



SUNDAY OCTOBER 8 2000

"All my life, I'll never forget that radio signal from Ross Brawn. I was driving down the pitlane after my second stop, desperate to know if I would make it out ahead of Mika, and Ross said over the radio, 'It's looking good! It's looking good!' I was very tense, and expecting him to say, 'It was looking good,' but suddenly he said, 'It's looking bloody good!' Honestly, my heart leaped in the air! It was as if it had skipped a beat.

"I didn't expect that it would work out after the second pitstop. My two last laps before the stop were not very good. I'd been caught in traffic, and had had to overtake a Benetton which had spun off the track. I had lost time, and I never thought that I could be in the lead after leaving the pits. And then came Ross's radio message – unbelievable! I realised immediately that I had emerged in the lead, and that if I made no mistakes and there were no problems with the car, it was in our grasp – because overtaking is almost impossible at Suzuka. The race and the title. The good thing was that I had to concentrate the whole time, because it was drizzling a bit and various sections of the track were very dark where it had just been resurfaced. You couldn't see


clearly whether it was wet or not. That was the biggest problem, which is why I went extremely slowly for the last two laps, to ensure that nothing would go wrong.

"And then the moment when I crossed the line – crazy! Until then I hadn't dared feel any joy: I wanted to be absolutely sure and get that finish line behind me. What happened then is simply indescribable. Later, I was repeatedly asked what my predominant feelings were at that moment, and on no single occasion was I able to find the right words. I honestly believe it's something you cannot convey with words. I was so wonderfully happy. I didn't know what to do with this happiness. I suddenly felt trapped in the car, trapped in my Ferrari, as if I was about to burst. I banged so hard on the steering wheel they thought it was broken and, as a precaution, it had to be taken out of service. It was simply such a release! I'd finally done it, after so many years of disappointments. On the out-lap, when it was all over, I just kept driving. I was overcome with tears, and it was as if I were standing next to myself, looking in on the moment. Almost as if I were someone else.

"When I got out of the car in parc fermé, the whole team were waiting. It was just fantastic. Those faces! Shining eyes and everyone cheering – I could have thrown my arms around them all and kissed them. I did try to and, thank God, Corinna was there. And then up on the podium, at the

presentation. By then I could have embraced the whole world. When you look down and are greeted by nothing but laughter, cheering, and singing... as I said, I find it impossible to find the right words for moments like that.

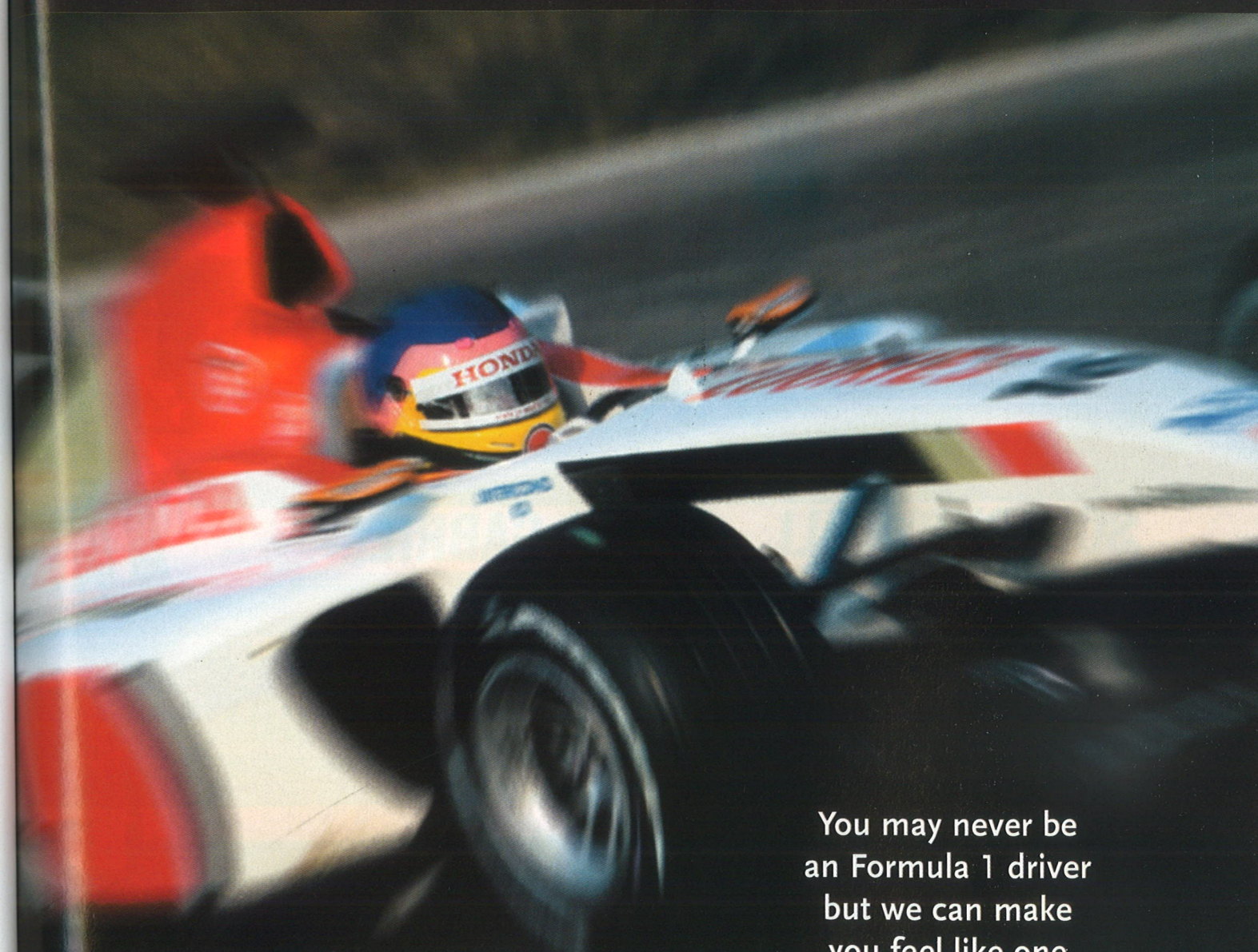
"Everyone parties in Suzuka with a vengeance, and this year was very special for Ferrari. But I repeatedly had to switch off in the middle of the party. I kept having flashes of images from the race, and I just wanted to stop and pause. When we moved on to a karaoke bar, I started out by leaving everyone else to do the singing and dancing. But no-one was outstripping my alcohol consumption. I was getting more than my share and, when we left at 5.00am, I was really glad that Corinna was with me. I've never suffered so badly after a party. From Japan we went on holiday to Thailand and I took two days to get over the after-effects.

"Looking back, I have to say that this race, quite understandably, was something very special for me. Not only because it brought me the title, but also because it was such a high-class race. The season was spectacular enough, but this race was extremely unusual. It really was racing at its top level. It was incredibly satisfying and wonderful fun. For over 40 laps Mika and I drove almost identical times, like a perpetual qualifying lap. It's certainly one of the best races I've ever driven, if not the best. Mika was fantastic and pushed me to the very limit. To win a race like that is very special." 

MAIN: DARRIN HEATH; RIGHT INSET: LAU JARUANG; LEFT INSET: DDPH



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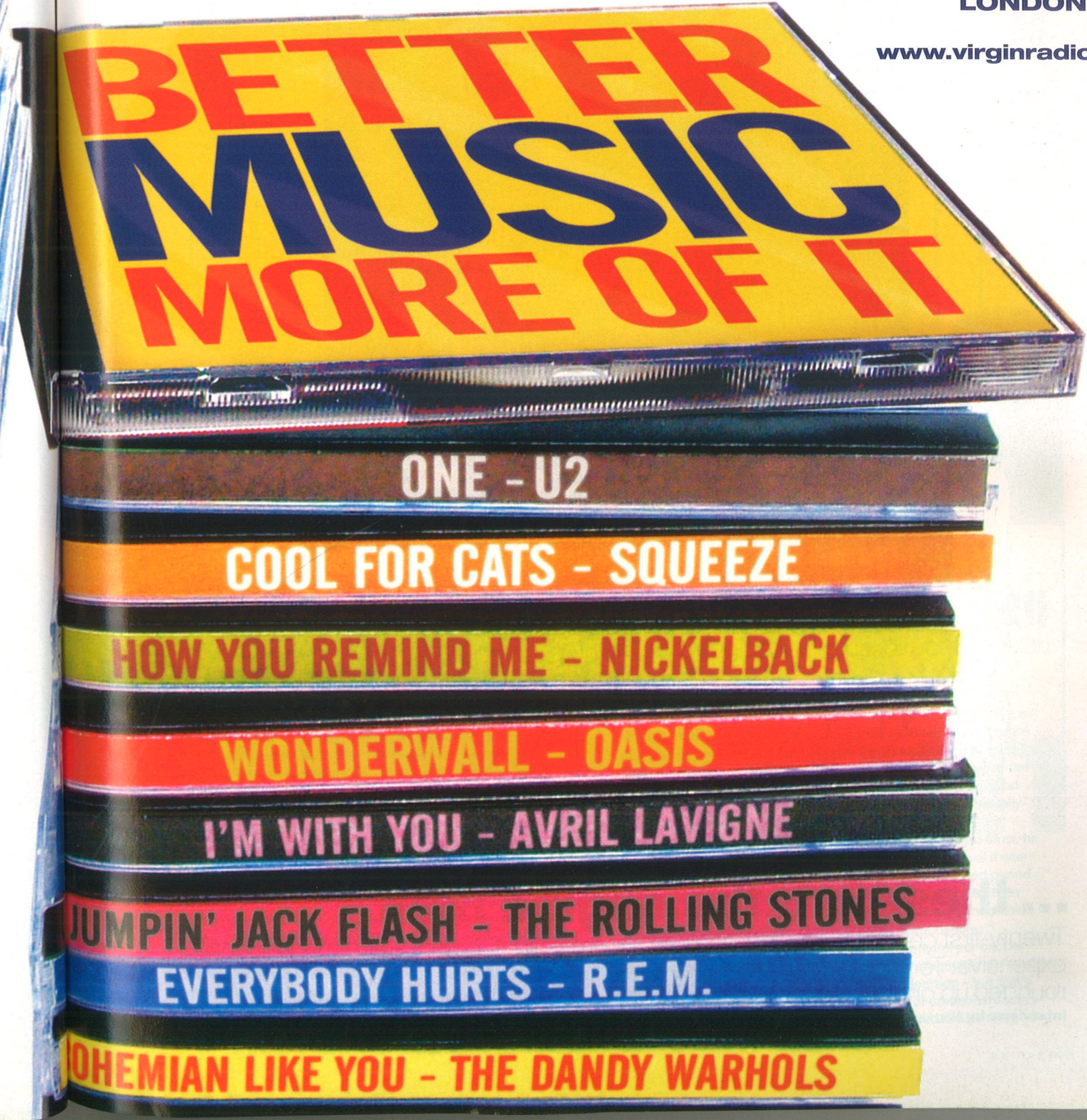


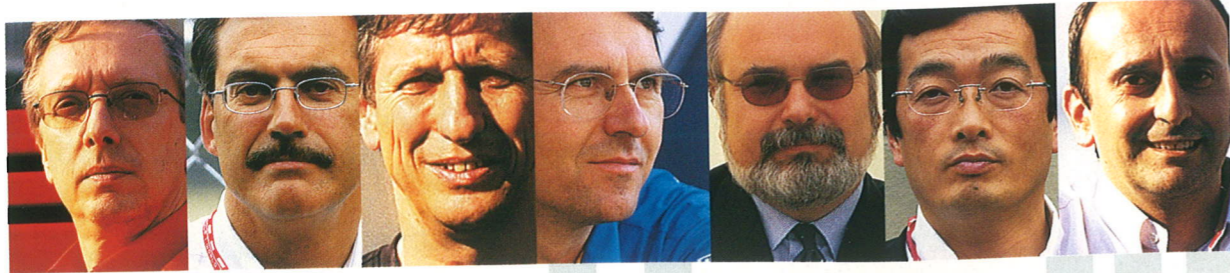
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... these are the engine men

Twenty-first century Formula 1 engines are small, light, potent – and magnificently expensive. To find out why, and what goes into the building of them, *F1 Racing* rounded up one key man from each of F1's magnificent seven manufacturers

Interviews by Alan Henry; photographs by Darren Heath



Paolo Martinelli
 Formula 1 engine technical director, Ferrari

FERRARI TYPE 052: 90-DEGREE V10 DEVELOPING 890BHP AT 18,700RPM

The architect of Ferrari's seminal 3.0-litre V10 engines, Paolo Martinelli is one of Maranello's most respected home-grown talents. He joined Maranello in 1978 and has spent all his working life with Ferrari.

"It was a good working opportunity for me – and a place with a nice attitude to work," he says, with self-effacing charm. "My first years were spent in the GT car area – from '89 to '95 I was responsible for GT car engines. I joined the Formula 1 engine department in January '95.

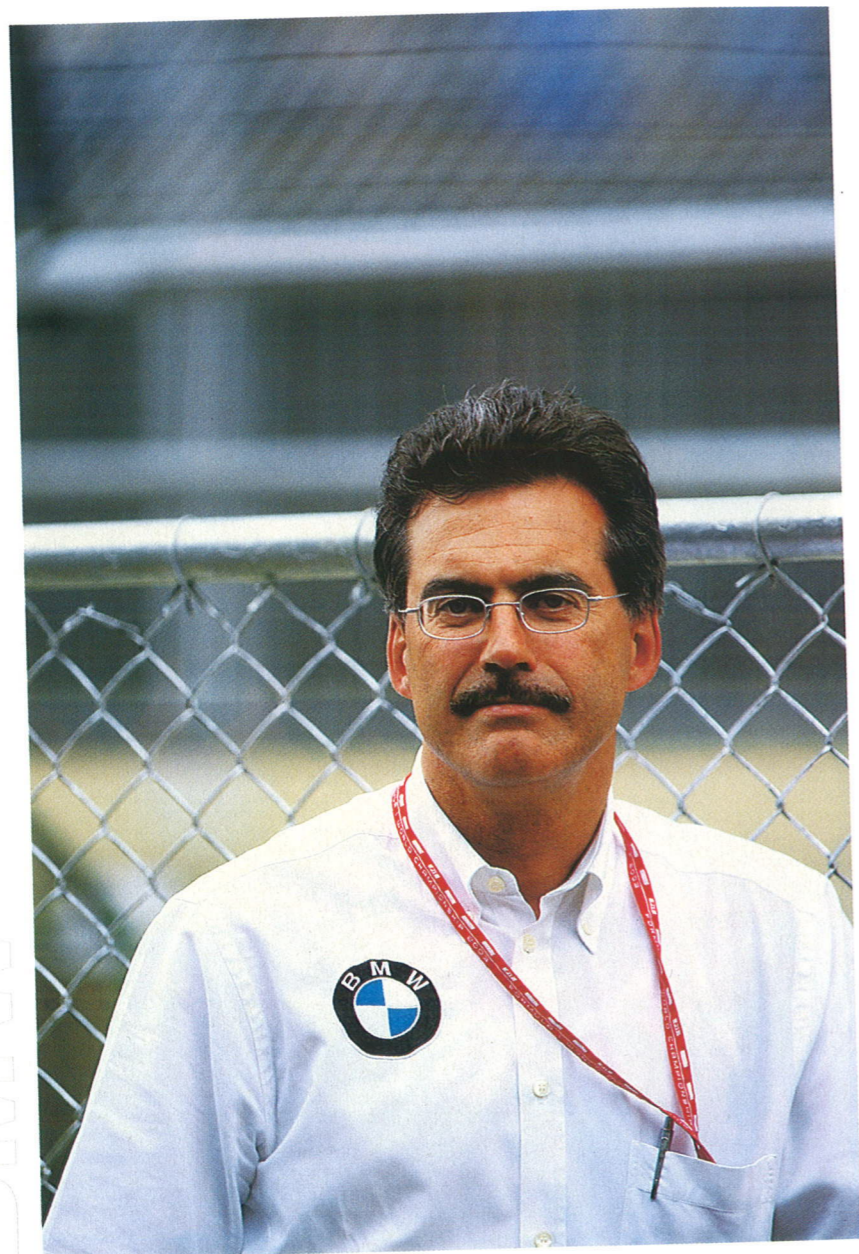
"In my first year in F1 I worked on the V12, trying to develop it, and after a while we started the development programme for the '96 engine – which, of course, was Ferrari's first ever F1 V10."

Martinelli does not feel that the current F1 engine regulations (which make a V10 cylinder configuration mandatory) are stifling of engineering creativity. "The number of cylinders is not a key issue, honestly," he says. "As a matter of fact, we decided to move from the V12 to the V10 just before the introduction of the V10-only regulation.

"But if you were to ask me what I'd consider to be the very best engine from a dynamometer point of view [ie in terms of ultimate top-end power], then I'd probably go for a V12. But the point is that, for F1, an engine has to be light and small, with a low centre of gravity and low fuel consumption – and *that's* why we moved to a V10. Overall, we think a V10 is the best solution, technically speaking, for an F1 engine today."

Moreover, despite protestations from unreconstructed tifosi, he insists that Ferrari's opting for a V10 was not the upheaval it was reported as being at the time. "No! Ferrari had had a good period with 3.5-litre V12s. The displacement of each cylinder was then 290cc, so when we moved to a 3.0-litre V10 we were almost there anyway – in terms of piston size, valve size, combustion..."

So what about the '04 requirement for one engine per car per weekend? For Martinelli, it will be just another pragmatic technical challenge: "There are strong reasons for this decision – but that's not only an engineer's viewpoint. The number of components and engines used per season will certainly be reduced. It'll be okay." ▶



Mario Theissen
Motorsport director, BMW

BMW TYPE P83: 90-DEGREE V10 DEVELOPING 900BHP AT 19,200RPM

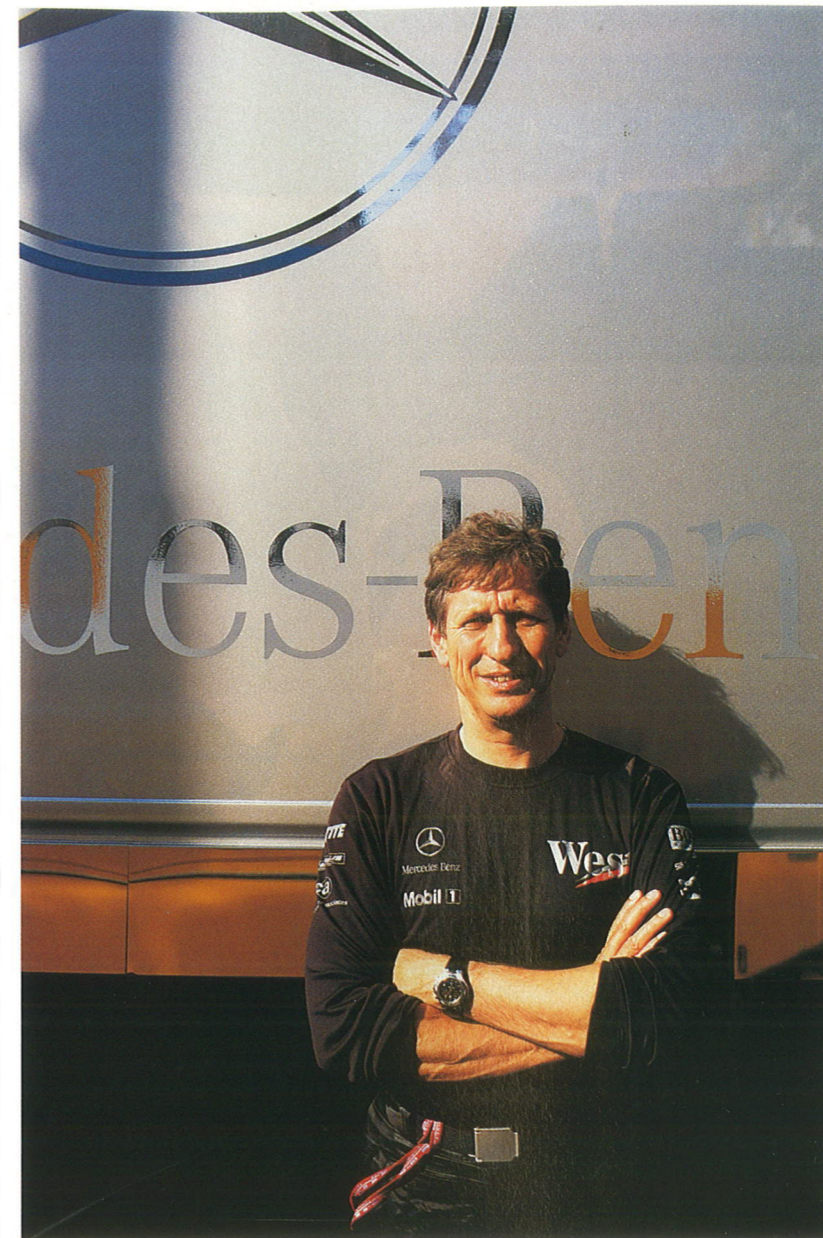
Mario Theissen speaks in crisp, precise terms about BMW's current brief in the F1 business, making it plain that he has total confidence in his company's V10 engine... but also stressing that their plans beyond the end of '04 have not yet been finalised. "We want to make our relationship with Williams work better," he says. "It's our preferred option to stay with Williams, but it's not our *only* option."

Theissen, a graduate of Aachen University, was in at the ground floor of the current BMW F1 operation – which has not simply been a matter of getting results but also one of consolidating a tangible link between race-car hi-tech and road-car innovation: "The board's request, when they decided on the project, was that it should not only be a marketing instrument, but that it should also create technology transfer from F1 to road cars. That had to be taken into account when we were setting everything up – and that was the main reason behind establishing our purpose-built facility in Munich, quite close to the BMW group's research and innovation centre. From the very first day we created strong links between the two. Why? For two reasons: to exploit what a 'big company'

set-up can contribute, and to feed back *fast* what the F1 business can develop in return. Honestly, it's *essential* that this programme is more than simply a marketing tool." One cannot help wondering whether his insistence on this last point is a subtle dig at Mercedes-Benz, whose engines are built in Northamptonshire (see opposite). "Oh it's *vital!* And for that reason we decided from the outset to do our F1 electronics in-house, because BMW have always been pioneers in automotive electronics and we wanted to prove our competence in this field. The people who did the M3 and M5 engine electronics were asked to do the F1 systems. Then we built our own in-house F1 foundry and F1 parts manufacturing plant. And these facilities are *not* run by BMW Motorsport, but by road-car departments. Ditto the engine block and cylinder head: they cast and machine them in-house. New technology is tested for F1 and then immediately taken over for the road cars."

BMW make F1's most powerful engine, of course. "Yes, I heard that," he grins... then adds, "But the big question is: can we put the team in a position where we're confident we'll win championships?"

MERCEDES-BENZ



Mario Illien
Managing director, Ilmor Engineering

MERCEDES-BENZ/ILMOR FO110M: 90-DEGREE V10 DEVELOPING 860BHP AT 18,200RPM

It's a standing joke with Mercedes motorsport director Norbert Haug that Mario Illien is the most secretive of engine specialists. An Ilmor press release, he once said, could be a blank sheet of paper with the footnote 'For no further information, please contact Mario Illien'.

Certainly, in the 20 years since he established Ilmor Engineering with a fellow Cosworth refugee, the late Paul Morgan, Illien has acquired a reputation of playing his cards *very* close to his chest. Ask about the forthcoming Mercedes engine for the hotly awaited McLaren MP4-18A – and a wolfish grin spreads across his face. "Well, it's a V10," he admits. In truth, this is rather like pulling teeth.

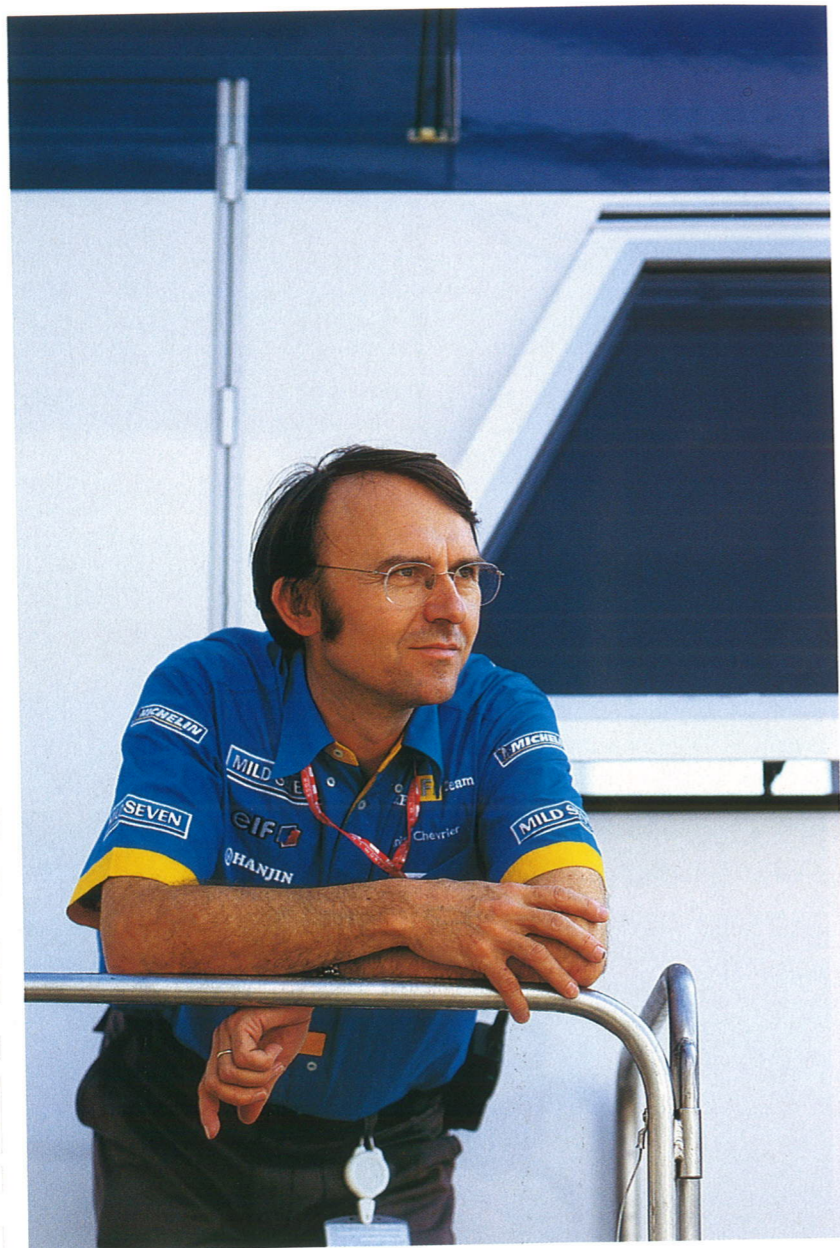
Yet the loss of Morgan in a plane accident two years ago left a gaping hole in Ilmor's operational infrastructure. It has been filled, to some degree, by the arrival of former BMW engineer Werner Larenz, an appointment initiated and endorsed by McLaren, who urgently appreciated that Illien needed additional support.

It is scarcely a secret that the new engine will follow the Ilmor design philosophy of 'smaller, lighter and more compact' – an approach they pioneered with their first F1 V10 in '89. "I think we

started that trend, and I think it'll continue in F1," says Mario. "But one of the aspects I think it's important to remember is the need to have exciting engines in F1 – nice-sounding engines, which are important when it comes to holding spectator interest."

Illien is generally happy with how F1 has developed under the V10 regulations. "The overall reliability of the engine manufacturers is very good," he says. "That shows we have a good level of stability and that everyone can make positive development progress."

Still, the purist engineer within wants more technical challenges. In the longer term, he admits, he believes it would be good to have a change of rules. Would he perhaps favour a fuel-flow formula, as frequently advocated by Cosworth founder Keith Duckworth? "No, I don't like the fuel-flow suggestion," he replies. "What I'd like to see is some system whereby we could have energy recovery systems so we could demonstrate to the outside world that we can go fast using less fuel by regenerating some of the energy we're wasting. Currently this is not allowed, but I think to have such an approach in the future would be excellent." ▶



Denis Chevrier
Engine operations manager, Renault F1

RENAULT RS23: 111-DEGREE V10 DEVELOPING 810BHP AT 18,100RPM

Denis Chevrier's F1 career started when he was an engineer on the customer 1.5-litre Renault turbos used by the now-defunct Tyrrell team in '85 and '86. He subsequently became a race engineer on the championship-winning, naturally aspirated V10s which Renault deployed to such brilliant effect during the '90s – and he now acts as the main 'link man' between the operation of the Renault team's engines at the circuit and their development base at Viry-Châtillon.

"Every single engine which has been used is returned to France – where it's dismantled, inspected and rebuilt. Some components are retained, some thrown away," he says. "The replacement engines are then delivered to our UK base at Enstone, where they're installed in the chassis before the transporters leave for the individual races."

"My work deals with defining the specifications of the engines used race-by-race, helping with reliability issues, organising the supply of engines, specifying the number of engines required and making arrangements for delivering engines to Enstone."

Chevrier tacitly acknowledges that Renault's latest wide-angle V10 may not be the most powerful engine currently in F1, but he will

not confirm what we know to be true: that Renault have already decided to build a more conventional 90-degree unit for '04. What he does say is that the Renault R23 showcases the benefit of a properly integrated F1 design – or a "global car", as he terms it.

"In this business you just can't supply the best engine, the best tyres and the best suspension if you don't make everything work properly together," he says. "It's always the target to make a car which can have outstanding performance, but sometimes this can be within a very narrow band."

"But when you have a properly integrated design, even a small improvement in any aspect of the car will improve the car's overall performance. If it's not a properly integrated design, a slight improvement in one area can upset the car's overall balance."

He admits that he is continually amazed by just how much progress has been made in tightly packaging the engine and its key ancillary components. "The overall engine package continues to get smaller, more efficient, lighter and so on," he says. "It's this purist engineering quality which has evolved the most."

COSWORTH



Nick Hayes
Managing director of engineering, Cosworth Racing

COSWORTH CR-5: 90-DEGREE V10 DEVELOPING 860BHP AT 18,200RPM (WORKS TEAM: JAGUAR)

COSWORTH CR-4: 72-DEGREE V10 DEVELOPING 810BHP AT 17,800RPM (CUSTOMER TEAMS: JORDAN AND MINARDI)

Nick Hayes nurtured an early enthusiasm for motor racing from the time he was a schoolboy, and first became involved in the sport by cleaning wheels on club racer Mick Hill's Formula 5000 March 74A and the Capri saloon driven by the versatile Martin Birrane – the man who today owns the famous Lola company.

"I went to Salford University in '78 with sponsorship from Rolls-Royce and the promise of a job in Derby once I graduated," Hayes says. "I started working there in '82, and two years later had a phone call from [Cosworth boss] Keith Duckworth asking me if I wanted to come and work at Cosworth." Nick did not need to be asked twice.

He admits that he had originally been keen on pursuing a career as a chassis engineer and had only intended to stay at Cosworth for a couple of years. But Hayes was hooked on the challenge of mastering the technology of state-of-the-art racing power units.

In '97 he took overall control of the works F1 project and led development of the Zetec-R V10 used by Stewart Grand Prix in their debut year. In '01 Nick took control of all technical

development at Cosworth Racing when he became managing director of engineering. This involves balancing the development priorities of the front-line CR-5 engine for the works Jaguar team with the requirements of their customer teams, Jordan and Minardi.

Nick appreciates that the potential of Cosworth's V10 engine has always been a matter of speculation. "I agree that it's very hard to establish precisely where we are in F1's pecking order," he says. "We only have a few clues to work on. Someone who really knows what the other engines are developing might tell you, but even then the edges are blurred because you have to take into account variations in temperature and barometric pressure. It's also possible to get a reasonable view from the mid-range acceleration of your rivals."

"Certainly, I'm not happy with where we are at the moment; we're pushing all the time for more horsepower. I don't think we're the best, but we're not too far from the best. And in terms of the centre of gravity, weight distribution and general packaging, I think it's hard to see how anybody else could do any better." ►



Takeo Kiuchi
Formula 1 project leader, Honda R&D

HONDA RA003E: 90-DEGREE V10 DEVELOPING 840BHP AT 18,100RPM

Takeo Kiuchi labours under the grand title of 'head of worldwide automobile racing and Formula 1 project leader, Honda R&D'. As such, from a Honda-in-F1 point of view, he is *the* main man.

Kiuchi-san's involvement in F1 goes back to '87, when he worked with Ayrton Senna on the Lotus-Honda 99T. "We taught each other a lot," he says. "Ayrton taught me what performance characteristics were ideal for a driver; I helped him get the best out of those traits. First with the turbo engine in '87-88, then with the V10 in '89, when we were increasingly relying on computers to control the engine."

"Honda's commitment to F1 involves two distinct philosophies," Kiuchi says. "One is to create the highest-performance engine/chassis package in every category in which we compete. The other is to educate our young engineers – and the reaction time required by the F1 business is very important for their development."

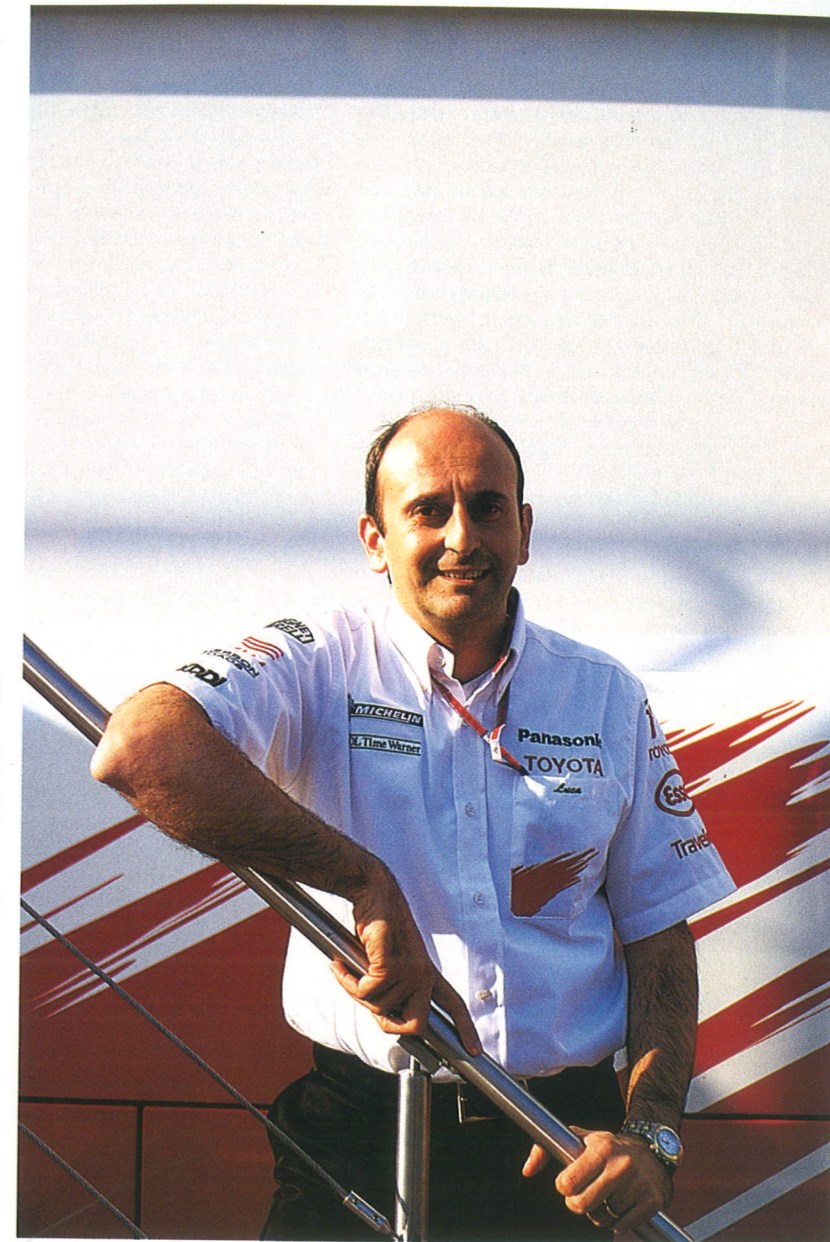
Although Honda have had a disappointing time over the past couple of years, Kiuchi radiates a quiet confidence that they can get to grips with a competitive challenge while integrating ever more strongly with B.A.R. "Of course, the regulations inevitably

restrict performance to some degree, but they still leave us scope for experimenting with strong and lightweight materials. It's fair to say that what we regard as our second-generation involvement in F1 has been particularly interesting and challenging from the technical side – and we feel that the regulations are not too bad, not too restrictive. We've made progress with several important areas such as improved combustion and reduced friction – but there's further still to go, more scope for development."

Like his colleagues, he stresses the need for integrated engine/chassis packages. "Balancing good handling with any reduction of engine power can be *very* significant," he says. "If we can improve fuel consumption by three per cent for the race, we can reduce our fuel load by 5kg for Saturday. It's something to consider now."

So can Honda rekindle the dominant F1 form which took them to six world championships from '86 to '91?

"It's a very tough job, F1, compared with 10 years ago," Kiuchi says. "Many manufacturers have since come into the sport, so it's very difficult. But not impossible, I think. It's a good target to aim at."



Luca Marmorini
General manager, Toyota Formula 1 engine department

TOYOTA RVX-03: 90-DEGREE V10 DEVELOPING 855BHP AT 18,400RPM

Schooled and seasoned as a member of the Ferrari F1 team, Luca Marmorini joined Toyota in '99 and was therefore in at the start of both the original, abortive, V12 engine programme and the ensuing V10 development which has been used from the start of '03.

"The first important activity I had on the engine side was as project leader of the last Ferrari V12 in '95, after which I was moved onto the subsequent V10 project," he says. "I was in charge of the type 047 80-degree family, and in '99 I worked on the next evolution. But then I left Ferrari for Toyota in September '99."


"It has definitely been a very challenging activity – and, looking back, I'm so proud of what I've seen growing in this company. Contributing to getting this team established has been extremely challenging and interesting. Our target is to succeed, of course, but ours is a long-term plan. We've set ourselves a number of milestones – and, so far, all those milestones have been reached, not only in terms of engine performance, but also in terms of general team parameters. We're sure we'll succeed in the future."

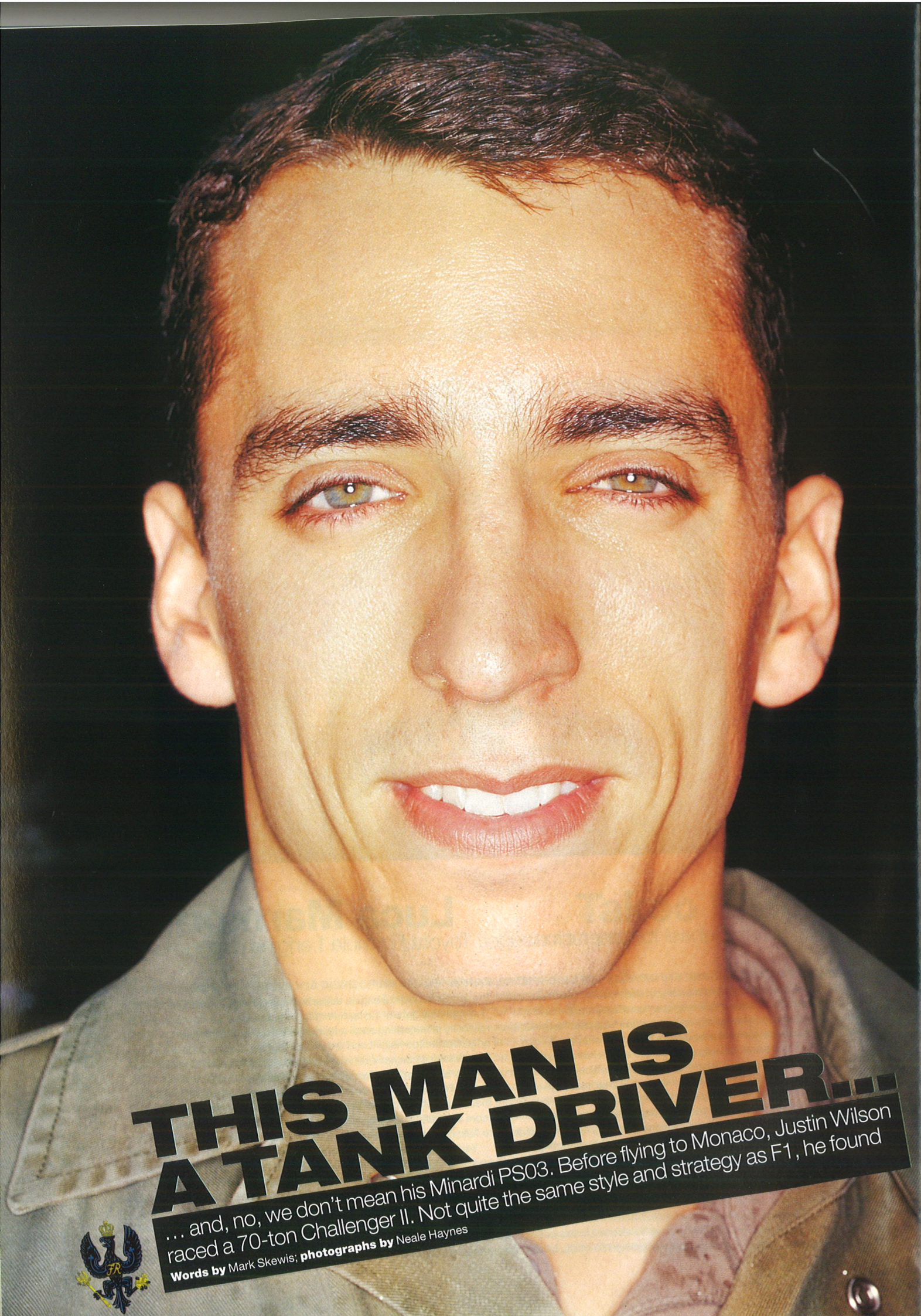
But, with the increasing complexity of current F1 V10s, surely

the scope for radical engine department projects is diminishing?

"I completely agree," he replies. "One must also consider that reliability is becoming such a fundamental issue that you can only take limited risks. Lead times are long, and if you make a big mistake it can have serious implications for the next season."

"For example, we're assessing materials and solutions. When I was at Ferrari, we used to experiment with new materials by putting them straight onto the engine – which was a risk. Today we need a more scientific approach. There's no limit to the ideas, but we have to follow a routine. There's not a lot of scope for improvisation."

Yet he relishes the challenge of the forthcoming rules – which, from the start of '04, will require one engine to last for an entire race weekend. But, he cautions, "in terms of cost reduction I don't think the rules will create any savings at all. Achieving reliability for 500 miles will be very expensive, and the number of engines we'll destroy by developing this reliability will be considerable. There may be fewer engines on the track, but there will still be about the same number overall." 



(Below) "Look at me, mum. I'm going to drive a tank!" (Below right) Justin is a little tall for the tank's turret. He quickly learns his way round, though, and is ready to don helmet and go for it (below far right)

Engine revs rising, eyes focused dead ahead, Justin Wilson sits calmly in his cockpit waiting for the start. There are no lights or launch control here.

No pitlane babes or pretentious kissing on each cheek even though we're not French. This is a race with a difference. He's in a tank.

I know what you're thinking, but this really is a tank. Not just any old tank, either. This is a Challenger II, one of the most sophisticated fighting machines on the face of the planet.

From the moment Justin arrives at the King's Royal Hussars (www.krh.org.uk), at Tidworth near Salisbury, he knows he's in for a hard time. Captain Jim Peachey takes one look at his 6'3" frame and bursts into laughter. "You're gonna struggle to get in there," he chuckles, gesturing to the narrow hatches of the Challenger's turret. "And this time nobody's gonna build a special one for you!" Not at over \$4 million a time, no.

The itinerary includes a tour of the tank, a familiarisation session at the controls and even a quick course of gunnery instruction. But why are there two of the beasts here? Captain Peachey's grin widens...

Minardi's starlet is well versed in hi-tech equipment, but even he draws breath at the level of sophistication that awaits him in the turret. "It's like a PlayStation," he marvels at the commander's firing controls. "Yeah, they call us 'the PlayStation generation' in the army," agrees tank commander 'Mac' MacLean, our guide for the day.

Beneath the humour lurks the reality that this tank is a formidable weapon. It has just proved itself in the Gulf, where its 'fire and forget' laser targeting was instrumental in the British army's success. When it comes to aggression, this machine makes a dust-up between Formula 1's constructors and the FIA look like a Girl Guides' tea party.

"Er, what if you're right behind the gun when it fires and recoils?" Justin asks from within the confines of the turret. "Simple," comes the reply. "You die." Jolly good, glad we cleared that up. Instinctively, Justin draws his gangling limbs a fraction closer to his body. If his shareholders could only see their investment now, perched precariously above the gun, they'd be reaching for the telephone. Sell, sell, sell!

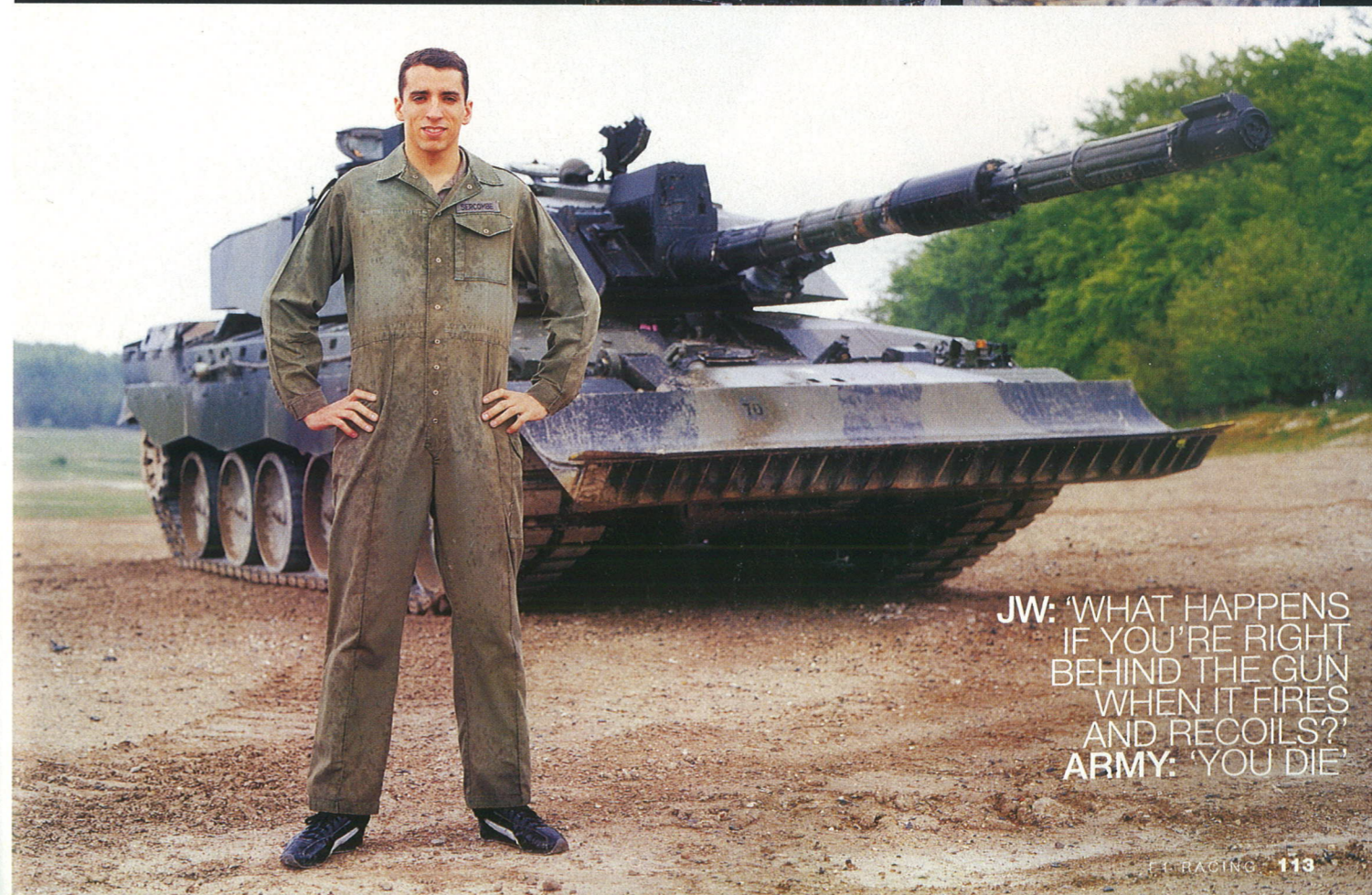
The driver's cockpit, his next port of call, is immediately beneath the gun's barrel. Like an F1 car, the tank has two pedals – throttle and brake – and features a pre-programmed six-speed automatic gearbox. There's no steering wheel, though – just two levers with which the driver can apply a brake to the tracks in order to effect a turn. "I expected there to be a lot more to it," Justin confesses. This from a man whose getaway from the F1 grid relies on his merely punching a button!

His test run goes remarkably smoothly... until a corner approaches. Temporarily fazed by the levers, Justin loses the momentum required to bully the machine into a turn. Not for the first time in his career, he runs wide onto the grass. From his vantage point in the turret, Mac exudes confidence. "Had any good accidents in F1, Justin?" he asks over the intercom. Amid the static, you can almost hear the driver's brain whirring. After all, what exactly constitutes a good accident?

"It's an almost unreal feeling to be in control of a machine that won't stop for anything," Justin says. "A little like the first time you get to the end of the pitlane in ►

> Head to head: F1 car v tank

	Minardi	Challenger II tank
Weight	605kg	70 tons
Engine	V10 Cosworth	Twin-turbo V12 Perkins
Power	810bhp	1,200bhp
Gearbox	6-speed auto	Pre-select 6-speed auto
Max speed	200mph+	35mph
0-100mph	2.8 seconds	Only in dreams
Miles per gallon	1.8	1
Approx cost	\$1.1 million	\$4.1 million



THIS MAN IS A TANK DRIVER...

... and, no, we don't mean his Minardi PS03. Before flying to Monaco, Justin Wilson raced a 70-ton Challenger II. Not quite the same style and strategy as F1, he found

Words by Mark Skewis; photographs by Neale Haynes



JW: 'WHAT HAPPENS IF YOU'RE RIGHT BEHIND THE GUN WHEN IT FIRES AND RECOILS?'
ARMY: 'YOU DIE'

JUSTIN GETS TANKED UP



(Left, from left) It races slower than Justin is used to; copes better with the dirty bits, as well... At least Justin - not being in the army - won't have to clean his own boots; (below) we won! Mega

an F1 car. You're in control but it feels like nothing else you've ever driven. It takes a while for it to sink in."

As will the day's next event: a full-blown race against another Challenger II. Just to ratchet up the pressure, Mac reveals that he has a tenner riding on it. With rain drumming on their armour, the tanks lumber into position. There are no pitcrews, no lights. And no sportsmanship. While Justin debates whether to jump the start, his rival beats him to it.

The dirty tricks are just beginning. Already unsure of the width of his own vehicle, Justin is dismayed to find Dick Dastardly suddenly weaving towards him on an uphill haul. "Bloody hell," says Mac. "Is that bloody hell left or bloody hell right?" asks his driver.

The other tank stretches its advantage as we negotiate a clump of trees. Mac curses again. Time for a cunning plan. "Don't worry," he reassures Justin. "We're gonna cheat."

As the track bears left, we spear right. By the time Dastardly has negotiated the extra loop, Minardi's finest has transformed a 50-

metre deficit into a 100-metre advantage. But not for long. Lacking rear mirrors, he is oblivious to the threat as his rival steams up the inside into a left-hander. A groan over the intercom. Dastardly is ahead.

We're in the closing stages now, and there's only one option left: cheat even more blatantly. Mac exploits a grey area in the pre-race rules discussion to navigate Justin up the smaller of two hills. Dastardly is defeated. Wilson crosses the line for his first victory of the season. Mac's tenner is safe and F1's honour is upheld. Sort of.

Ever sporting, Dastardly's crew splash to a halt alongside and offer helpful advice. They're suggesting sex and travel, it seems. With acceleration from zero to 60 in about two weeks, the Challenger II isn't really the perfect racing machine. But it is just about

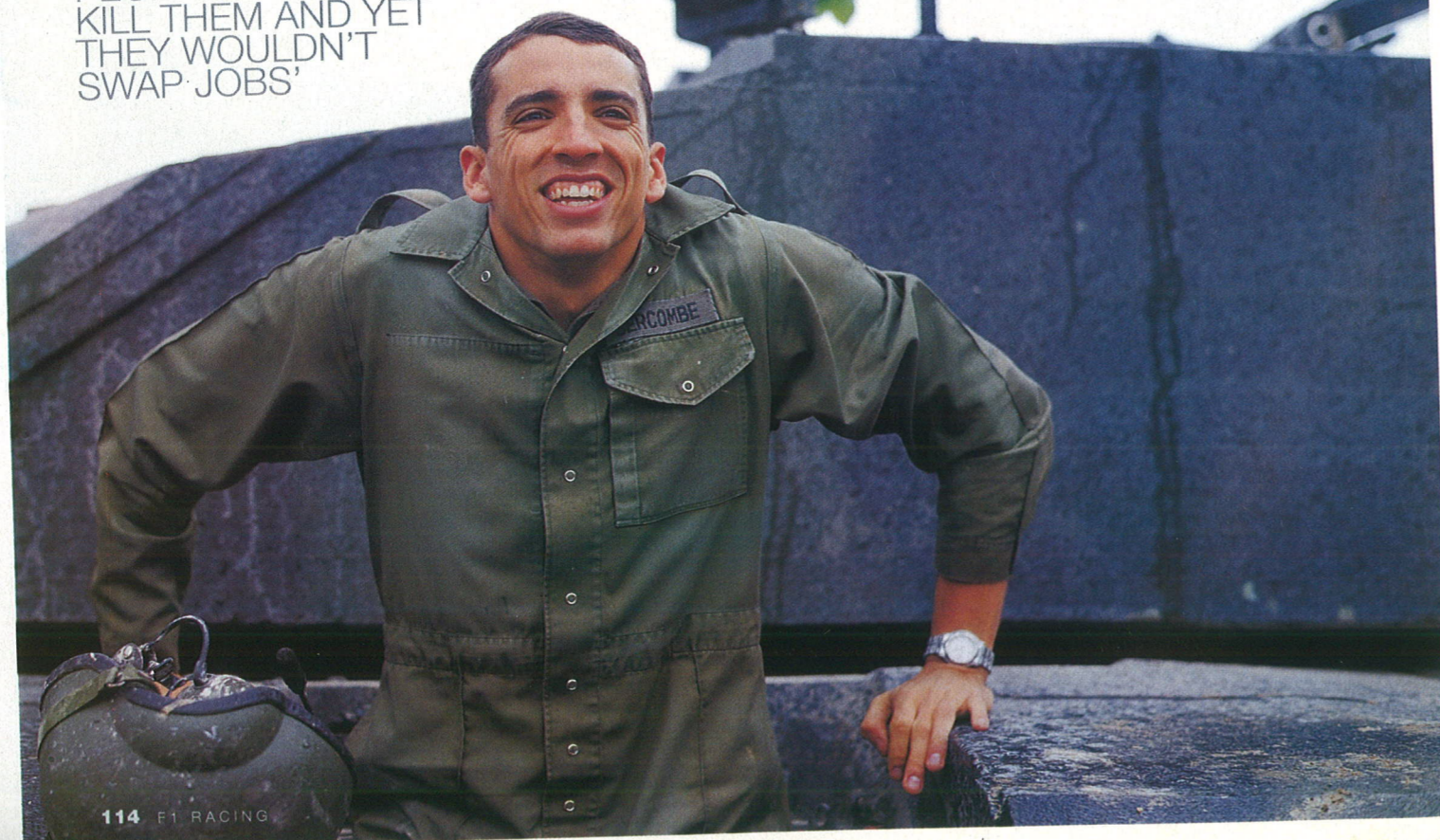
the ultimate tank, as gunnery instructor Steve Brannick explains. "It's such a massive leap in technology over its predecessors that a straight fight between the two would be like sending a Type 22 frigate into action at the battle of Trafalgar." It can unleash shells that travel at one mile every second (3,600mph). It's a sobering thought.

After a 70-ton tank, the Minardi must have seemed positively nimble as it scabbled around Monte Carlo. "I'd like to visit Monaco," ponders class two warrant officer Mark Kvesic as we say goodbye, "but 200mph in one of those things? Rather you than me."

"Weird, isn't it?" says Justin as he walks back to his car. "They've got people trying to kill them and yet they wouldn't swap jobs."

Justin has the comfort of knowing that the only thing fired in F1 is the drivers... 1

'WEIRD, ISN'T IT? THEY'VE GOT PEOPLE TRYING TO KILL THEM AND YET THEY WOULDN'T SWAP JOBS'



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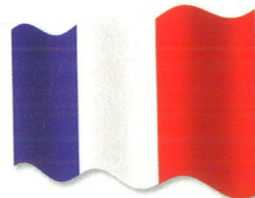
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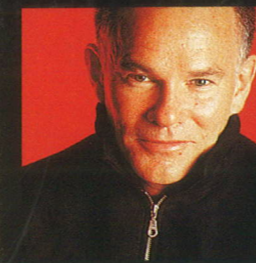


Race report

Kimi ekes out his championship lead – but Juan Pablo shows he means business. By Peter Windsor

Contents: Austrian GP report: page 118 • Monaco GP report: page 128

Canadian GP preview: page 140 • European GP preview: page 142 • French GP preview: page 144



> Pressure is on as championship heats up

So Juan Pablo is back. He was leading the Austrian Grand Prix before his engine blew and he won at Monte Carlo. Smooth, calm and very, very fast. And, when things went wrong in Austria, as they were always going to after those delayed starts had shown up a flaw in the Williams' cooling system, he didn't lose his head. "These things happen, guys," he said – or, at least, that was the gist of what he said. "We were leading, we had a good car. Let's move on."

The Williams-BMW FW25 indeed looked good at Monaco. It probably wasn't as quick as the McLaren-Mercedes (Kimi Raikkonen set fastest lap, on a free road, by the margin of 0.4 seconds) but it was efficient enough to out-accelerate Kimi into the first corner and thereafter to win the race – despite another cooling system scare. "And we did it all without a twin-keel layout!" said Patrick Head facetiously

after the race, quietening those of us at *F1 Racing* (ie me) who have seen McLaren's pursuit of this design as something of an aerodynamic step forwards. Patrick has a point, of course – although there is still no telling how good the Williams (or the Ferrari or the Renault, for that matter) would be if they had adopted the Sauber/McLaren system. Michael Schumacher won in Austria, scoring his third win in a row and his second in the F2003-GA, but at Monaco it all quickly changed, reminding us not only of how important tyres are in the overall scheme of things (this was not the greatest of races for Bridgestone) but also how easy – or difficult – it is for the tyre companies always to get the variables right. We take tyres for granted for the most part – until something goes wrong.

Assuming Williams-BMW continue their resurgence, this could yet be a great world championship. McLaren-Mercedes lead both the drivers' and constructors' points tables going into Canada but they have yet to make their (quantum) leap into their new, 2003, MP4-18. As at Monaco, the pressure is mounting...

#6: Against all odds...

The start went wrong. A Ferrari burst into flames. JPM was winning. Yet Schumi took 10 points. Peter Windsor explains



This wasn't another of Michael's standard afternoon drives because delays, safety cars, fire, rain, oil and a cool Colombian named Juan Pablo Montoya combined to make him work hard for his points. In the end, of course, he won it easily, condensing a 10-second lead into 3.3s as the chequered flag approached, proving again that the new Ferrari, like its

predecessor, is not only devastatingly quick but also rock-solid reliable. For a while, though, for a while out there... Juan Pablo spoke on Friday evening of "reconnecting" with his FW25, which I guess is JPM-speak for starting to feel some grip again. I asked him how the car felt. "Pretty good, actually," he said, almost pleased. "Just a bit of understeer."

He was sixth-fastest that afternoon, slower than cars like the B.A.R.-Hondas and the Jaguars and therefore not brilliantly placed for a shot at the pole on Saturday; and he had been only 10th-fastest on Friday morning, when David Coulthard was quickest in the McLaren-Mercedes from Jarno Trulli's Renault. He said, though, that he wasn't worried. Genuinely not worried.

(Above) If Schumi can win this, well, he can probably win anything. A bit depressing for his rivals, sure, but this was unquestionably one of Michael's greatest recoveries

> Drivers' championship: Round 6 Austria

1 Kimi Raikkonen	40	11 Heinz-Harald Frentzen	7
2 Michael Schumacher	38	12 Mark Webber	4
3 Rubens Barrichello	26	13 Jacques Villeneuve	3
4 Fernando Alonso	25	14 Cristiano da Matta	3
5 David Coulthard	23	15 Nick Heidfeld	1
6 Ralf Schumacher	20	16 Ralph Firman	1
7 Juan Pablo Montoya	15		
8 Giancarlo Fisichella	10		
9 Jarno Trulli	10		
10 Jenson Button	8		

> Constructors' championship

1 Ferrari	64
2 McLaren-Mercedes	63
3 Renault	35
4 BMW-Williams	35
5 Jordan-Ford	11
6 B.A.R.-Honda	11
7 Sauber-Petronas	8
8 Jaguar-Cosworth	4
9 Toyota	3



(Above) For once, we mean it literally when we say the Ferrari was on fire; (right) at the third attempt, the pack get away cleanly to begin the 2003 Austrian Grand Prix



DARREN HEATH; SCHLEGELMILCH PHOTOGRAPHY; CLIVE ROSE/GETTY IMAGES

"So what's the pole mean these days?" he added, in a deliberate reference to times now gone, when poles actually meant something. "Other teams may spend more time running light; we've done a lot of homework and I'm pretty confident we've got a good set-up for the race." These words are used so often that they have become a cliché in Formula 1 press releases; in JPM's case, however, they seemed to carry some weight.

Out on the circuit on Saturday morning, through the penultimate corner of the lap, on a fast, downhill right-hander, Montoya indeed looked silky-smooth – a man again with Michels he could lean upon. Revving the thing like crazy mid-corner (the FW25 has a six-speed gearbox as part of the 'move the weight forwards' programme), perhaps only Michael's Ferrari, with its much earlier turn-in, looked quicker. Juan Pablo was second-fastest in that untimed

session, splitting the two Ferraris. Ralf, emphasising the promise, was only a tenth away in fourth place.

Already, though, Ralf's weekend was in trouble. He had spun to the back of the qualifying order on Friday afternoon (when Ralf, completely disagreeing with his team-mate, had complained of oversteer) and had thus effectively dialled himself out of contention in qualifying. Nothing does more for your confidence, of course, than seeing your team-mate in trouble, and so Juan Pablo's weekend gathered further momentum...

His qualifying running slot – sixth from last – turned out to be about as good as you could get. Learning from guys like DC and Fernando Alonso, both of whom found it difficult to stay on the black stuff, Juan Pablo took it easy through Turn One's wide, new Tarmac exit and stitched it together nicely through the remainder of the mountainside ▶

TECHNO FILE

Running repairs keep Kimi on road

Steve Matchett explains how a few tweaks put McLaren on the podium



Before the aborted first start, I was surprised to see the McLaren mechanics topping up the pneumatic valve system

aboard Kimi Raikkonen's MP4-17D. Mechanics are always fussing on the grid, but recharging the air supply is not routine. In the pitstops, perhaps, but doing so before the race is an indication of potential problems.

They did it before the second start, too. Something was surely amiss.

It appears the car had exhaust valve problems during Saturday qualifying. Rather than change the engine on Sunday – and suffer the penalty of starting at the back – the team elected to repair the original.

For many years past, the idea of repairing an engine in the pits has been dismissed. Teams have merely renewed any stricken engine and carried out repairs back at base. But the new rules have forced a rethink.

The repair may explain Raikkonen's inability to pull out a sufficient lead, when Michael Schumacher pitted a second time, to remain ahead of the Ferrari come McLaren's own stop.

Raikkonen needed to exploit every last drop of horsepower during this seven-lap window, but perhaps his team had lowered the engine's revs to encourage its reliability; certainly the lap times suggested so. Under the circumstances, second place was a laudable result for all concerned.

Nurturing the engine was the key to Kimi's second place





'MICHAEL, WITH THE RACE IN THE BAG, LAPPED A WHOLE 0.6S FASTER THAN THE FIELD. IT WAS THAT CONCLUSIVE'

lap. The BMW's power certainly helped on the straight bits – as much as 70 per cent of the Austrian lap is covered at full engine load – but the corners weren't a disaster. He was P2, 0.241 seconds behind Raikkonen's McLaren-Mercedes. Jenson Button was out next in the B.A.R.-Honda. He, too, was ragged, resulting in a 1m9.935s. Then it was Jacques Villeneuve, in the other B.A.R.-Honda (which is now proving to be extremely quick, particularly in terms of acceleration; the Honda has landed!). Jacques jumped from kerb to kerb, from edge to edge, as he does – and sprayed the circuit liberally with dirt. Mark Webber, next out in the Jaguar, found his tyres coated with crud as he braked for Turn One; he qualified 17th as a result.

Which left only the two Ferraris. Rubens Barrichello was also wild on the sandy track, resulting in a mediocre 1m9.784s – P5. Now it was down only to Michael.

He was smooth and clean through Turn One but locked up the back end alarmingly as he braked from high speed for the tight Turn Two. He caught it beautifully – as he had an exit-oversteer moment out of the last corner on Friday – and magically found himself perfectly poised for the apex. Head down, he set out to make up for lost time.

He did so, stealing the pole by 0.039 seconds. Fastest in the last two sectors, fastest – unbelievably, given his pre-apex drama – on the back straight. Over the last two-thirds of the lap he had made up a deficit of nearly 0.3 seconds.

It was, he said later, maybe one of his best-ever poles.

The start was the usual shambles, as *Motor Sport's* Jenks used to say. Twice it was aborted (thanks to the unresponsive launch strategy of Cristiano da Matta's Toyota) and then, after only a couple of laps, the safety car was deployed (to remove Jos Verstappen's Minardi-Cosworth from the approach to Turn One). Behind Michael in the queue, and running second because of his speed away from the line, Juan Pablo was concerned about the temperature of his Michelins. He pulled up alongside the Ferrari, waving his hands and squirting his right foot, spinning the rears. Michael, calm and unmoved, just kept his pace, kept his pace. This is the Michael, remember, who no longer becomes ruffled.

And it was a good call, because what neither Michael nor anyone else apart from the BMW-Williams team could know was that Juan Pablo's race was already pre-determined. The two restarts had sent

his water temperatures soaring and a small malfunction in a (Williams!) part of the cooling system was beginning to fail under pressure. They could see it in the garage, clear as day. Should they tell Juan Pablo? They had to. Just race. Show your speed.

At McLaren, meanwhile, Kimi, too, was in trouble with high engine temperatures. McLaren felt they could control the problem – but only if Kimi was careful with revs.

Thus you would have thought that this had quickly dissolved into another Michael day. He was leading by about 10 seconds after what were effectively 10 laps (five had been lost to the restarts) and his engine temperatures, fed by Ferrari's funky, steeply angled radiators, were still perfect. Michael trod carefully on a greasy track in light rain over the next five laps or so, losing seven seconds to Kimi, but afterwards he spoke lightly of it: "I was being very careful and of course I had no reference point. It was no problem..."

No, the problem, when it came, was a shock. In the first of his two pitstops (on lap 23 – three laps after Juan Pablo's and at the same time as Kimi's) the fuel neck wouldn't release from the Ferrari. Shell lead-free simultaneously spilled everywhere, catching fire and moving the mechanics, like

(Main) This was a race Montoya was in with a shout of winning. His FW25 had been strong all weekend, but a minor mechanical failure did for its P83 BMW motor; (inset) Jenson Button took a smooth, morale-boosting fourth



FACT ATTACK: The 2003 Austrian Grand Prix was the 100th Formula 1 race in which both Schumacher brothers have competed



(Above left) Michael darts inside Kimi's McLaren for the lead, at the very moment JPM's BMW dies. Juan (above), remained philosophical. "It's a shame," he said, "but at least we could have won"; (left) more mumm for Ruby and Schumi

clockwork, to douse the flames. Michael sat there, calm, listening to assurances that all should be okay and then blasted back into the race, wondering about possible electrical damage or, worse, a shortage of fuel. (Ferrari were unsure even after the race what had caused the problem, although it was probably more than coincidence that Rubens, who had stopped the lap before, was also delayed by a tetchy fuel rig.)

Juan Pablo led now – and it didn't look bad, either. His FW25 felt well balanced and quick and his second set of Michelins were just as good as his first. If it wasn't for the ongoing problem with the water leak, and the knowledge that he wasn't going to make it, this would have been a very enjoyable Sunday afternoon drive.

Michael, jammed up behind Kimi,

was by lap 31 about three seconds adrift of Juan Pablo and beginning to lose ground. He thus made his move into Two, braking late – exploiting the Ferrari's great speed right down to the apex – and obliging Kimi to give way. At that moment – amazingly – Juan Pablo's BMW engine blew itself into retirement. It was Michael's race, with perfect timing.

In the paddock, BMW's Mario Theissen was concise about the problem: yes, it was a function of the delayed starts. No, the faulty part was not BMW's ("It was outside the engine!"). And, no, not even the best engine can withstand those sorts of circumstances.

A lurid moment on Alonso's Renault oil aside, Michael thereafter cruised it, leaving behind him a very unwell and sweaty Rubens, who found Kimi much less obliging

over the closing stages and thus finished third; Jenson Button, who had held off Rubens for a while but had then strangely allowed himself easily to be outranked into Two; and Mark Webber in seventh place – ahead of Trulli's Renault and ahead of his Jaguar team-mate. This, despite starting from the pitlane and subsequently incurring a 10-second stop-go for some ludicrous infringement of an indecipherable parc fermé refuelling rule.

Webber was also third-fastest through sector two, second only to Michael through sector three and also one of only three drivers to lap in the 1m8s. Mark and Rubens both recorded 1m8.9s; Michael, just before his second pitstop, and with the race in the bag, lapped a whole 0.6s faster than the field.

It was, by the end, as conclusive as that. 1

A lopsided search for balance

In Austria, quirky aero bits were in. Symmetry was out. Stéphane Samson explains; illustrations by Patricia Soler



EJ13's nose cone grew a Gurney flap for Austria, as the team hunted for extra downforce

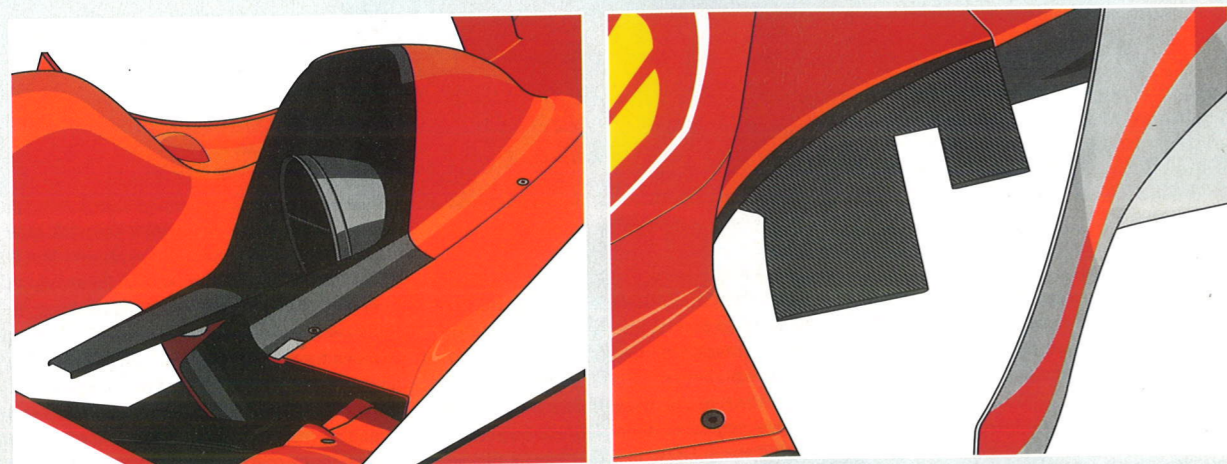
◀ EJ13 has hi-tech nose-job

In Austria, Jordan used a small Gurney flap on their EJ13's nose cone (left) in order to combat the circuit's very low grip level. It gave them a little more downforce, which is particularly valuable here: the A1-Ring is so short that even a tenth of a second in qualifying can make a difference of several places on the grid.

The front wing is one of the most important parts of a Formula 1 car. As well as providing downforce it

THE A1-RING IS SO SHORT THAT EVEN A TENTH OF A SECOND CAN GAIN SEVERAL PLACES ON THE GRID'

greatly influences the car's handling characteristics. It also directs clean airflow towards the car's sensitive areas, such as the floor and plays a key role in keeping dirty air from the wheels away from sensitive zones.



(Far left) Note the unusual shaping and asymmetric walls of F2003-GA's chimneys. You can also see here part of an upper rear wishbone; (left) this odd-looking design between the barge board and mono-coque is intended to improve aero efficiency

▲ Revel in the detail

The new Ferrari F2003-GA is gradually revealing its secrets. The redesigned chimneys (above left), for example, are bigger than last year's. They also provide better cooling – an area in which this car is sensitive – without giving away too much on the aerodynamics side. Notice how the external wall (on the left of the picture) is longer than the inside one.

Look also at the floor area between the barge boards and the mono-coque (above right). This design is unusual and demonstrates Ferrari's attention to minute detail. It is intended to maximise the aerodynamic efficiency of the floor and to help the performance of the turning vanes.

The F2003-GA was roughly a second a lap quicker than any other

car in Austria. Moreover, its lap times were incredibly consistent.

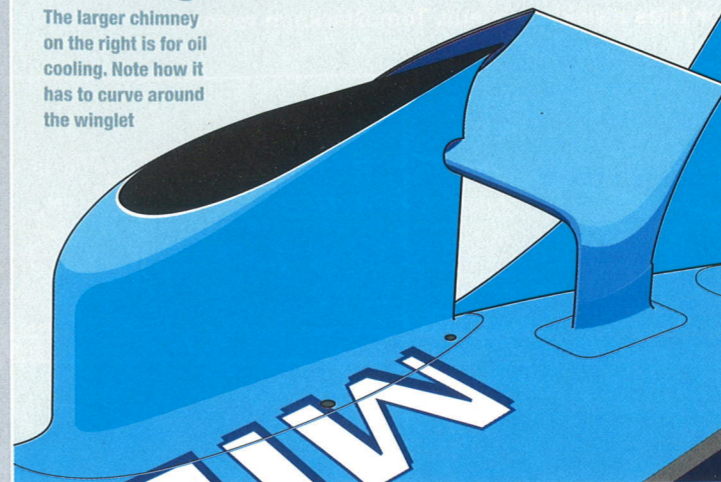
The car uses its tyres very well. In addition, the Ferrari rear suspension is much stiffer than last year's. Its Sachs dampers are, so *F1 Racing* hears, quite innovative. The whole assembly has been very carefully designed and produced, as you can see (in the picture above left) from the shape of the upper wishbone.

Without their refuelling problems, Ferrari could easily have finished one-two. Even though some teams – including McLaren – still say that this car is not as quick as they thought it would be, it might be difficult to catch the F2003-GA this season. During its initial tests after Austria, for example, McLaren's MP4/18A suffered from exhaust overheating and hydraulics problems.



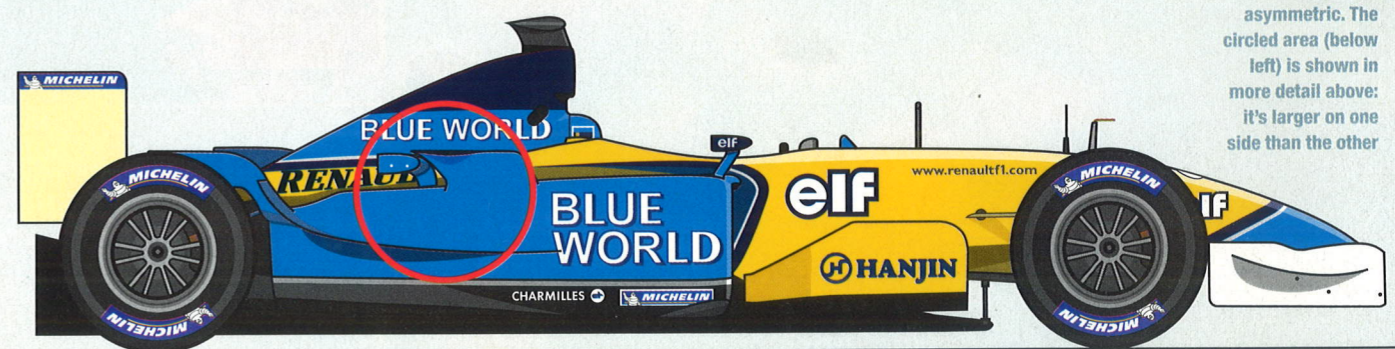
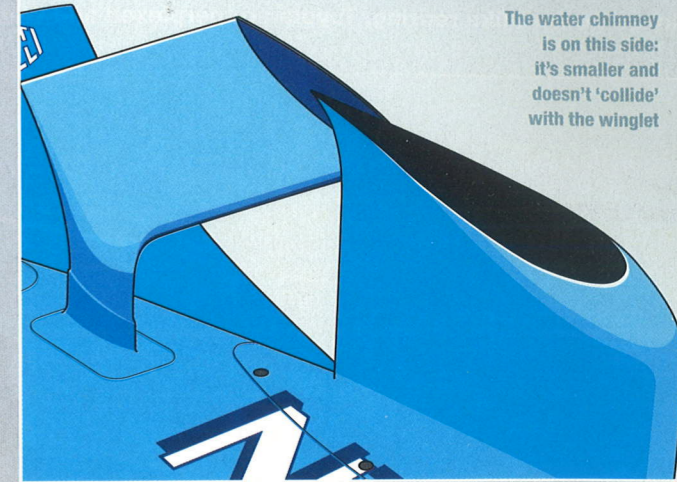
> The right

The larger chimney on the right is for oil cooling. Note how it has to curve around the winglet



> The left

The water chimney is on this side: it's smaller and doesn't 'collide' with the winglet



Renault's R23 is asymmetric. The circled area (below left) is shown in more detail above: it's larger on one side than the other

▲ Renaults bits on the side

Renault, like Jordan and B.A.R., use asymmetrical hot-air exits on their engine cover. Water and oil have separate circuits and water can be used at a higher temperature than on some cars. All of which means that Renault can fit a bigger chimney on the right side (above left) for oil cooling. Note how it had to be closely tailored to fit around the winglet. On the left of the car (top right), the chimney for water cooling is noticeably smaller.

The R23's aero package is very impressive. Mike Gascoyne, technical director, goes so far as to suggest that Renault have produced the best 2003 chassis. Their attention to detail is plain to see: look at the Gurney flap (right), located on the upper wishbone of the rear suspension, for example.

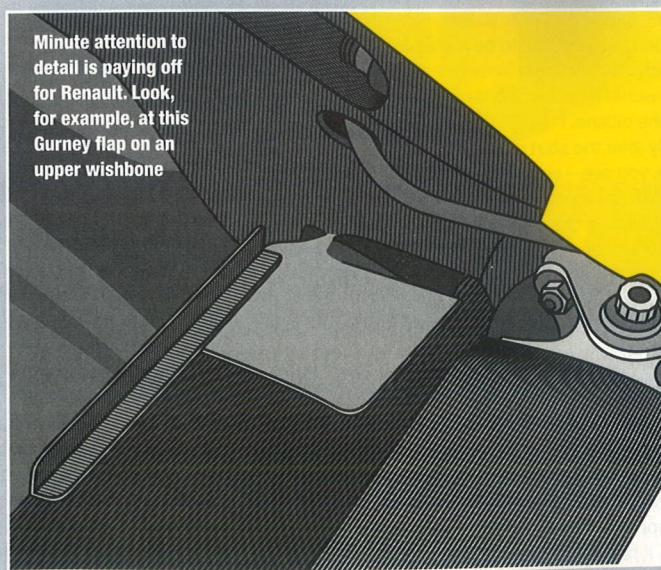
In Austria, the R23 couldn't make the best of its tyres – the car is too smooth with them. While this can be an advantage on some tracks, such as Barcelona, it can also harm the performance on others and in qualifying.

Next year, Renault will use a brand new 72-degree engine. It should profit from the working structure already being used in some parts of the team. "I've appointed Bernard Dudot as deputy managing director," team boss Flavio Briatore explains. "Project manager Jean Philippe Mercier will continue the development of the '03 engine whereas Leon Taillieu is the chief designer of the '04 engine."

In other words, while developing this year's RS23, Renault will also be designing next year's RS24. This pattern of parallel development has already worked very well in other areas – hence its extension.

Renault are adamant that their new engine concept won't be a problem for the chassis's handling.

"Our key aim is to achieve complete integration of chassis and engine," says Briatore. "The new engine will be designed according to a precise brief and 'wish-list' from Mike Gascoyne's team. The engine and chassis teams will develop the overall package in total synergy. We've now got at Enstone



Minute attention to detail is paying off for Renault. Look, for example, at this Gurney flap on an upper wishbone

[in England] a small engine branch, Engine Development UK [ex-TWR], which will be overseen from France by Pascal Tribotte, project manager at our Viry-Châtillon base."

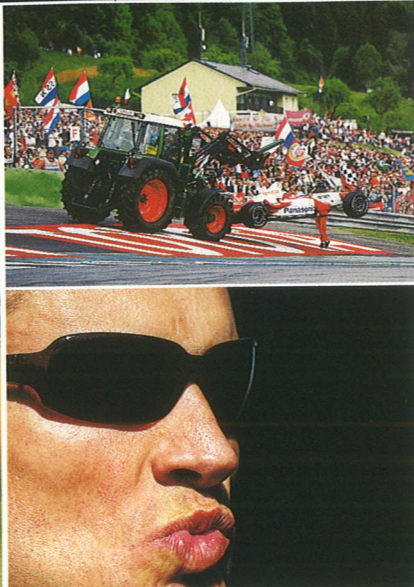
The target is to be ready for the 'one engine per weekend' rule, due

to come into force for '04. An updated version of the '00 Supertec – as Renault's customer engine was called – will run on the bench in November, and the brand new V10 should be finished by mid-January next year. 1



#6: Race shorts

Alonso doesn't like retiring, Toyota are perplexed and Webber tries a risky strategy. Tom Clarkson reports



(Left) Button was almost fast enough for a podium; (top) Panis's Toyota is winched away after a suspension failure; (above) DC kicks himself for his qualifying errors

CHARLES CONTESSAT; CLIVE ROSE/BETTY IMAGES; MARK THOMPSON/BETTY IMAGES

Webber takes a punt

When the race had to be restarted, Mark Webber knew immediately that he would be punished for refuelling in the pitlane. Refuelling is allowed only after the start of the formation lap, you see – and, thanks to the restart, the first start was annulled.

"It was a chance we took," said Webber, "and it didn't work. I'm not sure I'd like to see the rule changed, however, because next time we might be the ones who benefit."

Webber was punished with a 10-second stop-go penalty – but drove a storming race to seventh, setting the third-fastest lap along the way.

Jense on the button

Jenson Button pitted last of the two-stoppers, making his first stop on lap 23. It highlighted what a good job he did in qualifying: he was second-fastest through the first sector and sixth-fastest through the second sector... only to make a mistake in the third sector, which dropped him to seventh place overall.

He finished fourth in the race, having run as high as third until he

was overtaken by Rubens Barrichello on lap 35. "I had a great weekend all round," said Jenson. "It was nice to challenge the front-runners."

Confidence crisis for DC

McLaren boss Ron Dennis criticised David Coulthard after qualifying: "David made three unforgivable mistakes on his lap," said Ron. "He's sometimes too hard on himself, and this was one of those times. In this one-lap qualifying, if you make a mistake, you pay a heavy price."

DC struggled with his MP4-17D's balance throughout the weekend, which he said made it difficult to have the confidence to attack.

Some nifty strategy work by the team brought him home in fifth place.

No more DNFs, thanks

This was Fernando Alonso's first DNF of the year – his first non-points finish, in fact. His weekend was plagued by problems – including the moment in qualifying when he threw it off the track at Turn Five.

He would have started from the back of the grid but for an engine

problem as he was going to the grid. He started from the pitlane and was battling through the field when, on lap 44, he suffered another engine failure.

"I hope this is my last DNF of the year," he said. "Despite everything, we've proved to be competitive on a circuit that doesn't suit us. I'm still confident for the rest of the season."

Where's all the speed gone?

Toyota were mystified by their lack of performance. Their car was quick in Barcelona two weeks earlier and, on paper, it should have been quick here because the A1-Ring is a power track.

But Olivier Panis and Cristiano da Matta suffered from a lack of grip. "I think our qualifying positions [Panis 11th; Da Matta 13th] were a result of other people's making mistakes, not of our being quick," said Da Matta.

A launch control problem on Da Matta's car caused the engine to stall twice, leading to both aborted starts. He used a manual start to get away the third time and suffered no further trouble en route to 10th place.

Panis suffered his fifth retirement in six races after a suspension failure.

No surprises at Williams

The engine failure on Juan Pablo Montoya's car was caused by a faulty pressure relief valve. The part was made by Williams, not BMW, and had already failed twice in testing...

For once, Fisi is "not 'appy"

Giancarlo Fisichella vented his frustration after the race: his fastest lap was slower than his rookie teammate Ralph Firman's and, on lap 61, a fuel pressure problem put him out.

"I'm not happy," he said. "That was another disappointing race and my third retirement in three. We had a very difficult race with extremely low grip levels. It's not good at all and we need something for the future."

It all falls apart for Sauber

Fourth on the grid should have meant a decent finish for Nick Heidfeld, even though he was the first man to pit (on lap 13), but he was forced out on lap 46 with an engine problem; his V10 had started to lose power on lap 20.

He got further than Heinz-Harald Frentzen, though, who retired before the second restart with clutch failure.

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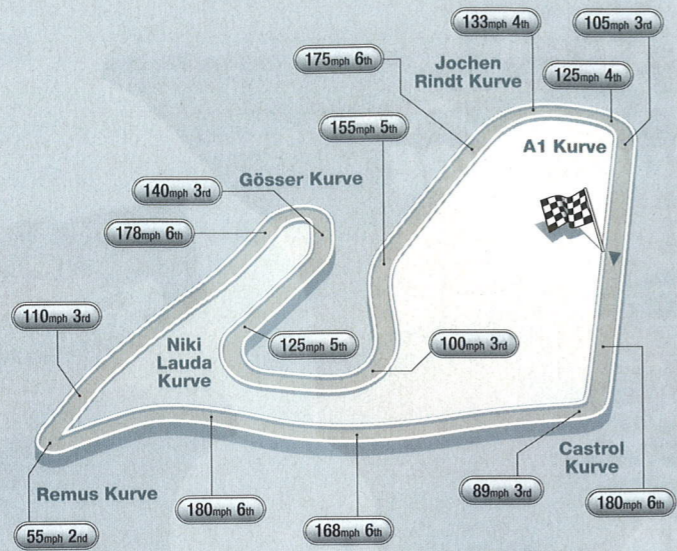


All the facts Spielberg

Date May 18 2003; Weather mixed, 20°; Track temperature 27°; Laps 69; Race distance 185.472 miles; Attendance 90,000

Qualifying times

Position	Driver	Time
1	Michael Schumacher	1m9.150s
2	Kimi Raikkonen	+0.039s
3	Juan Pablo Montoya	+0.241s
4	Nick Heidfeld	+0.575s
5	Rubens Barrichello	+0.634s
6	Jarno Trulli	+0.740s
7	Jenson Button	+0.785s
8	Antonio Pizzonia	+0.895s
9	Giancarlo Fisichella	+0.955s
10	Ralf Schumacher	+1.129s
11	Olivier Panis	+1.252s
12	Jacques Villeneuve	+1.468s
13	Cristiano da Matta	+1.684s
14	David Coulthard	+1.743s
15	Heinz-Harald Frentzen	+2.157s
16	Ralph Firman	+2.355s
17	Mark Webber	+2.512s
18	Justin Wilson	+5.358s
19	Fernando Alonso	+10.963s
20	Jos Verstappen	no time



A1-RING
Circuit length 2.688 miles
© 2003 Federation Internationale de l'Automobile, 8 Place de la Concorde, 75008 Paris, France

Lap by lap

PRE-START Cristiano da Matta's Toyota stalls twice, causing the start to be aborted
START Michael Schumacher leads from pole; Juan Pablo Montoya gets the jump on Kimi Raikkonen to be second. Jos Verstappen stops with a mechanical problem, bringing out the safety car
LAP 5 The race restarts
LAP 13 Michael's lead is eight seconds
LAP 16 Rain begins to fall. Michael's lead drops to 3.8 seconds
LAP 20 Montoya pits, falling back to sixth
LAP 21 Rubens Barrichello stops and has a fuel-rig problem
LAP 23 Michael and Kimi pit. Fire breaks out at Ferrari, but Michael rejoins in third
LAP 32 Race leader JPM's engine blows and MS passes Raikkonen for the lead
LAP 42 MS pits again; Kimi leads
LAP 49 Raikkonen pits; Rubens leads
LAP 50 Barrichello pits; MS leads again
LAP 69 Michael Schumacher wins (his 67th grand prix win) by 3.362 seconds from Raikkonen and Barrichello

Speeds and stops

FASTEST LAP
Michael Schumacher
1m8.337s on lap 41 (141.613mph)
FASTEST THROUGH SPEED TRAP
Michael Schumacher 196.362mph
SLOWEST THROUGH SPEED TRAP
Olivier Panis 188.036mph
FASTEST PITSTOP
David Coulthard 27.516s
SLOWEST PITSTOP
Jacques Villeneuve 1m31.533s

Did you know?

Ralf Schumacher is the only driver to have finished all six grands prix – and he was in the points every time. Under the old points system Michael Schumacher would have 34 championship points to Kimi Raikkonen's 32, putting him two ahead

Final standings

Final position	Driver & car	Total race time	Pos after lap 1
1	Michael Schumacher Ferrari F2003-GA (Bridgestone)	1h24m4.888s	1
2	Kimi Raikkonen McLaren-Mercedes MP4-17D (Michelin)	+3.362s	3
3	Rubens Barrichello Ferrari F2003-GA (Bridgestone)	+3.951s	4
4	Jenson Button B.A.R.-Honda 005 (Bridgestone)	+42.243s	8
5	David Coulthard McLaren-Mercedes MP4-17D (Michelin)	+59.740s	12
6	Ralf Schumacher Williams-BMW FW25 (Michelin)	1 lap behind	9
7	Mark Webber Jaguar R4 (Michelin)	1 lap behind	18
8	Jarno Trulli Renault R23 (Michelin)	1 lap behind	7
9	Antonio Pizzonia Jaguar R4 (Michelin)	1 lap behind	6
10	Cristiano da Matta Toyota TF103 (Michelin)	1 lap behind	16
11	Ralph Firman Jordan-Ford EJ13 (Bridgestone)	1 lap behind	14
12	Jacques Villeneuve B.A.R.-Honda 005 (Bridgestone)	1 lap behind	11
13	Justin Wilson Minardi-Cosworth PS03 (Bridgestone)	2 laps behind	15
NOT CLASSIFIED			
	Giancarlo Fisichella Jordan-Ford EJ13 (Bridgestone)	fuel system – 60 laps	10
	Nick Heidfeld Sauber-Petronas C22 (Bridgestone)	engine – 46 laps	5
	Fernando Alonso Renault R23 (Michelin)	engine – 44 laps	17
	Juan Pablo Montoya Williams-BMW FW25 (Michelin)	engine – 32 laps	2
	Olivier Panis Toyota TF103 (Michelin)	suspension – 6 laps	13
	Jos Verstappen Minardi-Cosworth PS03 (Bridgestone)	electrics – 0 laps	-
	Heinz-Harald Frentzen Sauber-Petronas C22 (Bridgestone)	clutch – 0 laps	-

Races to date

Driver	Australia	Malaysia	Brazil	San Marino	Spain	Austria	Monaco	Canada	Europe	France	Britain	Germany	Hungary	Italy	USA	Japan
Michael Schumacher	4	6	R	1	1	1	-	-	-	-	-	-	-	-	-	-
Rubens Barrichello	R	2	R	3	3	3	-	-	-	-	-	-	-	-	-	-
Juan Pablo Montoya	2	12	R	7	4	R	-	-	-	-	-	-	-	-	-	-
Ralf Schumacher	8	4	7	4	5	6	-	-	-	-	-	-	-	-	-	-
David Coulthard	1	R	4	5	R	5	-	-	-	-	-	-	-	-	-	-
Kimi Raikkonen	3	1	2	2	R	2	-	-	-	-	-	-	-	-	-	-
Jarno Trulli	5	5	8	13	R	8	-	-	-	-	-	-	-	-	-	-
Fernando Alonso	7	3	3	6	2	R	-	-	-	-	-	-	-	-	-	-
Nick Heidfeld	R	8	R	10	10	R	-	-	-	-	-	-	-	-	-	-
Heinz-Harald Frentzen	6	9	5	11	R	R	-	-	-	-	-	-	-	-	-	-
Giancarlo Fisichella	12	R	1	15	R	R	-	-	-	-	-	-	-	-	-	-
Ralph Firman	R	10	R	R	8	11	-	-	-	-	-	-	-	-	-	-
Mark Webber	R	R	9	R	7	7	-	-	-	-	-	-	-	-	-	-
Antonio Pizzonia	13	R	R	14	R	9	-	-	-	-	-	-	-	-	-	-
Jacques Villeneuve	9	R	6	R	R	12	-	-	-	-	-	-	-	-	-	-
Jenson Button	10	7	R	8	9	4	-	-	-	-	-	-	-	-	-	-
Justin Wilson	R	R	R	R	11	13	-	-	-	-	-	-	-	-	-	-
Jos Verstappen	11	13	R	R	12	R	-	-	-	-	-	-	-	-	-	-
Olivier Panis	R	R	R	9	R	R	-	-	-	-	-	-	-	-	-	-
Cristiano da Matta	R	11	10	12	6	10	-	-	-	-	-	-	-	-	-	-

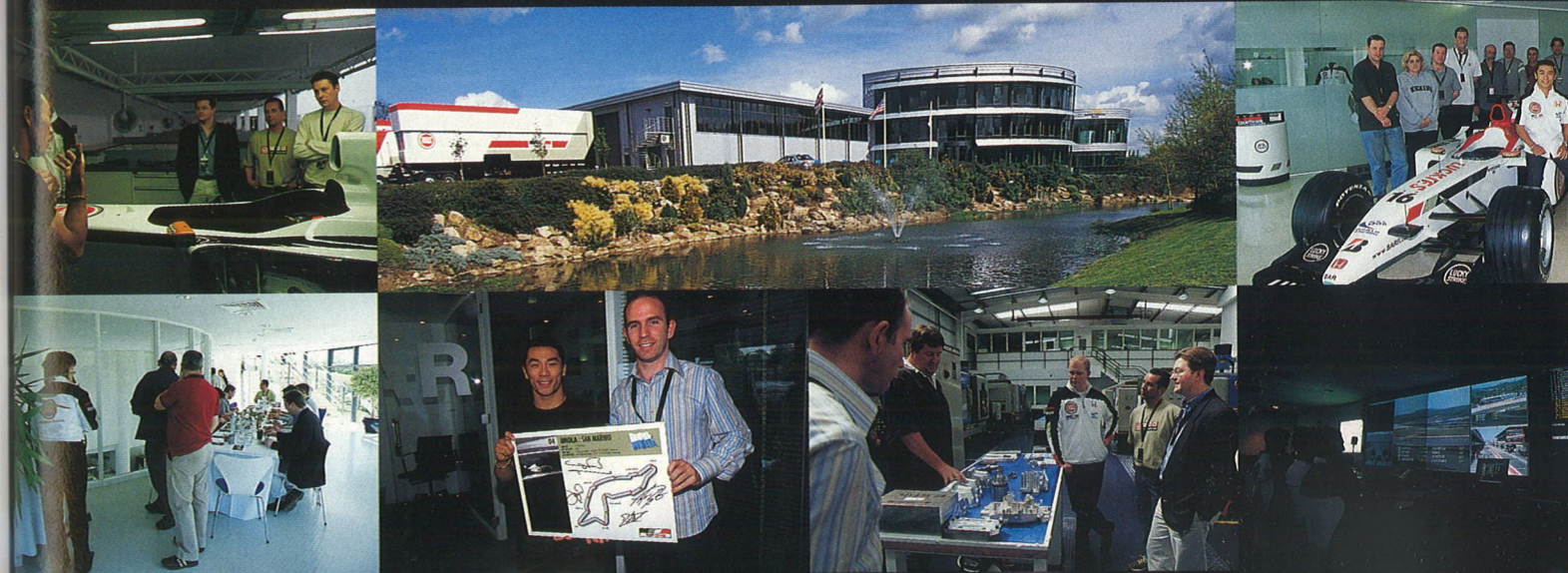
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B-A-R factory tour

Winners' day

Remember *F1 Racing's* competition to win a visit to the B-A-R factory? Our 16 winners got the VIP treatment on May 4 at B-A-R's Operations Centre. The day included live links from the Spanish

Grand Prix with team boss David Richards and race engineer Jock Clear, a tour of the factory, the chance to meet third driver Takuma Sato and a screening of the race. Truly a day to remember.



For more competitions, the latest team news and team merchandise visit www.BARf1.com

#7: The bull Monty, with a twist

The Colombian charged in his usual raw style – and showed he can also do calm and caution. Peter Windsor reports

Juan Pablo sat out the Tuesday charity soccer match in Monte Carlo. Literally sat. He balanced his wife, Connie, on his knee, he signed a few autographs, he watched the other guys kick the ball. Michael. Fisi. Alonso. Trulli.

"Why aren't you playing, Juan?"
"Two reasons. I'm useless at soccer and I don't want to injure myself. I think I'd be a marked man out there..."

Good call, in retrospect. Michael winced and grimaced his way through 84 hard minutes; Juan Pablo left early. Dinner. Some TV. Nothing too strenuous.

Two days later, on a golden Monegasque morning, he was driving his Williams-BMW FW25 around the streets of Monte Carlo, unusually (for him) wearing the same Arai helmet for the third straight race and feeling nicely comfortable around the Hotel Grand (né Loews/Station) Hairpin, where the steering lock, with modified suspension

'JUAN PABLO AND RALF BEGAN TO FEEL AS IF THEY WERE DANCING WITH THE MUSIC'

geometry, allowed him to cross his arms in the traditional style. The new track surface felt nice and smooth, too – very much to the taste of his Michelin tyres. The new Monaco is 60-40 in favour of the resurfacing whereas it used to be 60-40 in favour of the bumps. Pity they didn't resurface the whole track, though, while they were about it!

The new run down to Rascasse felt easier, too – less of a potential black spot. The critical point, clearly, was the new exit kerb out of the Swimming Pool section. If you took too much of it, it would lift the floor of the car clear off the ground and pitch you

into the guard rail. Several F3000 drivers, together with Fernando Alonso (on Saturday morning) and Heinz-Harald Frentzen (early in the race) would confirm the suspicion.

As he began to push, though, it became clear that the old, familiar understeer was still there. On the bumps, too, the car felt nervous. He finished the morning session down in eighth place, 0.8 seconds slower than Mark Webber's best in the Jaguar. They debriefed as they do in Monaco – in the pitlane, with laptops and readouts now nicely connected wirelessly to the servers in the Williams trucks. And the general feeling – encouraged by Patrick Head, it must be said – was that they should go softer, give the cars more suspension travel and use the tyres more. The FW25s were thus modified for the afternoon's qualifying session.

It was relatively cool that afternoon – cool and green, in the sense that the track had still not rubbered-in. And the afternoon

(Main) JPM took all the pressure Monaco could throw at him for his second win. Not Michael, not Kimi, not even a failing water valve could stop him. Few wins will ever seem sweeter

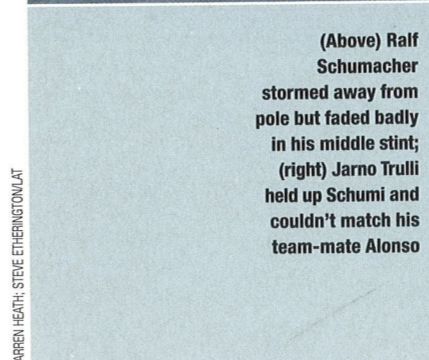


> Drivers' championship: Round 7 Monaco

1	Kimi Raikkonen	48	11	Heinz-Harald Frentzen	7
2	Michael Schumacher	44	12	Mark Webber	4
3	Fernando Alonso	29	13	Cristiano da Matta	3
4	Rubens Barrichello	27	14	Jacques Villeneuve	3
5	Juan Pablo Montoya	25	15	Nick Heidfeld	1
6	David Coulthard	25	16	Ralph Firman	1
7	Ralf Schumacher	25			
8	Jarno Trulli	13			
9	Giancarlo Fisichella	10			
10	Jenson Button	8			

> Constructors' championship

1	McLaren-Mercedes	73
2	Ferrari	71
3	BMW-Williams	50
4	Renault	42
5	Jordan-Ford	11
6	B.A.R.-Honda	11
7	Sauber-Petronas	8
8	Jaguar-Cosworth	4
9	Toyota	3



(Above) Ralf Schumacher stormed away from pole but faded badly in his middle stint; (right) Jarno Trulli held up Schumi and couldn't match his team-mate Alonso

CARRON HEATH; STEVE ETHERINGTON/LAT

belonged to Bridgestone. Michael Schumacher and Rubens Barrichello headed a one-two for Ferrari with Jenson Button third in the B.A.R.-Honda. Jarno Trulli's Renault was the fastest Michelin runner, 0.6 seconds slower than Michael. Juan Pablo and his team-mate, Ralf Schumacher, were fractionally slower still, although neither was happy with his laps. The feeling was that the Michelins needed a couple of laps to come fully up to optimum – and that wasn't possible, of course, in one-lap qualifying. The Bridgestones, by contrast, were so soft that they were graining by the end of their lap.

By Saturday, by the time Juan had scootered around town, had made several sponsorship appearances, had met his race engineer, Tony Ross, had hung out with Matthew Whyte and the boys working on his car and had picked up a new printer from the HP boat, the position had changed

completely. The ambients were up – up there in the 25s – and the Williams-BMWs, with about 26 laps' worth of Petrobras on board, had picked up balance and grip on the much stickier track surface. While the McLaren drivers were playing with roll stiffnesses – they had begun practice with the front roll-bar disconnected – and the Ferrari drivers were beginning to wonder about everyone else's fuel loads, Juan Pablo and Ralf began to feel as if they were dancing with the music.

Then Jenson Button crashed heavily at the exit of the tunnel, just as he reached the braking area, further underlining the suspicion that the Bridgestone-tyred cars were on this day on the loose side of town. And so it was in the warm-up preceding qualifying: the Michelin runners were in the 15s; the Ferrari drivers lapped in the mid-16s. The new track surface was turning the weekend into a Michelin-fest. ▶

TECHNO FILE

One small tweak and it was won

Michelin got it right. Williams made it better. Steve Matchett explains how



In designing tyres for Monaco, Bridgestone and Michelin were hampered by the fact that the teams don't test there; any

worthwhile assessment of grip level and tyre durability could only take place during the race weekend.

Once the cars ran, Michelin appeared to have the upper hand; Ferrari's Bridgestones had graining problems. Although the harder Michelins offered less grip, the front tyres of Williams' FW25s held up well. At this point Williams must have known they were in with a shout.

The FW25 has been beset all year with some rear-end instability – and the team made a huge effort throughout Friday to increase mechanical grip. Saturday qualifying showed that their time had been well spent.

What Williams had done came to light during the race. Normally, when a car's rear is sliding, you see uniform wear across the tyre's width; after 20 laps, however, it was predominantly the inside shoulders of the rear tyres on both FW25s that were worn.

This showed that Williams had increased their rear suspension's negative camber, moving the contact patch inward and increasing the heat generated within the tyre. Perhaps not an ideal solution – because the tyre's longevity will be compromised – but if the car goes on to win the grand prix, it's pretty much the perfect fix.



Williams' unusual tyre wear let us in on a little secret



'QUALIFYING WAS SCINTILLATING – PERHAPS THE BEST OF THE YEAR SO FAR'

Qualifying was scintillating – perhaps the best of the year so far. Kimi Raikkonen was dazzling and for a long time was on the temporary pole; Juan Pablo, to his surprise, found the car bottoming more than he had anticipated. The race set-up chosen was orientated towards running lower tyre pressures than Ralf: the decision would pay off the next day.

Ralf, with slightly higher ride height and tyre pressures, drove a perfect, early-apex lap to be 0.036 seconds quicker than Kimi. DC, who'd been fastest on Saturday morning, missed his apex at Tabac, ran too wide on exit and thus compromised his entry to the Swimming Pool section. Jarno Trulli braked roughly into the chicane, clouted the kerb – but still ended up fourth. Which left the two Ferrari drivers, both of whom chose to run heavy fuel.

Rubens' 1m15.820s was 0.6 slower than Ralf's best. Michael looked brilliantly fast – indeed was brilliantly fast through sector one – but then he faded, feeling the front tyres going away, as the lap progressed. Amazingly, he qualified only fifth, behind Ralf, Kimi, Juan Pablo and Jarno Trulli.

So what could stop Williams winning in Monaco for the first time in 20 years? Had Ferrari found an amazing strategy? Was DC on heavy fuel? Would Raikkonen beat Ralf away from the line, just as DC had beaten Juan Pablo into Ste Devote in 2002? These were the questions occupying the minds of the Williams-BMW boys as Saturday gave way to Sunday.

Kimi, despite blasting into Ste Devote at the head of the pack on the formation lap, found too much wheelspin on the dirty side of the grid. Ralf was cleanly away, followed by Juan Pablo. He elbowed Kimi out as the first corner approached. Ralf was leading by a blistering 2.2 seconds at the end of the opening lap and Juan Pablo nearly lost the back end of the car as he accelerated onto the pitstraight, with cement dust covering the Tarmac.

Then came the safety car (Frentzen); then came a rolling start. Juan Pablo crowded Ralf this time, pushing him hard, but, as they braked for Casino Square, Ralf's tyre pressures again showed their worth. He pulled away at a second a lap.

Until lap 11 (their seventh at racing speed). Juan Pablo set fastest lap at this point – a 1m17.3s to Ralf's 1m17.7s. Then, on lap 15, he threw in a 1m16.2s, followed, four laps later, by a 1m15.8s. The balance, for Juan Pablo, now felt perfect. In the cockpit of the leading Williams, Ralf Schumacher was conversely losing grip.

They ran very close for a while, with Kimi

pushing them hard, so Williams broke the deadlock by calling Ralf in earlier, followed by Juan. Good call – except that it left Kimi in a position (on both stops) where he could stop later and thus more easily make up time.

Ralf faded after that, emerging from his stop behind Juan Pablo and Kimi and, on his third, uncomfortable set, running wide at La Rascasse and coming momentarily to a halt.

At the front, though, this had become a classic grand prix: Juan Pablo Montoya, driving at his fluent, relaxed best, was now living with sustained pressure from Kimi Raikkonen, whose McLaren was slightly faster on just about every part of the circuit but who could do nothing about overtaking the Williams. And then in the background, drawing ever closer with his later- (but still

Kimi Raikkonen (below) had the quickest car on the track, but he still could not squeeze his MP4-17D past Montoya. His fastest race lap was half a second quicker than his P2 qualifying time. Awesome...



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(Left) Schumacher's F2003-GA wasn't quite on the pace of the lead pair, but a battling third still keeps him just four points off the title lead. He was the only Bridgestone runner in the top seven (his team-mate Rubinho was a distant eighth)

FACT ATTACK: This is Williams' first Monaco win since Keke Rosberg's triumph in 1983. They've won five drivers' titles since then



(Left) Spray it boys! They earned it with this performance; (below) to the victor the spoils. Now you know why JPM drives so fast - he wants to get back to Connie, his delightful wife



'JUAN'S PITCREW, WITH 10 LAPS STILL TO RUN, TOLD HIM DRASTICALLY TO REDUCE REVS'

two-) stop strategy, free at last from the wall that was Trulli's Renault, was Michael Schumacher.

The pivotal moment came when Juan Pablo stopped for the second time, at the end of lap 49. On a free road and with light fuel, Kimi immediately responded with the race's fastest lap - 1m14.545s. He was only 0.3 seconds slower than that on the next

two laps - but then he was badly held up by Jacques Villeneuve's slow B.A.R.-Honda: 1m15.760s. As he pulled into the pitlane at the end of lap 53, he was 23.2 seconds ahead of Juan Pablo. It was anyone's race.

Juan Pablo just held his lead (although at this point it was Michael, who had yet to stop, who was actually heading the lap charts). Juan Pablo knew then that it was a matter of making no mistakes and avoiding his mirrors. Except that his pitcrew, with 10 laps still to run, were now telling him drastically to reduce revs. A water pressure warning had appeared on the telemetry - two weeks after Juan Pablo's engine had blown with exactly that problem in Austria! He nursed it, he short-shifted but, with two

laps to go, with Kimi all over him, he radioed for help. Couldn't he have a few revs more?

They gave back to Juan Pablo 50 per cent of the saving. He used the bonus judiciously, making no mistakes - even at Rascasse, where he had nearly had a moment or two.

So it was that Juan Pablo crossed the line to win the 61st Grand Prix of Monaco - a race he had always wanted to win, a race to savour, a race to make up for an age of lost time; and, despite nearly two hours in the pressure cooker, he looked cool and unfussed as he climbed from the Williams and ran to his guys, and to Connie and Gonzo, as they screamed and cried and clapped by the famous Royal Box of Monaco.

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Directions
From the North to Leafield
M40 Exit Junction 11 into Banbury. Take A361 Chipping Norton road out of Banbury. At Chipping Norton, stay on A361 to Shipton-under-Wychwood. At Shipton-under-Wychwood turn left (on unmarked road) signposted Leafield. Follow road for approx. 2 miles. Just past the crossroads sign on the right hand side is the entrance to TWR. Follow the road down to the security building and notify them of your arrival

Directions From London to Leafield
M40 - Exit Junction 8 onto A40 to Oxford. At Oxford take the A40 to Cheltenham (3rd exit off roundabout). Witney is approx. 10 miles from Oxford. Take 1st signpost for Witney B4022 & exit. Drop down hill, under flyover into Witney onto 2 small roundabouts. Across roundabouts take B4022 for Hailey. Through Hailey on same road to Finstock (approx. 3 miles). Drive through Leafield (past school & green). Turn right at Fox pub into Fairspeare Road. Follow for approx 3/4 mile. Take the next left turning which is the entrance for TWR, following the road down to the security building.

Directions by Train
Approx. 1 hour 20 minutes travelling time from London to Charlbury. Charlbury station is approximately 5 miles from Leafield Technical Centre

For further information please contact our Birmingham Office
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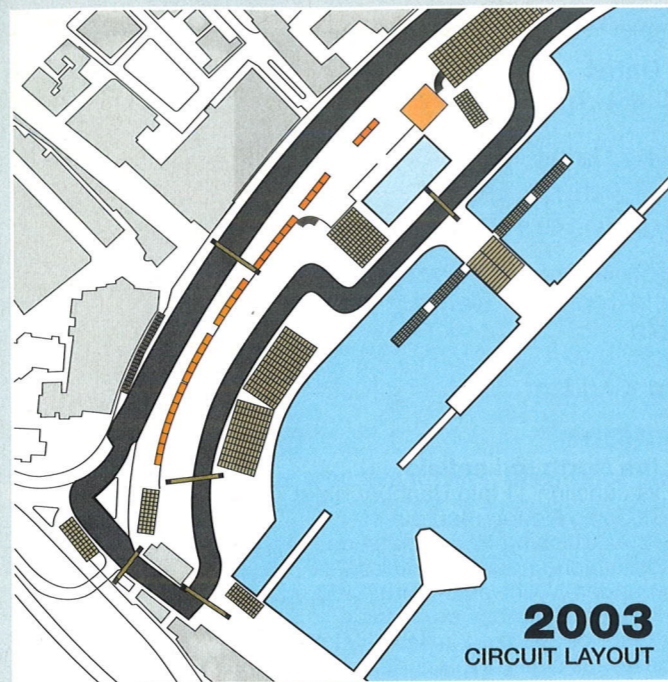
Sea change for Monaco

A smoother, faster Monaco – and it's all built on water. Stéphane Samson explains; illustrations by Patricia Soler



2002
CIRCUIT LAYOUT

Before this year, land area between the circuit and the sea was at a premium. That meant cramped pits, tight garages and a very tight, bumpy Rascasse hairpin



2003
CIRCUIT LAYOUT

A grand arc of land has been reclaimed from the sea, making the Swimming Pool chicane tighter but Rascasse less so. It adds up to more speed and more spectators

▲ New-look Monaco

The first step of a massive redesign has been completed, meaning that the circuit raced on this year was slightly different from the Monte Carlo of previous years.

Rascasse and the Swimming Pool are significantly different, as the diagrams show. Five thousand square metres of land have been reclaimed from the sea, allowing the Automobile Club de Monaco (ACM) to redraw the exit to the Swimming Pool chicane and to widen the

Rascasse corner. It has made the circuit 27m shorter than previously... and much quicker.

"The chicane exit is now very tricky," says Renault test driver Allan McNish. "You can use the right kerb a lot, but you have to be very careful on the left one that follows. Use a bit too much and the bottom of the car hits the kerbs – which sends you directly into the rail." That's what happened to Heinz-Harald Frentzen when he hit the barriers on lap one.

Rascasse also demands a slightly

different line from the drivers. "It's now much easier to lock the front wheels under braking there," says Jarno Trulli. "If you do that, it's very easy for someone to overtake you in the following corner."

In other words, Rascasse has become one of those places where a driver can easily lose half a second by trying to gain half a tenth.

The Renault R23 was about 6mph slower than the best cars through the Tunnel – but it was definitely the best car at the Swimming Pool.

"I remember that, last year, I had to brake just before entering this area with my Toyota," says McNish. "This year, in the Renault, I was only briefly lifting off in order to get a bit of weight at the front, before pushing again right at the entry. Amazing."

As for further alterations, the pit area is being improved for next year. Teams will benefit from 'duplex' garages measuring 150 square metres each on the ground. A budget of \$16 million has been allocated to the whole project.

► Eye-popping stopping

There's nothing really new on the MP4-17D front brake assembly – but this part is so beautiful that we just couldn't resist featuring it here.

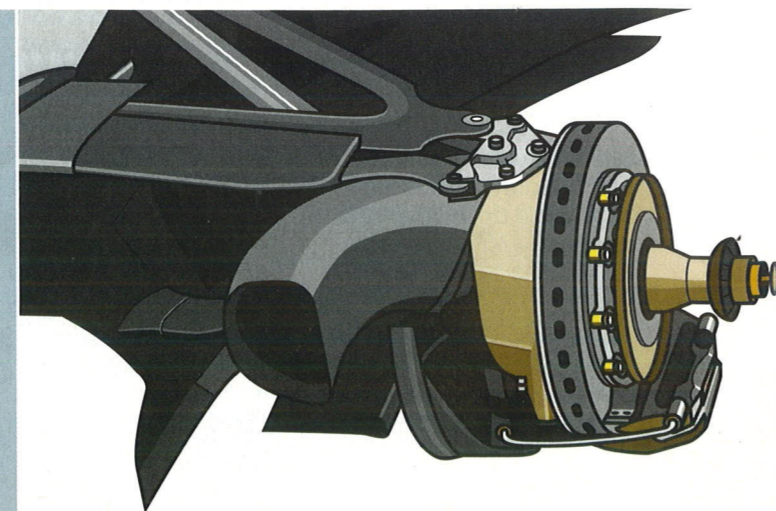
In order to gain in aerodynamic efficiency, McLaren's carbon disc isn't completely sealed – unlike Ferrari's. The cooling is split between two brake ducts: a large one for the disc and pads, and a smaller sharp one, just underneath, for the caliper. The Formula 1 regulations limit the brake assembly to one six-piston caliper with two pads, and the disc must not be thicker than 28mm.

One of the most interesting

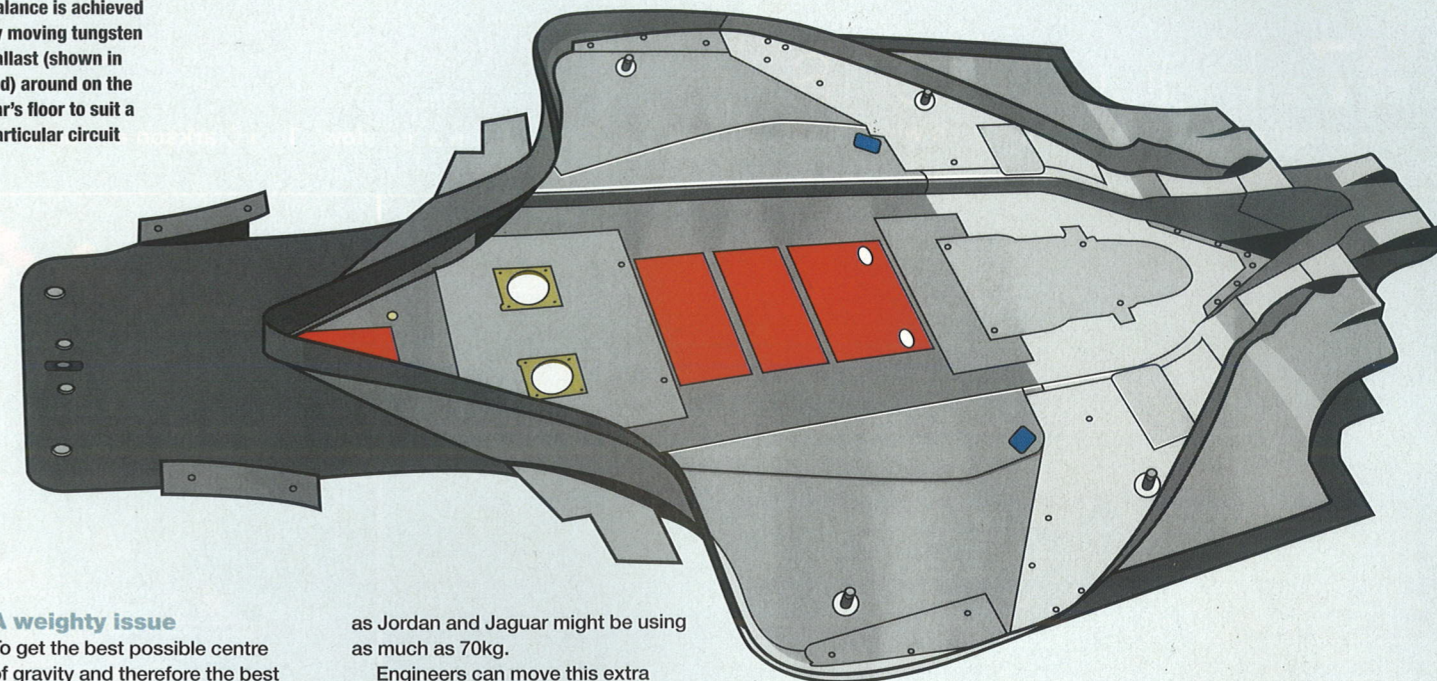
elements here is the unusual position of the caliper: right at the bottom. Several teams are using this solution at the rear – but McLaren are the first team to use the same system at the front. Their aim is to get the lowest possible centre of gravity.

The MP4-17D's twin-keel system shows clearly in the bottom-left-hand corner of our diagram (right). McLaren have pushed this concept even further with their brand new MP4-18A (see page 22).

(Right) McLaren's braking system and the twin keel. For aero efficiency, the brake disc is not completely sealed



Balance is achieved by moving tungsten ballast (shown in red) around on the car's floor to suit a particular circuit



▲ A weighty issue

To get the best possible centre of gravity and therefore the best possible handling, teams have made their cars much lighter in recent years. But under F1's regulations, they must still weigh 600kg, with the driver included. Teams meet this requirement by using ballast.

Ferrari, we understand, are using more than 100kg of tungsten in their car's floor, and other teams such

as Jordan and Jaguar might be using as much as 70kg.

Engineers can move this extra weight forward or backwards, depending on each circuit's characteristics, to achieve the handling they want. The centre of gravity usually ends up just behind the driver's back, in the fuel tank, 20cm above the track.

On the diagram of the Toyota floor above, the tungsten is coloured in

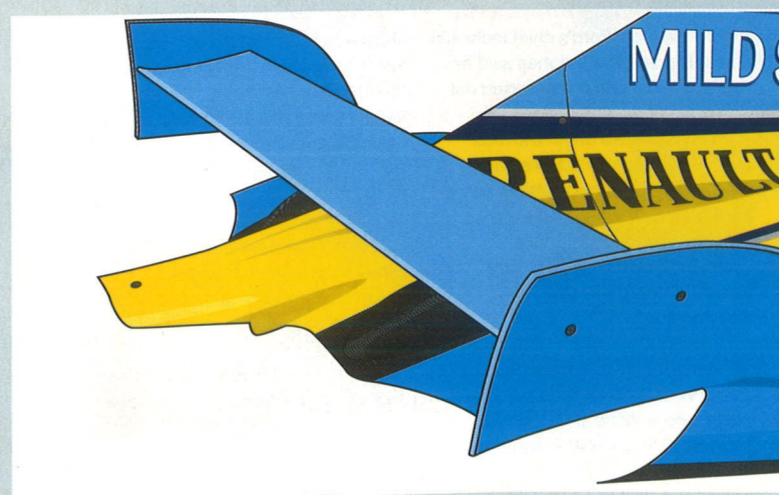
red. This ballast is very expensive – \$40,000 per set, and most teams use 10 sets per season. The very-front section of the floor (coloured black above) is also part of the ballast.

Olivier Panis's retirement in Austria was caused by a piece of ballast hitting a barge board. Very

dangerous. Last year, FIA race director Charlie Whiting asked teams to be absolutely certain that tungsten is securely fitted to car floors. The FIA are now understood to be considering a way of forcing the teams to stop using so much ballast in the future.



(Left) Renault's new rear wing features a uniquely shaped – and potentially controversial, it seems – endplate



(Left) Toyota and Minardi had 'floating' wings similar to this one above the engine cover – but Renault's was by far the most spectacular version

(Right) This small wing on the airbox was another new feature in Monaco

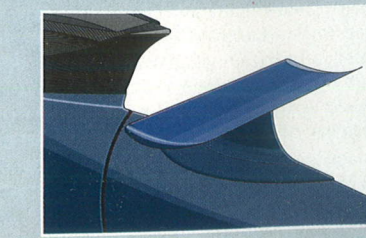
◀ New aero package for R23

John Iley – head of aerodynamics at Renault – worked like crazy in the wind tunnel to prepare for Monaco. The R23 raced with several new features, including a new rear wing made up of three planes, in accordance with the regulations.

Of particular interest was the rear wing's endplate. Its shaping (left) at the top is unique. Paddock rumour suggested that such an item could move a bit with downforce, possibly rendering it a mobile aero device – which is not allowed in F1.

A 'floating wing' (bottom left) was added above the end of the engine cover. Toyota and Minardi used a similar (but less spectacular) solution. Notice also the small wing at the top of the airbox (below).

Finally, Renault used double barge boards very similar to those on the Ferrari F2003-GA. The car's global aerodynamic efficiency was excellent, but it could still do with more power: even with the D-spec engine, the car was too slow in the Tunnel. 1



#7: Race shorts

'Our Jense' misses out, Toyota get even worse, and Barrichello and Trulli put on a 'go slow'. Tom Clarkson explains



(Left) Button was merely "groggy" after this big shunt; (top) Minardi - with a new sponsor's livery - suffered a double DNF; (above) a sluggish Trulli held everyone up - including Schumi

STEVE ETHERINGTON/LAT; CLIVE ROSE/GETTY IMAGES; PA PHOTOS

"Groggy" Button pulls out

Jenson Button didn't qualify or race at Monaco due to his massive crash during Saturday morning practice. As he braked for the Harbour Chicane he hit the outside guard rail, which catapulted him into the inside guard rail at 170mph. The worst part of the accident happened after he slid out of control down the hill, hitting the next barrier side-on. The impact had a force of more than 20g.

"I was on a *really* good lap," said Jenson the next day, having spent the night under surveillance at the Princess Grace Hospital. "I feel fine, although my head's still a bit groggy, but that'll clear up pretty quickly."

The car behind is a Toyota

A bad race for Toyota. On Thursday their cars were outpaced by both Minardis, and in Saturday qualifying Olivier Panis - fuelled for a one-stop strategy - only just managed to pip them. Cristiano da Matta, on a two-stopper, qualified 10th - but the fact is that the TF103 was not as effective through the Principality's streets as last year's TF102 was.

"We suffered from a grip problem all weekend," said Panis. "I opted for a one-stopper because I thought I had to do something different since the pace just wasn't there."

In the race Panis had a severe braking problem and finished 13th (and last); Da Matta just missed a point, finishing ninth... 12 seconds behind poor Rubens Barrichello's unaccountably sluggish Ferrari.

Rubens... in slow motion

Barrichello did not feel comfortable all weekend. He struggled more than his team-mate Schumacher did with the tyres that Bridgestone brought to Monaco - and, because of his lowly seventh place on the grid, had traffic problems throughout the race.

"Constant traffic meant I wasn't able to push to the car's limit," he said afterwards. "I can only describe my race as disappointing." Very.

He was Trulli in the way

Jarno Trulli blamed traffic problems, too - and ended up a far-from-impressive sixth. In truth, though,

he was the race's main mobile chicane! He had beaten Michael Schumacher off the line, then held him up until he (Trulli) pitted on lap 27... then he did the same to David Coulthard all the way to the flag.

"I didn't have any particular problems," said Jarno. "I lost quite a bit of time with backmarkers, and the three points I got for finishing sixth are small consolation."

We are reliably informed...

Before the race, Ford's chief technical officer Richard Parry-Jones said he hoped Jaguar had finally sorted out their reliability problems. Ahem!

Both R4s were out of the race by lap 17, Antonio Pizzonia having suffered an electrical problem and Mark Webber a hydraulic leak.

"We have to iron out these problems," said Jag boss Tony Purnell. "They really shouldn't be happening."

Wilson starts well - again!

Justin Wilson again showed how brilliant he is in the early laps. He overtook Panis at the Grand Hotel

Hairpin on the first lap - around the outside, for good measure! - but his efforts were undone at the Harbour Chicane, where he hit a kerb and his Cosworth engine went briefly into anti-stall mode.

He and his Minardi team-mate Jos Verstappen were on one-stop strategies, but they went out of the race within a lap of each other with fuel vaporisation problems.

Fisi fizzles out

Giancarlo Fisichella put in a truly scintillating lap in the Thursday qualifying session to set the seventh-fastest time in his far-from-rapid Jordan - ahead even of eventual race winner Montoya. But that was as good as Monaco specialist Fisi's weekend got. While other teams improved their cars, Jordan only slipped back down the field.

On Saturday Fisi managed only the 12th-fastest time - and his race was predictably ruined by traffic.

"I'm not happy," he said. "My car wasn't good during the first two stints. It was much better-balanced in the last stint, but it was too late."

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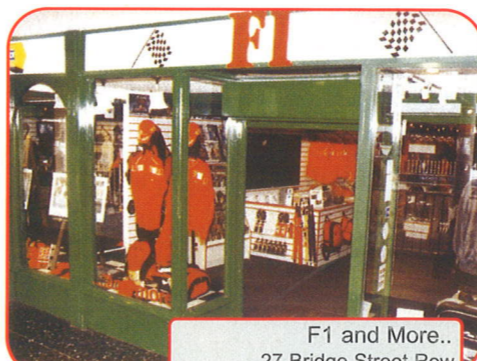
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#8: The Mont-real deal

Everyone loves the Canadian GP and it nearly always provides a cracking race. Why can't they all be like this?



Travel info

- Montreal's modern cityscape (left) is stunning, but don't miss Old Montreal's pretty cobblestone streets
- Get the metro to Ile St-Hélène, 250m from the circuit
- Visit *F1 Racing* at the Winston Churchill bar, 1459 rue Crescent
- Jacques Villeneuve's club NewTown is at 1500 rue Crescent
- As well as taking you to Montreal for the race, Page & Moy offer a trip with three nights in Boston from £1,549. Phone +44 (0)8700 106 393

2002 results

Top eight finishers

- 1 Michael Schumacher**
Ferrari F2002, 1h33m36.111s, 121.591mph
- 2 David Coulthard**
McLaren-Mercedes MP4-17, +1.132s
- 3 Rubens Barrichello**
Ferrari F2002, +0.444s
- 4 Kimi Raikkonen**
McLaren-Mercedes MP4-17, +37.563s
- 5 Giancarlo Fisichella**
Jordan-Honda EJ12, +42.812s
- 6 Jarno Trulli**
Renault R202, +48.947s
- 7 Ralf Schumacher**
Williams-BMW FW24, +51.518s
- 8 Olivier Panis**
B.A.R.-Honda, +1 lap

Fastest lap

Juan Pablo Montoya
Williams-BMW FW24,
1m15.960s, 128.432mph
NEW RECORD

Number of laps

70
Race distance
189.695 miles

Top eight qualifiers

- 1 Juan Pablo Montoya**
Williams-BMW FW24,
1m12.836s, 135.773mph
- 2 Michael Schumacher**
Ferrari F2002, +0.182s
- 3 Rubens Barrichello**
Ferrari F2002, +0.444s
- 4 Ralf Schumacher**
Williams-BMW FW24, +0.465s
- 5 Kimi Raikkonen**
McLaren-Mercedes MP4-17,
+1.062s
- 6 Giancarlo Fisichella**
Jordan-Honda EJ12, +1.296s
- 7 Nick Heidfeld**
Sauber-Petronas C21, +1.303s
- 8 David Coulthard**
McLaren-Mercedes MP4-17,
+1.549s

When to watch ITV

Qualifying 1
00.00 Saturday June 14

Qualifying 2
23.50 Saturday June 14

Race
17.15 Sunday June 15

Highlights
00.05 Monday June 16

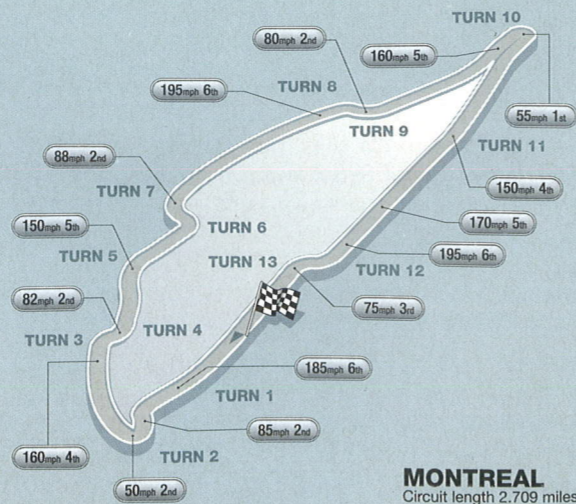
Times subject to change

Driver's eye



Giancarlo Fisichella

"I don't know why, but I always seem to go well at the Canadian Grand Prix. I feel very confident at the Circuit Gilles Villeneuve because it's quite easy for me to find the limit of the car and the circuit each time I go there. You have to be quick in all three chicanes – and my technique through them seems to be effective. Maybe that's why I tend to get good results there. I really like Montreal as well – it's a fantastic city and that helps make the weekend more enjoyable. I'm hoping I'll score points there again this year."



Canada 1998: Fisichella comes second behind Schumi. It'll be a tough call to get there this year

MEMORY (PIT)LANE

Some guys have all the luck

Funny GP, Canada. Some guys, like Fisichella, always go well there. The rest? Well...

If Giancarlo Fisichella was ever going to break his grand prix duck, the odds would have been on his doing so in Canada, not Brazil.

Third for Jordan in 1997, runner-up (as a Benetton driver) to Michael Schumacher in '98 and then to Mika Hakkinen in '99, when the race finished under yellow flags. Still with Benetton he claimed another third in '00 before a retirement in '01 and a fifth in '02 when back with Jordan.

Jordan, indeed, have reason to like the circuit. In '95 Rubens Barrichello and Eddie Irvine followed Ferrari's Jean Alesi home to give the team their best result until Spa '98, when Jordan were first and second.

Even now, 18 months after the flamboyant Frenchman's retirement, it seems hard to believe that Alesi's

only win was that '95 one. He went on to a number of podium finishes with Benetton in '96 and '97, but never again did he mount the top step.

If that '95 win was gifted to Alesi, Nigel Mansell wrapped up his present to Nelson Piquet in '91 in gold foil and had it delivered by Concorde. That was the year that Mansell, having led 68 of the 69 scheduled laps, decided to celebrate a little early by waving to the crowd on the last lap. Unfortunately, the Renault engine in his Williams mysteriously 'cut out' on that final lap. If Mansell let the revs drop too low and stalled, only he will know... but Piquet wasn't about to look a gift horse in the mouth. As a result of that faux pas Mansell remains the only driver ever to have led every lap of

a Grand Prix except the last one.

'Our Nige' had a bit of a love-hate relationship with Canada. He won in '86, but then in '89 he and Alessandro Nannini were disqualified for starting too early. No, not jumping the start, but starting way before anyone else.

Both drivers had pitted at the end of the parade lap to change to slicks as the track was beginning to dry. When they reached the end of the pitlane and nobody stopped them, they assumed the race was under way and sped out onto the track.

Unfortunately, the lights hadn't turned green and they were subsequently black-flagged.

Not a circuit to gamble with then: just ask Olivier Panis, who broke both legs here in a painful '97 shunt.

Stewart Williams

'MANSSELL WRAPPED UP HIS PRESENT TO PIQUET IN '91 IN GOLD FOIL AND HAD IT DELIVERED BY CONCORDE'

CRYSTAL BALLS

Watch out for those walls, boys

Canada rewards consistency. Tiny errors can mean calamity



Ralf Schumacher in the barrier back in '97

There's more to Montreal's Circuit Gilles Villeneuve than meets the eye. Its long straights and slow corners don't look challenging, but you underestimate them at your peril – as Toyota found out last year.

The team went to Montreal for their first Canadian Grand Prix expecting their superb RVX-02 engine to power them to the front. Poor handling over the kerbs and lack of traction scuppered any chance of a decent result.

The kerbs at Circuit Gilles Villeneuve are similar to those at Imola in that a driver has to attack them to be quick – but he is reliant on the car's being able to ride them well. So, for a form guide, look no further than April's San Marino Grand Prix.

Williams, therefore, will be strong – as at Imola – because FW25 has the right attributes: great traction and engine, and it rides kerbs well. Ferrari didn't race their F2003-GA at Imola, but it seems almost inconceivable that this majestic machine will not be competitive everywhere – even if Michelin get the jump on Ferrari's tyre supplier Bridgestone.

McLaren hope to introduce their MP4-18A in Montreal, which will be as tough a debut as they come. The fact that Canada is a fly-away race makes it harder to get parts to the track, and the long periods of full throttle will make reliability a challenge for the all-new Mercedes engine.

From a driving point of view, the track isn't too demanding – although, because the walls are so close (see picture above), the drivers can ill afford to make mistakes. That's probably why Michael Schumacher has won four times in the past six years (five in the past nine). Another driver who shines here is Giancarlo Fisichella. He's nearly won in 1998 and he can be expected to hustle the Jordan EJ13 higher up the grid than it deserves to be.

Irrespective of the on-track activity, Montreal is a fantastic venue for a grand prix – better than Monaco. The city combines French chic with American largesse: few can resist its charms.

Tom Clarkson

#9: Racing the ghosts of the past

It's haunted by the old 'Ring. By a patchy history. By Schumi's '97 antics. Welcome to Europe, where controversy reigns



Travel info

- See the Wolfgang von Trips museum, located between Koblenz and the Nürburgring
- You're in magical castle-land (left), so go play tourist
- If you can get to Cologne, visit its new Sport Museum at Reinauhafen 1
- Cologne has more than 20 local breweries. Prost!
- You should be able to park fairly easily at the circuit
- Check out www.motoringtours.com for Page & Moy's trips such as a Saturday-to-Monday tour costing from £99

2002 results

Top eight finishers

- Rubens Barrichello**
Ferrari F2002, 1h35m7.426s, 121.006mph
- Michael Schumacher**
Ferrari F2002, +0.294s
- Kimi Raikkonen**
McLaren-Mercedes MP4-17, +46.435s
- Ralf Schumacher**
Williams-BMW FW24, +1m6.963s
- Jenson Button**
Renault R202, +1m16.943s
- Felipe Massa**
Sauber-Petronas C21, +1 lap
- Nick Heidfeld**
Sauber-Petronas C21, +1 lap
- Jarno Trulli**
Renault R202, +1 lap

Fastest lap

Michael Schumacher
Ferrari F2002, 1m32.226s, 124.821mph
NEW RECORD

Number of laps

60

Race distance

191.778 miles

Top eight qualifiers

- Juan Pablo Montoya**
Williams-BMW FW24, 1m29.906s, 127.693mph
- Ralf Schumacher**
Williams-BMW FW24, +0.009s
- Michael Schumacher**
Ferrari F2002, +0.129s
- Rubens Barrichello**
Ferrari F2002, +0.481s
- David Coulthard**
McLaren-Mercedes MP4-17, +0.644s
- Kimi Raikkonen**
McLaren-Mercedes MP4-17, +0.685s
- Jarno Trulli**
Renault R202, +1.021s
- Jenson Button**
Renault R202, +1.230s

When to watch ITV

Qualifying 1
23.30 Friday June 27

Qualifying 2
12.40 Saturday June 28

Race
12.05 Sunday June 29

Highlights
23.45 Sunday June 29
Times subject to change

Driver's eye

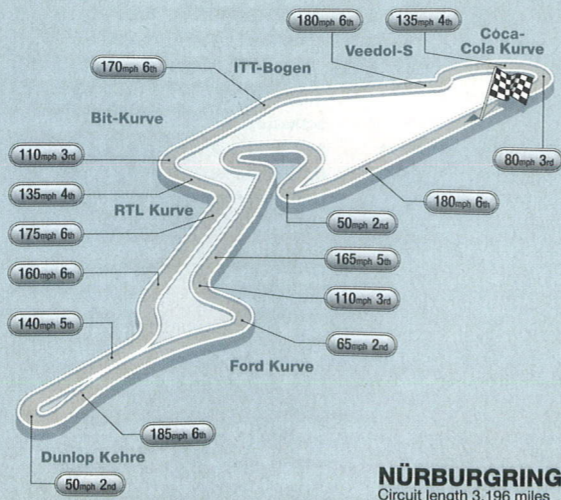


Jarno Trulli

"The Nürburgring is a tricky, high-downforce circuit that includes an interesting mix of corners. I think experience can be a real advantage here.

"I know it well and I'm used to reading the changing conditions. The time I spent in the junior formulas definitely helped me in 1999 [when Trulli finished second here, still his highest-ever F1 finish, up to and including the Spanish GP '03]."

"I don't think the circuit itself is anything special – it's pretty uninspiring really. There are no real opportunities for the driver to make big gains in lap time, so I will be concentrating on building up a good rhythm in order to perform competitively."



LAT ARCHIVE; BETTY IMAGES

Check out that tyre mark on the bodywork. It's Jerez 1997, after Schumi collided with Villeneuve

MEMORY (PIT)LANE

Expect the unexpected

The European GP: either memorable or miserable. You never know what you'll get

Now a regular fixture on the calendar, the European Grand Prix has had a difficult and, at times, stuttering history.

The Nürburgring has held the race since 1999 but the first 'real' European GP was in '83 (some early GPs were known as the European as well as their own country's GP). That '83 race was held at Brands Hatch.

It came about because of the cancellation of a proposed grand prix in New York and it meant that Brands was to be the penultimate race in the championship. The title was still being scrapped over by Brabham's Nelson Piquet and Renault's Alain Prost. Piquet won, both at Brands and in the championship.

After switching to the Nürburgring for '84, it was back to Brands in '85

for a race that heralded the start of Mansell mania. Nigel took the lead on lap nine and held his nerve to record the first of his 31 victories.

It was another eight years before the fourth European Grand Prix. Autopolis had been pencilled in for an Asian GP. When it failed to materialise, Britain again had the honour – but this time Donington Park was the venue.

Ayrton Senna's stunning opening lap in the pouring rain, a superb showing by the young Rubens Barrichello and the huge number of pitstops ensured that it was a race that has stuck in the memory... but the drama faded thereafter.

Jerez '94 and the Nürburgring '95 and '96 were forgettable, apart from Jacques Villeneuve's first win in only

his fourth grand prix – 15 years since his father's last victory in Spain.

The next year, Villeneuve was at the centre of the most memorable European GP of all: the '97 title showdown at Jerez. Needing to outscore Michael Schumacher by a point, he dived inside Schumacher's Ferrari on lap 48 in a bid for the lead.

The resultant collision was seen by many as a blatant attempt by Schumi to take Villeneuve out of the race. It was immaterial: the only loser was Schumacher. Villeneuve continued and, although he let through the two McLarens of Mika Hakkinen (for his first win) and David Coulthard on the last lap (causing yet more controversy), third place was enough for the title.

Stewart Williams

'IN '97, VILLENEUVE WAS AT THE CENTRE OF THE MOST MEMORABLE EUROPEAN GP: THE TITLE SHOWDOWN'

CRYSTAL BALLS

Take a punt on wonder boy Alonso

Ferrari will be strong here. But watch Renault, too



Eye, eye: Alonso sees F1 glory ahead

With Spa no longer on the calendar the European Grand Prix has become the geographical home for the Schumacher brothers. Kerpen, their birthplace, is 20 minutes away and, after the death of their mother in April, this will be an emotional race for them. But they showed more than enough mental steel to earn gold medals at Imola on the weekend of her death, so don't expect it to affect their driving this time around, either.

Sadly, the Nürburgring has none of Spa's character or challenge. It's typical of most stadium circuits in that it is built more for spectators than for drivers. Take the changes made last year: not only has the first-gear hairpin at the end of the pitstraight ruined the track's rhythm, it has also failed to improve overtaking chances.

The only redeeming feature is a quick uphill left-hander, but it's hardly enough to make the track worthy of hosting a grand prix. And, with the old 'Ring looming just the other side of an Eiffel hill or two, this one is something of a poor relation.

In terms of set-up, it's a medium-to-high downforce track, so it's unlikely to suit the Williams FW25, but very likely to be perfect for the Ferrari F2003-GA. McLaren will most likely take the fight to Ferrari, depending on how quickly they get to grips with their new MP4-18A.

Last year's race was decided by Michelin's inability to produce a durable race tyre. But they have made great strides since then and, assuming that they are better prepared this year, expect Renault to be a force. A win for Fernando Alonso is by no means out of the question on '03 form to date.

Even that, however, would be unlikely to outdo the sense of elation that followed the '99 race – Stewart Grand Prix's first (and only) win, with their other car third. The memory of JYS smiling his toothy grin from the top of the podium, showing more emotion than he did for any of his 27 victories as a driver, still sends a shiver down the spine of even the most grizzled, cynical Formula 1 veteran.

Tom Clarkson

#10: It's now for Nevers

Phew! It's almost French Grand Prix time already. Changes to the track should mean more overtaking this year



Travel info

- This is one of F1's more rural venues, for those who enjoy life in the tranquil countryside (left)
- If you're more of an adrenaline lover, watch at the Adelaide Hairpin – it's where Kimi Raikkonen slipped up last year
- The Loire Valley boasts magnificent castles: visit some
- How about a trip north, to Paris – always one of the world's most alluring cities?
- There's a shuttle bus between Nevers and Magny-Cours over the GP weekend

2002 results

Top eight finishers

- 1 Michael Schumacher**
Ferrari F2002, 1h32m9.837s, 123.737mph
- 2 Kimi Raikkonen**
McLaren-Mercedes MP4-17, +1.105s
- 3 David Coulthard**
McLaren-Mercedes MP4-17, +31.976s
- 4 Juan Pablo Montoya**
Williams-BMW FW24, +40.676s
- 5 Ralf Schumacher**
Williams-BMW FW24, +41.773s
- 6 Jenson Button**
Renault R202, +1 lap
- 7 Nick Heidfeld**
Sauber-Petronas C21, +1 lap
- 8 Mark Webber**
Minardi-Asiatech PS02, +1 lap

Fastest lap

David Coulthard
McLaren-Mercedes MP4-17, 1m15.045s, 126.719mph
NEW RECORD

Number of laps

72

Race distance

190.077 miles

Top eight qualifiers

- 1 Juan Pablo Montoya**
Williams-BMW FW24, 1m11.985s, 132.077mph
- 2 Michael Schumacher**
Ferrari F2002, +0.023s
- 3 Rubens Barrichello**
Ferrari F2002, +0.212s
- 4 Kimi Raikkonen**
McLaren-Mercedes MP4-17, +0.259s
- 5 Ralf Schumacher**
Williams-BMW FW24, +0.439s
- 6 David Coulthard**
McLaren-Mercedes MP4-17, +0.513s
- 7 Jenson Button**
Renault R202, +0.776s
- 8 Jarno Trulli**
Renault R202, +1.045s

When to watch ITV

Qualifying 1
23.30 Friday July 4

Qualifying 2
12.40 Saturday July 5

Race
12.05 Sunday July 6

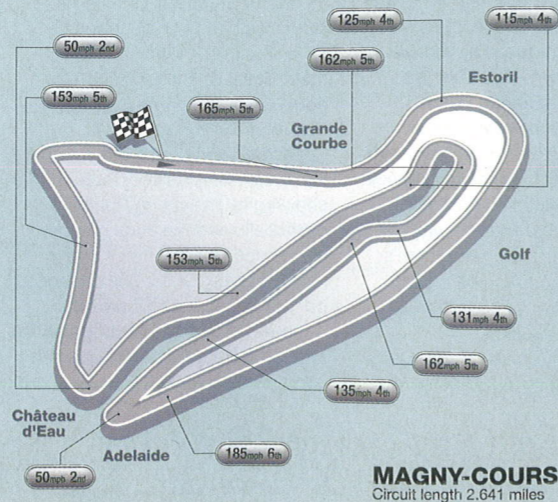
Highlights
23.45 Sunday July 6
Times subject to change

Driver's eye



Kimi Raikkonen

"I'm looking forward to this year's French Grand Prix at Magny-Cours. The circuit has a good mix of low-speed hairpins, medium-speed corners and fast chicanes – and I'm saying that despite the unfortunate end to last year's race from my perspective [Kimi slipped off on oil while leading the race and was passed by Michael Schumacher]! It's more of a technical challenge than a flat-out, on-the-limits racing track. It has a very smooth surface, which allows us to run low ride heights and which also results in low mechanical grip."



10 Monte Carlo



Villeneuve, Jabouille and Arnoux in 1979. Are those sweat stains on Jean-Pierre's overalls?

MEMORY (PIT)LANE

Home is where the wins are...

... if you're lucky, as Renault were in the late 1970s and early '80s. Will they be again?

A Formula 1 team will take their first win any time, any place – but if they could choose the track at which it would happen, most would plump for their home grand prix. Renault would have preferred that their first win had come earlier than the 1979 French Grand Prix at Dijon, having been in the sport for nearly two years at that point. But when Jean-Pierre Jabouille brought the RS10 home ahead of Gilles Villeneuve's Ferrari in their home race, not only was it Renault's first win but also the first ever in F1 for a turbocharged engine.

There followed a brief run of Renault French GP domination. As Dijon and Paul Ricard took turns to host the race, Renaults triumphed in three of the next four years thanks to

Alain Prost ('81), René Arnoux ('82) and Prost again in '83.

The man who had masterminded Renault's entry into F1, Gérard Larrousse, had – ironically – brought the curtain down on his (very) brief and unsuccessful F1 career at Dijon five years earlier. He failed to qualify his Scuderia Finotto Brabham BT42, after a retirement in Belgium two months earlier, and promptly quit.

He stayed with Renault until '85, then left to work briefly with Ligier before setting up his own Larrousse team for the '87 season. Unfortunately, the team's fortunes mirrored his own F1 career, rather than that of Renault: one podium and 25 points, none of them in France. The closest they got to troubling the scorers at home was in '90 at Ricard

when Aguri Suzuki and Eric Bernard finished seventh and eighth.

Tony Maggs had reason to curse the French GP even more. He only competed in 25 grands prix over five years, including two races in France: at Rouen in '62 and Reims in '63. He never won a GP, but in both French events he came close.

At Rouen, in his sixth race, his works Cooper followed home Dan Gurney's Porsche – the only win for the German marque. Then at Reims he had to play second fiddle, albeit a distant one, to Jim Clark's Lotus. He took a third place later in '62, in South Africa, so you might have expected great things – but his career slowly petered out and ended in South Africa in '65.

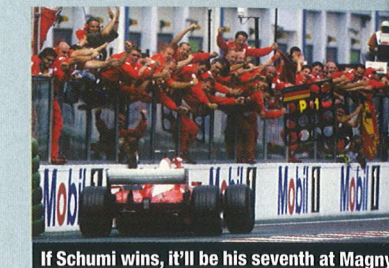
Stewart Williams

'TONY MAGGS HAD REASON TO CURSE THE FRENCH GP. HE NEVER WON A GP, BUT IN FRANCE HE CAME CLOSE'

CRYSTAL BALLS

Can they stop the red cars?

Only Renault or McLaren can beat Ferrari at Magny-Cours



If Schumi wins, it'll be his seventh at Magny

Renault, as an engine supplier, won five of the first six races held at Magny-Cours between 1991 and '96. Their bid this year to recreate their glory days puts them firmly in the spotlight at their home event. Can they really roll back the years? That depends on the degree to which the best chassis on the grid is handicapped by what began the year as just about the worst engine. If a heavily revised motor can propel Fernando Alonso into the same ballpark as his rivals, his natural ability will take care of the rest.

Magny-Cours may be the folly of former president François Mitterand, but it is anything but a hotbed of national fervour. Locals exhibit the lack of enthusiasm the French usually reserve for a US resolution at the UN. The circuit's rural location, near Nevers (should that be 'near Nowhere?'), adds to the muted atmosphere.

Cars run with minimum ride height because of the smooth surface, and brutal braking down to first gear twice interrupts the circuit's medium- to high-speed nature. The run-off area at one of these points, the final corner, has been increased for '03 and the final chicane has been removed in a bid to improve overtaking opportunities. Traditionally, though, the hairpin is the track's saving grace. It affords an excellent opportunity for overtaking and controversy.

David Coulthard still glows with embarrassment at the recollection of flicking the finger to Michael Schumacher there in '00. Deep down, though, you suspect he is pretty proud. The episode demonstrated the combative edge his fans had long yearned for – and that drive was also one of the finest of his career.

Incredibly, that race remains McLaren's only victory at Magny-Cours. Last year Kimi Raikkonen came within four laps of adding to their tally, only to run wide on oil. His slip gifted Schumi the win and, with it, a record-equalling fifth title.

McLaren and Renault have the best chance of averting another Schumacher win this year – which would be his seventh at Magny-Cours, if he were to achieve it.

Tom Clarkson

Dear Patrick,
Must say I hadn't quite appreciated just how many of *F1 Racing's* readers were devoted fans of Ralf Schumacher. A tricky state of affairs, one might be tempted to conclude, given that you chaps at Grove seem to be pretty consistently under the cosh from the Munich brigade.

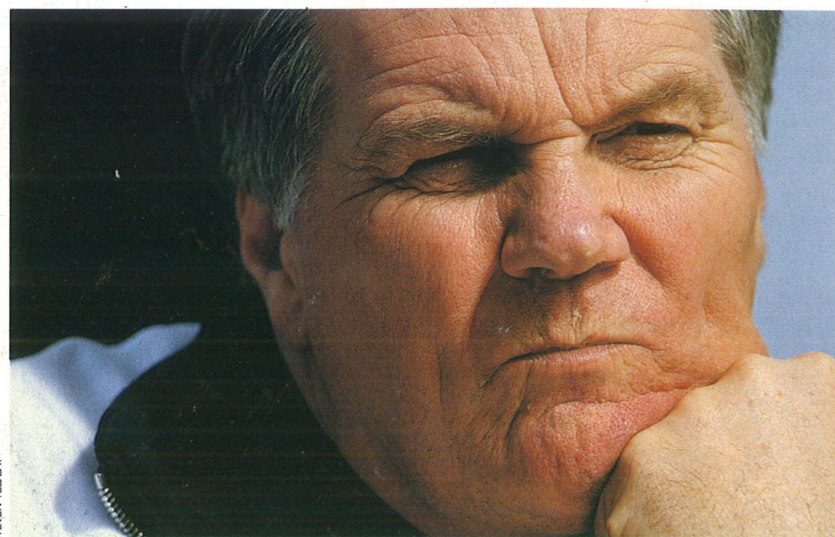
Bloke only has to run up a half-decent 3.0-litre V10 and the next thing you hear is sniggering from the clubhouse, obvious message being that we can make a good chassis as well, so move over Frank and Patrick while we show you how. As I think you may have hinted already, just because you are an aerodynamicist who's won the Golden Propeller award (second class) for producing a 0.35 per cent reduction in wind noise on a new gutter for the 5-series, doesn't automatically mean you're equipped to produce the fourth

variation of an FW25 diffuser, particularly when Ralf spends much of his time in the gravel traps ripping off most of its appendages.

I mean, do me a favour. All this moaning and groaning from BMW may have a degree of justification, but it doesn't take a degree in crystal ball gazing to realise that Williams and the Boys from Bavaria have no alternative but to make their partnership work. The notion that BMW are poised to wander off and cut a deal with Jordan or B.A.R – thereby effectively sluicing the past four years' collaboration straight down the drain – is about as barny an idea as I've ever encountered. But then again, this is Formula 1, of course, a sport in which rational decision-making is often regarded as slightly eccentric in itself.

Say what you might about the Mercedes brigade and

BMW want more from Williams' tech boss Patrick Head (below). They say he's not building the cars right. But it seems they'll stand by Team Willy



STEVEN TEE/LAT

'Even in your current state of uncompetitiveness you're better than most of the walking wounded who pass for teams lately'

their partnership with McLaren, but I can't imagine anyone from the three-pointed star sounding off with public criticism of Ron Dennis or Adrian Newey. Anybody who wants to last in that particular partnership keeps their trap well zipped in front of the reptiles. Only behind closed doors do they go crazy ape-shit with each other.

I'm assuming here that the good Francis doesn't want a material change in the way Williams do their business – a fairly reasonable position to take, I would have thought, given that (a) you've won umpteen world championships over the past two decades and (b) even in your current state of uncompetitiveness you're better than most of the walking wounded who pass for grand prix teams in the second half of the starting grids these days.

Returning to the Boy Ralf, Patrick, you won't believe one of the letters I've received from a young lady on the Emerald Isle. A quick glance at the sign-off line – "All my love" – raised my spirits. But only momentarily. The main burden of the good lady's gist was that she was 16 years old and the "load of rubbish" I wrote about Ralf back in May "made no sense at all." She then proceeded to put my line of what I thought was rational and well-modulated criticism through the shredder, making it quite clear she thought I was stark, raving bonkers and thus talking all manner of garbage.

I was once told that it was best not to answer letters in person, believing that if they are left in the pending tray long enough they will answer themselves. Watching Ralf parked up in the kitty litter at the A1-Ring on his Friday qualifying run, I thought, provided the only answer that was needed. What nobody seems to explain to me is how a man who drove so beautifully, in extremely stressful conditions, to qualify alongside Michael at Imola can make such a pig's ear of things a few weeks later. But I expect you've been asking that one yourself, Patrick. Anyway, I've always found it best never to argue with a woman as it always seems to me a one-way ticket to a thick ear, either figuratively or literally. So I'll leave Ralf's fan to herself.

In any event, Ralf and Juan Pablo seem to have remained pretty upbeat, in public at least, over the long-term potential of the FW25, so perhaps we'll see the Williams sideboard sagging under the weight of a fresh collection of silverware before many more months have passed.

In closing, I must send you a gramophone record of that fella Noel Coward's warbling rendition of *Don't let's be beastly to the Germans*. It might put a smile on Ralfie's face, but the BMW directors might not see the funny side – and for God's sake don't tell any of them that it was first recorded in 1943. Things were pretty stressed between us at that time, too, so I'm told – certainly not the moment to be asking for a 20 per cent press discount on a BMW 328i Cabriolet, as a holder of a permanent FIA credential.

We'll meet again, don't know where, don't know when.

the SCRUTINEER

PULSAR



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