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EXCLUSIVE
ALEX WURZ

Why McLaren's super-tester deserves a race seat in 2003

EXCLUSIVE
GEOFF WILLIS

Can BAR's new tech boss stop the rot?

INVESTIGATION
NAME THE BEST FERRARI
I'VE EVER... AND PROVE IT SCIENTIFICALLY!

REVIEW
MICHAEL SCHUMACHER & RYOMA SATO
Team's new boys look out - loud

REVIEW
BERNARDINI SAUBER
F1's Mr Nice Guy makes a big player

REVIEW
DAVID BRADBURY
Toyota's 'new' star looking sky-high again



JENSON
BUTTON

DON'T WORRY BE HAPPY

'I WANT TO BE CHAMPION AND I KNOW I CAN DO IT'



MICHAEL v RALF

WHICH SCHUMI WILL BE 2002 WORLD CHAMPION? WE ASK THE MAN WHO KNOWS THEM BEST. IT'LL BE VERY CLOSE...

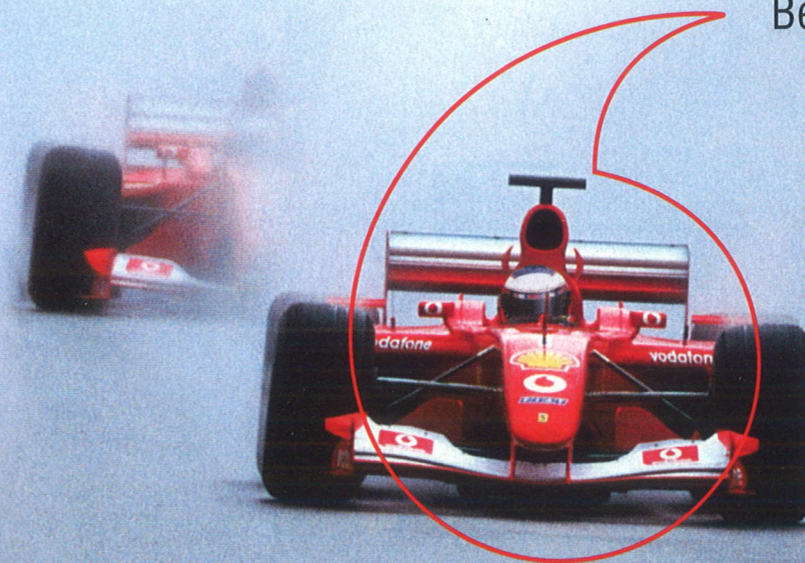


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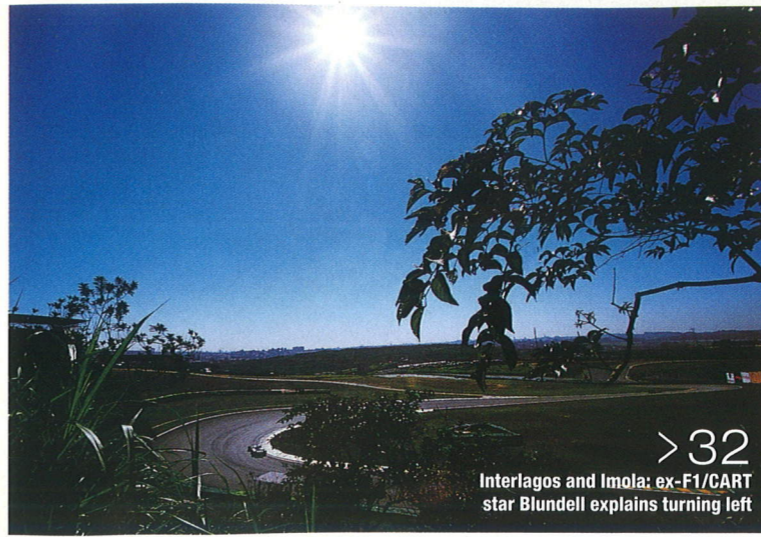
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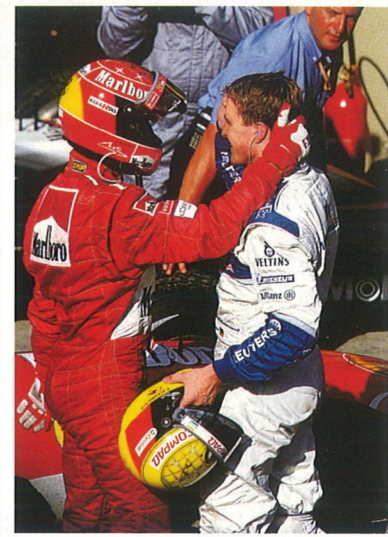


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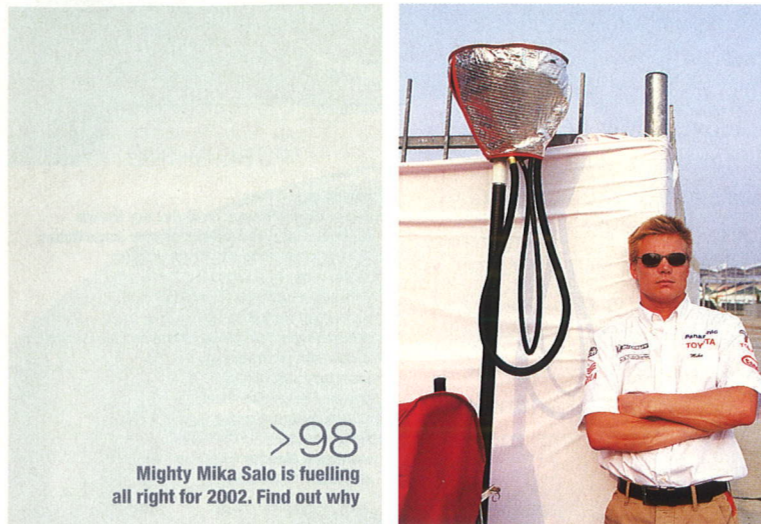


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Melley

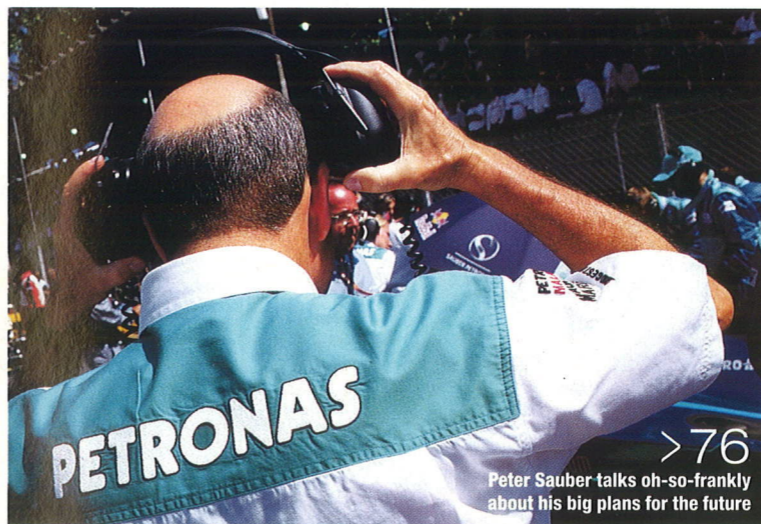
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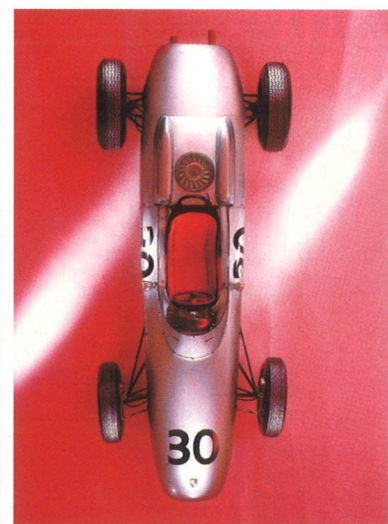
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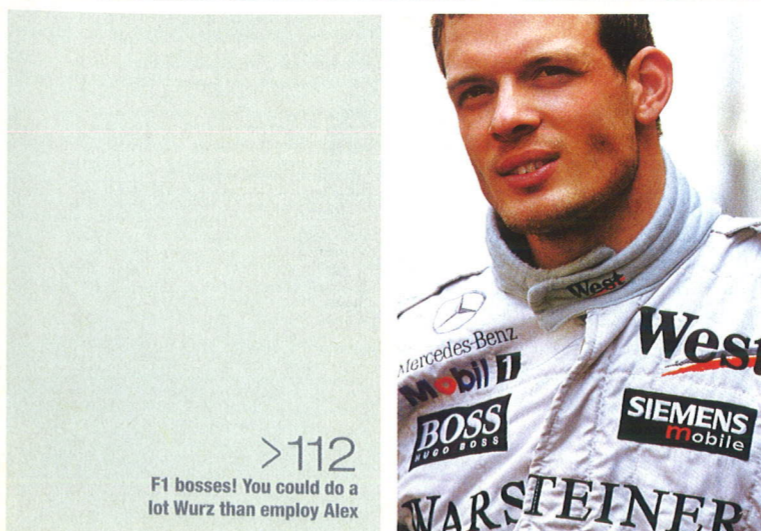
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Repent, oh ye of little faith!

April 14 2002 will go down in the private annals of Jenson Button's Formula 1 experience as a historic date. For, while the ever loyal tifosi made their annual pilgrimage to the Autodromo Enzo e Dino Ferrari to urge the Ferraris to put it up us Brits once again (and cheered and whooped and yahoo'd all the livelong day, as their dreams were fulfilled more comprehensively than ever before), the 22-year-old Somerset lad drove fast and faultlessly to finish a superb fifth. As he climbed out of his Renault R202, exhausted but delighted with a job extremely well done, the 100,000-strong crowd barely noticed him. But I did, and so did you.

Verily I say unto thee (because we Brits can wax almost as religious about our racing as Italians can, can't we?), the '02 Gran Premio di San Marino was the most impressive race of Jenson Button's F1 career heretofore.

Jenson had a great '00 – and a dreadful '01. But we at *F1 Racing* kept the faith.

Even in the darkest hours of his *annus horribilis*, we continued to tell you that this particular boy was still of a decidedly golden variety. And he was.

He still is. Moreover, now he has the tools with which to prove it. The fact that he fairly and squarely beat the McLaren of David Coulthard (an Imola specialist, remember) was a dreadful blow to the unhappy Woking team; for Button, by contrast, it was a triumph – and a turning point. From now on in, do not be too surprised to see 'our Jense' winning the non-Ferrari-non-Williams race more often than not.

So just how good is he? And just how well will '02 turn out to be for him? Very good indeed – and very good indeed. Well, that's what we think – so between pages 38 and 45 I have tried to tell you exactly why we think it. And between pages 46 and 50 Jenson tells his own story, with a little help from his dad's photo album. Don't worry, Jense; be happy.

Matt Bishop

contributors

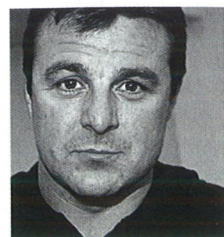


Mark Blundell
Racing anti-clockwise is a singular art: ITV studio pundit Mark knows the rigours of turning left (and we don't mean what happens when he gets on a 747) from his F1 and Indycar days. Turn to page 32 and soak up the g-forces.



Eddie Judd
Our picture editor is one of the unsung heroes of the *F1 Racing* office – and, as well as selecting the finest photographs for your enjoyment every month, she's a very talented snapper in her own right. See for yourself on page 86.

Heiner Buchinger
If you really want to know what makes the brothers Schumacher tick, it pays to speak to someone on the inside. Heiner, their former PR man, has that inside knowledge – on page 64 he spills the beans for the first time ever.



Jenson Button
He's no stranger to the pages of *F1 Racing*, our Jense – either as subject or columnist. Starting on page 46, he talks us through some formative moments of his career, illustrated by exclusive photographs from the family album.



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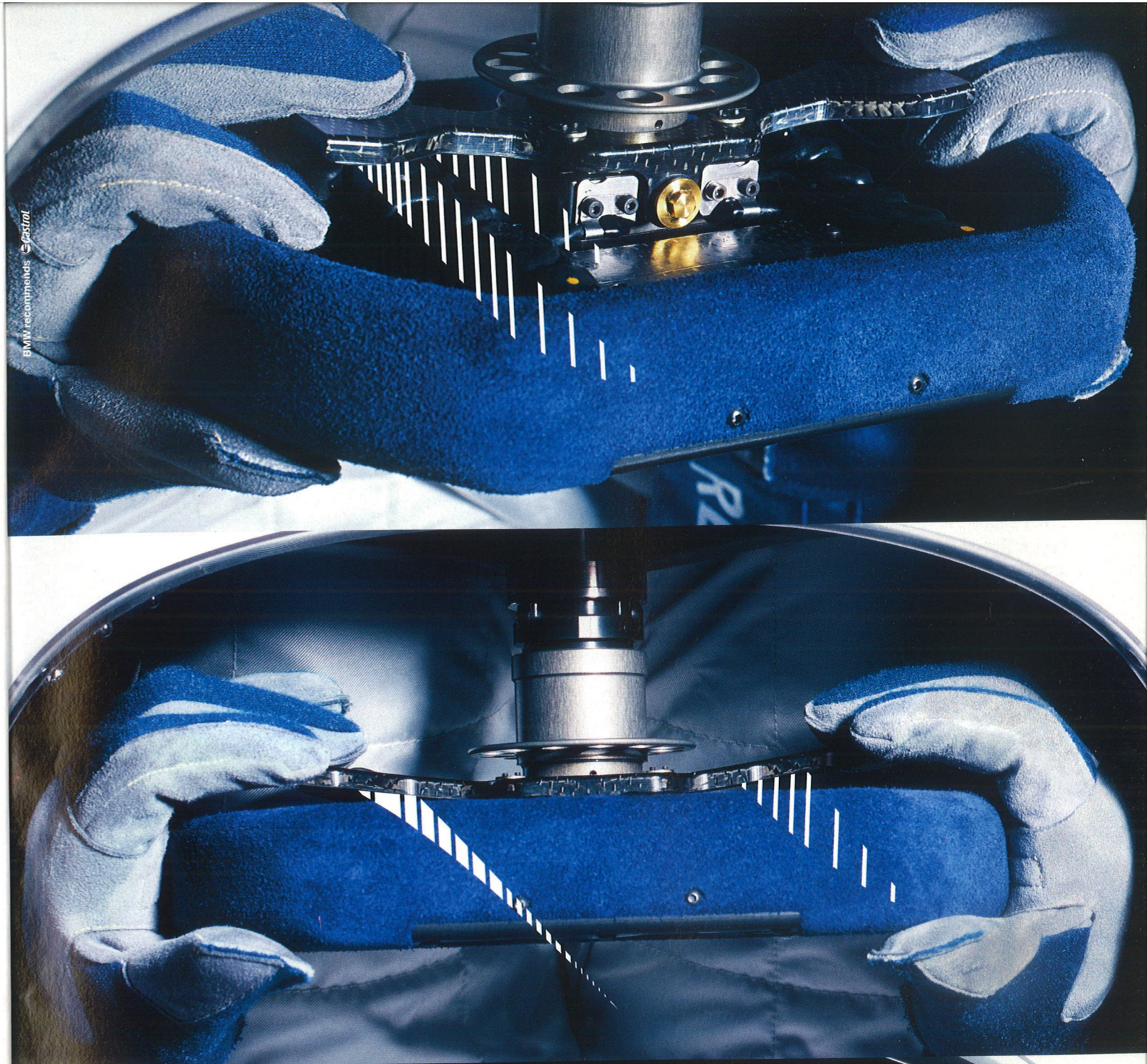
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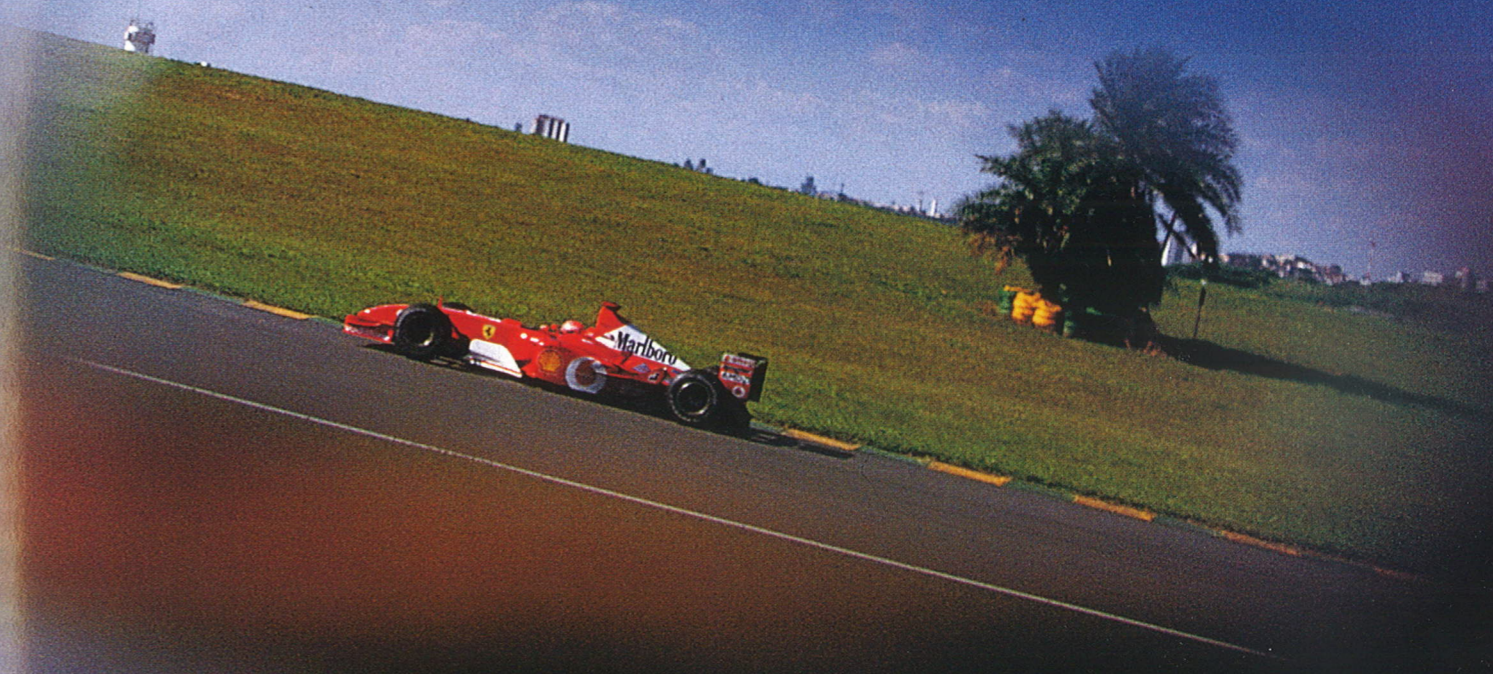
West

Done and dusted

DC has been pushing singularly hard to overcome the power deficit of the new Mercedes V10, cutting corners here and there – he was bound to fall off eventually
Circuit: Interlagos, Brazil

Time/date: 11.36am, Friday March 29

Photographer: Darren Heath, Canon EOS 1V, 600mm lens, Fuji Velvia film, 1/60 at F20



Mind the gap

Between the hairpins at Interlagos, new Armco has been installed to accommodate a FOCA digital television camera position – what can you see?

Circuit: Interlagos, Brazil

Time/date: 3.25pm, Sunday March 31

Photographer: Darren Heath, Canon EOS 1V, 35mm lens, Fuji Velvia film, 1/2000 at F2.8



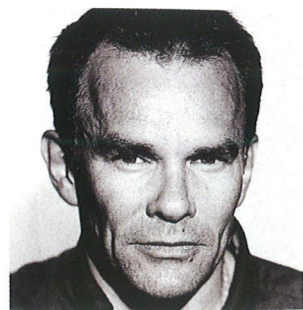
Motor homies

Formula 1's cooler kings, Jacques Villeneuve and Mika Salo, run side-by-side on track – and, by quirk of motorhome parking, side-by-side off track too

Circuit: Imola, San Marino

Time/date: 9.50am, Sunday April 14

Photographer: Darren Heath, Canon EOS 1V, 20mm lens, Fuji Velvia film, 1/500 at F6.3



Peter Windsor

Ferrari left McLaren no option but to switch to Michelin. So Ferrari are reaping the rewards of 'exclusive' tyres

Maximise your strengths and weaken your opposition's: thus it was sweet retribution for Ferrari over the winter, scoring as they did a double-whammy over McLaren and a whammy of a sort over Williams.

I speak, of course, of Ferrari's Bridgestone deal – the one that is allowing Bridgestone to do an all-round better job than they have ever done before while at the same time they dilute the Michelin effort at Williams and McLaren. (Michelin would interject at this point, affirming that McLaren provide them with valuable, additional information, but that would be to disregard one of the great, unwritten rules of Formula 1 – ie, exclusivity is everything; and, if you can't be exclusive, be the next best thing.)

Two thousand and two, then, is 1998 in reverse. Four years ago, you will recall, Ron Dennis turned the F1 world upside down by switching at the last minute to Bridgestones. It was a masterstroke. While Ferrari struggled to react with Goodyear, a company that had enjoyed a monopoly for almost too long, McLaren and Bridgestone sealed the championship virtually in the first half-season.

I asked Jean Todt that winter why Ferrari had allowed themselves to be pre-empted by McLaren and he replied that Ferrari had been contractually bound to Goodyear and had never been in a position to switch tyres. That in itself made sense... until one considered that McLaren, too, had been Goodyear-contracted. The difference was that Ron Dennis had found a legal loophole: by announcing their withdrawal from F1 at the end

of '98, while their team contracts were still alive, Goodyear had effectively rendered those team contracts null and void. Game, set and very comfortable match to McLaren.

'If McLaren were going to remain on Bridgestones they would obviously be racing Ferrari-orientated tyres. McLaren thus switched to Michelin'

Last autumn, though, while McLaren were deciding whether they should stay on Bridgestones (and risk losing to arch-rivals Ferrari on the same tyres) or switch to Michelins (where they had more chance of shifting the balance of power), Ferrari put together a Bridgestone proposal that was dazzling in its brilliance.

It was based, I imagine, on the following premises:

- (1) Bridgestone and Michelin are similarly great and have technology levels that are difficult to separate.
- (2) It would be an advantage to have the nearest opposition – Williams and McLaren – on the same tyre, leaving Ferrari almost exclusively with the other tyre, regardless of whether it was Bridgestone or Michelin.
- (3) With Williams obviously contracted to Michelin in the immediate future, it would be of benefit to Ferrari if McLaren switched to Michelin.
- (4) Both Bridgestone and Michelin can see the advantage in the Weight of Numbers: engine blow-ups, accidents etc can wreak havoc with your best-laid plans, regardless of the quality of your tyres.
- (5) Ferrari could not formally suggest to Bridgestone – or Michelin! – that McLaren switch camps.

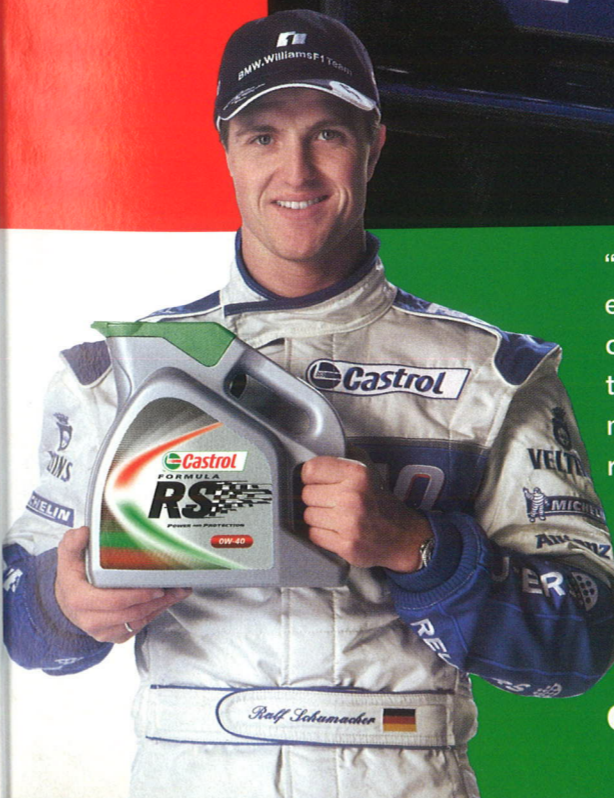
So what to do? The first thing Ferrari did was decide that trying to force McLaren onto Michelins was an easier option than switching to Michelins themselves. The second thing they did was take the gamble of signing a new Bridgestone agreement – an all-embracing, full-range, total-exchange contract of the like that has probably never before been seen in F1 – not with a tyre company that was also supplying tyres to major opposition, at any rate. Despite being aware that McLaren could indirectly benefit from Ferrari technology, Ferrari agreed to supply Bridgestone with every detail of their chassis dynamics – with every data recording, with every result – while in return Bridgestone would do the same with their tyres. For years – ever since the mid-'70s days of Karl Kempf and Harvey Postlethwaite – engineers had been struggling with the most difficult problem of them all – of how mathematically to model racing tyres in a high-speed, dynamic state. Now, finally, they had a chance of filling the black hole.

By the time McLaren – keen, too, to break frontiers – seriously sat down with Bridgestone, the Ferrari deal was done. If McLaren were going to remain on Bridgestones they would obviously be racing very Ferrari-orientated tyres. McLaren thus switched to Michelin. The gamble paid off.

Of course Williams enjoy – or have enjoyed – a very open relationship with Michelin: in '01, with no serious opposition to trouble them, it was in Williams' interest to provide their tyre supplier with every possible help. Now, though, it is different. There is McLaren – and perhaps even Renault – to worry about.

And there is Bridgestone/Ferrari, breaking new ground – and already planning an '03 car that will be the first in the world to be designed with tyre... dynamics that are as integral to it as its aero... dynamics. The F2002? It's only half-way there... **1**

Ralf Schumacher recommends Castrol



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AERO AGGRO

Flexible fiends?

Ferrari's allegedly mobile bargeboards were the talk of Imola

Ferrari's super-dominant performance at the recent San Marino Grand Prix was, in the opinion of some of their rivals, achieved via creative interpretation of the rules prohibiting moveable aerodynamic devices. Such is the secrecy surrounding Formula 1 technology these days, that *F1 Racing* was unable to confirm or deny the accuracy of these allegations – for the simple reason that, needless to say, we were unable to view the Ferraris' allegedly offending quarters close-to.

During Friday practice, rival

technical directors appeared to be watching the slow-motion FOCA TV pictures (identical to those beamed to Sky Digital subscribers) rather more avidly than might have been expected – especially when either of the Ferraris was to be seen negotiating the Variante Alta chicane. When *F1 Racing* asked why, one senior man from a rival team explained that each Ferrari's floor could be seen to be "visibly flexing over the bumps", and that the bargeboards attached were "moving about by about 40mm" – a contravention of the 'no moveable aerodynamic devices' rule.

On Friday evening another rival technical director invited FIA technical delegate Jo Bauer to view a video recording of the tell-tale footage. Bauer agreed to do so – and was reportedly "visibly alarmed" by the extent of the bargeboards' deflection. The next day, however, Bauer had become considerably more sanguine, and told his informer that the flexing was a result of the great weight of the Ferraris' floor (due to ballast). When his informer poured scorn on Bauer's implied assertion that a component need not adhere to FIA rules due to its mass, Bauer

refused to comment further.

F1 Racing assumes that the Ferraris therefore raced in the same configuration in which they had practised on Friday. Indeed, post-race, the paddock was rife with rumours that Williams or McLaren might lodge a formal protest. In the end, neither did.

Could such bargeboard flexing confer significant performance advantages? According to yet another technical director *F1 Racing* consulted, they certainly could. "The flexing appeared to be occurring in a highly aero-sensitive area, so it could potentially have been of very great benefit," he said. "And since Ferrari have been allowed to get away with it, we'll all have to look at modifying our cars' floors. And that will be the thin end of the wedge – because after Imola '02 no-one really knows what constitutes a moveable aero device any more."

Instant replay: the F2002's aero package caught the eye of many rival technical people as it rode Imola's kerbs in super slow-mo on FOCA TV (below). The front wing appeared rigid enough; aft of that, though, was there a 'moveable feast'?

This has happened before...



The wording of the Formula 1 technical regulations is at once absolute and studiously vague, rendering them occasionally – how shall we say it? – mutable. Flash back to October 1999, the last time a Ferrari's bargeboards caused so much controversy (above).

At the Malaysian Grand Prix, then the penultimate race of the season, the F399's bargeboards (which

had, incidentally, been to that spec for the two previous grands prix) were found to be 10mm out of compliance with the regulations. Ferrari, and their drivers, stood to lose their points – thereby handing the drivers' championship to McLaren's Mika Hakkinen before the finale at Suzuka.

But Ferrari somehow proved to the FIA's Court of

Appeal that their bargeboard had been measured incorrectly, and was only 4mm out – and that the rules permit a 5mm discrepancy since it is almost impossible to manufacture a totally flat surface.

So Ferrari (and their drivers) got their points back; the FIA (and Bernie) got their cliffhanger finale. Fantastic! Or not, depending on how you see it...



PITSTOPS AT DAWN

Phoney war? No, believe it: this one's real

F1 expected fierce competition between Michelin and Bridgestone, but how low will they go (grooves, that is, not tactics)?

Formula 1's ever-intensifying tyre war is about to get nasty. The Bridgestone-supplied teams, among them title holders Ferrari, have become so perturbed by the performance of their rivals' Michelin rubber that behind closed doors they have alerted the FIA to what they regard as Michelin's overly liberal reading of the tyre regulations. The FIA rule book states that all new tyres must have four grooves, each to a depth of 2.5mm. It is accepted that these will wear during the course of a race, but when removed, all four grooves must remain visible. Both Michelin and Bridgestone tyres comply with these regulations, but Bridgestone teams are aggrieved because the Michelin runners 'scrub in' their tyres for around 15 laps to bring them into their 'sweet spot'. Data seen by *F1 Racing* reveal the Michelins are as much as 0.6 seconds per lap quicker when in this 'sweet zone'. Which explains why every Michelin-shod car arrives at the grid with worn tyres and why they are fitted with worn tyres at every pitstop.

To Bridgestone's dismay, there are no FIA rules obliging teams to fit fresh rubber, either at the start of the race or at pitstops, which allows Michelin teams to fit tyres 'brought in' to their peak performance. But senior figures from Bridgestone-supplied teams are on the verge of protesting the Michelin teams, claiming the worn tyres being fitted as a matter of course are illegal, because they do not have a groove tread depth of 2.5mm. *F1 Racing* understands FIA President Max Mosley has accepted this as a 'grey area' in the rule book.

The Bridgestone teams will further protest that the increase in performance of the Michelins as they wear expressly contradicts the original intention of the grooved tyre rule, which was framed to reduce grip and thereby cornering speed. Said one (Bridgestone-supplied) team boss: "Whether by

accident or by design, the Michelin has a very strange characteristic. From new it's very good for one or two laps; then it drops off quite dramatically – only to return to a proper performance level by about lap 15. After lap 15 it has a consistent performance characteristic, and we have data to suggest it actually improves as it wears down." Over the Imola race weekend FIA president Max Mosley met senior figures from Michelin, Bridgestone and Ferrari to discuss the situation. And according to one team principal (whose cars are Bridgestone-equipped): "Max Mosley is about to get an awful lot tougher Michelin."

But Michelin's Pierre Dupasquier argued: "We're behaving 100 per cent within the rules. It's up to the FIA to tell us if we're doing something wrong – and we've heard nothing from the FIA."

Should the FIA take the dim view that many are predicting, however, it is possible pre-race laps may be restricted or that the number of sets of tyres that can be used over a race weekend may be reduced. There is even speculation that tyre manufacturers may be asked to produce fully treaded rubber for the 2004 season.

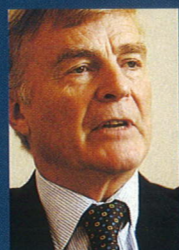
Keeping pace with change

FIA president Max Mosley (below) has been busy of late...

The FIA World Motorsport Council's most recent edicts:

- Driver penalties
- As of the Brazilian Grand Prix, race stewards have the power to demote a driver by 10 places on the grid of the next grand prix.
- HANS (Head And Neck protection System)

From January 1, 2003, the HANS device will be mandatory in F1 and Formula 3000, "provided the FIA has confirmation from each team that no driver suffers a disadvantage by using the device."



Some drivers, among them Felipe Massa, have suggested they will begin to use the device before then.

- One engine per weekend
- From January 1 '04, drivers may use only one engine each per weekend, or be moved 10 places further down the grid from their qualifying position for each

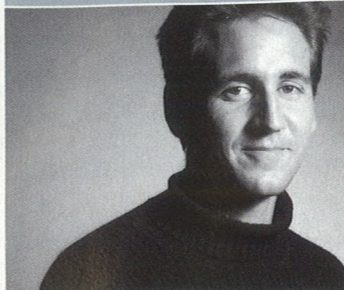
change. The rules will be framed to prevent engine rebuilds during the weekend. The rationale for this is to cut costs, with emphasis on curbing the use of profligate 'screamer' or 'grenade' engines during qualifying that deliver prodigious power but only last for a handful of laps.

- No chassis changes

The regulations covering the chassis remain unchanged until '05 at the earliest. It is hoped that stability may help some of the less well funded teams to improve their levels of competitiveness

On the Inside

Rubens Barrichello: on a wing (man) and a prayer



Adorning a wall of the reception area at Gestone Sportiva in Maranello is a photograph of Rubens Barrichello. He is on the podium at Hockenheim in 2000, celebrating his first and, to date, only grand prix victory. His face is creased up with emotion.

I was reminded of the picture at this year's Brazilian Grand Prix where I saw these same creases of emotion. But they were caused by pain, not joy. Rubens had just read an article, written by someone he had considered a friend, which talked of his being sacked by Ferrari.

"This will cause me a lot of problems," he said. And it did. The Italian press picked up the story and soon afterwards it was everywhere. 'Rubens is out' and 'Rubens: pay cut or out' were two of the crueler headlines that followed.

In truth, Ferrari would be nuts to sack Rubens Barrichello because – and I mean this as a compliment – there is no-one better available for the job. In two and a half years with Ferrari, Rubens has proved himself to be fast, popular with the mechanics and matey with Michael. He even claims to like the champ. Given the huge potential for disaster when selecting a team-mate for Schumacher, be it contractual or egotistical, Rubens is the dream ticket. Barrichello is a wonderfully talented – if slightly erratic – racing driver. At Imola last weekend he was at his very best. After combining his and Michael's fastest times from Friday, Saturday and Sunday, only 0.149 seconds separated them at the end of the weekend. A fag paper. That Rubens then expressed delight with his second place in front of the tifosi only added to the feathers in his cap. Michael is too astute not to realise that there is no better wing man with whom to go into battle.

TOM CLARKSON



SCHUEY'S PERFECT PARTNER?

Nowhere to run, nowhere to hide

Second place in the San Marino Grand Prix may have done a lot for Rubens Barrichello's confidence, but it hasn't stopped the Italian media speculating about his future as a Ferrari driver. There is widespread belief in Italy that Rubens will be sacked at the end of the year – or, at the very least, be forced to take a huge pay cut in 2003. Rubens himself, has, predictably, scotched any such rumour-mongering.

The stories originated in Brazil, but were seized upon by the Ferrari-hungry Italian press. The team's sporting director Jean Todt has said a decision will be made in July. Until then, speculation as to the eventual occupant of the number-two seat centres on the following contenders.

Barrichello: the favourite. He's a known quantity and a certain M Schumacher likes him. Has a tendency to moan to the press too much, but he has always been good

enough to play a serious supporting act to Michael on the day.

Jenson Button: you'd better believe it. Our cover star's new-found form this season is attracting fresh interest and, should Ferrari plump for Jenson, F1 would be witnessing a first glimpse of the team building a future beyond Schumacher. Why? Because Jenson, at 22, has a long F1 future ahead.

Felipe Massa: already uses a Ferrari engine at Sauber and his contract allows him to walk at the end of the year, should he so wish. The downside is inexperience – and he has a wild streak. In reality, '03 is likely to be too early for him.

Giancarlo Fisichella: fabulously fast and no doubt looking for a berth higher up the grid. Nationality would be a snag. Ferrari are currently politics-free; an Italian driver would change that. Look at the mess surrounding Ivan Capelli in '92 for evidence...

SILVERSTONED?

Opposites at tracks

First the good news: the Imola circuit is due to get a makeover which will go a long way to restoring this once-great track (now chicane-emasculated) to its former glory. The bad? A boosted Imola could punt Silverstone off the F1 calendar. Building work is about to begin at Imola, to be completed in time for the '03 San Marino Grand Prix. It comprises a new pitlane and media building on the outside of Rivazza, about half a mile from their current location. There will also be track alterations designed to increase the number of overtaking spots.

The chicane leading to the existing pitstraight will be straightened, making the first chicane at Tamburello a heavy braking point and a real passing place. The road between that chicane and the second at

Tamburello will also be straightened, creating another passing opportunity.

Meanwhile Hockenheim, home of the German GP, is also being titivated; so, of the three European grands prix thought least secure on the calendar, Silverstone will have the worst facilities. Not good when FIA president Max Mosley said recently one GP in Europe would have to go in order to make way for the proposed Russian Grand Prix in Moscow in '04. Silverstone's place has been under threat since the debacle of '00; and, to compound its misery, the new A43 bypass, key to improved access, may not be complete in time for this year's race. The FIA will take an extremely dim view of any traffic delays, having declared them unacceptable in the past. There may be trouble ahead...

Splash 'n' dash

▽ Pelé's own goal

Comedy award at the Brazilian GP went to footie legend Pelé for failing to wave the chequer at victor Michael Schumacher. His tardy performance led paddock wags to declare Takuma Sato the real winner, as Taku was the first to get a flutter from the legend. EJ didn't see the funny side.



▽ Je reviens

You can take the boy out of F1, but... actually, in Jean Alesi's case, it seems you can't take him out of F1 completely. Having tested successfully for McLaren in their MP4-16B, he has, *F1 Racing* understands, had a seat fitting to allow him to drive the latest MP4-17. Age shall not weary them...



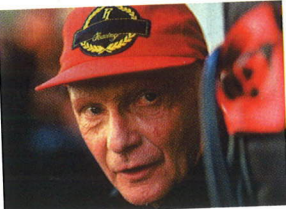
▽ Rest in peace

Eight long years after the crash which killed Ayrton Senna at Imola in '94, the Williams FW16 in which he suffered the fatal accident has been returned to the team. The car, which has been the subject of a lengthy Italian judicial enquiry, is being kept in an area of Williams' Grove factory which "very few people even know exists", according to one source.



Splash 'n' dash

▽ **Hats all folks**
Niki Lauda's Parmalat cap is a Formula 1 landmark – but not for much longer. His sponsorship deal with the Brazilian food conglomerate has come to an end after 25 years. But what will happen to the cap itself? Rumours of its demise proved greatly exaggerated when Niki continued to parade around the paddock in it, albeit with tape obscuring the logo. Classy!



Pat on the back

Talking of premature obituaries, what those concerning Renault's engineering director Pat Symonds (below, right)? Certain media outlets claimed last month that Renault had given him the boot. Renault, though, issued a swift, definitive denial.



Bob's full house

Bob McMurray, McLaren's hospitality and logistics manager for more than 30 years, has returned to his native New Zealand to run a luxury guest house near Auckland. His wife, Shaune (also a McLaren veteran) will be co-proprietor. F1 Racing wishes them both well. Get the details at www.twinstacks.net.



Nobody move: you'll make dust. McLaren's infirmarium-clean Communications Centre, new at Imola

MOBILE 'PARAGON'

There's no place like chrome

Of the 11 team principals in Formula 1 today, only two – Ron Dennis and Frank Williams – still stand out against the cost-saving proposals recently proposed by Max Mosley. But whereas Frank's opposition is typically understated, Ron has raised two fingers to the FIA president in the most conspicuous way imaginable. The word 'motorhome' is anachronistic in the extreme. The West McLaren Mercedes Communications Centre, which made its debut at Imola, is the result of three years' research and – above all – development, and cost £3.5 million to build.

"A few years ago we realised that our motorhome was behind the times," said Dennis. "What we have created replaces our three motorhomes [one each for West, McLaren and Mercedes], and draws each element of our group closer together as a result." Other F1 bigwigs' reactions were, as ever, tinged with irony. "With all that chrome

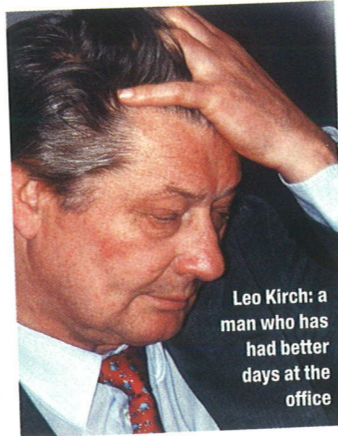
and neon lighting, it looks like a Croydon nightclub," said one. Another called it "an ostentatious manifestation of conspicuous over-consumption". Neither remark will cause Ron to lose much sleep. "The project was conceived and created by a working group composed of people entirely separate from those engaged in McLaren's race effort," he remarked – in a clear attempt to scotch any stories linking his team's poor start to the season with the development of Château Dennis (as one wag dubbed it).

The real significance of McLaren's new home is clear: whatever the FIA or Ron's peers may think of him, his commitment to upping F1's presentational ante remains undiminished. F1 cash crisis or no F1 cash crisis, the McLaren way is to speculate to accumulate. The sponsors – 'partners' in Ronspeak – adored their new toy. And that is the point – because sponsors equal money. Cost-cutting is for F1's minnows.

CAUGHT ON CAMERA: TRULLI SCRUMPTIOUS



Regular readers of F1 Racing will know we've always thought Jarno was rather tasty, but it seems he has taken our praise a bit too literally. Nice to know he's got an alternative career in mind with the way team-mate Jenson Button has been going so far in '02. Nibbles anyone?



Leo Kirch: a man who has had better days at the office

KIRCH COLLAPSE

F1 fights for its rights

The commercial rights to Formula 1 are not 'at risk' – not as mired in the Kirch Media collapse (with debts estimated at £4 billion) as you might think. They are, to use the jargon, 'ring-fenced' – not directly held by the insolvent division and therefore out of reach of creditors. But they are up for sale – or at least the 75 per cent of the holding company (SLEC) 'owned' by Kirch are. And the future of Formula 1 is, to an extent, bound up in them.

Bernie Ecclestone, who still owns the remaining 25 per cent of SLEC, could buy back the stake for a fraction of the price (an estimated £1.3 billion) he got for selling it. Why would he want to do that? On the surface, it would appeal to his business sense, as buying something for a fraction of the price you sold it for often does. But how much is it worth? That depends on what happens in 2007 when the Concorde Agreement, F1's governing document, is up for renewal.

If the car manufacturers form their own championship in '08, as they've threatened to, the commercial rights to F1 won't be worth much; if, on the other hand, they can be persuaded to take a stake in (and therefore profit from) SLEC, they may decide not to proceed with the breakaway series.

Among others also rumoured to be interested in buying up the rights are media moguls Rupert Murdoch and Silvio Berlusconi.

This arcane affair was precipitated by F1's ruling gods: control and money. The teams and manufacturers want more control over and more return from the sport they participate in (that, too, will form part of the '07 Concorde Agreement negotiations). Above all, they do not want F1 to move from free-to-air television, which was what they feared would happen with Kirch in control. F1 delivers better value for money for sponsors than any other sport: it is in the interests of everyone involved to keep it that way.

DR'S ORDERS

BAR reform long overdue

Aggressive agenda set for struggling midfielders

Meet the new boss, David Richards. Not quite the same as the old boss, Craig Pollock. Things have been rather different *chez* BAR since Richards' arrival at the Brackley-based team in January. Gone are the team's erstwhile engineering director Malcolm Oastler and chief designer Andy Green. Gone too, in fact, are a total of 15 per cent of the workforce.

One of those who has stayed is new technical director Geoff Willis, who was appointed by Oastler and Pollock just before the latter's departure. Willis, formerly Williams' aero specialist, saw eye to eye with Richards over the need for a radical internal restructure at BAR and their reforms are already being felt.

Earlier this month Willis stood before the entire workforce and told them nothing they had produced in the team's three and a half years' existence approximated to an F1 car – not out of spite, but because staff had to be apprised of the new standards they will be expected to attain from now on. Willis said of this year's 004: "There's no part of the car that's top-of-the-grid F1 practice. There are some bits that are frankly awful; there are some bits that are competent."

Engineering rigour (ie the lack of it) is a key area Willis believes the team must address before they can begin to become competitive. Richards, meanwhile, has concentrated on bringing to BAR the "leadership and direction"

which he believes have been absent to date. One of his most significant appointments is the transfer of Nick Fry, from Richards' Prodrive motorsport engineering operation, to assume day-to-day responsibility for the running of BAR. Fry, who has been with Prodrive for 18 months, is highly rated as a fixer. Before Prodrive he held a number of senior roles within Ford management, gaining a reputation for getting things done without amassing enemies. This last asset is likely to prove precious as the new chiefs struggle to build morale in a team yet to score in '02.

Further transfers will be limited for now and Richards has ruled out a mass recruitment drive, although he concedes additional engineering strength to bolster Willis is necessary. "We know what the team need and we know how to bring it about," Richards said. BAR's future starts here.

• Geoff Willis F1-to-one page 86 ▶

Honda way down?



A Honda engine deal should have been one of BAR's most prized assets. But, three years into their F1 programme, Honda's motors remain poor. A source from one of F1's two Honda-supplied teams (the other being Jordan) revealed: "We're not sure if the engine has less power than the Asiatech but it has less than every other

engine. It's not the worst, but it's definitely the second worst." A new spec for Imola raised hopes, but another senior source said: "It's no better." As Jordan's Takuma Sato noted: "Since Mr Honda died no one throws things at the engineers when they make a mistake." Post-Imola, neither Honda-powered team has scored in '02.



Careful now, the boss is watching. Richards has been taking notes on his new charge, BAR. Change has been swift. Expect more

F1 RACING

Experience

Shades of greatness

Our Jenson has always had a bit of an eye for the latest fashions, and his choice of Bollé eye wear is no exception. We have five pairs of his latest favourites (each with their box signed by JB) for you to win as part of this month's F1 Racing Experience. Retailing at £99, these gunmetal-framed lookers are a seriously cool piece of kit, and genuinely F1 style. Call 0901 070 5075 to enter.

Bollé



Schu-signed F1 Racing

The younger Schumi brother liked our September 2001 cover so much that he agreed to autograph five copies of it for us to offer as F1 Racing Experience prizes. Now that Ralf and Williams are looking so competitive, these collectors' items could easily become a little bit of world championship history. Get dialling now on 0901 070 5074 and follow the instructions on how to enter.



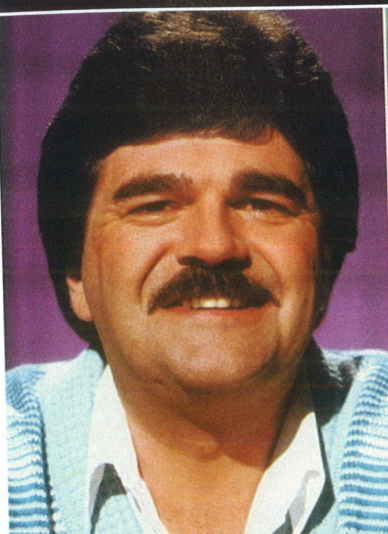
TERMS AND CONDITIONS
The winning entry will be the first drawn after the closing date, which is May 1 2002. Calls cost 30p. See page 4 for further details.



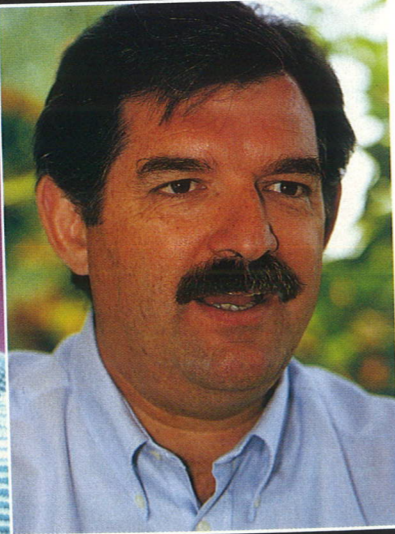
Ali G – in da Jenson house

F1 Racing can reveal that the final scene of the Ali G blockbuster, *Ali G Indahouse*, was filmed in Jenson's Weybridge pad. Said Jense: "It was weird trying to talk to him when he was wearing all that yellow kit." Now you know how the F1 press posse feel, JB

LOOKY-LIKEY No 25



Sergio Rinland
Don't call his car a hound



Bob Carolgees
Made Spit the dog famous

The boy's a bit special...

Your guide to F1's next hot property: Antonio Pizzonia

Another young driver wanting a pizza the action?

Ho ho. You've been beaten to that one by the tabloids' headline wags, I'm afraid.

Okay. Who's this 'Tone', anyway?

Apart from being a test driver for BMW.WilliamsF1, you mean? Antonio was British Formula 3 champion in 2000 (other alumni now in Formula 1: Takuma Sato, Jenson Button, David Coulthard, Rubens Barrichello), and is one of the most highly rated drivers in Formula 3000. He's quick and aggressive, but made a few mistakes last year and won only one race.



How's it going for him this year?

Well, comically, he was the most notable Brazilian *not* to be on the all-Brazilian podium at the season-opener – which was, appropriately enough, in Brazil.

What happened there, then?

He finished fourth. Well, I suppose it's difficult to overtake in these one-make championships.

Does anyone care about F3000 any more, what with people like that Sato chap jumping straight from F3 to F1? And hasn't last year's champ failed to get a drive this year?

Right on most counts. But there's a new chassis in F3000 this year, and it's supposed to 'feel' more like an F1 car. And anyway, poor old Justin Wilson is 6'4" tall, which has hindered his F1 prospects. Young Tonio is more 'regular' than 'extra large'.

So do you really reckon this Pizza chap will deliver?

Perhaps. He's popular at Williams, but then again they've got plenty of young drivers on the books already. If he can prove himself to be the cream of the crop of young Brazilian drivers, he's sure to get the financial backing for an F1 seat.

Pizza express?

Certainly pretty quick.

With extra topping?

Only if he wins the championship.

Happy birthday to us

High fives – and 75 not out

Can you believe it? F1 Racing is 75 issues old – and our Australian edition celebrated its fifth anniversary at the recent Aussie GP. We invited some of the sport's biggest stars to lend us a hand in marking the occasion – and, because they think we're mega, they agreed...

Photographs by Lorenzo Bellanca/LAT



Ross 'the boss' Brawn: that's not how Spock does it, now, is it?



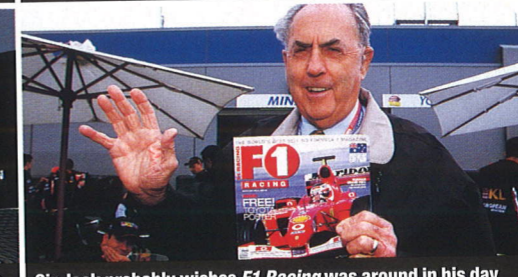
How many points for BAR in '02? JV and DR seem to disagree



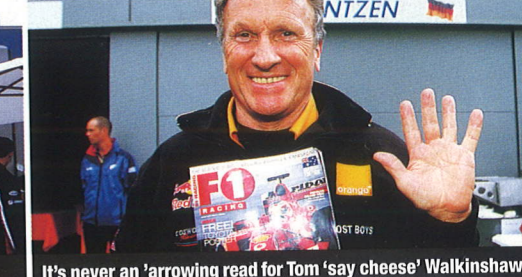
Palm d'or: Jarno reveals the hand behind that qualifying speed



Giancarlo has seen Barbarella (but not a razor, it would seem)



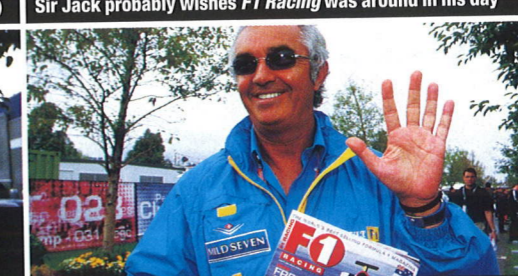
Sir Jack probably wishes F1 Racing was around in his day



It's never an 'arrowing read for Tom 'say cheese' Walkinshaw



Saucy Berger: a happy-looking Gerhard nabs a copy of our mag



It's never too dull for Flav Briatore to wear (ultra-cool) shades



Never mind, Pollock. There'll be a new F1 job along shortly



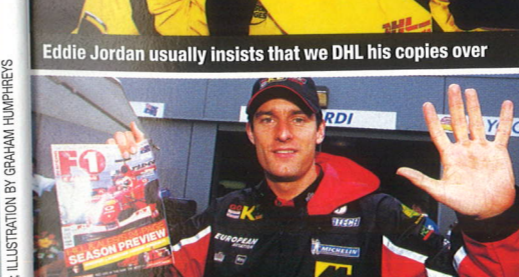
Eddie Jordan usually insists that we DHL his copies over



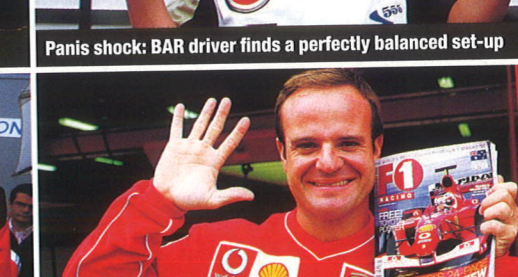
Panis shock: BAR driver finds a perfectly balanced set-up



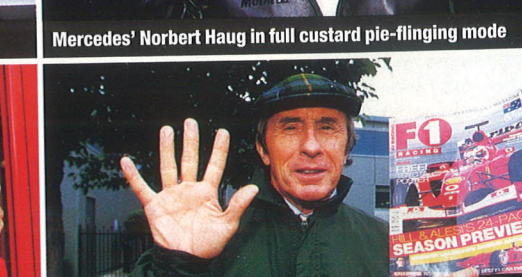
Mercedes' Norbert Haug in full custard pie-flinging mode



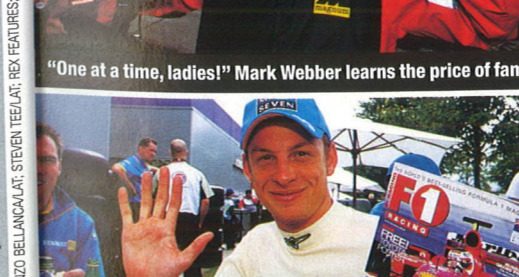
"One at a time, ladies!" Mark Webber learns the price of fame



Hands up who bagged pole position on our birthday



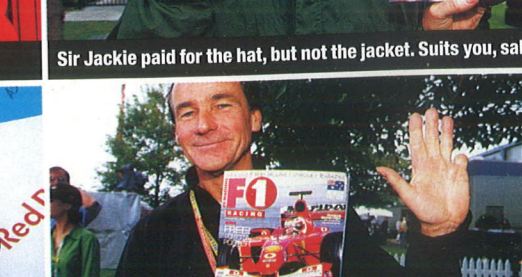
Sir Jackie paid for the hat, but not the jacket. Suits you, sah



JB reads us on the loo, apparently. Nice to know we're wanted



Please, Mr Editor Bishop... can I be on the cover, too, one day?



Ouch! That's a high four and a stump from ex-biker Barry Sheene

LORENZO BELLANCA/LAT; STEPHEN TEE/LAT; ILLUSTRATION BY GRAHAM HUMPHREYS



(Above) Peter Windsor, working for digital TV. You enjoyed Windsor's *F1 Racing* piece on Schumi v Montoya (below right); McNish and his odd tyre warmer (above right). The author of our star letter wins a Castrol racing jacket (below)

star letter

Sky rocketing

Interesting to read the howls of protest regarding the cost of digital television coverage of Formula 1 – I for one am happy to pay a premium in order to obtain superior quality footage. The camera angles are better chosen, the editing more pacy and the images more crisp and colourful than anything the host broadcasters have managed thus far. ITV do a wonderful job of packaging grands prix (and, at the British event, of actually filming it), but their frustration with the images they receive is often evident: how often does Martin Brundle complain that some far more interesting battle is occurring off-camera?

I watched the Brazilian GP live on Sky Digital, then tuned in to the ITV repeat. The host broadcaster missed most of the first lap action; FOCA TV captured all of it. And that was just the first lap. Perhaps the local broadcasters are treated shoddily by the 'powers that be' in F1 – but, on the other hand, you have to appreciate the magnitude of the investment (in terms of technology and personnel) required to make the digital coverage happen.

I will miss the excellent commentary of James Allen and Brundle but, since I can get a

whole season of interactive coverage for less than a three-day ticket to Silverstone, it makes little sense to put up with an incomplete F1 experience.

James Notting
Via email

One engine per weekend

At last! It finally looks as though the FIA are going to do something constructive to stop the big teams from squashing the smaller ones. The single engine per race ruling will throw up some interesting developments. I find it hard to believe that the FIA have taken so long to do something to help the midfield runners and tail-enders. My only question is: do we really have to wait until 2004? Isn't this again playing into the hands of the big boys by giving them more time to develop new engines?

Stephen Barnes
Leeds, West Yorkshire

First class Windsor

Well done Peter Windsor for his first class analysis of the racing incident between Michael Schumacher and Juan Pablo Montoya at the Malaysian GP. A truly balanced comparison of the drivers' viewpoints and, in light of events in Brazil, who says history doesn't repeat itself – albeit with differing results? Is that one front wing each now? These are the two best drivers around at the moment and no doubt have the greatest respect for one another's ability. Neither will say so – it would be seen as a sign of weakness – but you know it.

Ted Martin
Via email



Eagle eyes

Does it seem strange that the tyre cover on Allan McNish's Toyota (*F1 Racing* April, page 76) is on the right rear tyre, despite the tyre warmer clearly stating that it is designated for the rear left?

Chris Bennett
Falmouth, Devon

Bunch of boobs

F1 Racing is a fantastic magazine. The layout and quality of content (both editorial and pictorial) put others to shame. But I have one criticism: why is it such a male-dominated and male-oriented publication?

I'm not some bra-burning feminist, and I realise that F1 is a quintessentially 'male' sport, but I'm not the only female fan out there. When I turn to the *Contributors* section below the editorial there always seem to be only male faces looking back at me. There is no doubt that the journalists who write for the magazine are excellent, but I'm tired of the male perspective on everything – surely there are some decent female journalists who can join the line-up on *F1 Racing*? It could only improve the quality of the magazine.

In the April issue, the item on drivers' wives was a poor nod to the female contingent (and really just an excuse to provide eye candy for your male readers and a chance to play spot-the-boob-job), and the piece on Giovanna Amati was there solely to appease your female readership. If this is the case, it was a lame attempt; I would rather see an in-depth feature written by a woman.

Beth Williamson
London



ADDRESS YOUR LETTERS TO: *F1 RACING*, 60 WALDEGRAVE ROAD, TEDDINGTON, MIDDLESEX TW11 8LG. FAX: 0208 267 5022 EMAIL: LETTERS.F1RACING@HAYNET.COM (BACKFIRE LETTERS ONLY)



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Va Va Voom¹⁷²



CHARLES COATES/LAT; STEVEN TEE/LAT; PATRICK GOSLING

San Marino analysis

Look and learn

It's proving a golden debut season for Mark Webber. Points on his first outing. Reliable car. Top teacher. Pardon? Well, when Michael Schumacher laps him, Webber watches his technique – and copies. So if he's good now...

Words by Peter Windsor; portrait by Darren Heath

One of the best moments in F1 so far – apart from the Australian GP itself, of course, because that will always be something special but is a story in itself, something to watch again at the end of the year, when there will be time to take it all in – was in the gym, in Brazil, when he'd been there just with Michael. They were both working out on a sticky Wednesday morning. Michael was on the mat, stretching. Mark Webber, towelling down after a run, had again thanked Michael for walking down to the other end of the Melbourne pitlane to see him after the race. Michael had

quickly changed the subject: "Brazil will be a nice change for you. You would have had a lot of off-track going on in Australia and Malaysia but here you can just concentrate on the driving. You'll enjoy that..."

Mark Webber was moved. There's no doubt that Michael Schumacher has totally changed the way of doing things over the past few years. There's no doubt that he's taken the game to a new level. And here he was, being a normal guy, talking as if he actually takes an interest in what is going on down at Minardi.

At Imola, two weeks later, Michael ►

Mark Webber is having a great debut year in F1. He scored points in his first race, he's always quicker than his team-mate, and he's having fun learning stuff from Michael Schumacher

WEBBER AT IMOLA

Schumacher is again on the scene. It's always dramatic when Michael comes up to lap you, because you can see right into the heart of what he does; for a millisecond, but curiously in slow motion, you can almost *touch* his brilliance.

On this occasion, in Mark Webber's fourth grand prix, he was given plenty of warning. When a Ferrari is about to pass you in Italy – especially a leading Ferrari! – you know about it about three laps ahead of time. What Webber didn't want to do was lose too much ground. He had passed one car in the middle of lap one, easing alongside it into the top chicane as its driver had run wide with understeer, and he had kept pace with the other one. You don't want to get in the way of Michael, but Webber didn't want to waste time, either. He had to find the moment.

Thus he rolled off the throttle a tad as they ran down the hill. He moved wide, onto the marbles, which is always a risk, particularly now that the tyres were good and sticky and would pick up the rubble, but there was no way around it. Michael was now up and alongside him and then quickly he was disappearing into the distance, quicker by a mile in every measurable department.

It struck him again, just as it had in Melbourne, how *connected-up* Michael looks. Everything is just-so. He brushes (rather than touches) the kerbs; the systems – the diff, the traction control – seem perfectly in sync: much more so than on any other car; and there is no waste in anything that he does or in what the car does. Everything is definite and precise.

Quickly, though, he returned to reality: like the guy in front, he had started on new Michelins. And, like the guy's in front, his tyres had started to go away after about six laps: oversteer. Oversteer not in the back-end-out-of-line-and-hold-it-on-the-power sense but oversteer in the back-end's-all-over-the-place-and-you're-probably-going-to-lose-it sense. Oversteer in the most critical sense of them all – instability under brakes and therefore a drama right into the corner. The guy in front, he could see, was having to straighten his approaches, nurse the car into the apex. A couple of times he got right up behind him, but then the front would wash away and he would have a bit of a moment, trying not to hit him. You have to be careful in this game, losing your downforce as you do when

you're right behind someone else.

The main thing, from lap six onwards, was to get the brake pressure absolutely right. This is again something that Michael does to perfection. You can see it in the way he gets the car early into the corner. He uses *exactly* the right amount of brake pedal pressure for the downforce he is carrying. As the car slows, losing downforce, he always compensates by decreasing the pressure on the brakes. He's brilliant in the way he does this. The car looks as though it's poised and balanced and smooth and easy and yet in reality he is absolutely on the edge. It's just that Michael Schumacher very rarely shows it.

So here is the task for the day: to try to do the same with the Minardi, with the back end trying to hop out all over the place whenever he hits the brakes and the front diving into the corner, forced in by the loose rear, when he starts to give it some steering.

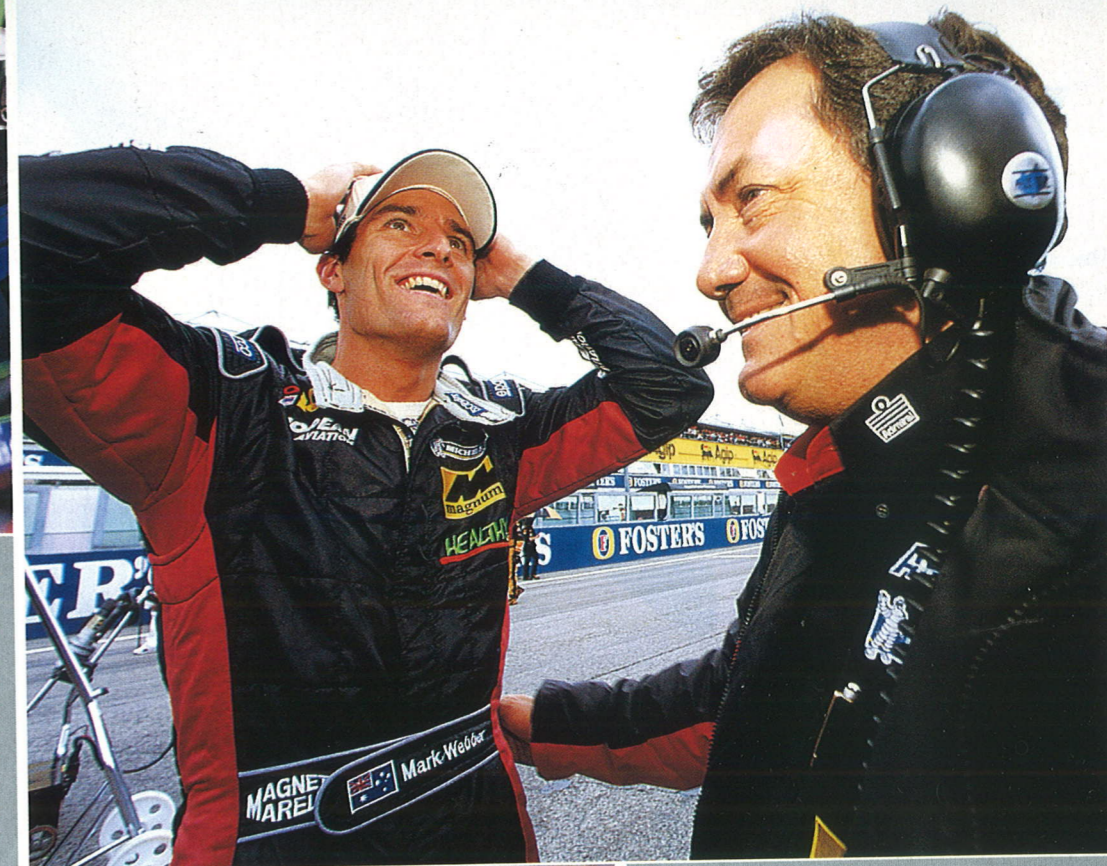
He does it pretty well. He locks up the rears going into the last chicane on one occasion... and then does the same again, at the same corner, on the next lap. Not good. No more mistakes.

His vision is part car in front and part

At Imola (main), Webber tried to adopt Michael Schumacher's technique, learned through some close observation while being lapped. And he made a good job of it



(Above) Webber psyches himself up for the race. Minardi may be a small team but the car is reliable and things are going well; (right) enjoying a more relaxed moment with Gian Carlo Minardi, the team's managing director



'IT'S DRAMATIC WHEN MICHAEL COMES UP TO LAP YOU: YOU CAN SEE INTO THE HEART OF WHAT HE DOES'

(Above) As cars ahead and behind fell off the road, Webber found himself lapping alone. That can affect your concentration, but Mark still got the best from his Minardi

track – to the approximate ratio of 30-70 (except when he's trying not to run into the back of the car in front and it becomes, suddenly, 70-30!). There's a lot of stuff hitting him, too – oil, stones, crud – sometimes even small clumps of mud. He started – manually started, thank you! – with three visor strip-offs and quickly he's devouring them. You always want to leave the last one up your sleeve for emergencies but it's always tempting – a bit like dessert – to have it sooner than you should. So he suffers a little longer, feeling also the heat of the car ahead, although it is nothing like the wave of heat he had felt in Malaysia, when the whole field had barrelled into the first corner and the effect, back where he was, had been of a furnace.

He looks, also, at the dash, at the read-outs on the steering wheel, where there's so much going on these days that you could almost write a book, not a race report. He looks at the splits and his lap

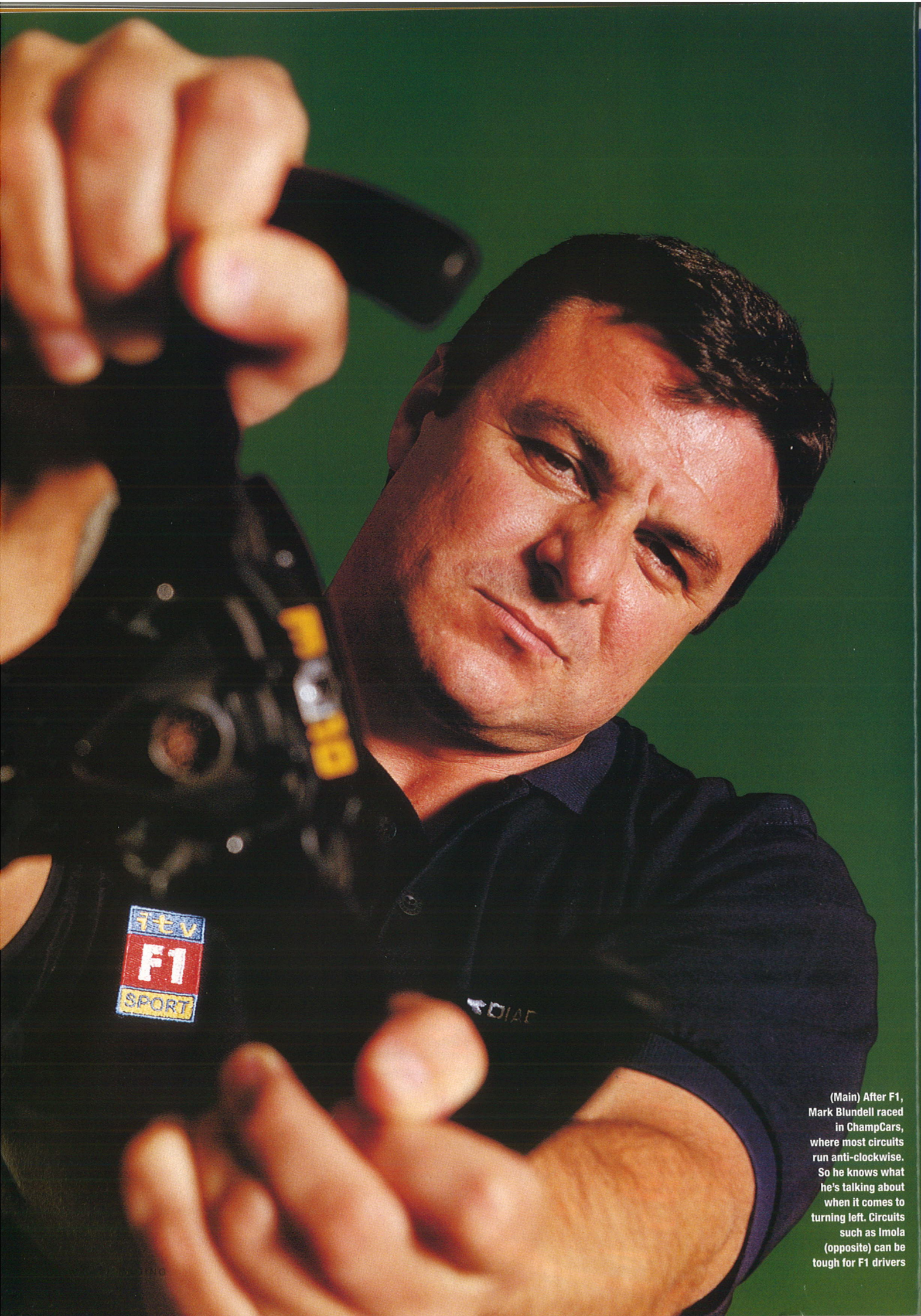
times, surprising himself that the guy in front isn't a bit more consistent but also asking himself the question, too much probably, of what is achievable and is he doing enough? It becomes even more difficult when the guys in front of him and behind him grind to a halt because this means that he often has a completely clear track ahead of him and you start to wonder, you know? *Are you doing enough?*

He kept the new Michelins on through the first stop, hoping that the grip would again pick up... but it was a mistake. He changed the tyres for the third stint, and the car was better, but it wasn't better enough. No-one would finish behind him, but he would be 11th, which is no bad thing for a small team like Minardi, especially as how he'd split those big-budget other guys for a while and that his team now have a reliability and finishing record that is unsurpassed on the grid. They laugh about the Asiatachs

but maybe they're actually pretty good.

Afterwards, watching the rain belt down in the Imola paddock, and everyone run for cover, he tried to ring his dad back in Queanbeyan, but his dad was over at a mate's place, probably having a few drinks after the race. He sat there under the awning and a journalist asked him how he felt, given that he is now the only guy on the grid who does not have the help of power steering and also obviously had a lot of handling problems, none of which were comfortable.

How did he feel? He felt mentally as though he just driven 62 pretty decent racing laps of Imola and, yes, that he had done pretty much of what was achievable. He'd locked up the brakes twice. That was all. Otherwise, he'd been pretty much on the car's pace for the whole afternoon. Physically? Physically he felt... as if he'd just been to the gym – and that he'd just had another, privileged but very brief, close-up look at Michael Schumacher. 1



(Main) After F1, Mark Blundell raced in ChampCars, where most circuits run anti-clockwise. So he knows what he's talking about when it comes to turning left. Circuits such as Imola (opposite) can be tough for F1 drivers



Left turn ahead

F1's mostly clockwise circuits mean it's all about turning right, right? Wrong. Interlagos and Imola, anti-clockwise both, were all about turning left. Here, Mark Blundell, Britain's ex-F1 star who became a left-turn ace on US ovals, explains the subtle art

Portraits by Clive Rose/LAT

Obviously, turning left is no different from turning right. But it is out of the norm on most Formula 1 circuits, because all but two run clockwise. It's something that you have to be aware of when you come to

race at these two tracks, because although there are a few tracks that have tough left-handed corners (Spa, for instance, where there are a lot of left-handers in which you pull substantial g), your body really does become accustomed to the prevalence of

right-handers. Therefore, Interlagos and Imola present a driver with a tough – and very different – physical challenge.

F1 drivers develop asymmetrical necks; they're stronger on one side. It's a bit like being right- or left-handed: one of them ▶



ANTI-CLOCKWISE CIRCUITS

gets stronger than the other. It also used to be the case that drivers would be stronger in the right leg than the left, but not so much now that left-foot braking is so popular.

You might think oval racing is similar, but in fact it's very different. Since you don't have to worry so much about peripheral vision, the chassis manufacturers can build up the cockpit sides to give your head some support through the corners, and you set up the suspension with 'stagger' (something Mario Andretti experimented with in F1) so that the car's natural inclination is to turn left. On bigger ovals, the loads build up more gradually because the corners are longer – although not all the races are held at big venues. At one-mile ovals such as Homestead and Milwaukee, the corners are pretty acute and you do

encounter sudden *g*-loadings.

In F1, it really starts to bite in corners which you take at some speed and which have an acute angle. The *g*-force builds up very quickly and can sap the strength from that side of your neck. At Interlagos you do the full lap, with all the bumps and gradients and sharp turns (and it's usually very hot as well), then you come to that big, fast left-hander that leads onto the start-finish straight. You get very little opportunity to rest your neck before the lap starts again.

F1 drivers are in reasonable shape – if they weren't, they wouldn't have got this far. Even the smaller drivers can be very tough: Ukyo Katayama was tiny and wiry but incredibly strong. He was an incredible guy: there was nothing to him, but he never had any problems with fitness or strength.

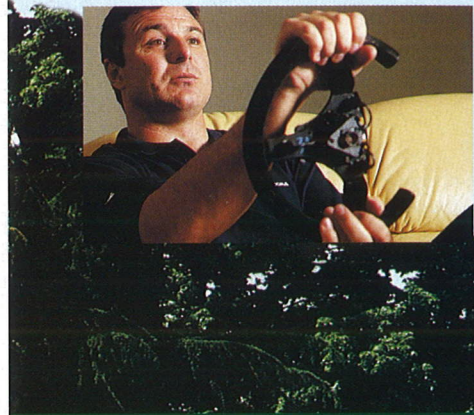
'IT STARTS TO BITE IN CORNERS WHICH YOU TAKE AT SPEED AND WHICH HAVE AN ACUTE ANGLE. THE G-FORCE BUILDS UP QUICKLY'

Some guys use neck braces or wires to try to preserve their necks. Interlagos is tough because it's the first predominantly left-handed track of the year. It's difficult to do effective training for these circuits. Most drivers do resistance training, attaching weights to their helmets to build up their neck muscles. I used to work the other side harder before going to Interlagos and Imola.

But nothing can replicate what you actually go through in the race. During winter you'll have been training *and* testing, but mainly on circuits where right-handed corners are in the majority. Then you come to Interlagos, and you're working a different set of muscles with different loads. It has lots of climbs and descents built in with high-*g* corners, plenty of heavy braking, high humidity – it's a more physical track, and therefore a much tougher race, than Imola. The speeds are lower at Imola, too, especially since they converted the Tamburello into a chicane; it just doesn't have many high-speed corners left.

No matter what you do training-wise, whether as an F1 or IndyCar driver, there is nothing like being inside a race car and doing those movements and having those loads put through you. ▶

(Main) Imola is a much slower circuit than Interlagos and is thus slightly less tiring. However, it is still hard work, because drivers' necks simply aren't used to turning left; (inset) Blundell imagines himself back in the car



> Car preparation for Interlagos and Imola

By Steve Matchett

-At Interlagos and Imola the cars were circulating anti-clockwise, so the majority of the loading affecting the tyres, suspension and brakes was switched from the left-hand side of the car to the right. In the previous two races the left-front tyre suffered the majority of wear; at Interlagos and Imola the right-front took most of the punishment.

Careful attention had to be paid to the brakes, too. A batch of pads or discs may look identical but production methods inevitably result in

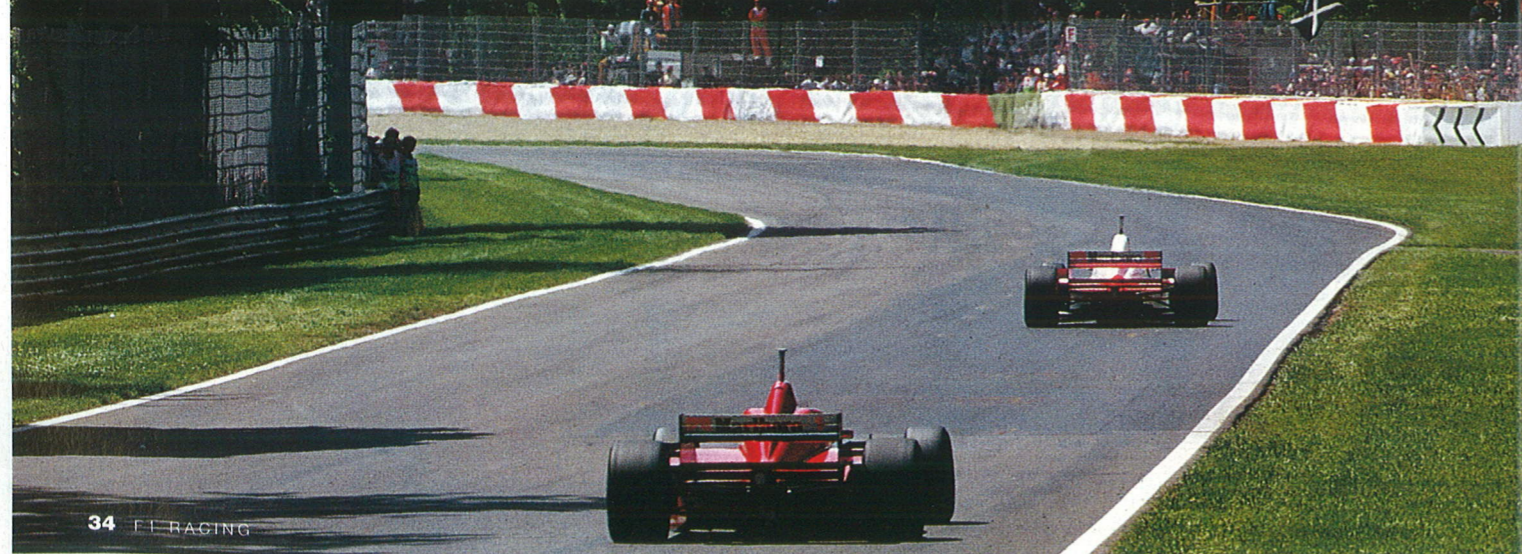
each piece having a slightly different mass. Every pad and disc is weighed, recorded and issued to the car following a systematic procedure. The front brakes were stressed more than the rears, so the pads and discs with the greatest mass (and, hence, marginally more material) were allocated to the front of the car. However, on a clockwise circuit the left-front brake suffers more loading than the right-front, so this corner gets the most dense material. But at Interlagos and Imola the right-front brake gets

the most action. Perhaps the difference in mass between two pads of the same batch will be no more than three or four grams – but that could make all the difference as regards surviving the race distance.

The importance of location (left or right) of the refuelling valve is self-evident: as the car drives down the pitlane the valve needs to be on the side of the chassis closest to the garages. In Melbourne and Sepang this was the right-hand side; at Interlagos the valve needed to be on the left.

The positioning of the fuel valve also depends on exactly where the pit complex has been built in relation to the closed loop of the circuit – whether it's on the inside or the outside of the loop. Most pitlanes are on the inside, but there are exceptions: Montreal and Magny Cours, for example.

Imola is like this too, which means that for the San Marino Grand Prix the cars had to be built for an anti-clockwise track but they needed to have their fuel valves positioned on the right of the chassis.



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> Anti-clockwise Formula 1 circuits

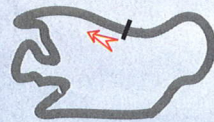
Of the 60 circuits ever used in F1, 10 run anti-clockwise. Suzanne Arnold has the gen.

Oporto (Portugal)



Years used: 1958, '60
Track length: 4.602 miles
Lap record: 2m27.530s, 112.309mph (John Surtees, Lotus 18, '60)
This was a street circuit close to the harbour front. Cars had to negotiate their way round a mass of obstacles including shops, lamp posts and cobbles. The circuit was mostly used for sportscar racing, but was considered dangerous and fell out of use after '60.

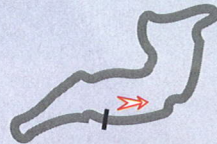
Montjuïc Park (Spain)



Years used: '69, '71, '73, '75
Track length: 2.356 miles
Lap record: 1m23.800s, 101.196mph (Ronnie Peterson, JPS Lotus 72E, '73)
The circuit used the

roads of a public park. Rolf Stommelen's car suffered a wing failure here in '75 and crashed over the barriers. Four spectators died and the circuit was never used again.

Imola (San Marino)



Years used: '80-present
Track length: 3.063 miles
Lap record: 1m25.524s, 129.031mph (Ralf Schumacher, Williams-BMW FW23, '01)
The Imola circuit sweeps alongside the river Santerno for one half of the lap; the other half twists through vine-covered hillsides.

Avus (Germany)



Years used: '59
Track length: 5.157 miles
Lap record: 2m4.500s, 149.129mph (T Brooks,

Ferrari Dino 246, '59)
The name stands for 'Automobil Verkehrs und Ubungs Strasse'. The circuit was first used in '21 and was constructed as a dual carriageway. It is made up of two long straights and two hairpins – not the most imaginative layout! In '37 a 43-degree banking was added, which led to some high speeds (Jean Behra died on it in a support race in '59 and the banking was eventually removed in '67).

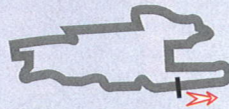
Dallas (USA)



Years used: '84
Track length: 2.424 miles
Lap record: 1m45.353s, 82.830mph (Niki Lauda, McLaren MP4/2, '84)
This circuit was used only once – in '84. It was an angular street circuit but the newly laid track surface crumbled during

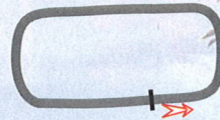
the race. Not surprisingly, this caused the drivers some problems and they never came back.

Detroit (USA)



Years used: '82-88
Track length: 2.500 miles
Lap record: 1m40.464s, 89.584mph (Ayrton Senna, Lotus 99T, '87)
Detroit hosted seven championship grands prix but never really suited F1 cars: its corners were near right-angles. F1 raced there for the last time in '88, after which it was used for IndyCars.

Indianapolis (USA)



Years used: (as anti-clockwise oval) '50-60
Track length in '60: 2.500 miles
Lap record in '60: 1m1.590s, 146.128mph

(Jim Rathman, Watson Offenhauser)
Indianapolis now has a clockwise F1 circuit, of course. But what we're talking about here is the old rectangular circuit with 90-degree banked corners. The Indy 500 was included within the world championship for a few years, in an attempt to attract more American drivers to compete in F1.

Las Vegas (USA)



Years used: '81-82
Track length: 2.268 miles
Lap record: 1m19.639s, 102.523mph (Michele Alboreto, Tyrrell 011, '82)
This circuit was as temporary as they come – it was built in the Caesar's Palace Hotel car park with interlocking concrete barriers! Due to space constraints, therefore, it was a very twisty circuit, shaped rather like a capital 'E'. The drivers found it

uninspiring, though, and it was used just twice.

Phoenix (USA)



Years used: '89-91
Track length: 2.312 miles
Lap record: 1m26.758s, 95.936mph (Jean Alesi, Ferrari 642/2, '91)
Phoenix was another of those street circuits with too many right-angles and wasn't too popular with either drivers or spectators.

Interlagos (Brazil)



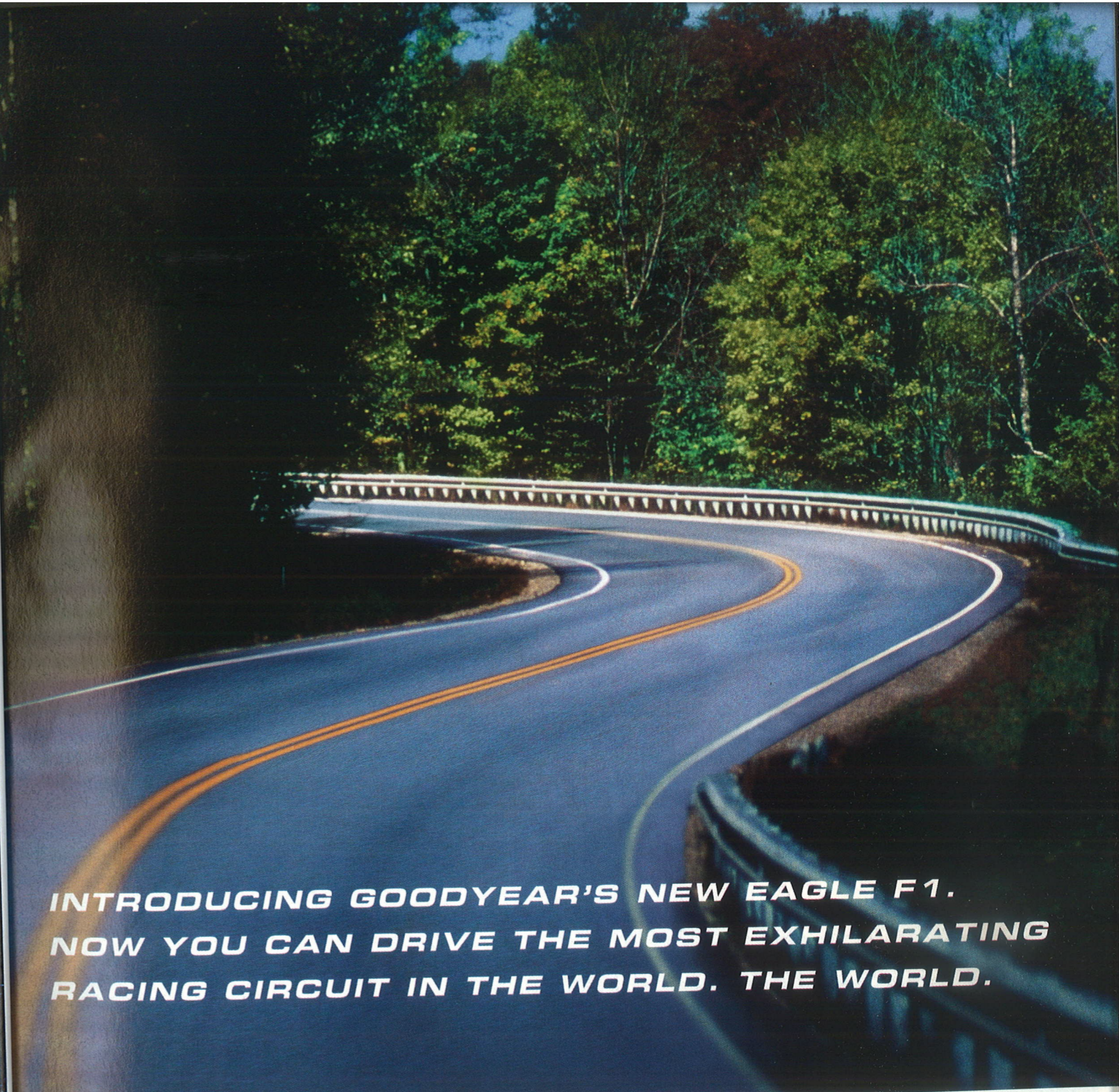
Years used: '73-77, '79-80, '90-present
Track length: 2.667 miles
Lap record: 1m14.755s, 128.940mph (Michael Schumacher, Ferrari F1-2000, '00)
Interlagos has changed dramatically over its F1 years. It sits between two lakes (hence the name) and used to be longer and twistier.

Nothing I have yet experienced has come close to simulating it. In the days of wide-track, slick-tyred, active suspension cars it was even harder, because they had so much downforce that the driver was almost the only limiting factor. There were points where you couldn't physically keep your foot on the throttle because of the forces.

Age is not the problem you might expect it to be. Michael Schumacher is one of the oldest guys in F1, David Coulthard is only a bit younger, Olivier Panis is 35. But I assure

you they're among the fittest guys in the pitlane. You don't have to be the dictionary definition of 'fit'. You wouldn't say Juan Pablo Montoya looks 'ripped' or especially athletic, but he has incredible strength and endurance and he does the job. Panis is the same, as was Nigel Mansell. Did Mansell ever look like an athlete? No, but who could say he never got the job done? He's strong, even today – he only has to shake your hand and he's practically tearing it off. **1** Brazil, San Marino GP reports page 131 >

(Main) Interlagos has a lot of high-g, anti-clockwise corners, heavy braking and high humidity. So it's a tough physical challenge; (right) Blundell used to do particular exercises to prepare for it



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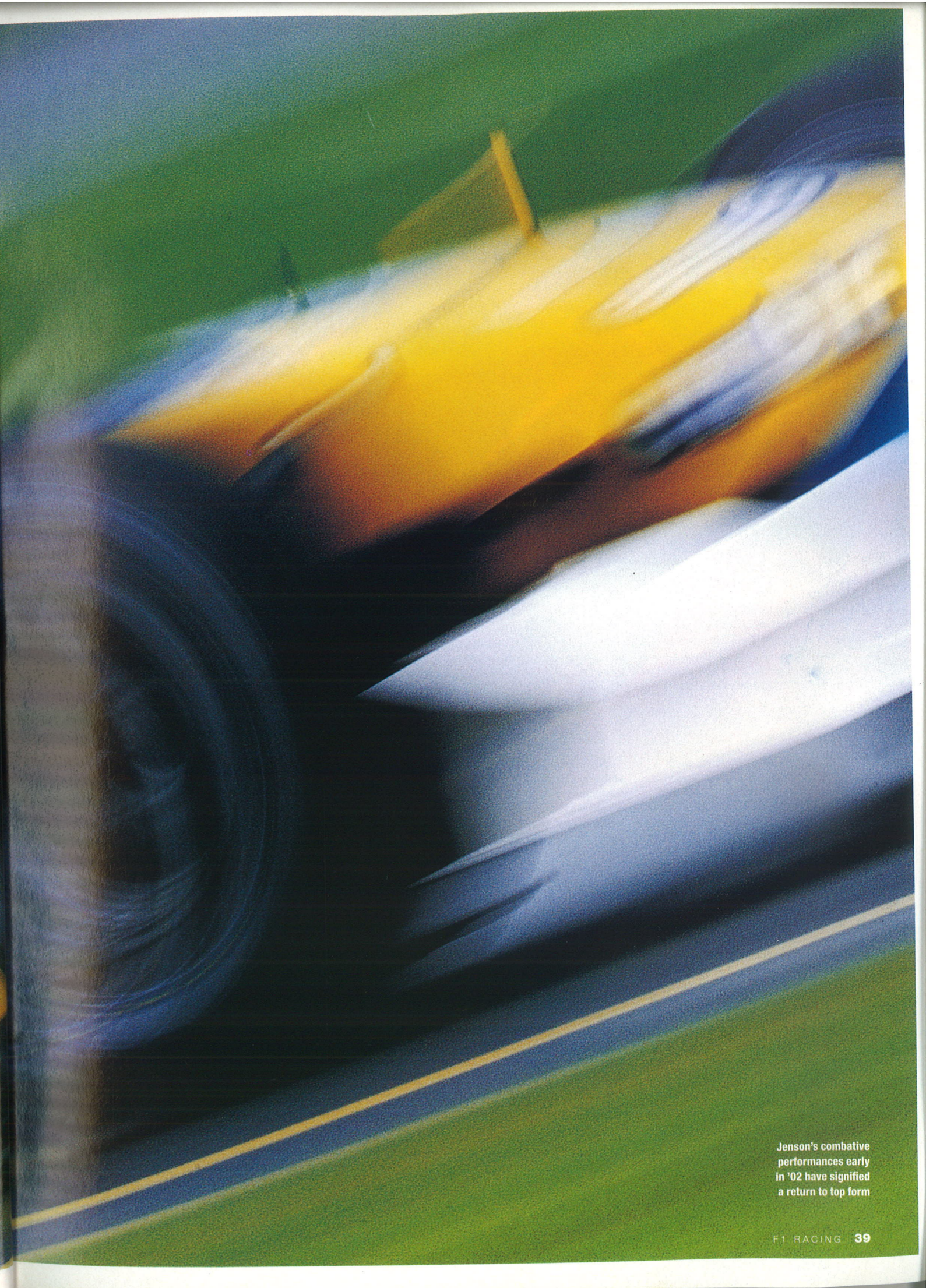
ON THE BUTTON

DON'T WORRY BE HAPPY



After a nightmare 2001, 2002 is looking good for Jenson Button. Very good, in fact...

Interview by Matt Bishop; portraits by Ben Wright



Jenson's combative performances early in '02 have signified a return to top form



This time last year, things were going pear-shaped for Jenson Button. Indeed, although we at *F1 Racing* were careful not to say it, most Formula 1 insiders were beginning to think of him as a one-hit wonder – the one hit being his brilliant debut year (2000) with BMW-WilliamsF1. Indeed, on the morning of the Austrian Grand Prix last year, one Benetton man (whom I shall not name) strolled up to me, pointed at a visibly disconsolate Jenson (who had qualified the B201 21st for the third consecutive race), and muttered, "Poor lad. First people were saying, 'Who's Jenson?'; then everyone was screaming, 'Get me Jenson'; then, when we got him, it was, 'Get me someone like Jenson'; and now, already, it's 'Who's Jenson?' again. I'm really worried for him."

We all were. But *F1 Racing* did not, like some rivals and most of Fleet Street, kick the man when he was down. Why? Because we always felt his other-worldly talent would prevail. And the latest evidence would appear to show that we were right.

"I got pretty low last year, it's true," Jenson will now admit. "It was very, very difficult. But some people who should have known better should have kept their mouths shut. People should look at the bigger picture, and not only at a driver's last race. I want to prove those people wrong this year, but the most important thing about that is the success itself, not the proving people wrong that goes with it. I still want to be world champion, and I still know I can do it."

It is an interesting declaration, and warrants scrutiny. It was triggered by a question, of course, and that question was as follows: "How low did you get in the dark days of '01?" Jenson's answer starts off candid, then turns belligerent, but – via a clever 'link', to use a broadcasting term – finishes on an extremely positive and ambitious note. Moreover, it ducks no issues, and seeks out no soft options. It is the remark of a man who is palpably at ease with himself, with his situation, and with the tasks that lie ahead of him.

Two years in F1 have made Jenson an

**Born to be Mild?
After a patchy '01,
Jenson (above) is
re-establishing
himself as a top-
drawer driver**

adept interviewee, consummately able to reply to a question that probes negatives with an answer that highlights positives. Drag him back to the original theme, however, and he will not evade it. "I don't want to look back on last year too much. But Giancarlo [Fisichella, Jenson's '01 team-mate at Benetton] was more experienced than me, and therefore better on set-up. He was very good on set-up, in fact. He used to just turn up at each race,

DARREN HEATH; CLIVE ROSE/LAT; STEVEN TEE/LAT

'JENSON BUTTON IS PALPABLY AT EASE WITH HIMSELF, WITH HIS SITUATION AND WITH THE TASKS THAT LIE AHEAD'



(Above right) Jenson and Renault F1 boss Flavio Briatore didn't always see eye to eye last year – but Jenson's superb drive at Sepang (main) will have improved things

set the car up, and be able to more or less match his eventual qualifying time straight away. He was always straight on it like that. At some places, I admit I was lost on set-up. I didn't really know which way to go. But you can work on it. It makes you stronger. And you can learn from the experience."

Again, an honest answer – with, once again, a happy ending, so to speak. But its oratorical finale – though indubitably upbeat – is not mere flimflam. Jenson *did* 'work on it', and it *did* 'make' him 'stronger', and he *did* 'learn from the experience'.

Following his summer of discontent, Jenson resolved to spend the winter sorting his life out. He sacked his manager, Dave Robertson (who, with his son Steve, still looks after Kimi Raikkonen), and replaced

him with Essentially Sport Ltd, a sports management company headed by John Byfield – a lawyer who part-ran the Leyton House March and Pacific Grand Prix teams in the early '90s and has more recently done high-level legal/contractual work for David Sears, Jan Magnussen and Juan Pablo Montoya. "For me, personally, John has changed a lot," says Jenson. "He's doing a very good job – and appears to be very professional, very much in control. That enables me to get on with what I need to be getting on with: keeping fit and driving the car. John sorts out everything else."

The change was initiated by Jenson – indeed, it was Jenson himself, by telephone from a hotel in Norway, who broke the bad news to a distraught Robertson. The origins

of the split may never now come out, and perhaps it is better that they do not. But two things are clear: (1) though Jenson is only 22 years old, he is unequivocally the master of his own destiny, and (2) despite being courted by some of the most prominent and successful driver-managers in the sport, he was always going to choose his own man.

Also new in Jenson's '02 life, of course, is Jarno Trulli (who has replaced Fisichella as Button's Benetton – or, from this season onwards, Renault – team-mate). Both Jarno and Giancarlo are quick and Italian – but there the list of similarities between them starts to peter out. Last year was Fisichella's fourth at Benetton, and the advantages that his long service gave him – especially relative to the freshman, Button – were ▶





> Renault: getting better and better...

Already there are clear indications that Renault are making significant headway as a stand-alone constructor. The question is: how is such a new team managing to make such rapid inroads? Actually, much of the team's seemingly quick progress can be

attributed to long-term continuity. For, while Renault's PR machine has been working overtime to promote the company's return to Formula 1, the reality is that only the RS22 engine is manufactured at their Parisian headquarters; the remainder of the car is produced at

Whiteways Technical Centre, in Oxfordshire, England (the old Benetton facility). And there is much sense in that, too. The new team's first chassis, the R202, is a carefully considered, logical progression of the Benetton B201. And, while the 2002 car features an all-new transmission and composite rear-lower wishbones (a first for the Benetton/Renault design team), the car's aerodynamics are visibly similar to its predecessor's, allowing technical director Mike Gascoyne to massage lines and shapes already familiar to him.

In an attempt to extract the maximum potential from each of their subsequent cars, the team have taken an interesting approach to future design work, splitting their designers into two groups: one group, working under the guidance of the team's chief designer, Mark Smith, will concentrate their efforts entirely on R202, following its progress throughout the whole of the season, while the other group are already busy on research, development and preliminary drawing of R203, the car destined to race in 2003. Next year, when this second crew are racing and honing R203, the first team will be free to create R204. The idea is that each crew can follow their individual projects to a natural conclusion without the distraction of having to design the next car halfway through the racing season. A shrewd move – since Renault doubled the number of designers, they have doubled the design time available to them. Clever.

Steve Matchett

Jenson drove quite superbly in Malaysia. Race day was dry, but it rained in practice – giving the team a chance to try out Michelin's 'inters'



CHARLES COATES/LAT

(Left) Jenson has built good relations with his mechanics (being English in an English-speaking team helps). That, and improved results – such as his near-podium in Malaysia (above) – has led to the reappearance of his customary cheeriness (right)



manifold. Giancarlo's rapport with his engineers – still, since grand prix racing remains *au fond* a sport, the key relationships for any driver, despite F1's tendency to become ever more corporate and ever more marketing-orientated – was exceptionally strong. Giancarlo may be super-rich and ultra-cool, but he remains at heart a chummy Roman Jack-the-lad with a ready wit and an eye for a pretty girl. Combine those qualities with his mesmerising speed in a car, and you have the kind of driver whom mechanics adore.

Trulli, by contrast, is more intellectual, more complex, more political and much more private. Although his English is considerably better than Fisichella's, he chats to the Renault boys (who are almost all ex-Benetton men, and therefore British) less engagingly and less often. And since Jarno is managed by Renault boss Flavio Briatore, the announcement of his (Jarno's) arrival – and the consequent departure of 'Fisicho', as the chaps had dubbed Giancarlo – was met with muttered accusations about "jobs for the boys".

Jenson has potted cheerfully around the edges of this imbroglio, doubtless well aware that it suits him rather well. Like Fisichella, he gets on with mechanics and engineers fabulously well – better even than Giancarlo, perhaps, helped as he is in this regard by being a Brit himself. As a result, whereas Button was second in most team members' affections to Fisichella in '01, he is very clearly *numero uno* this year. In Malaysia, for example, where Jenson

drove magnificently to what should have been a superb third place ahead of Michael Schumacher, a last-minute suspension failure demoted him to fourth. As he tiptoed the stricken Renault around the slowing-down lap, he felt, in his own word, "gutted". And yet he still remembered to croak, "This one's for you, mate" on the car-to-pits radio – a message to a mechanic whose birthday it was. Despite the hi-tech, F1 remains a human sport; group-dynamic courtesy of this kind can consequently confer tangible benefits on a driver, like Button, who is cute enough to bother with it.

Ask Jenson about Jarno, and the torpid cadences with which he imbues his answer reveal – to my ears, at least – that it has been rehearsed. "I think people tend to regard Jarno as a fantastic qualifier and a good racer. If he wasn't my team-mate, he'd be a driver I'd really want to beat. Nothing changes just because he's my team-mate – although people tend to concentrate on that angle. I want to beat him, obviously – but he's just one of many. There are red cars and silver cars I want to beat – and blue-and-white ones, too. Especially the blue-and-white ones." Again, note Jenson's trademark positive sign-off.

One of the first people to congratulate Button on his splendid (and popular) Sepang performance was Frank Williams, the man whose blue-and-white cars Jenson drove so impressively in '00. "Frank and I speak a lot on the phone," Jenson reveals. "He used to give me a lot of advice last year, when things were bad, even though I wasn't

'BUTTON WAS SECOND TO FISICHO IN THE TEAM'S AFFECTIONS IN '01, BUT HE IS CLEARLY NUMERO UNO NOW'

driving one of his cars. He always told me I'd pull through. And we've been talking quite a lot this year, too."

Although Button is still contracted to Williams, it is by no means certain that Frank will have a vacancy for him in the foreseeable future. Montoya and Ralf Schumacher both have long-term contracts with Williams, and both men are driving well. Despite that, Frank remains remarkably vocal (especially for Frank!) about his enthusiasm for a driver who is, after all, competing in a rival car; one Saturday morning last summer, for instance, Frank telephoned me to praise a very pro-Jenson column I had written in *F1 Racing's* weekly counterpart *Autosport* after a particularly wretched Button weekend. He has made similar calls to other journalists.

So why is Williams so keen on Button? The simple answer is that, more than any other team principal, Frank thrills to the sight of an F1 car in full flight, controlled on the nervily ragged edge by a driver as brilliant as Jenson. And yet the traditional Williams 'type' is slightly different from that: it is Alan Jones (who became world champion in a Williams in '80) and Keke ▶

ON THE BUTTON

Rosberg (ditto, '82) – thick-set, combative, no-nonsense men who crudely strong-armed their cars around the world's circuits, violent commitment making up for what they lacked in finesse – who Frank and Patrick Head tend to talk about with greatest ostensible fondness. And Jenson is not at all like that.

"Williams have had some marvellous drivers," Frank told me recently. "To be precise, we've had seven guys win world championships for us – plus Ayrton Senna and Carlos Reutemann. Ayrton was fabulous, obviously, but tragically we only had him for a couple of races. But I often think about Carlos too, and I don't think we really got the best out of him. He was fantastically quick – magnificently gifted, he could really take your breath away – but he wasn't like Alan or Keke. He was much more, you know, sensitive."

"Perhaps," I wondered aloud, "you think Jenson is a bit like Carlos – and maybe this time you want to make sure that a wondrous talent has every opportunity to blossom."



Button is upbeat about the R202, designed under the auspices of Mike Gascoyne (above, with Jenson)

Frank only smiled, but I think I was right.

Like Reutemann was, Button is naturally quick and beautifully smooth and is able to control a car on the edge of its tyres' adhesion with wonderful facility. I will remember, over lunch in December '00, having the unenviable duty to inform Jenson that the FIA had that day announced their decision to re-legalise traction control for '01. He looked at me with the blank eyes of a patient who had encountered some reality in the coils of his condition that no doctor could ever comprehend. "That's terrible," he mumbled, "bloody terrible. Throttle control is one of the things that separates the top drivers from the rest. That's just terrible for me. Terrible, terrible..." Reutemann would have felt exactly the same.

If, however, you compare video footage of the two men in action you would be forced to conclude that there is little of Reutemann in the on-track trajectory of an F1 car being driven on the limit by Button; while Carlos disliked understeer more than anything, and could only give of his best if his car's front end were set up so that he could turn in on the brakes into an early apex, catching and recatching the rear end again and again as he did so, Jenson has hitherto been more conventional – until this year. "I used to *hate* oversteer," he reveals. "But, lately, I don't mind it so much. This year's car is a lot more gradual in the way it behaves on the limit, so I like a bit of oversteer now. That's changed the way I've been going on set-up. In Malaysia the car was a lot more oversteery than I'd normally go for, but it seemed to work so I'll probably continue with it for the rest of the year."

So what of the rest of the year then? All in all, things are looking pretty good.

The Renault R202 is clearly a promising package, and it is getting better all the time. "Yes, it feels good. But for the first half of the season it's going to be very difficult to qualify regularly inside the first six, for obvious reasons. In the races, though, we seem to have a very good package. And the good thing about Renault is that they're totally focused on making improvements – and I mean big improvements. Last year they made bigger improvements than any other team. So podiums are certainly a possibility this year, and I think we've proved that. Ferrari and McLaren have had a few reliability problems, but they can't take it easy because Williams are looking so good right now. So they've got to push – and, you know, that might help us."

He sounds happy, doesn't he? And his friends confirm it. His 22nd birthday party (January 22), held in the large comfy Weybridge house he shares with his father John (and which, bizarrely, was used as a location for the blockbuster *Ali G Indahouse*), was by all accounts a remarkably convivial occasion – low-key, unriotous, but fun. And Jenson was on good form – his old self, in fact. His childhood mates were all there – Richie, Fraser, Brad – as were a couple of new pals from the world of minor showbiz (Olympic gold medallist rower James Cracknell, F1-ITV presenter Beverley Turner, among others)... and, of course, his engineers.

Jenson was *always* going to invite his engineers. **1**

In Australia Button qualified a very promising 11th (main), but was eliminated in the spectacular first-corner accident

'BUTTON IS ABLE TO CONTROL A CAR ON THE EDGE OF ITS TYRES' ADHESION WITH WONDERFUL FACILITY'



WASH: GABRIEL HEARH; INSET: CHARLES COATES/KAP

Frome here to eternity

He was an ordinary boy from an ordinary town (Frome, in Somerset). Here, exclusively in *F1 Racing*, Jenson Button tells his extraordinary story. Ain't no stoppin' him now.

Portrait by Ben Wright

'DAD DESERVES TO SHARE IN MY GOOD TIMES SINCE HE DID SO MUCH TO BRING THEM ABOUT'



Me and my old man

"My dad isn't my manager in any sense of the word – he's just a dad. But he gave so much of his time, effort and money to my career in the early days – possibly more than he should have done, to be honest – that I'm really happy that he comes to all the races now. It's really good to have him around and he deserves to share in my good times since he did so much to bring them about."



On my 50cc Yamaha bike, aged seven
"I got this bike from my dad for my seventh birthday. I'm riding it around the cricket club of Longleat Safari Park in Somerset. Judging by my dirty knees, I must have been quick – I had it cranked right over!"

"But after one day I got bored because it wasn't quick enough. So my dad took out the restrictor and, when I next got on it, I fell straight off the back! It was hilarious."



BUTTON FAMILY ARCHIVE

With dad again – on a karting grid

"With dad in 1990. The kid on my right is Anthony Davidson, by the way, who is now British American Racing's test driver. My father was everything to me then. He worked on the kart and even tweaked the engine himself – to the regulations, of course! I can remember him standing on the inside of corners and shouting at me where to brake or turn in, that kind of thing. A lot of the skill was about keeping the engine revs up because karts only have about 4bhp. I used to be really gentle with the steering wheel and it seemed to work. I still have the same style of driving now."



Cadet karting at Clay Pigeon, aged eight

"My first 60cc kart. I was given it for Christmas and the first place I drove it was in a pub car park. I got bored fairly quickly, so we took it to a nearby airstrip. But, again, after half an hour I got bored. So dad took me to a proper circuit – and I immediately loved it. In this picture I'm driving at the Clay Pigeon circuit near Yeovil in Somerset. After a bit of practice, my old man put me in a race – and I won it! It wasn't the biggest grid in the world and it was wet, but I came from the back and won."



△ **And this is me, aged 11**
 "I'm 11 in this picture. In case you're wondering about the helmet, this isn't personal sponsorship from Renault; they sponsored a race meeting at Clay Pigeon called the Super Prix. Johnny Herbert used to come down to show us how to do it.
 "At this stage, I only karded at weekends and in school holidays. I took the odd Friday off from school to test, but no more than that. I was just having fun, although I was keen on winning. I wasn't thinking about making a career from racing."

The Margutti Trophy, Parma
 "It's '94 and I'm wearing pink – my ex-manager Sergen Popovic's colours.
 "This is at the season-opener – my first race abroad – at Parma in Italy. There were about 65 karts and I got through to the final. I was running sixth until I landed on top of the European champion from a couple of years earlier.
 "I enjoyed racing abroad and won the European Championships in '97, my last year in karting. I was sad to leave: it was competitive but also a big family. Only one category is more competitive: F1."



△ **My first taste of Formula 3**
 "In '99 I moved up to the British Formula 3 Championship. I looked at doing it with two teams: Paul Stewart Racing or Promatecme. In the end Stewart didn't want me – so I went to Promatecme, who had Renault engines.
 "After Formula Ford, I loved the feel of an F3 car. It felt more like a kart, although it was a bit underpowered. I only won three races, but I don't think that our package was as strong as Stewart's."



'MACAU IS PRETTY SCARY BECAUSE IT'S FAST AND TIGHT. IT'S A LOT MORE FUN THAN MONACO'



△ **Formula Ford at last!**
 "Thruxton, my first car race, in March '98. I'm driving for the works Mygale team in the British Formula Ford Championship. One of the hardest things for me to get used to was the braking – I just couldn't stop the car. The brakes were far worse than in karting. The gearbox was no problem, only the brakes.
 "As for the racing in FFord, there was much more weaving than in karting. If you weaved in karting someone would have you off, it was as simple as that. But FFord wasn't the same. Still, I had an enjoyable year and I won the championship."

'ONE OF THE HARDEST THINGS TO GET USED TO WAS THE BRAKING. I JUST COULDN'T STOP THE CAR'



△ **Festival fever!**
 "I'm celebrating my victory in the '98 Formula Ford Festival, which is the world championships for Formula Ford. What made it doubly satisfying was that the Mygale wasn't the best car around Brands Hatch – the Van Diemen was quicker. It was an important win for me."



△ **Mega Macau!**
 "Finishing second in the Macau and Korean F3 races at my first visit was fantastic. Darren Manning beat me in both races, but he happened to be the small matter of 7.5mph quicker in a straight line!
 "I loved Macau. It's a fantastic circuit, but pretty scary because it's pretty tight and fast – one mistake and that's it. It's a lot more fun than Monaco."

△ **My Autosport Young Driver day**
 "After winning the Formula Ford Festival in '98, I did the test for the Autosport Young Driver of the Year Award. It involved driving an F3 car, a touring car – awesome in the wet – and some non-driving tests. I won it. The prize included a test in a McLaren.
 "The F1 drive was at a damp Silverstone. I loved it. The car was so driveable and felt very quick. My first word was, 'Wow!'
 "I was supposed to do 20 laps, but only did 12 because the wet tyres had started to overheat and I wasn't going to go faster. I said, 'There's no point doing any more laps.' The boys went a bit quiet at that..."

My first F1 test
 "In the autumn of '99 I still didn't think that I'd be racing in F1 the following year. So I tested a Formula 3000 car at Jerez and it went well, although it felt a bit like a bus compared to an F3 car.
 "I went on holiday in Mexico at the beginning of December. A week into the holiday I got a call from Alain Prost, who said he wanted to test me at Barcelona.
 "Jean Alesi had driven the car the day before. After 12 laps I was quicker than him – never having seen the track before. I was chuffed to bits. Alain was there, but he never said what the test was for."



BUTTON FAMILY: PHOTOFEST; LAT: AGENCE

ON THE BUTTON



A (Formula 1) dream come true

"Early in '00 Frank Williams said he wanted to test me but that I 'wasn't in the running for a drive, not even a test drive'.

"But I knew a race seat was probably up for grabs. I set a quicker time than Bruno Junqueira, but I thought he'd get the drive because he was more experienced and, technically, probably better too.

"Just before the launch, Frank said, 'Do you think you can do it?' I said yes. 'Well, you're going to be the other driver,' he said.

"I then met Ralf Schumacher. Frank told him that I was going to be his team-mate and Ralf replied, 'I already knew that.'"

My mate Ralf...

"Ralf is a good guy, although he was quite difficult to talk to early on. As I got quicker I think he respected me more and we got on a lot better. He's quite a quiet guy, but also funny. He was a good team-mate: if I asked a question, he told me everything."

... and my mate Frank

"My relationship with Frank is great. He phones after every race for a chat. I knew before mid-'00 that Juan Pablo Montoya was coming back. Frank is a very honest man - he had a 'handshake' with Montoya and I knew he wouldn't break that."



Me and my boss

"I must be kissing Flavio here! Despite what has been reported in the press, we get along very well - even last year when things weren't going so great.

"For example, when I had a problem in qualifying at the Nürburgring, he came into the truck and told me not to worry. The only time that he was majorly unhappy was at Monaco, where I didn't get in the points when maybe I should have done. But we never really argued."



My new motor

"There's a good atmosphere in the team this year. The Renault R202 is a much better car than last year's Benetton. Aerodynamically, it's a lot better and it feels much more how a racing car should. When you make a change to it, you can really feel that change. I hope we can achieve great things with it."



CHARLES COATES/LA, ARDVAE



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Horses for corsa

Corsa – racing – is the very life-blood of Ferrari. When Enzo Ferrari created his scarlet empire, he built a racing dynasty that would bear his name to glory across the globe, across the decades. More than 50 years on, many legends have been born through their association with Ferrari – each, in turn, helping to perpetuate the team's own legend. Drivers, cars, engineers and team bosses were often touched by greatness; but which were *the* greatest? Here, in an *F1 Racing* world exclusive, we examine the claims of Ferrari teams from all six decades to assess which one can be declared *numero uno*. The results, we are sure you will agree, make fascinating reading...

Words by Peter Windsor

Our special contributors



José Froilan González, Ferrari's first grand prix winner (1951 British GP)



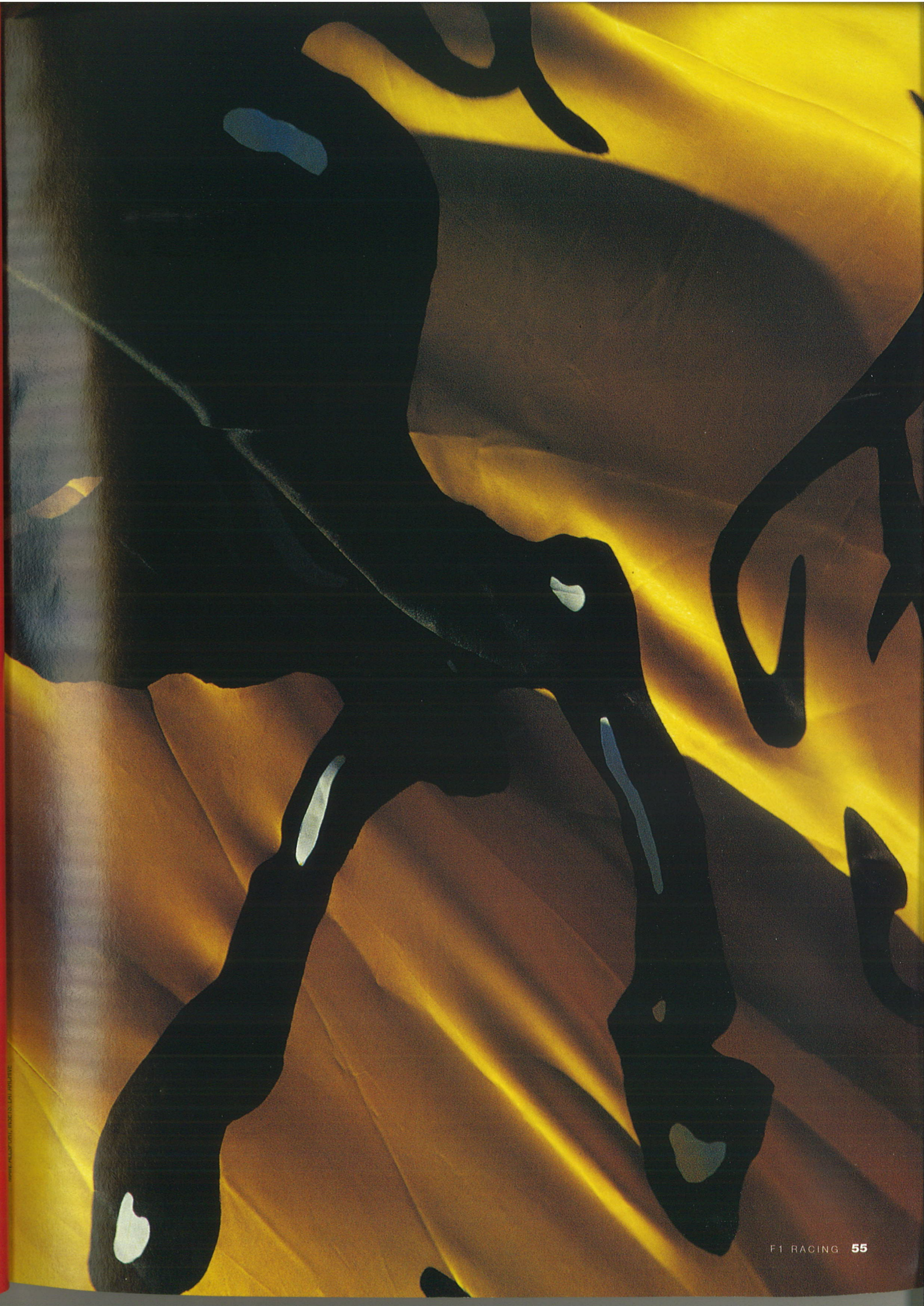
Phil Hill, Ferrari's '61 world champion



Jody Scheckter, Ferrari's '79 world champion



Michael Schumacher, Ferrari's '00 and '01 world champion



FERRARI'S GREATEST TEAMS

Car design

Ferrari's first world championships – in 1952 and '53 – are dismissed by many as being irrelevant. After all, the championship in those years specified 2.0-litre Formula 2 cars, not Formula 1. Despite growing opposition from Maserati, Alberto Ascari won as he pleased.

The truth is somewhat different. The championship was downgraded for those two years because Ferrari had virtually killed off his major F1 opposition (Alfa Romeo) with his much more fuel-efficient 4.5-litre unblown F1 cars (designed by Aurelio Lampredi). The brilliant new F2 car featured a torquey four-cylinder engine, four DCOE Weber carburettors designed by Ferrari's Bolognese friend, Eduardo Weber, and (typically for Ferrari) no head gaskets. It was what you might call state-of-the-art.

Later, with F1 regulations now specifying 2.5-litre engines, Juan Manuel Fangio won the '56 championship for Ferrari. Ferrari had the previous July taken over the assets of the collapsed Lancia team and quickly disregarded most of the innovative features of Vittorio Jano's Lancia D50 design team. These included the use of the engine and (rear-mounted) gearbox as stressed chassis members (Colin Chapman reintroduced the principle with the '67 Lotus 49); disc brakes (Ferrari would reluctantly switch to them in '58) and four-wheel drive (reintroduced by Ferguson in '62). Nonetheless, Ferrari found reliability and driveability with the modified

D50s; Fangio, racing hard to beat the Maserati 250Fs, did the rest.

Mike Hawthorn won the '58 championship at the wheel of the beautiful Ferrari Dino 246, named after the son that Enzo Ferrari had lost to muscular dystrophy in '56. The Dino was inferior to the Vanwalls and the rear-engined Cooper-Climax in '58, and was only fitted with disc brakes at the Italian Grand Prix, late in the season. It was, though, typical of most Ferraris: it was reliable and powerful.

Adapting quickly to the new 1.5-litre regulations of '61, and again enjoying a power advantage, Ferrari won a fifth drivers' championship with the Carlo Chiti-designed shark-nosed Ferrari Dinosaurs, fitted either with 65-degree or 120-degree V6 engines. The distinctive twin-nostril shape was brought over from Maserati by the engineer Medardo Fantuzzi, who had sculpted the 250F, and were added to the Dino design after wind tunnel tests proved their worth.

Ferrari again adapted late to F1's next major design breakthrough – the monocoque chassis. By '64, though, John Surtees was up to speed with the V8-engined semi-monocoque car, which also appeared in flat-12 and V6 guises, and which would clinch the championship in the final round in Mexico.

After a major slump, Ferrari re-emerged to win another championship in '75 with the 312T – a derivative of the '73 312B3 that chief designer Mauro Forghieri had

described as Ferrari's first true monocoque (no surprise about that, either: Forghieri commissioned Northampton's John Thompson to build the chassis). The 312T was all about a flat-12 engine, a transverse gearbox (and, thus, a relatively low centre of gravity) and great brakes; it was an outstanding racing car. The theme continued through to the late '70s, winning Ferrari further championships in '77 and '79.

However, Ferrari would thereafter again lose time, switching late to the ground effect era, to the advent of turbos and to carbon chassis. It was only in '89, when Ferrari entrusted their entire technical programme to the Englishman John Barnard, that things again began to improve. Enrique Scalabroni transformed Barnard's concepts into race-winning packages, but a drivers' title would elude the team until '00. By that time Michael Schumacher, Ross Brawn and Rory Byrne had brought Benetton-style engineering standards to Maranello. The Ferraris of the past three years have been extremely adaptable from circuit to circuit, have been outstanding in their reliability and have rarely been inferior to their opposition.

Ferrari began by setting technical trends but then quickly assumed the character of a team in which the individual mechanical components of the car – the engine, the gearbox, the castings – were more significant than the car as a whole.

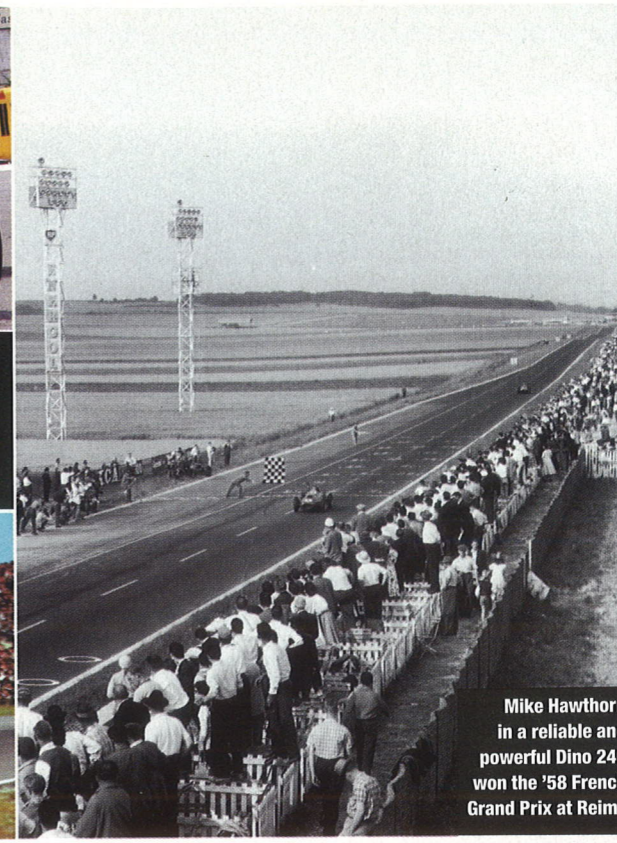
Niki Lauda took the title in 1975, driving a car designed by Mauro Forghieri (in yellow, centre). It was based on his '73 car, which Forghieri considered Ferrari's first true monocoque



(Above) Gilles Villeneuve in the '79 312T4. Team-mate Jody Scheckter won the championship



(Below) The shark-nosed Ferrari had more power than its rivals and easily took both titles in '61

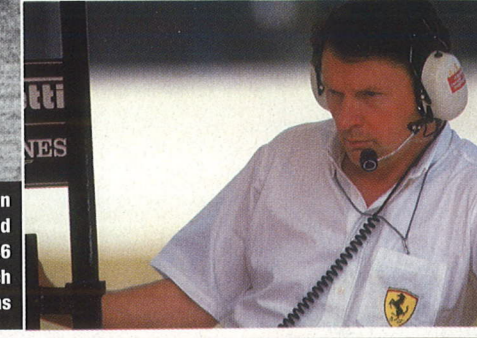


Mike Hawthorn in a reliable and powerful Dino 246 won the '58 French Grand Prix at Reims



(Above) Nigel Mansell in the '89 640 in Portugal. His team-mate Gerhard Berger won the race

Technical director John Barnard (below) improved Ferrari's fortunes in the late '80s



> All the stats, decade by decade Compiled by Suzanne Arnold

1950s: Monaco '50-USA '59	Starts	156	Fastest laps	150	
Drivers' titles	4	Wins	18	Podiums	483
Constructors' titles	0	Poles	18	Three most successful Ferrari drivers	
Starts	73	Fastest laps	23	Alberto Ascari, 13 wins from 26 Ferrari starts:	
Wins	29	Podiums	71	50% success	
Poles	31	1990s: USA '90-Japan '99		Juan Manuel Fangio, 3 wins from 7 Ferrari starts:	
Fastest laps	30	Drivers' titles	0	43% success	
Podiums	105	Constructors' titles	1	Michael Schumacher, 36 wins from 95 Ferrari starts:	
1960s: Argentina '60-Mexico '69		Starts	162	38% success	
Drivers' titles	2	Wins	28	Most Ferraris in a race	
Constructors' titles	2	Poles	20	10: Italy '52 and Argentina '57	
Starts	89	Fastest laps	27	Most consecutive wins	
Wins	13	Podiums	107	9: Alberto Ascari	
Poles	17	2000s: Australia '00-Brazil '02		Most consecutive podiums	
Fastest laps	16	Drivers' titles	2	39: Malaysia '99 to Brazil '02	
Podiums	56	Constructors' titles	2	Longest run without a win	
1970s: South Africa '70-USA East '79		Starts	37	58: Japan '90 to Britain '94	
Drivers' titles	3	Wins	21	Driver with most Ferrari starts	
Constructors' titles	4	Poles	23	Gerhard Berger: 96	
Starts	141	Fastest laps	8	Most wins in a Ferrari	
Wins	37	Podiums	48	Michael Schumacher: 36 from 95 Ferrari starts	
Poles	41	GRAND TOTALS		Most starts in a Ferrari without a win	
Fastest laps	46	Drivers' titles	11	Stefan Johansson: 31	
Podiums	96	Constructors' titles	11		
1980s: Argentina '80-Australia '89		Starts	658		
Drivers' titles	0	Wins	146		
Constructors' titles	2	Poles	150		

Correct up to and including Brazil 2002



Ascari



Fangio



Schumacher



Berger



Johansson

Technically, then, Ferrari's F1 cars at first glance cannot justify a rating that would put them up there with, say, Lotus's, Williams' or McLaren's. There is something unique about Ferrari, though, and in many ways this has always been their saving grace: Ferrari make their own engines. They always have and they always will. For that achievement, and for cars like the '52 four-cylinder 2.0-litre, the '61 Dino, the '75 312T and the F2001, they must be judged favourably.

Scores on the doors (out of 25)

'50s	20	'80s	16
'60s	19	'90s	15
'70s	22	'00s	24



Froilan González



Phil Hill

It was also sluggish on turn-in. But it was reliable and had a very sweet gearbox."

"It must be said that much of the design and development of the cars evolved from meetings we drivers had with Mr Ferrari after the races. He was very thorough in his questioning about the cars' performances."

"The '61 car wasn't too bad – but could have held the road better. There was negative camber on the rear suspension.



Jody Scheckter



Michael Schumacher

"The car design was probably not our greatest strength in '79. What helped were tyres and reliability. It was a strong car, which made it very safe. I had driven others which weren't like that." "The F2002 is now faster than F2001. I was optimistic that we could win in Brazil even with the F2001. Winning there was not down to luck. We worked hard for it, developing the new car and the tyres." ▶



Team organisation

It's difficult to be objective about this one. There is no doubt, looking back, that Ferrari have always been the rebels when it comes to a subject as up-and-down as team organisation. Enzo Ferrari was an autocrat who nonetheless was able to delegate. His team managers always wielded power and for many years managed to sustain Enzo's character – even after his death in 1988.

Perhaps Ferrari's organisational system was defined by his beginnings not only as a very quick racing driver but also as an innovative, skilled engineer. His tolerance levels were low; he expected drivers to be loyal to Ferrari first and to themselves secondarily. He always felt that cars were more important than drivers.

Was it poor organisation that caused Stirling Moss never to drive for Ferrari? More probably it was politics. Stirling was invited to drive for Ferrari in the '51 Bari

Grand Prix but arrived at the circuit to find Piero Taruffi in his car. Insulted, he never again considered an offer from Ferrari.

Conversely, Ferrari caused a stir in '52 when he decided to enter the Indianapolis 500 with a 4.5-litre Ferrari 375 driven by Alberto Ascari. The attempt failed, but Ferrari's organisation was such that they were still able to win the championship. Think about the logistics of racing at Indy and in F1, add propeller-engined planes that took for ever to cross the Atlantic and you have a team who were ahead of their time.

It was at about this stage that Ferrari also made the momentous decision not to sell F1 cars to customers. Other manufacturers were doing so and would do so in the future; Ferrari, though, decided that the complaints of customers (usually caused by their inferior driving skills, as Mike Hawthorn once memorably proved, when

he drove a customer's car quicker than his own, factory Ferrari!) would be a distraction from the business of winning in F1. He concentrated, instead, on sportscar racing, and on producing road cars for sale – and was massively successful as a result.

For the most part, Ferrari's team organisation was – and is – exemplary. The politics were dreadful through the years – indeed, Ferrari *invented* F1 politics – but that's another story. Team managers like



(Main) Enzo Ferrari ruled his team firmly but well. He also knew how, and when, to delegate; (inset) Alberto Ascari celebrates victory in the '52 British GP. He won the championship that year despite the distractions of racing at Indy

> And let's not forget... Compiled by Stuart Codling

Enzo Ferrari started building and selling road cars in order to fund his passion for racing – and racing, for Enzo, always came first. Since then, commercial imperatives have forced his company to change emphasis: Ferrari is a huge global brand of which the race team are an integral part – integral to marketing (and profiting from) the road cars. *F1 Racing* has picked out the best half dozen road-going Ferraris of all time



1950s 250 TR

Developed with the World Sportscar Championship's 3.0-litre formula in mind, the Testa Rossa (literally 'red head', so named because of the race team's practice of painting its camshaft covers red) really was a race car for the road. In race trim it

won Le Mans in '58 – and developments of the car won a further three times



1960s 250 GTL

The final GT evolution of the 250 breed, and the seminal Ferrari coupé, the Pininfarina-styled GT Lusso was based on the swb (short wheelbase) chassis of the 250 race car, with a 250bhp 3.0-litre V12. Just over 300 were built, by coachbuilder Scaglietti



1970s 365 GTS 'Daytona'

One of the new breed of Ferraris launched after Fiat took a stake in the company, the Daytona's Pininfarina-styled body followed the American long-nose, short-body 'muscle car' look (the faired-in headlights were also changed for pop-up ones to cater for US safety legislation). The 4.4-litre V12 produced 350bhp; it was quick, well mannered by Ferrari standards and very popular – 1,500 were built in four years



1980s F40

Intended to commemorate Enzo Ferrari's 40 years in the trade, the F40 was the world's fastest production car and arguably the most focused Ferrari up to that point ('87): extensive use of composite materials saved weight, as did the removal of cabin trimmings. Pictures of it went up on boys' bedroom walls throughout the world



1990s F355

A milestone in Ferrari's modern (ie Luca Montezemelo) era: not just a great drivers' car, though it set new benchmarks for mid-engined handling – it was also a rigorously built *product*. The 3.5-litre V8 produced 375bhp and revved to a heady 8,800rpm.

The car spawned its own one-make race series for rich men... less wealthy folk had to make do with a deathly dull three-screen arcade game 'simulation'



2000s 575M

The ultimate GT (grand tourer). A thorough update of the highly regarded 550 Maranello; with a bigger (5.7-litre) V12 engine, F1-style semi-automatic gearbox, active damping and a more sport-focused interior. Ferrari claim it will be good for 202mph...

FERRARI'S GREATEST TEAMS

Nigel Stepney (main) worked at Lotus and Benetton before moving to Ferrari. He speaks fluent Italian and is well respected by those working with him. Consequently, he is very successful as a team manager

Dragonì and Tavoni may have been hated by their drivers but that was more because of the games they played rather than the management they lacked. Ferrari lost plenty of opportunities, and could have been even more successful, but few of these problems were due simply to poor team organisation. On the contrary, Ferrari's organisation has frequently made up for other shortcomings.

Throughout the years, for example, Ferrari have always proved capable of running three and sometimes four or five cars at the highest level. Even today, Ferrari effectively run three teams – the two-car F1 race team and two test teams. And this is in addition to building their own engines...

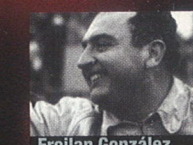
If there are any shortcomings in the system, they are probably in Ferrari's determination always to build his own engines. Given the competitive nature of F1, rivalries within the organisation were inevitable. The chassis team blamed the engine team; the engine team... blamed the drivers. The head-count was too large for every person accurately to be accounted for.

Today, Ferrari's organisation has few shortcomings. Their pit work is second to no-one; Nigel Stepney speaks fluent Italian and runs the team with respect from both sides – with respect from the boys and with respect from those above him. In addition, Ferrari still have some sort of sportscar racing programme and they still turn out a bunch of pretty attractive road cars.

Team organisation? Through the decades, Ferrari have stood for what a racing team is all about.

Scores on the doors (out of 25)

'50s	22	'80s	15
'60s	22	'90s	19
'70s	24	'00s	24



Froilan González

"Basically, it all depended on a Mr Miazza. The organisation of the team did not depend on many people. It was a very compact team, closely knit, nothing like how things are now."



Phil Hill

"It would have been a joke by today's standards, and they weren't what they should have been as a team. Things like pit work, which are so much a part of winning today, just did not apply then."



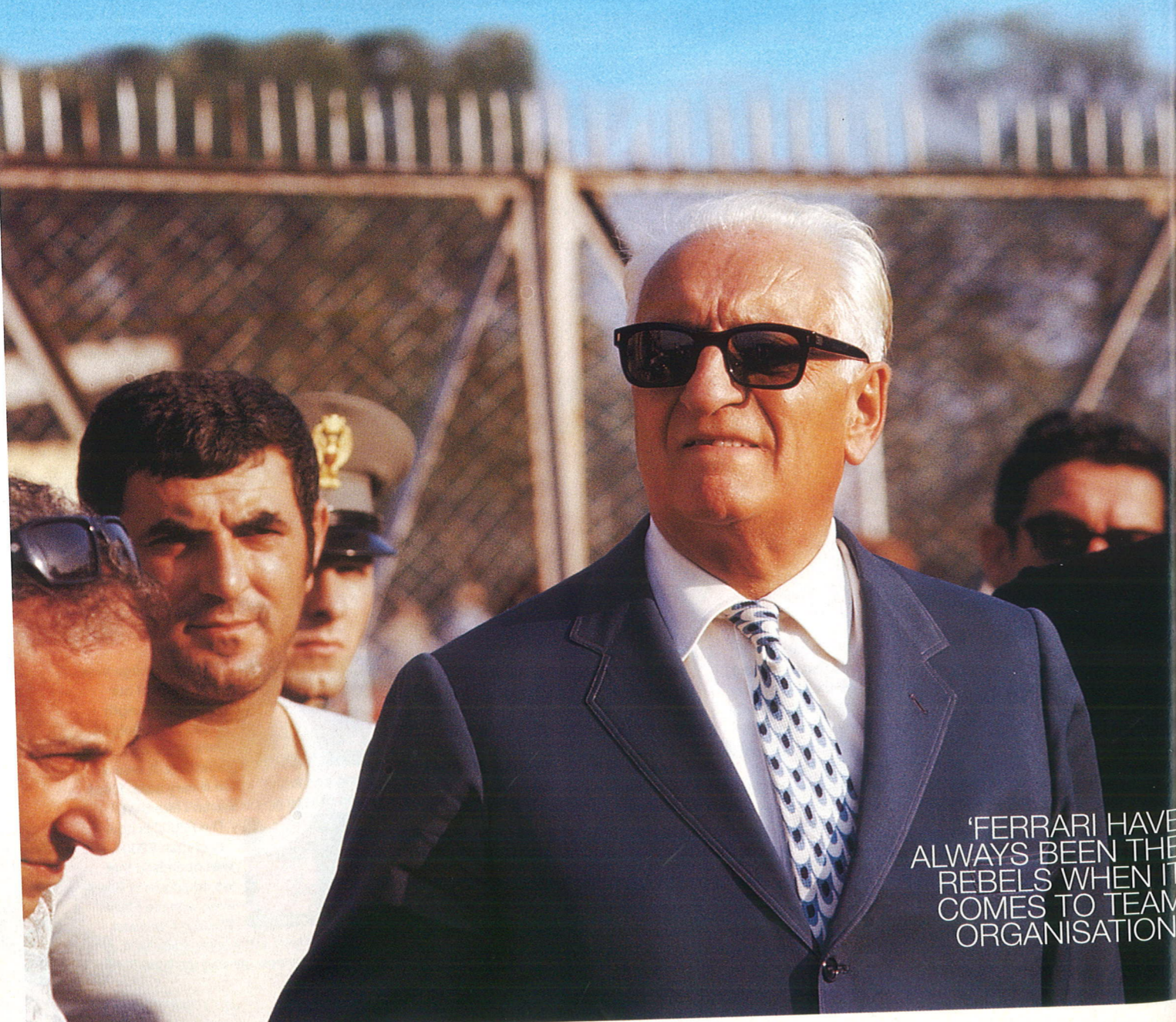
Jody Scheckter

"Ferrari had the biggest organisation: they did the engines and everything else. Renault did the lot, too, but they were nothing like as big as us. Mauro Forghieri kept things heading in the right direction."



Michael Schumacher

"Everyone in the team is so fantastic. They work so hard, they are so determined and it's lovely to work with them. It's something very special. In my experience, this team is simply the best." ▶



'FERRARI HAVE ALWAYS BEEN THE REBELS WHEN IT COMES TO TEAM ORGANISATION'

MAIN: OLIVIERO TOSCANI; INSETS: LAT AGENCY



> Wilderness years: the '80s and '90s

Ferrari's wide, flat-12 engine won them a lot of races in the 1970s, but proved to be a millstone as the next decade began. With the Cosworth-powered teams building ultra-slim chassis virtually to the width of their V8 engine, thus allowing themselves massive space for ground effect side sponsons, Ferrari's engine was effectively a brick wall around which the air somehow had to flow. No wonder the team failed to win a race in '80; their '79 world champion, Jody Scheckter, even failed to qualify for the Canadian Grand Prix.

This was the era of sliding skirts and fuel tanks behind the driver – of chassis like the Williams FW07 making the Lotus 79, let alone the Ferrari, look torsionally weak. Ferrari's new V6 turbo engine solved some of the problems; indeed, Ferrari should have won the world championship in '82. Both their star drivers, however, suffered savage accidents.

Gilles Villeneuve was killed when a slower car moved over on him during qualifying for the Belgian Grand Prix; Didier Pironi was critically injured at Hockenheim.

Ferrari were slow to adapt to the era of carbon chassis, despite the creative brilliance of their director of engineering, Dr Harvey Postlethwaite. There wasn't a lot wrong with their engine, but, in the late '80s, Ferrari were no match for the Patrick Head-designed Williams-Honda FW11s.

Realising their shortcomings, Ferrari swept the board clean and hired John Barnard, the man who had pioneered carbon chassis at McLaren. Barnard's terms were demanding – he wanted to work in England, from a brand new, Ferrari-financed facility near his home, in Surrey – but Ferrari were desperate: they agreed to all of his terms. The '89 Barnard car featured a revolutionary electronic gearbox and proved desperately unreliable in the build-up to its first race. Magically, though, it won first time out in the hands of Nigel Mansell.

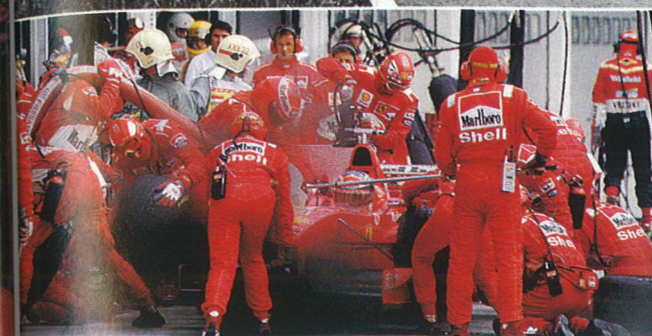
Ferrari could have won championships in the early '90s with Enrique Scalabroni as chief engineer but lost again because of politics. Fearing Scalabroni's Williams heritage, Alain Prost asked for Steve Nichols to be hired from McLaren. Scalabroni resigned in disgust; Nichols' car was a disaster.

To lift Ferrari from this chaos, Niki Lauda was then hired as a consultant. His solution was to re-employ Barnard – a decision that proved to be another mistake. More years – not to mention money – were lost.

It was only in the late '90s, when Ferrari hired Michael Schumacher, and when Schumacher brought with him to Ferrari the pick of the bunch at Benetton, that Ferrari's destiny changed again.

Peter Windsor

Peter Collins and Juan Manuel Fangio at Monza in '56. Collins gave his car up for Fangio to allow him to clinch the drivers' title



In Hungary, '98, the planned pitstop strategy for Michael Schumacher was flexible enough to allow him to switch from two to three stops. It enabled him to win the race



During the drenched Malaysian GP last year, Schumacher decided to take on intermediates rather than full wet tyres. Another tactical masterstroke; another win



Ross Brawn is largely behind the current brilliance of Ferrari's tactics. He and Schumacher work fantastically well together, and frequently spot opportunities that other teams miss

Race tactics

Those who today criticise the tactics of Michael Schumacher and Ferrari – or of McLaren, even, for letting Mika Hakkinen win the 1997 Spanish and '98 Australian Grands Prix – should take a look at some of the things that have taken place in the past. Most of them, unsurprisingly, have involved Ferrari.

Peter Collins handed his Ferrari over to Fangio at Monza in '56, thus enabling Fangio to win his fourth world championship. Few remember, however, that Collins was still in the championship at this point and that Ferrari's third driver, Luigi Musso, had earlier refused such a car swap. Collins was a gentleman – and a true team player. In Morocco, in '58, with the championship almost within reach, Ferrari employed team tactics to enable Mike Hawthorn to beat Stirling Moss by a point. They entered three cars (for Hawthorn, Phil Hill and Olivier Gendebien) and ordered Hill, lying second, 40 seconds ahead of Hawthorn, to slow down in the closing stages and cede his position. Three years later, Hill received his reward

when he clinched the world championship at Monza. On this occasion Ferrari entered no fewer than five cars – for Hill, Wolfgang von Trips, Richie Ginther, Ricardo Rodriguez and Giancarlo Baghetti. Von Trips was fatally injured when he collided with Jim Clark's Lotus – and Hill won the race easily after the remaining Ferraris, and Stirling Moss's Lotus-Climax, all retired.

In '64 John Surtees was one of three drivers who could win the title in the final race in Mexico (the others were Jim Clark and Graham Hill), and again Ferrari entered three cars (for Surtees, Lorenzo Bandini and Pedro Rodriguez). Surtees needed to finish second, ahead of both Clark and Hill, to clinch the championship, but was running only fifth, behind Clark, Gurney, Hill and Bandini, as the race approached half-distance. Ferrari's solution? Bandini flicked Hill's BRM into the guardrail and slowed on the last lap to let Surtees up to third. Then, amazingly, Clark's engine failed on the last lap. Surtees finished second to Gurney to become the only man to

win world titles on both two wheels and four. Surtees left Ferrari two years later after winning the wet '66 Belgian Grand Prix at Spa. Surtees had driven beautifully, judging the race to perfection, but was criticised after the race by Ferrari's team manager, Eugenio Dragoni, for not having set the race pace from the start. Surtees, a man of principle, merely walked out of the team.

Race tactics were again an issue in '82, when Gilles Villeneuve and Didier Pironi were running one-two for Ferrari at Imola. Ferrari's team manager, Marco Piccinini, had decreed before the start that the pair should not race one another if they were clear of their opposition, but Pironi ignored the instruction and passed and repassed his team-mate whenever Villeneuve eased the throttle. Pironi thus won... and was not sanctioned by Ferrari.

Today, Ferrari lead the world in the area of race tactics. Michael Schumacher brought Ross Brawn with him from Benetton, continuing a rapport that was already near the level of Clark and Chapman, and has

Gilles Villeneuve (background) and Didier Pironi were fiercely competitive team-mates in '82. At Imola, Pironi ignored orders and passed Villeneuve. Ferrari now impose team orders with a touch more ease...

taken the business of strategy to a different stratosphere. In Hungary, '98, he changed during the race from two fuel stops to three because of the track and traffic conditions. He went on to win. In Malaysia last year Schumacher and Ferrari alone opted to switch to intermediate tyres in torrential conditions. Michael then spent a ridiculously long time rejoining the queue behind the safety car... giving the drying track a few more minutes to clear. Again Schumacher won with ease.

Schumacher also had no compunction about letting his team-mate win races towards the end of '99. Out for six races because of a leg injury, Schumacher slowed to let him win in Malaysia. Similarly, Ferrari ordered Mika Salo, Schumacher's substitute, to relinquish a win at Hockenheim and to race within team limits at Spa.

The car and the team have always come before the drivers at Ferrari, and this is no better exemplified than by their race tactics. Without them, perfectly executed, Ferrari would not have won the '58 or the '64 world

championships – and Michael Schumacher would have a smaller number of race wins to his name. Sometimes they have backfired, as at Imola, in '82; and, for all the help he was given in '99, Schumacher's number-two still failed to win the championship. Overall, though, Ferrari are world leaders in this

department – thanks mainly to the legacy of the man who founded the team.

Scores on the doors (out of 25)

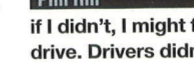
'50s	22	'80s	16
'60s	20	'90s	19
'70s	23	'00s	24



Froilan Gonzalez

"In general, there were no orders. It was a question of doing the best each of us could do. But we were told not to

fight it out with our team-mates in case we were well up and the finish was not far off."



Phil Hill

"Tactics were very much part of the game. I twice had to pull over for Mike Hawthorn – and it was made clear that if I didn't, I might find myself without a drive. Drivers didn't have a lot of choice."



Jody Scheckter

"We didn't really have team tactics like you do now. We didn't have pitstops. The driver chose whether to use wets or slicks.

Because I made the decisions, I'd have to say we were very strong in that area!"



Michael Schumacher

"It's my philosophy that whoever is the faster driver should be supported by the team, because that is the best way for the championship. And that's what I've made happen. That's what I've brought to Ferrari." ▶

Politics and PR

It all began, probably, in the '30s, when Enzo Ferrari decided that he should publish a magazine about his team's exploits (which in those days involved Alfa Romeo). Through the legacy of *La Scuderia Ferrari* the modern press releases and brochures were born...

Ferrari also played politics in the late '30s, helping the Italian motor racing industry survive the domination of Mercedes and Auto Union. Italy's Tazio Nuvolari had brilliantly won the '35 German Grand Prix in a Scuderia Ferrari-run Alfa Romeo P3, beating the Germans on their home ground, but Germany's might proved impossible to stem over the following few seasons. With crowds dwindling at Monza, and both Alfa Romeo and Maserati facing ruin, Enzo Ferrari suggested that the Italians should for a while concentrate on Formula 2.

World War II intervened, but Ferrari's ideas were not forgotten. The world championship indeed fell into F2 regulations for '52-53, for which Ferrari developed a new four-cylinder engine. This not only won as it pleased; its success also obliged the FIA to adopt a 2.5-litre F1 for '54, thus saving Ferrari the trouble of having to develop another new engine!

As early as '53 Ferrari was also showing himself to be a master of the drivers he created. Just as Damon Hill and Jacques Villeneuve whined about the money they earned during their championship years at Williams, so Alberto Ascari felt ready for a wage rise after winning back-to-back championships in '52-53. Ferrari refused to deal, obliging Ascari to drive for the new Lancia team.

The pair were reunited, of course, when Ferrari took over Lancia's assets... but again Enzo Ferrari showed his deftness. Although the marriage was encouraged by the Italian Automobile Federation, Ferrari at first said he wasn't interested. It was only when Fiat gave him a £30,000 incentive that he went ahead with the deal. At Monza, where Ferrari's image was made or potentially broken, Ferrari forced the Lancias to run on the

Englebert tyres (to which he was contracted) rather than Pirellis (for which the D50 suspension geometry had been designed). All the Lancias were therefore withdrawn, leaving Eugenio Castellotti to finish a dazzling third in a Ferrari Super Squalo.

Ferrari never allowed his drivers to relax: Luigi Musso was killed at Reims in '58, driving his Ferrari Dino on the limit and losing control on the long, fast corner after the pits. It is rumoured that Musso had received a "win or be sacked" note from Enzo Ferrari before the race, adding to the pressure of gambling debts that needed to be paid... And Peter Collins, who drove great races for Ferrari as team-mate to Mike Hawthorn, was similarly goaded – probably for the simple reason that he had decided to get married! Team manager Romolo Tavoni told Collins that he would be driving only in the supporting event for the '58 French Grand Prix, prompting Peter to suggest that he wouldn't be driving at all, if that was how they felt. A few weeks later, at Silverstone, Peter Collins scored perhaps the greatest victory of his career; then, at the Nürburgring, he was killed when he left the road, chasing Hawthorn.

John Surtees knows all about Ferrari politics – as do the Italian Automobile Federation, who fought an annual battle with

Ferrari over starting money at Monza. Ferrari did not appear in America after winning the '61 championship – despite producing an American champion for the first time – and in the mid-'60s raced the American and Mexican Grands Prix with his cars painted in the blue and white colours of the North American Racing Team. Angry that his 250LM sports car had not been homologated by the federation, Ferrari had torn up his entrants' licence and threatened never again to race cars under his own name! The 250LM was approved...

Today, Ferrari are powerful but respectful members of the F1 industry, appeased from time to time but generally conscious of the enormous role they play. Ferrari could have abused their position of power over the past 15 years, but they have not. Together with Bernard Ecclestone, television and commercial sponsorship, Ferrari are one of the main reasons for F1's success. Enzo Ferrari was never shy in coming forward, even when he was running the Alfa Romeo team, so Ferrari's PR score must be high. Politics, though, have always been their weak point.

Scores on the doors (out of 25)

'50s	19	'80s	15
'60s	20	'90s	19
'70s	21	'00s	21



Froilan González

"Mr Canestrini, a very noted scribe, was in charge of handling the press affairs, issuing communiqués when there was something to write about. Of course, in those days there was practically no television coverage."



Phil Hill

"The night before Monza '61 [where Hill won the title] I told the team the engine had to be changed. I had to threaten not to drive unless they did it. Any other team would have just changed the engine."



Jody Scheckter

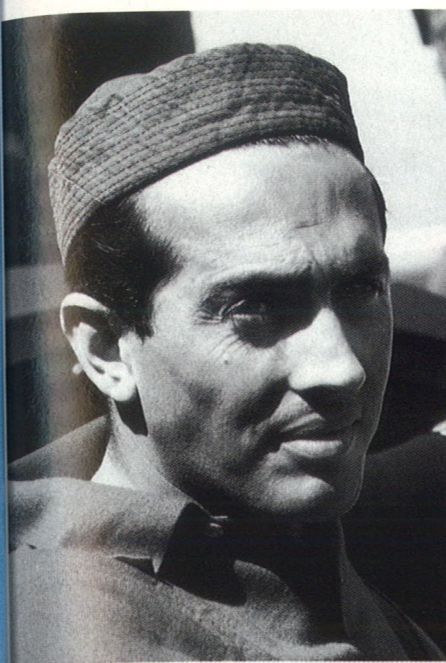
"Marco Piccinini was very active on the political side. Ferrari had more clout than almost all the other teams put together. It's still much like that now – but as Bernie is so powerful, the balance is different."



Michael Schumacher

"What do journalists really see of us? You do a professional job, which sometimes means you're not really doing what is natural. Even if there's good news, there will always be some journalists who turn it into bad news."

For the '64 Mexican (below) and US GPs Enzo Ferrari raced his cars in the blue and white colours of the North American Racing Team. His refusal to enter under his own name was a negotiating tactic in an ongoing licence battle. His strategy succeeded



(Left) Luigi Musso was under pressure from Ferrari to win when he died in the '58 French GP

(Right) Black noses at Monza last year were a public mark of respect after the New York disaster



> Conclusions

Final scores on the doors (out of 100)

1. '00s	93	4. '60s	81
2. '70s	90	5. '90s	72
3. '50s	83	6. '80s	62

Ferrari's latest car – the highly technologically advanced F2002 – won first time out in Brazil (above). Yet another title winner?

Surprised? Don't be. Ferrari have started this decade – the '00s, for want of a handier moniker – better than any team have ever begun any other. Of the first 37 grands prix of the 21st century (Melbourne '00 to São Paulo '02) Ferrari have won 21 times.

But winning grands prix is not only a Ferrari monopoly – it's a Schumacher monopoly, too. Of those 21 victories, fully 20 have fallen to Michael.

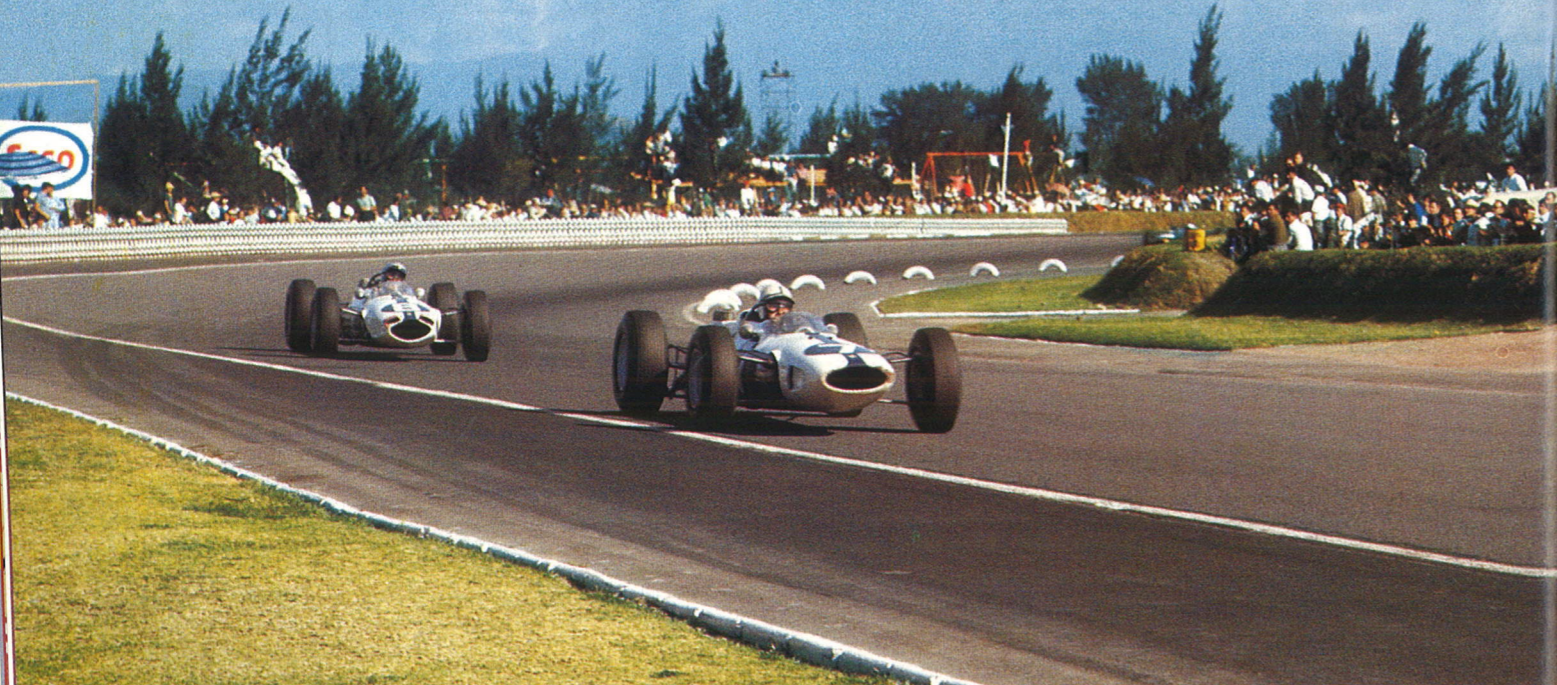
If this decade is Ferrari's *numero uno*, which is next best? The answer is the '70s – the decade in which Luca Montezemolo restructured the ailing Scuderia, allowing Niki Lauda to win two championships ('75 and '77). The glory years lasted until '79, in which year Jody Scheckter won the third Ferrari drivers' title of the decade.

Third best era, then, is Ferrari's first: the

'50s. Alberto Ascari, Juan Fangio and Mike Hawthorn won four drivers' titles between them. The fourth-best decade is the '60s, during which only Phil Hill ('61) and John Surtees ('64) added to Maranello's title tally.

The wooden-spoon decades, then, are the '90s and – worst of all – the '80s. In these 20 years, no drivers' titles came Ferrari's way at all. The *tifosi* had little to shout about, frustrated as they were by the domination of their darling team by the Brits they loved to hate – namely, Williams and McLaren. **1**

Matt Bishop

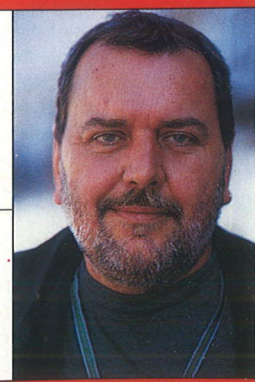




Marlboro

Living with the Schumachers

We all know Michael Schumacher is a genius – but Ralf is pretty special, too. The man who knows the brothers best is Heiner Buchinger (right), Michael's former PR manager – who, until recently, did the same job for Ralf. For the first time ever, Buchinger has broken his silence – exclusively in *F1 Racing*



Brothers they may be, but the on-track fight is intense, as we saw in Brazil. Will '02 be all Schumi v Schumi?

Bernie Ecclestone leaned back into the heavy black leather armchair in the corner of his office. "What Formula 1 is missing," he grimaced, "is a black man, a Chinese and a quick German."

That was more than 11 years ago, but typically he was mulling over his global

ambitions for his sport: questions of ethnicity and of their potential benefit to F1's pan-global televisual appeal were at the forefront of his mind this particular day.

A decade on, he is still searching for the black F1 star and a swift Chinese. But fast German things? Well, they're everywhere.

Michael Schumacher is world champion ▶



(Right) Ralf hugs manager Willi Weber after his Malaysia '02 victory; (far right) Michael pores over data with Ignazio Lunetta, his ex-race engineer, now a top Ferrari tech bod



professional but don't really know him well. The brazen British tabloids pegged him as 'arrogant' – especially those who never spoke to him – but then came Monza '00, and the tearful press conference which revealed a soft, hitherto unseen side.

This 'robot' burst into tears in front of millions of TV viewers and sobbed, having to be comforted by the man sitting beside him, his arch-rival Mika Hakkinen – one of the few drivers Schumi really respects, not only for his great talent but also for his sensitive personality.

Suddenly, dramatically, the enormous pressure that had built up in five years of trying to win the championship for Ferrari flooded forth. It revealed to all those who mistakenly believed otherwise that Schumi, too, was human.

A remarkable human nonetheless, one able to resist that enormous pressure and proceed to take the race win – a victory which was vital in Ferrari's quest finally to win the championship after 21 years.

That race gave us essence of Michael in a bottle: an enormously strong individual, able to withstand intense pressure (never once did he and Hakkinen clash – even in the heat of the title fight), able, too, to answer the most minute scrutiny, but simultaneously vulnerable and capable of great humanity.

Perhaps we should not be surprised at that aspect of his character. At both Benetton and Ferrari he has formed relationships strong enough to help carry him – twice – to back-to-back world titles.

Ralf has yet to prove his ability to win the heart and goodwill of a team in this way. At Williams, the team responsible for honing a rough diamond, both Williams and Head have criticised 'their' Schumacher in public, Head complaining that Ralf did not spend ▶

four times over; Mercedes-Benz have won two drivers' and a constructors' title; BMW and Heinz-Harald Frentzen have all won grands prix, while Nick Heidfeld has proved with the (German-Swiss) Sauber team that he is ready for bigger challenges.

But from a list of remarkable German successes over the past decade, Michael Schumacher, and more recently his younger brother Ralf, have emerged pre-eminent from the masses.

Niki Lauda, a triple world champion himself, understood back in 1994, the year of Schumi's first world title, that there was something special happening.

"If I could mix genes to create an ideal driver, I'd put together what Michael has become," he said. "A young, strong bloke with the right instincts to be a racing driver, who started early with karting, did not give other influences in his life a chance and developed and strengthened his given talents in such a way that he completed the F1 school in the shortest time possible."

Many thought that those incomparable (in racing terms) genes had been replicated when Ralf arrived on the grid in '97 as a fresh- (though recognisably Schumacher-) faced 21-year-old.

F1 success was to prove far more elusive for the youngster, however, than it had been

for Michael, despite the signs that Ralf is coming on ever stronger as maturity (thanks to Frank Williams and Patrick Head) softens the edges of his raw speed.

Burdened by the legacy of his brother's reputation, he was guaranteed avid media scrutiny, earning early on the tag 'Rolex Ralf' – the suggestion being that only a name bigger than his talent got him to F1.

His early forays did little to dispel the unfortunate handle. A racing driver's most important tasks are to beat his team-mate and to have the team on his side.

Michael Schumacher has managed both consummately throughout his F1 career; warhorses like Nelson Piquet or Martin Brundle as well as highly rated young (then) talents JJ Lehto, Jos Verstappen, Eddie Irvine and Rubens Barrichello failed to beat him, while his success in moulding Ferrari around him is already legendary.

Ralf, by contrast, initially battled to get on terms with his team-mates. In his first season he finished in 11th place overall with 13 championship points. His team-mate Giancarlo Fisichella came eighth with 20 points. His next team-mate, in '98, Damon Hill ('96 world champ) came sixth with 20 points. Ralf scored 14 for 10th spot.

Journalists criticised Ralf's inconsistent performances, his 'wild man' driving style

'IF I COULD MIX GENES TO CREATE AN IDEAL DRIVER, I'D PUT TOGETHER WHAT MICHAEL IS'
NIKI LAUDA

which led to unnecessary accidents, and an apparent nonchalance in his attitude. Easy fodder for the poison pens, quick to sneer at the lack of success which they had come to associate with the Schumacher name.

Michael, conversely, has attracted criticism for being almost too good. Think of his constant striving for improvement. An example: he was the first to optimise the pitstop. While his rivals were giving away crucial seconds rolling into the pits and then rejoining the race carefully, Schumi was taking it to the limit, even here.

The advantage gained is obvious – yet such is his absolute commitment to precision and perfection that Michael has been dubbed a robot.

He loathes nothing more than that judgement. "Why is someone who wants to avoid mistakes and do a good job a robot?" he complains. His coolness and distance exist only to those who know just the F1

> Schumi or Schumi? Show me

Peter Windsor analyses the brothers' driving techniques. Spot the difference

Would you notice the difference if they swapped cars and helmets? I'd like to say yes but probably I'd be wrong: Michael and Ralf are too similar – probably the most alike of any two drivers on the grid. They both naturally turn in to a corner early, smoothing over the transition from braking load to lateral *g*, and they both tend to stay away from high-grip oversteer.

I wrote a couple of years ago that the biggest difference between the two Schumachers was in their ability to deal with understeer. Michael, I said, stands alone in the way he coerces a car to do exactly what he wants. You'll see him tuck the front end into the apex, you'll see the back end exactly where he wants it for perfect use of traction control... and yet Michael will later talk of handling problems, of understeer that had slowed him. You see Michael making

the odd mistake – braking too late, or running out of road on a quick corner – but rarely will you see the car looking (or sounding) bad. He kills understeer not only with his phenomenal feel for rearward-biased brake balance but also with his excruciatingly precise use of the steering. And he never strays far from what he obviously believes to be the fastest way to take a corner (ie braking deep into an early apex and plugging the front of the car).

Ralf has improved dramatically in this department over the past two seasons. You can see it in the way he jabs the brakes into the apex, with emphasis on the word 'jab'. He isn't rough or abrupt; on the contrary, he is silky-smooth through the arc he describes. Within the extremities of that arc, though, he uses the brakes much more than he used to. In his ability to live with understeer, to translate it into something that works, Ralf is now a much better driver.

For all that, Ralf fell into a bit of a slump last year. His response over the winter was

to correct a slight deficiency in his eyesight – a brave thing to do in the macho- and ego-driven world of F1. On the basis that corrected vision is by definition 100 per cent accurate, the evidence suggests that Ralf is now driving even better as a result of the change.

How the two brothers perform in traffic is, of course, a different matter. They race beautifully together – as we saw in Canada last year, for example, or at the Nürburgring – but you can imagine Patrick Head and Frank Williams wondering how deep Ralf will really delve if he has to outbrake Michael into Turn One at Suzuka in order to win the world championship. Put another way, you'd back Montoya before Ralf if the man you had to beat was Michael Schumacher. And, in reverse, you'd back Michael against... anyone.

(This page) Ralf has been accused of not making enough effort to befriend engineers, and of heading home as soon as tests are over. Not so Michael (opposite), who will test as long as it takes





(Main) Ralf follows Michael in Brazil this year; (right) in his first few F1 seasons Ralf showed a tendency to try too hard, too soon; (far right) Ralf with team-mate Jenson Button in '00



'MICHAEL HAS BEEN ACCUSED OF MANY THINGS IN HIS 11 YEARS IN F1; CARELESSNESS IS NOT ONE OF THEM'

enough time with the team's engineers, preferring to flee home a couple of minutes after tests had finished.

That sort of complaint could never have been made about Michael. At Ferrari's test tracks at Mugello or Fiorano he often sits together with the engineers in the race truck until 10.00pm and usually has supper with them – one of the reasons the whole Ferrari team support him. Another is his genuine, compassionate warmth towards those close to him. He asks after the mechanics' children, looks at family photos and plays football with his 'boys' whenever possible. No sign of the pretentious superstar which Ralf is sometimes accused of being.

Gerhard Berger, whose role as BMW director of motorsport grants him a close view of Ralf, makes this revealing observation: "He reminds me a bit of my own time as a driver in F1. I had a lot of other things on my mind apart from racing

and was rather careless." Michael has been accused of many things in his 11 years in F1; carelessness is not one of them.

Pat Symonds – his race engineer at Benetton who, a decade earlier, had engineered Ayrton Senna at Toleman – sees many similarities between the two greats: "Like Senna, Schumacher drives at any track that he doesn't know and keeps the car on the limit from the first corner." Nearly every other driver needs at least a couple of laps to explore the possibilities of the car.

But it is not just the skill to explore boundaries; it is also the talent to reproduce the limit according to his wishes that makes a good driver, as McLaren found to their cost in '98. They were Bridgestone's number-one development partner until Ferrari switched to Bridgestone at the end of that year. At the first test at Suzuka after the season ended, Schumacher produced a database with his constant lap times that the engineers had never seen before. It started a shift in emphasis by Bridgestone away from McLaren and towards Ferrari, even though McLaren nominally retained the 'development partner' tag.

His qualities as a test driver did not always work to the team's advantage, however. Ross Brawn, Ferrari technical director, observes: "Michael's skill can

outweigh particular problems with the car and sometimes that can make it difficult for us to recognise whether we have a good car or a very good car."

But there's another clue as to what makes him so special – his incredible adaptability. Martin Brundle, Schumi's Benetton team mate in '92 says: "This guy is not just driving every lap at the limit. He's also able to adapt to changing circumstances faster than anybody else."

That's why Schumi has won so many races under difficult circumstances, not just in wet weather, where his touch has rendered race wins a near-certainty, but also when technical problems compromise his car's performance.

Symonds still enthuses when he recalls Michael finishing second at Barcelona in '94. For Pat, that race still rates as Michael's best to date: "In the second half of the race he only drove in the fifth gear," he recalls. "It's a small miracle that the gear lasted that long, because it isn't made for permanent load. The big miracle was how Michael changed his driving style to be quick with a one-gear F1 car. He was driving as he did in his sportscar days, when he had to save petrol. And he came second. Anybody else would have given up and left the track."

This incredible ability to alter his driving

style to suit particular, fast-changing sets of circumstances keeps Michael always at least one step ahead of his rivals.

His incomparable driving feel is what Niki Lauda invented the term 'bum-o-meter' to describe. The racing driver's most sensitive instrument (which, in Schumi's case, is more sensitive than most) informs its owner of the limit, when the car might spin off, how it will let go... and why.

Michael Schumacher's five (six?) senses are extremely sharp. He is blessed with powers of extreme concentration, but still notices exactly what goes on around him. He once sat at the long, dark grey table in the Ferrari motorhome at Monza, discussing complicated telemetry data with his race engineer. His team-mate sat at the other end of the table together with his engineer. Several other technicians were gathered around, and in this tense, busy atmosphere, voices were low whispers. Work to be done; decisions to be made. Michael suddenly interrupted his chat with his engineer and said to his team-mate: "I think you're on the wrong path with that. I've tried it and it didn't work." He knows what is going on around him even when apparently concentrating 100 per cent of his attention on one thing.

Comments like that say so much for his awareness. His senses are extraordinary. For example, his excellent hearing – still

extraordinarily good after more than a decade in F1 – has prevented millions of pounds' worth of mechanical damage.

He is aware of even the tiniest change in engine sound, and shuts down an engine before it blows up. This ability is priceless to engineers in sourcing flaws in their design or materials: a comprehensively blown engine is of very little use to frustrated technicians seeking tiny clues about failure.

Schumi's eyesight is also very good. If he is really pumped up by a new development for the car, but testing time is running short, he will occasionally drive in the dark. He first did so a couple of years ago at Mugello. The last rays of the setting sun barely lit the horizon; the track was almost dark.

Michael's lap time? Just two-tenths slower than his fastest of the day. Weary engineers peering over the pitwall through the gloom could only shake their heads silently in amazement, and smile.

Schumi's outstanding sensitivity is accompanied by an amazing ability to learn. At one Benetton test session, failed timing gear left engineers stumped – until Michael reeled off the last five lap times, which he'd memorised from his in-car display. A little later, with the timing system repaired, curious engineers checked Michael's times, just for the record. They needn't have bothered – his memory had been accurate

down to the last tenth. With a working style as precise as this, is it any wonder that his teams are able so easily to make progress?

Precision: one of the key facets of the whole Michael Schumacher approach to F1. Think of his relationship with the media. His ability to concentrate allows him to interrupt an interview, should his team need him urgently, run down to the pit, jump in the car, drive five laps, answer the technicians' questions, hurry up the stairs back to the interview and give a precise answer to the last question of the surprised journalist. And rest assured it won't be Michael who asks, "Where were we?"

Such is his capacity for his chosen profession that he occasionally finds himself under-occupied by the demands of a particular race. If there's little at stake or if he finds himself leading easily, he will sometimes start to ask Ross Brawn trivial questions over the pit-to-car radio. When this happens, Ross knows his driver isn't concentrating fully and that a swift reminder to get back in the game is necessary.

Sometimes it works the other way, of course, and Brawn has to rein his man in a little. Once, when Michael was leading easily and popping in fastest lap after fastest lap, Ross shouted: "Take it easy, please!" The reply came back at once: "I'm just rolling around. What's the problem?"

Everything is easy for Michael, it would appear – apart from driving slowly.

Ralf has never had it 'easy' in quite the same way, despite his undoubted talent, but the turnaround which has seen him emerge as a consistent race winner began at a team which many have found too tough to take: Williams.

Since '99 he has thrived there, thanks in no small part to his robust self-confidence. ▶



Schumi and Ferrari's tactical guru Ross Brawn celebrate Michael's win in Brazil this year. Ralf tried his hardest to beat his brother, but the Ross-Michael axis proved too strong once again



'EVERY ONCE IN A WHILE RALF GOES TO LUNCH AT THE FERRARI GARAGE. HE AND MICHAEL TALK ABOUT... F1'

> **Qualifying: where the Schus can give it the old one-two**

Michael is plain faster than anyone else. Ralf isn't so dominant, but he still looks good against his team-mates. Luke Steven has the low-down

> **Michael Schumacher**

- 1991 Jordan/Benetton**
Qualifying: Schumacher 5 – Andrea de Cesaris/Nelson Piquet 1
Schumacher's average superiority: 0.349s per lap
- 1992 Benetton**
Qualifying: Schumacher 16 – Martin Brundle 0
Schumacher's average superiority: 1.015s per lap
- 1993 Benetton**
Qualifying: Schumacher 16 – Riccardo Patrese 0
Schumacher's average superiority: 1.147s per lap
- 1994 Benetton**
Qualifying: Schumacher 14 – Jos Verstappen/JJ Lehto/Johnny Herbert 0
Schumacher's average superiority: 1.882s per lap
(Schumacher misses two race starts due to FIA ban)
- 1995 Benetton**
Qualifying: Schumacher 16 – Johnny Herbert 1
Schumacher's average superiority: 1.351s per lap
- 1996 Ferrari**
Qualifying: Schumacher 15 – Eddie Irvine 1
Schumacher's average superiority: 0.893s per lap
- 1997 Ferrari**
Qualifying: Schumacher 16 – Eddie Irvine 1
Schumacher's average superiority: 0.758s per lap

- 1998 Ferrari**
Qualifying: Schumacher 15 – Eddie Irvine 1
Schumacher's average superiority: 0.712s per lap
- 1999 Ferrari**
Qualifying: Schumacher 9 – Eddie Irvine 1
Schumacher's average superiority: 0.871s per lap
(Schumacher misses six races with broken leg)
- 2000 Ferrari**
Qualifying: Schumacher 15 – Rubens Barrichello 2
Schumacher's average superiority: 0.483s per lap
- 2001 Ferrari**
Qualifying: Schumacher 16 – Rubens Barrichello 1
Schumacher's average superiority: 0.600s per lap
- 2002 Ferrari**
Qualifying: Schumacher 2 – Rubens Barrichello 1
Schumacher's average superiority: 0.438s per lap

> **Ralf Schumacher**

- 1997 Jordan**
Qualifying: Schumacher 7 – Giancarlo Fisichella 10
Fisichella's average superiority: 0.047s per lap
- 1998 Jordan**
Qualifying: Schumacher 10 – Damon Hill 6
Schumacher's average superiority: 0.070s per lap
- 1999 Williams**
Qualifying: Schumacher 11 – Alex Zanardi 5
Schumacher's average superiority: 0.493s per lap
- 2000 Williams**
Qualifying: Schumacher 10 – Jenson Button 7
Schumacher's average superiority: 0.404s per lap
- 2001 Williams**
Qualifying: Schumacher 11 – Juan Pablo Montoya 6
Schumacher's average superiority: 0.290s per lap
- 2002 Williams**
Qualifying: Schumacher 1 – Juan Pablo Montoya 2
Schumacher's average superiority: 0.075s per lap

Michael Schumacher has comprehensively outqualified every team-mate he has ever had. He was faster than Nelson Piquet, no less, right away in 1991, and has since dominated the likes of Johnny Herbert, Riccardo Patrese and Eddie Irvine – GP winners all. Current team-mate Rubens Barrichello has come closest to matching Michael, yet still he found himself an average six-tenths shy of Schumacher during the '01 season.

Ralf, on the other hand, has not made it look so easy. He was shown the way by Giancarlo Fisichella in his debut year ('97). His qualifying speed has since matured to the point where he has won the battle against such rapid team-mates as Damon Hill, Jenson Button and – so far – Juan Pablo Montoya.

Correct up to and including Brazil '02

A pairing with Alex Zanardi that year, who was returning to F1 in some pomp as a double IndyCar champion, proved something of a mismatch. Come season's end, Williams had 35 points – all of them scored by Ralf. A disconsolate Zanardi quit and was replaced by Jenson Button for '00. Such career-crushing dominance is not often seen between F1 team-mates, although perhaps it rather aped Michael's consummate and ruthless eclipsing of Johnny Herbert, Nelson Piquet, Martin Brundle, Andrea de Cesaris and Jos Verstappen.

Ralf went on to outpoint the young Brit comprehensively, although Jenson came on ever stronger as the season wore on.

Which brings us to Juan Pablo Montoya, Ralf's current and arguably most formidable team-mate yet. Results-wise, Ralf has had Montoya handled so far; but their relative performances swung increasingly towards JPM throughout '01, leaving Juan Pablo with the psychological upper hand as the season closed.

At Spa, for example, JPM was 8mph quicker through Eau Rouge, and even in Japan – Ralf's favourite track – Montoya was in front during qualifying and the race.

All the while Montoya was learning how to work with the team to achieve success.

He had started by watching Ralf. Now he is going his own ambitious, hard-working and determined way – and his approach appears to have won over certain key personnel. In this respect Montoya has shown himself to be more like Schumi Sr than even Michael's own lil' bro.

What Ralf still has on his side, though, is time. Still only 26, he has, in Williams-BMW, a ticket which should ensure future success. And he continues to improve. Mistakes are few now; he is working on his weaknesses.

Even so, '02 has an air of 'make or break' for Ralf. He definitely has to beat Montoya; any failure to do so would mean that his brother's boots are too big for him to fill – and that would be a pity for the media, because a genuine battle of the brothers would be a fabulously spicy story for F1.

Although Schumis one and two maintain that they are more careful with one another than with the rest of the drivers, sometimes it doesn't look that way! When the start lights go out they are like any racing drivers – out for themselves. Think back to Barcelona '99, when Michael was on his way to the pit garage with a slow puncture, but defended himself with every trick against his brother. Ralf lost his third place as a result. He was very upset, and for the

first time, the image of family harmony was disrupted in public.

Then again, at the Nürburgring last year, Michael blocked his brother after the start. Michael gave a full explanation to the journalists, while Ralf refused to comment at all. At times like these the professionalism which both cultivate is stretched a little thin, if not – yet – to breaking point.

Despite the incidents (Silverstone '00 was another), they get along better with the years. That wasn't always the case, by any means, especially in their younger racing days; but, now, both are fathers, and their lifestyles have become quite similar. They swap stories about their children and they often spend their few hours of leisure time together, especially if their teams are testing at the same track.

Every once in a while Ralf comes around for lunch at the Ferrari garage (pasta tastes better than Yorkshire pudding!) – where, naturally, he and Michael talk a lot about F1, but never about their respective teams' internal affairs. That, of course, might give the other an advantage or reveal a hint of weakness. Brotherly love is not that strong.

And Michael, one of the cleverest drivers on the grid, knows only too well that the man about to become his biggest rival is probably the one who shares his surname. 1

(Above) On-track, Ralf could soon be Michael's main rival. But the post-race congratulations will always be warm-hearted (opposite)



Circuits and bumps

The most important factor in motorsport safety is the design of the tracks on which cars race. Global insurance and asset management company Allianz investigates the science behind circuit design

Success is all about being in the right place at the right time...and the axiom is a guiding principle for designers of motorsport circuits. To avoid problems, you need to know where and when things are likely to go wrong before cars turn a wheel – and anticipating accidents is a science.

Take barriers, for example. There is little point erecting them in the wrong place – but predicting the right place is a black art. The FIA has developed bespoke software, the Circuit and Safety Analysis System (CSAS), to predict problem areas on F1 circuits.

Where and when cars leave circuits is due to the complex interaction between their design, the driver's reaction and the specific configuration of the track, and the CSAS allows the input of many variables – lap speeds, engine power curves, car weight changes, aerodynamic characteristics etc – to predict how cars may leave the circuit at particular places.

The variables are complex. The impact point of a car continuing in a straight line at a corner is easy to predict, but if the driver has any remaining control and alters the car's trajectory, or if a mechanical fault introduces fresh variables, its final destination is tricky to model. For example, when Ricardo Zonta hit a bump on the Ferradura corner at Interlagos in 1999, his efforts to recover the spin led him to hit a section of Armco instead of the 'right' barrier. CSAS is constantly updated to predict such events, and may have applications in civilian road design in future.

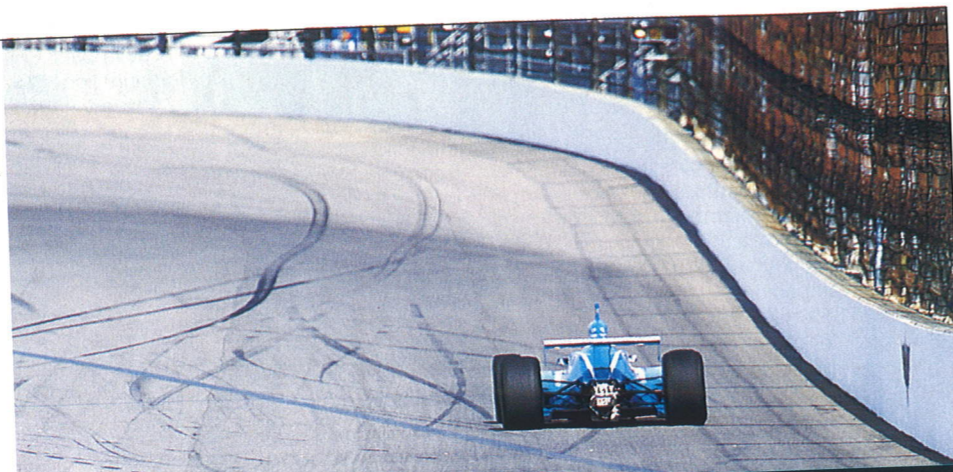
"Of course, predicting impacts is only part of the problem," says Dr Christoph Lauterwasser, a risk expert at the Allianz Center for Technology. "On normal roads, you also have to minimise their ill effects. For that you need barriers that contain the forces without hurting drivers or passers-by."

In 1994, the FIA instituted special tests for barrier performance. The Transport Research



WHY CONCRETE?

Many people wonder why motorsport circuits still use concrete barriers – particularly in oval racing. The answer, perhaps surprisingly, is that on both civilian roads and racing circuits they are the safest option for impacts involving high speeds and approach angles below 30°, ie accidents on straights. Energy increases as the square of speed, and a car crashing at the end of a fast straight impacts with the same force as an aircraft falling from 500m. To stop a car without injuring the driver at this speed requires progressive dissipation of energy, and smooth concrete walls are perfect for safely shedding speed by friction.



Concrete barriers on American oval circuits may look fearsome, but they are actually designed to save lives

Laboratory (TRL) in the UK created a trolley holding an F3000 nose cone designed to smash into barriers at 60-80km/h to test frontal impacts. From various barriers tested, the modern tyre wall turned out to be best, absorbing almost 80% of the trolley's energy at a crash speed of 80 km/h without inflicting more than 30g upon the driver – a critical consideration, since the deceleration must be gradual if it is to save a driver's life. There must also be some 'give' under impact to prevent cars bouncing off barriers into the path of other vehicles.

Modern tyre barriers are built of road tyres with plastic tubes sandwiched between them. The side facing the track is covered with conveyor belting to prevent wheels becoming snagged and distorting the barrier. The whole provides a deformable 'cushion', a principle that has found its way to civilian roads. "To protect bridge piers in the UK, we use crash cushions made out of deformable materials," says Alan Pickett, Divisional Director of Civil Engineering at the UK's Highways Agency. "In the USA, they use lines of tubs filled with water, which absorb the force of an impact and shoot water in the air! We're also experimenting with hinged steel fences that crumple like a garden trellis."

Tyre walls absorb 80% of impact energy without inflicting harmful g-forces on drivers

Barriers made of air-filled cells, currently under investigation, may be the final answer. At sites where acute angle impacts are likely, however, different solutions are called for. "Armco and wire barriers are common to F1 and civilian roads," says Dr Lauterwasser. "Armco is fitted to posts that are designed to stretch and pull the barrier on either side of the impact site, absorbing the energy of the vehicle. Catch fences have a criss-cross wire weave on a line of posts, and they work by tangling a car and slowing it as the posts deform and 'pull' it to a halt. After an impact, you can throw away the posts and re-use the

wire, and it's quick to repair." Think of Jacques Villeneuve at Eau Rouge in 1998 and 1999, when wire fences performed perfectly to slow him down safely.

Another important safety factor is the road surface. Racing circuits are at the cutting edge of surface technology, experimenting with new materials for optimum performance.

"Civilian roads are built for lorries, and their foundations go down at least 450mm to stop 'frost heave'," explains Jeremy Pinington, Head of Pavements Division at the TRL. "Motorsport circuits carry only light cars, so they don't need to be so durable. Also they tend to use a negative texture surface, ie one that has indentations rather than bumps – it's grippier and better at moving water away. Some circuits have experimented with porous surfaces to help reduce aquaplaning, but these tend to collect rubber and detritus and need expensive maintenance. This makes them unattractive for civilian roads."

The best safety measure is to prevent cars from hitting anything. Though controversial, gravel traps are still the best solution, and their technology has an important counterpart on civilian roads. 'Arrester beds' are often used in run-off areas on hills, for instance, so that lorries can be halted in emergencies. Long

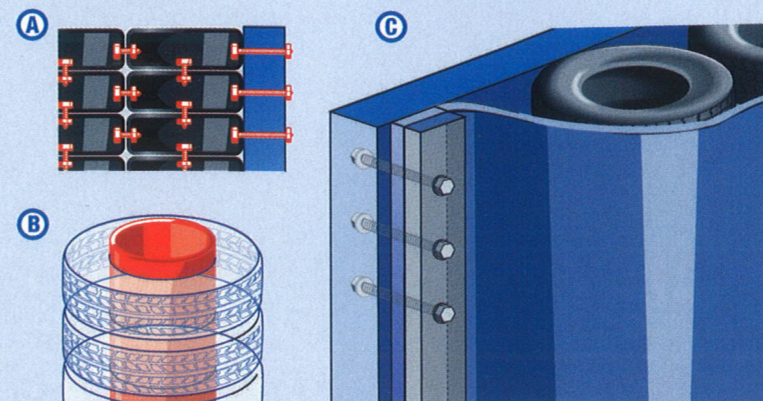
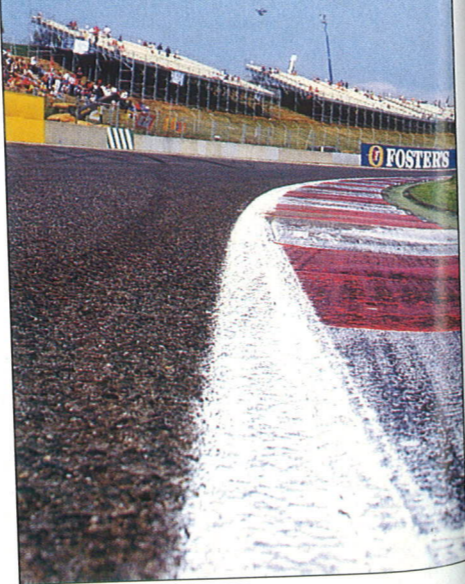
experience in motorsport and civilian life has shown they need to be 0.6m deep and well drained, and future modifications to gravel traps in F1 may well impact upon those used on normal roads.

F1 is unlikely, however, to take any tips from arrester beds at airports. Important for slowing aircraft that overrun runways, gravel traps have been tested with planes as heavy as a Boeing 727 and specify spherical stones of 6mm diameter in beds at least 0.7m deep. According to American research, however, they'd work better with formaldehyde foam.

Try selling that idea to F1 drivers...

HOW TO BUILD A CIRCUIT SURFACE

Civilian roads are traditionally built on foundations of aggregate rubble and built up in layers of progressively increasing smoothness. The same is true of motorsport circuits, except that the layers are fewer and the road is topped off not with standard asphalt (hot bitumen covered with stone chips) but with a higher quality asphaltic concrete. This is made by mixing quality granite or whinstone chips with a petroleum bitumen fortified with thermoplastic polymers. These modify the bitumen, improving its flexibility and making it more sticky. They also increase the 'stripping resistance', making the surface last longer. A common type used on circuits is Stone Mastic Asphalt, invented in Germany 20 years ago: it combines high skid resistance with durability and low maintenance costs.



TYRE BARRIERS

A. Tyres are bolted to each other and to a solid object, usually a concrete wall

B. To give the wall extra strength, flexible plastic tubes are inserted into the middle of the cylinders created by piles of tyres

C. The barrier is completed with a layer of conveyor belting laid across the surface of the wall facing the track. This is bolted to the tyres and helps prevent damage to individual units in the wall by spreading the load of any impacts against the barrier



THE LONG INTERVIEW

Close, but no cigar

Peter Sauber: chews more of Havana's finest than Groucho, but they haven't been enough – yet – to elevate his team to the *really* big league. Will he ever make the jump? Tom Clarkson chewed the fat (no cigars) with F1's most enigmatic boss

Photographs by Darren Heath

We are sitting either side of a table, staring at one another like two monkeys in a cage. We've already discussed the relative performances of his cars in this afternoon's free practice for the Brazilian Grand Prix. Now, he just sits there.

I study his face, picking on various trademark features: the sallow complexion, the smile lines surrounding his eyes, the perfectly aligned teeth – stained ever so slightly by cigar smoke – and the immaculately trimmed hair surrounding his bald pate. He looks young for 58.

We're sitting in Herr Sauber's temporary office at the back of his team's pit garage, awaiting the arrival of Agnes Carlier, his multilingual press officer, whose job it will be to translate his Swiss-German for me. If we can hear one another, that is, because only a thin section of plywood separates us from the din of drills and mechanics shouting at each other.

When Agnes finally arrives, the noise coincidentally dies down as the boys head off for a bite of lunch – and we begin our 'long interview', which is made longer by

the enforced laborious interview technique. I ask a question, Peter thinks about his answer before replying in German, which Agnes then translates. Significantly, my English question doesn't have to be translated – only Peter's answer.

Truth is, Peter speaks English in FIA press conferences. He *can* do it. He bursts into the occasional flurry of English, but it's rare. He feels more comfortable – and gives better answers, if you have the patience – speaking in his mother tongue. ▶

Peter Sauber's small, (relatively) low-budget team have always been a low-key operation. Fourth place in last year's constructors' title changed all that



SWISS TIME

It's a scene that reminds me of television footage from the late 1970s in which Leonid Brezhnev, then Soviet president for the second time, palmed off the then British Prime Minister James Callaghan in a similar fashion. The joke was on Callaghan then, and it is on me now. So my first question is rather predictable...

Tom Clarkson: Are you at a disadvantage being unable to speak English?

Peter Sauber: Yes, a big one.

TC: Why have you not tried to learn it?

PS: Since I've been in F1, I haven't had time to learn English properly. In Switzerland, the first foreign language you learn is French, not English. I find myself thinking about the entire sentence before I say it, which is an impossible way to learn.

He ends this last remark with a grin – no, make that a self-deprecating smirk.

TC: Moving onto racing, what can Sauber achieve this season?

PS: We have a clear goal: to keep our fourth position in the constructors' championship. It will be very difficult, but we will try.

TC: Do you have the right drivers? Have

you been impressed with Felipe Massa?

PS: Principally, I think it is too early to say very much about Felipe. For sure he is fast and has a lot of talent, but talent is not enough in Formula 1.

TC: Okay. Can he be compared to Kimi Raikkonen, who drove for you last year?

PS: Only in one area: speed. That is the same. But they're totally different characters; they couldn't be more different. Felipe is Latin; Kimi is Scandinavian. The body language and the way they deal with people in the team are very different.

TC: How is Nick Heidfeld developing?

PS: Nick is even more important to the team now that he has a year's experience with us. He's very good technically and he has had a very good apprenticeship in F1 as test driver for McLaren. He's also a very fast driver, like Kimi and Felipe. He's very fast.

TC: Is Nick your number-one driver?

PS: We don't have a number-one and a number-two in the team. Nick has an important position, but he's not our number-one driver.

TC: Will Nick drive for you in 2003?

PS: We have an option to sign Nick for '03, but I think it's too early to speak about that.

TC: Why was Kimi chosen by McLaren, and not Nick – who has links with them?

PS: I don't know, but this is an old story. Our intention was to work with Kimi for longer – but, in the end, that was not possible.

It is well known that Ferrari had been angling for Kimi last year, only to have him snatched from under their noses by McLaren. You can be sure that the Maranello boys will be very careful not to let the same thing happen twice.

TC: Do you worry about Felipe being taken by a bigger team – Ferrari maybe?

PS: We have a long-term contract with Felipe, but both sides have the possibility to end the contract at the end of every year.

TC: With Nick and Felipe, you're continuing a trend of only employing small drivers...

PS: That's a joke. At the moment we have two very small drivers and, of course, it's easier for the designer to build a car with a smaller space for the drivers. You think this because of all this business about Jos Verstappen not fitting in our car, don't you? Well, that story has been blown out of all proportion by the press. We contacted Jos because he had become free unexpectedly. As we only test with one car, we do not need a test driver. He would have been our spare driver. We were happy to give him the opportunity to drive the car once,

Sauber: 'Can we win this one, Jacky?'

Eckelaert: 'No, but we're getting closer.'

Key staff like head of track engineering

Jacky Eckelaert have helped make 'new Sauber' competitive

but he couldn't fit in it. End of story.

TC: How has your success in '01 changed Sauber's image?

PS: I think the English press now realise that Sauber exist. That's nice after nine years in F1! Don't forget that the English-speaking press is very, very important in this global sport. I also think that our success has given us a more exciting image, which is useful in F1 – not that I have actively sought to change it. That's not my way.

This is the first of several digs at what Herr Sauber perceives to be the parochial attitude of the English racing fraternity as a whole towards the continental-based teams. A them-and-us attitude from Sauber.

TC: Has your success helped materially?

PS: If you're talking about money, not yet. It's very difficult to get new sponsors at the moment, especially after the atrocities of September 11.

TC: Why did Red Bull sell their equity in the team?

PS: I think they wanted to have their own team, and that was not possible with us. [Red Bull boss] Dietrich Mateschitz owned two-thirds of the team, but he didn't have the majority voting rights – I did.

TC: How long is the deal with Credit Suisse?

PS: I'm very pleased that Credit Suisse bought the shares from Red Bull. I would have loved to buy them myself, but they were too expensive!

TC: How long are Credit Suisse committed to the team?

PS: The sponsorship is for three years and their shareholding could be for longer. Red Bull, on the other hand, have committed

sponsorship to us for just this additional year – their eighth with the team.

TC: Do you think F1 is too expensive?

PS: Yes, of course. It's important that we try to make it less expensive – but every time we try, it ends up becoming more expensive! For example, I support one engine per grand prix weekend, but I'm not convinced that it will be less expensive in the long run. Even if we cut testing, the big teams will use the money they would have allocated to that on other areas of performance. It will not save money. He draws a diagram on the back of a timesheet to illustrate this point, using arrows to mark the budget of a big team versus that of his team.

TC: For Sauber to win races, do you need an exclusive manufacturer engine deal?

PS: We're very happy with our engine supplier. We have a powerful and reliable engine, and last season we had four manufacturers finish behind us in the constructors' championship. I'm very happy with where we are at the moment because I'm sure we're the most efficient team on the grid.

TC: How much longer is your engine deal with Ferrari?

PS: The contract between our engine supplier Petronas and Ferrari will finish at the end of this year, but I'm confident that the co-operation will continue.

TC: Do you think you get value for money?

PS: The co-operation between Petronas, Ferrari and Sauber is now in its sixth year, and I believe that a co-operation can only exist for such a long time if it's satisfying for all parties.

'WE'RE MIXING IT WITH THE BIG BOYS BUT, UNLIKE THEM, WE'RE NOT UNDER PRESSURE TO PERFORM'



It is widely accepted that the electronics on the Ferrari engine are superior to those on any other – except, perhaps, the Renault – which flatters young, inexperienced drivers. So what Sauber pays for his engines, he saves on driver salaries.

TC: What is your ultimate goal in F1?

PS: There is none – for me. Today, it's to remain fourth in the world championship, as I say. We're mixing it with the top teams but, unlike them, we're not under pressure to perform within a certain time-frame.

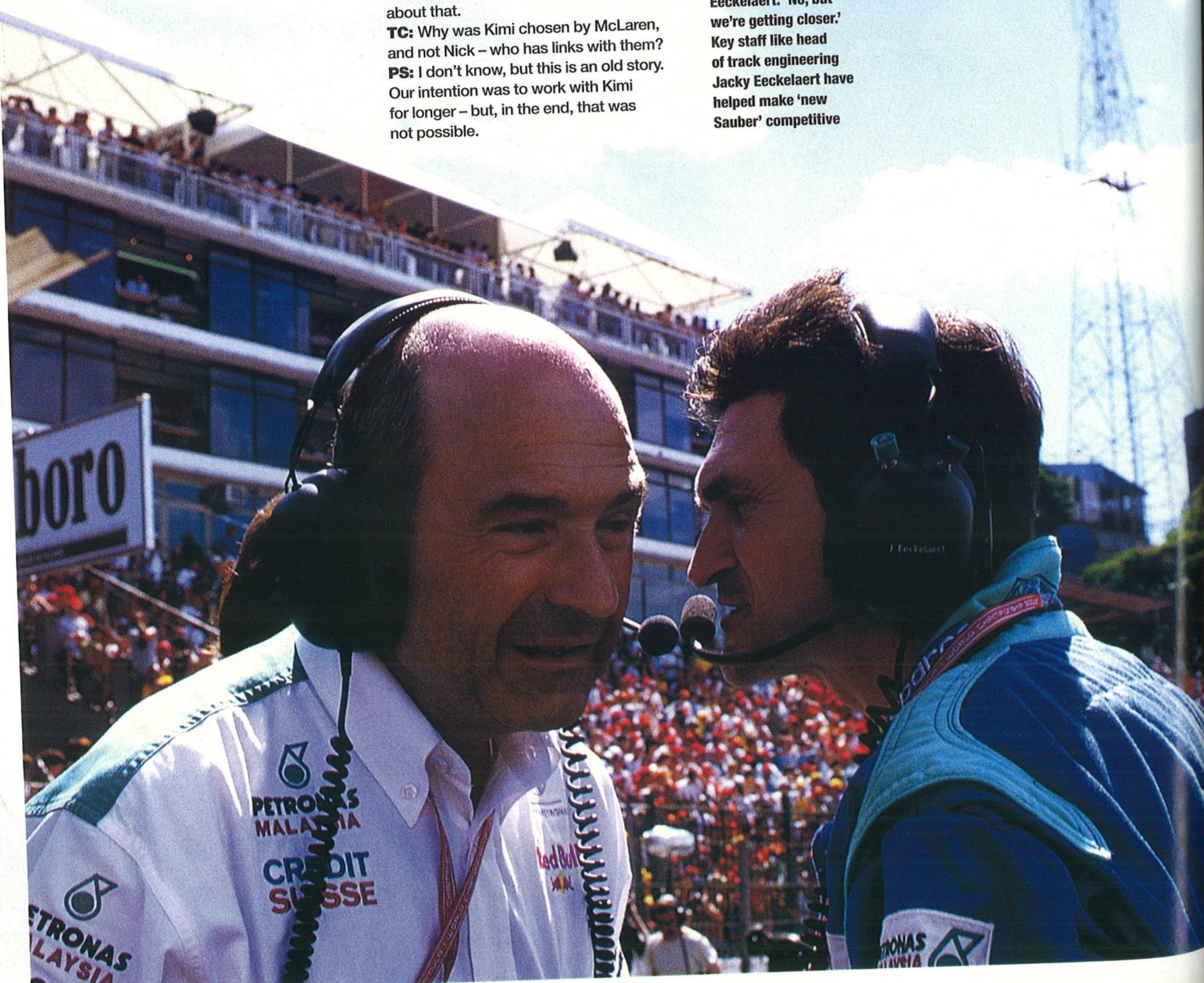
TC: Is that really true? Are you really under no pressure from your sponsors?

PS: None. What I want is for us to achieve the maximum at each step. We've won every series we've entered, as well as Le Mans. But it was never our goal at the beginning of the sportscar season to become world champions; it was just a matter of continual improvement.

TC: How have the opposition changed since last year?

PS: Renault look more competitive than they were as Benetton and, at the moment, Jordan, British American Racing and Jaguar don't look quite so competitive. But they all have the potential to improve during the season – because they have the money, the infrastructure, the people and the know-how. ▶

Rule stability helps small teams such as Sauber. They were able to retain many elements of last year's car (their best yet) for the C21 (main); (inset) with Mika Salo, who drove (disappointingly) for Sauber in '00





'STARTING A TEAM FROM SCRATCH LIKE TOYOTA HAVE DONE IS HARD, BUT THEY'VE SHOWN US IT'S POSSIBLE'

And I've been very impressed by Toyota.
TC: Do you welcome the arrival of these manufacturer teams into F1?

PS: Yes, I do, although starting a team from scratch like Toyota have done is very difficult. But they've shown us that it's possible to enter F1 and progress quickly. Of course, it's easier to buy a team like Benetton, as Renault did, because all you have to do is change the name.

TC: Indeed. How has the lack of a chief designer affected your team?

PS: You do know – don't you? – that the famous 'twin-keel' front suspension on last year's Sauber C20 was originally Harvey Postlethwaite's idea [it has widely been attributed to Sergio Rinland, Sauber's one-time chief designer, now at Arrows]. Our relationship with Sergio didn't work out; it would make no sense to discuss why here. *He raises his voice when talking about Rinland and gesticulates a lot – as if to emphasise his points. Clearly, their collaboration cannot have been an entirely harmonious one...*

TC: I see...

PS: Our team, headed by Willi [Rampf, technical director], built the C21 with the team that we have, and it's a good car. It's lighter, aerodynamically better and, I hope, more reliable than last year's car. So we're no longer looking for a chief designer.

TC: What role does former technical director Leo Röss play in the team?

PS: He's head of R&D. For example, Leo

has developed different gearbox concepts for the new car.

TC: How are you catering for the future of your design team?

PS: We have young people joining us from universities in Switzerland and Germany, where the engineering education is at a very high level. What people on the Continent lack is experience in motorsport, and that's the reason why all the teams based on the Continent often have to hire people from England – because that's where the experience lies. We now have seven different design groups: five are led by Swiss engineers, one by an Englishman and one by an American.

TC: Do you have problems attracting staff to Switzerland?

PS: I can understand that it's not easy for someone with children to move to Switzerland, though it may be harder for them to go back to England after several years. Switzerland is probably more expensive, but it offers a high quality of life.

TC: Are there any obvious advantages to being based in Switzerland?

PS: It's in central Europe, so it's close to most of the tracks. It's not necessary to swim if you want to get anywhere! *Yet another demeaning remark towards the English teams. Either that, or it's a Swiss-German joke. You decide!*

TC: How significant is your new wind tunnel to the future of the company?

PS: The biggest tool in building a car is a

wind tunnel – which is why we're building a really good one, costing £28 million. It takes 50 per cent models as well as 100 per cent models – all on a rolling road. It will be ready for operation at the end of '03. But we're not stuck until then because the tunnel we use at the moment is of very high quality. It belongs to an aircraft company, located just an hour from Hinwil – and we've been using a 50 per cent model there for five years now.

TC: Do you use that tunnel every day?

PS: We could, but we don't have the money for that. It's not just the cost of the tunnel that is expensive; it's also the cost of the people associated with it. We don't have the necessary people to run it 52 weeks per year, so we use it 40 weeks per year. We're trying to grow the entire aerodynamics side of the team so that, when our tunnel is ready, we'll be ready to exploit it to the full. To do that, we'll need double the number of people we have at the moment.

TC: Are you involved in any businesses outside motorsport?

PS: Only Sauber Petronas Engineering, and that's very closely related to F1.

TC: What does Sauber Petronas Engineering do?

PS: It's a joint venture company with Petronas and it has different tasks. One of them is a technical transfer programme, where we transfer premier technical know-how to 15 or 20 Malaysian engineers at a time. They stay for two years. In '98

we developed a 2.0-litre street car engine for Petronas to the pre-production stage. Then there's the three-cylinder motorbike engine, and now we're working on racing fuel and lubricant development – also for Petronas.

TC: Are there plans for a Proton F1 engine?

PS: This is not for me to decide. The development of a F1 engine requires a lot of resource, and the powertrain division of Sauber Petronas Engineering is a small company with about 40 people.

TC: What is your personal motivation in F1?

PS: I have two. First, as an entrepreneur. We have about 300 people in the company and I have a personal responsibility towards each of them, and some of them have been with me for 10 to 15 years. They've given a very big part of their lives to develop the company, so I want to succeed for them. Second, there's the sporting side – and that means to be as successful as possible.

TC: Are you a good man manager?

PS: I'll be very honest with you. I think there are better managers in F1, but I'm a good entrepreneur – although that's not the same thing. For me, it's important to look for good managers for our different departments.

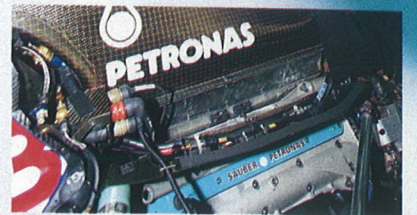
TC: Describe your management style?

PS: To give the managers in the company a direction and a way of thinking. It's very important that we work as a team, and we really are a team. That's an advantage that we have over some of the bigger teams. *He becomes very – or should I say more? – serious when talking about the welfare of his employees. I am told by members of the team that he is a good boss; he breeds great loyalty as a result.*

TC: Would you ever return to sportscars?

PS: It was never my goal to get into F1, but now we're here I don't want to go back. To build an F1 car is no more difficult than to build a sportscar. The difference with

(Inset) Sauber's Petronas-badged Ferrari engines are one of the team's trump cards; (main) Herr Sauber's trademark stogie



F1 is that the quality of the opposition is much higher. Finally, this is what makes F1 much more difficult than anything else in motorsport.

TC: How long will you continue in F1?

PS: I'm 58 years old and I feel very fit. It wouldn't be a problem for me to work for another seven years in F1, but how I feel isn't important. How long I'm good for the company is what's important. I need to look at the short- and middle-term future of the company and I must do what is right for it, be that getting in additional people to help me or an engine manufacturer.

TC: Which team bosses are you close to?

PS: I'm close to Jean Todt because of our engine deal. I have a lot of respect for Frank Williams, too. If he and I speak together, both sides are sure that the other is telling the truth – and that's very important.

TC: What about [McLaren's] Ron Dennis? Do you get on well with him?

PS: He's a completely different man from Frank, and my relationship with him is not the same. I have respect for Ron because I like McLaren. Maybe it's a little bit too dark at the moment – a bit black, a bit grey – but Ron has a clear objective, which is to win. I admire him for that.

He then gets out an electronic dictionary in search of a word that best describes ▶

(Above) Nick Heidfeld ran a strong seventh in Brazil '02, but developed technical problems and eventually had to retire on lap 62

'IT WOULDN'T BE POSSIBLE TO BUILD AN F1 TRACK IN SWITZERLAND: THE COUNTRY IS TOO SMALL'

Ron. While tapping on the keyboard he mutters 'vorbild', before announcing in English...

PS: Modell! It says here that Ron is a model. Eh? Let's hope we don't see him on the world's catwalks in the near future...

TC: Well, in one sense, I guess he is...

So, are you close to Bernie Ecclestone? **PS:** Today, F1 is at an extremely high level, both financially and from a sporting point of view. Bernie has made it what it is today. **TC:** Can you just pick up the telephone to him at any time?

PS: Yes, no problem – and he has time to speak to me. But I don't speak to Bernie a lot because it's not necessary for me to do so. **TC:** Do you worry about the future of F1 after Bernie?

PS: I've thought about this a lot because it affects the future of my company as well as my own future. F1 after Bernie will be a different F1, but that's normal.

TC: Who will succeed Bernie?

PS: I don't see this person at the moment.

I think it would have to be someone from within F1, because he would need to know the people involved and the way that it works. To be honest, I don't really want to share my thoughts about life after Bernie.

TC: Do you think that [FIA president] Max Mosley does a good job?

There is a long pause, maybe up to 45 seconds, before he answers my question.

PS: That F1 is, in my opinion, the number-one sport in the world is down to Bernie and the FIA. I think the FIA do a good job because they have a difficult job. A lot of people think that they could do it better, but I doubt whether they could.

Ultra-cagey...

TC: Are you a workaholic?

PS: No, but I work a lot. F1 is a technical war and I have to fight.

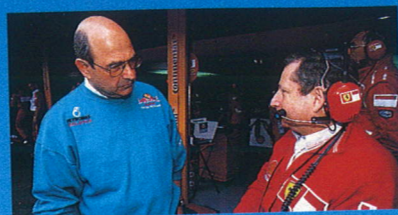
TC: Is F1 a passion of yours?

PS: Today, yes. But I still have a little bit of time for hobbies. I ride a BMW 1200 LT motorbike, similar to a Honda Goldwing. I like it a lot, but I only do between 600 and 2,000 miles per year. I've ridden different BMWs for 20 years. Another hobby is skiing and, despite my age, I still ski at a good level. I have a house in Laax, which is about two hours' drive from Zürich. It's a beautiful region of the Alps, 1,000-3,000 metres high.

TC: Would you like there to be a Swiss Grand Prix again?

PS: I like the idea, but it wouldn't be possible to build a track in Switzerland because the country is too small. It's like a village. There's not enough space and, even if there were, it would be too expensive – because the Swiss people would try to build the perfect track. It would be impossible to make it viable. **TC:** Who are the best and worst drivers to have driven for you?

PS: The best was Michael [Schumacher],



in sportscars. Even back then, it was clear that he was very, very good. And I don't remember the worst!

The memory of Michael triggers something in his mind: he puts his hands on top of his head and lets out a deep, nostalgic, breath.

TC: What is your biggest extravagance?

PS: That in the 10 years of F1 I haven't changed at all. Don't forget that I've been involved in motorsport for 33 years and, for the first 15 years, I didn't have enough money for toys – and certainly not enough time for toys. In the end, you can't wish for more than to be happy – and I'm happy.

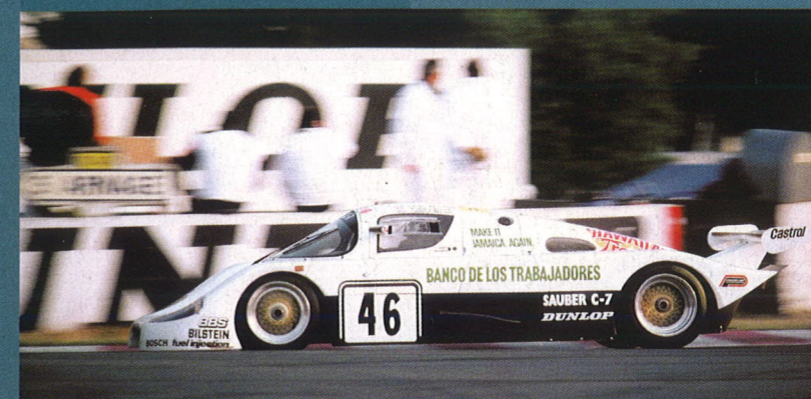
TC: How important is money to you?

PS: From a business side, it's the most important tool in F1. You always need more people and better infrastructure – and for these things you need money. But money is no guarantee of a good car – there are a few examples of that! Personally, I have enough money. You can't compare me to the really rich people in F1 – but that's okay because it isn't important for me to be really rich. ①

(Main) Sauber reckons his team don't feel the pressure the top teams feel. Try telling that to Nick and Felipe on race day; **(inset)** with Ferrari's Jean Todt, who provides Sauber's 'Petronas' engines

> From electric grid to starting grid

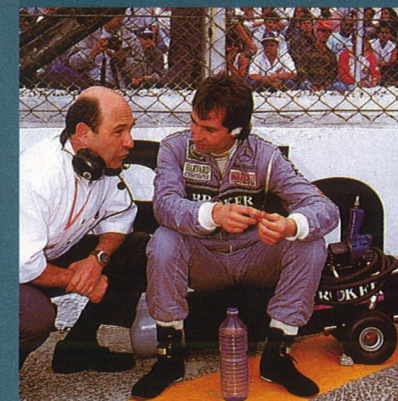
Switzerland: mountains, Töbelerone, cuckoo clocks. No-one told Peter Sauber, the electrician-turned racer. Alan Henry reports



(Above) In '89, the team was rebranded with silver livery. They won several races, including the non-championship Le

Mans 24-hours; **(below, from left)** Jochen Mass, Sauber, Manuel Reuter and Stanley Dickens celebrate that Le Mans win

(Above right) Sauber's C7 did the team proud. It finished ninth at Le Mans in '83, the only non-Porsche in the top 11; **(right)** Sauber with Heinz-Harald Frentzen. Frentzen made his F1 debut with Sauber in '94, their second grand prix season



'43 October 13, born Zürich, Switzerland. His family owned a company manufacturing traffic lights. Trained first as an electrician and later became a car dealer selling British Leyland and Subaru products

'67 Sauber and a friend prepared a tuned-up VW Beetle to contest hillclimb events.

The '55 Le Mans disaster had resulted in the prohibition of circuit racing in Switzerland, so his new passion for motorsport was unusual

'70 Family company is sold and Sauber establishes his own race preparation shop. Builds the first tubular-framed Sauber C1 powered by a 1.0-litre four-cylinder Cosworth engine. Drives it to victory in Swiss hillclimb championship

'71 At Geneva motorshow unveils revised Sauber C2 which is driven by Hans Kunis in the same series. This is followed by the first Sauber monocoque machine, C3, followed by a succession of evolutionary machines

'76 Herbert Muller wins Interserie title in 2.0-litre BMW-engined Group 6 Sauber C5 **'77** Sauber C5 driven by Swiss pairing of Eugen Strahl and Harry Blumer fielded at Le Mans. Led class, but later slowed by engine problems

'79 Temporarily short of sponsorship, Sauber stopped building cars and fielded Formula 3 Lolas in Swiss national championship for Beat Blatter, Eddy Kobelt and Max Welti. Finished first, second and fourth in the series with Welti joining Sauber as racing manager

'81 Sauber-prepared, BASF-backed BMW M1 car wins Nürburgring 1,000km race

shared by Nelson Piquet and Hans Stuck, fielded by Gerhard Schneider's GS Racing. This car was imaginatively lightened by Sauber using carbonfibre composite components manufactured by neighbouring Swiss company Seger & Hoffman

'82 Sauber C6 enters new Group C international sportscar championship using Cosworth DFL engine, competing over the next few seasons with limited success

'85 Key breakthrough when arrangement reached with Mercedes-Benz to use 5.0-litre twin-turbo V8 in Sauber C8 at Le Mans. Car does backward flip in the hands of John Nielsen on debut at La Sarthe

'86 First Sauber-Mercedes victory at new Nürburgring with Mike Thackwell and Henri Pescarolo sharing the driving

'87 No race wins for new Sauber-Mercedes C9, but car sets new Le Mans circuit record

'88 Mercedes confirm official partnership with Sauber for sportscar racing. Team score six wins and finish second to Jaguar in teams' championship

'89 Team rebranded in silver livery, but still titled Sauber-Mercedes. Seven championship race victories clinch title and Sauber also win Le Mans – which was a non-championship race this season – with drivers Jochen Mass, Stanley Dickens and Manuel Reuter

'90 Sauber-built cars now officially dubbed Mercedes-Benz C11s. Sauber's lack of expertise leads to subcontracting the manufacture of chassis to DP Composites, run by former F3 entrant Dave Price in Surrey. Michael Schumacher makes race debut after Mercedes motorsport chief Jochen Neerpasch encourages young driver initiative which also includes Heinz-Harald Frentzen and Karl Wendlinger

'91 Mercedes agree to support Formula 1 programme and seasoned F1 men Harvey Postlethwaite and Steve Nichols briefly join the operation before Mercedes-Benz make it clear they won't be fronting the operation. Sauber decides to go ahead anyway

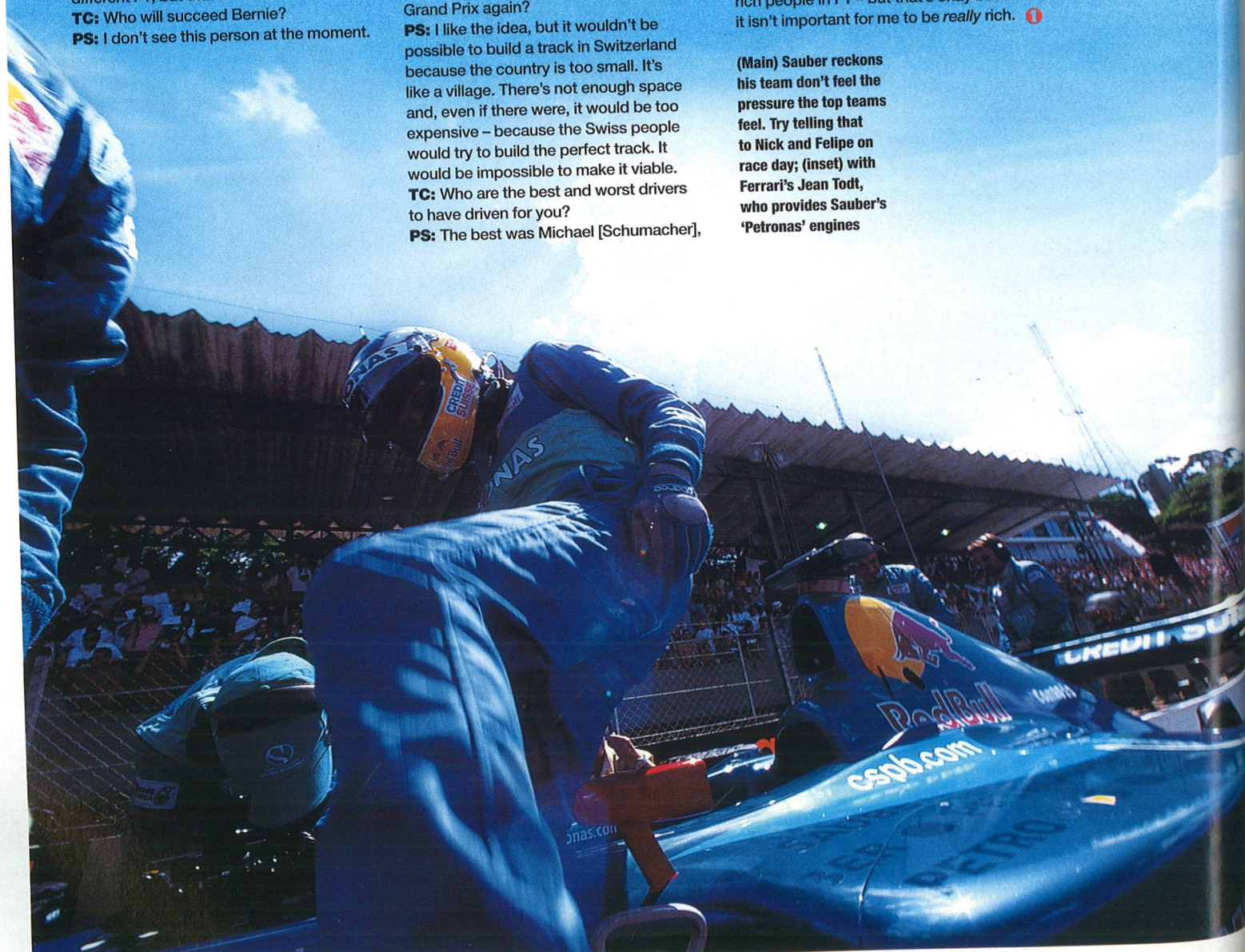
'92 Development year preparing for F1 **'93** Sauber F1 debut with low-key 'concept by Mercedes-Benz' branding for drivers Karl Wendlinger and JJ Lehto

'94 Full Mercedes support for Ilmor-built V10 engine programme with Heinz-Harald Frentzen initially partnered by Karl Wendlinger prior to his serious Monaco GP practice crash, then by Andrea de Cesaris and JJ Lehto

'95 Ditched by Mercedes who believe that partnership with McLaren would be better bet than continuing with ultra-conservative Swiss operation – which has been uncomfortably short of sponsorship anyway. Mercedes-Benz particularly irked when they have to make up financial shortfall caused by lack of cash from planned *Broker* magazine which never materialises.

Sauber become a Ford-backed F1 team, a programme which lasts for two years **'98** Purchase Ferrari customer V10 engines badged by Petronas, one of the team's major Malaysian sponsors; this engine supply arrangement has continued ever since

'01 Sauber-Petronas finish fourth in F1 constructors' championship – the best result in their history – with Nick Heidfeld and Kimi Raikkonen driving

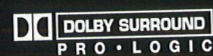


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TECHNICAL DIRECTOR: BRITISH AMERICAN RACING

Geoff Willis

On life at BAR, leaving Williams, new management and Honda

How's the new job (Willis took up his new position at BAR on March 5)?

It's an interesting challenge. There are a lot of positives; a lot of enthusiastic people. The motivation seems quite high and the resources are reasonable. The new management structure is a very positive step and I have been very pleasantly surprised by the personnel. However, the more I look into the nature of the car and the quality of the design and our performance level, it's very clear that we have a lot of work to do.

What's your view of Malcolm Oastler's departure (the ex-engineering director 'left' BAR just before the Brazilian GP)?

[New BAR boss] David Richards reviewed the activities and structure of the company over three months and when he asked my opinions, I think they largely tied in with what he was thinking. It was felt there was a need to make people more aware of what their responsibilities and tasks were and that the only way to turn BAR around was to make changes of sufficient significance. People in certain positions, particularly Malcolm, felt the inevitable consequence of reorganising.

Does instability have a negative effect, even if it's a means to an end?

I hope it will be positive. There's a big need to get the engineering side at a proper operating level, which it has not been for some time. My impression is that people here have been rather crying out for some direction.

What are you trying to improve?

We need strength in depth, a stable workforce, and a pool of people who are used to working with each other. What we were a little bit short of until I arrived was top team experience at a senior design level. After 12 years at Williams, I know the levels at which we have to operate. That does not make the task of getting there any easier, but when you can see the goal, people will stretch themselves to reach it.

What's wrong with the new car, 004?

I think the design task was underestimated. When a car is poor, people often believe there is a specific fault, but I don't think the 004 is good enough anywhere. The aerodynamic

package is the easiest thing to address and we've set up a new aero programme to try to understand the characteristics of the car.

What problems have you found?

We may have problems in our wind tunnel facility, in terms of correlating data. Certainly it's somewhat below what I was used to at Williams. On top of that there's no part of the car that's top-of-the-grid in terms of Formula 1 practice. There are some bits that are frankly awful; there are some bits that are competent. Over the next year I want our car to be well designed from one end to the other – so that when it has its bodywork off, it will catch the eye of other engineers in a positive way.

Can you fix 004, or will all your efforts be directed towards 005?

There's no intention yet to change 004's chassis, but the entire bodywork is up for review. This wouldn't constitute a new car but there are certain performance steps I would like to make. I would see those as a dress rehearsal, going into next year's car, partly to show the levels of work we need to attain and partly for performance.

Is much of 005 already designed?

The big layout issues will be started in May – chassis, wheelbase, fuel volume, gearbox, engine installation etc.

How good is the Honda engine?

In order to be a championship winner you have to have every part of your operation right and that includes the engine. BAR have to be the best Honda-engined team to ensure our

own credibility. I think Honda are somewhat behind where BMW are operating and they are working very hard to sort those issues out, but that takes time when you are talking about engine architecture.

How much of your 12 years' Williams experience have you taken to BAR?

I learned a huge amount from both Adrian Newey and Patrick Head, nearly all of it positive. Working with Patrick, who is a fairly robust character shall we say, gives you the confidence that you can also survive and do well elsewhere. Adrian is an extremely creative designer and he is an intuitive aerodynamicist with great attention to detail and an ability to think in three dimensions. Both are extremely competitive and anyone who works at Williams soon learns what's required to operate at the highest level in F1.

Are you pleased by FW24's pace?

As BAR are not in a championship-winning position, I'd be very happy to see Williams win the title this year; you don't stop being a Williams fan overnight. But I want to get BAR to a level where Patrick Head looks at our car and gives his guys a hard time for not doing something as well as us!

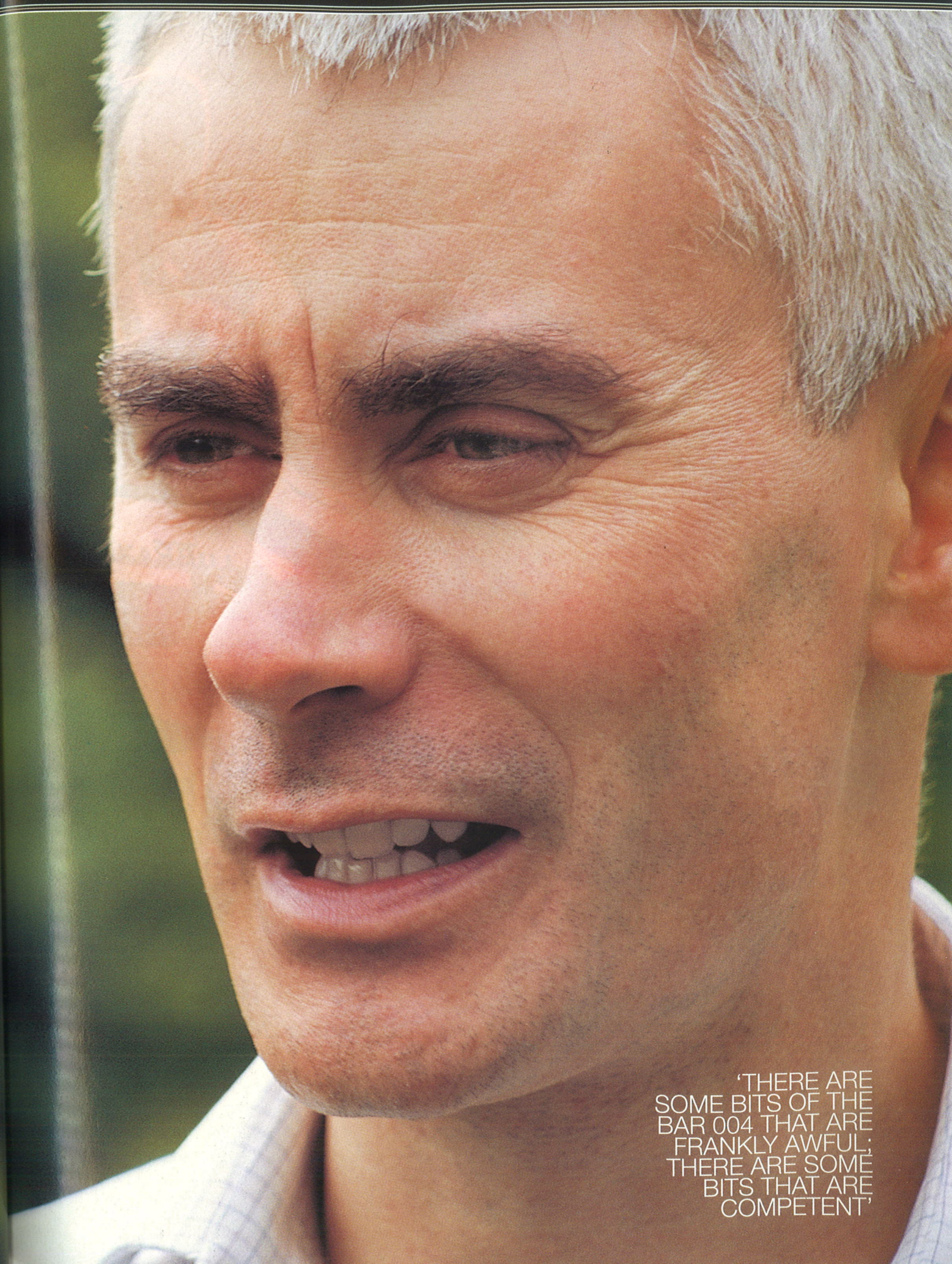
How long will it take to achieve that?

It will be a multi-year project. When I was at Williams we dropped the ball in '98 and it took us quite a while to work out what was required. I hope it doesn't take that long here. I'm a lot more experienced now than I was then. **Q**



Willis says no part of the 004 is "top-of-the-grid in terms of F1 practice". He hopes to bring Williams-standard engineering to BAR

MAN: EDDIE JUDD; INSET: CHARLES COATES/LAT



'THERE ARE SOME BITS OF THE BAR 004 THAT ARE FRANKLY AWFUL; THERE ARE SOME BITS THAT ARE COMPETENT'

'ACTUALLY, I FEEL SORRY FOR SATO. HE MADE A MISTAKE AND HE HIT ME. I DOUBT IT WILL HAPPEN AGAIN'
GIANCARLO FISICHELLA



Giancarlo Fisichella drove for Jordan in 1997. He's back this year alongside Takuma Sato - who's not just new to the team, but an F1 Rookie, too

New fellas in yeller



Jordan new boys Giancarlo Fisichella and Takuma Sato had a rocky start to their racing partnership: Sato took them both off at Sepang. Are they still talking? *F1 Racing* joined them for dinner...

Interviews by Tom Clarkson; photographs by Darren Heath

FISI & TAKU

Okay, chaps: round one. Whose fault was it? Silence follows my question. They are standing five feet apart. Yup, that's definitely a frown from Giancarlo Fisichella – anger towards his team-mate perhaps? Ah, a cheeky smile from Takuma Sato. All we need now is the first punch.

"Er, what are you on about?" asks Fisi. Come on, lads. Give us some action. *F1 Racing's* photographer Darren Heath is here to capture the moment. We're talking about a world-exclusive right hook. Giancarlo, don't tell me you're not angry with Taku – your team-mate – for taking you out at the start of the second lap in Malaysia? "Not at all," he says. "Actually, I feel sorry for Takuma. He was on a two-stop strategy. I was on a one-stop; so I was slower than him at the start of the race. He made a mistake and he hit me – a racing accident. But I don't think it will happen again."

There is a wry smile after this last remark, but that is the extent of the 'fisticuffs'. Don't hold the front page.

We're in the lobby of the Transamerica Hotel in São Paulo, on the Thursday evening prior to the Brazilian Grand Prix. It's just 10 days since their clash at Sepang, but there is not even a hint of animosity.

We pile into two taxis and head off to Jardineira, Fisi's favourite *churrascaria*, in downtown São Paulo. It's the kind of place that serves such exquisite portions of

beef that those unaccustomed to the Latin custom gorge themselves until they are ill. It's definitely Fisi's choice – Taku doesn't even eat red meat.

I share a cab with Sato, while *F1 Racing's* associate editor Stéphane Samson and Heath jump in with Fisi. I ask Taku for his version of events in Malaysia.

"It was completely my fault," he says. "I'd gone from 15th to 10th on the opening lap of the race and I was just enjoying overtaking people too much. At the start of lap two, I was close behind Giancarlo and he suddenly jinked to the side of Jacques Villeneuve and I hit him. That's it."

"I said I was sorry and shook hands with everyone in the team because I knew I might have cost them all a points finish. I learned from it, but it won't change the way I approach the opening lap because that's racing. I just won't attack my team-mate!"

The taxi driver has his window open, exposing us to the stench of daily life in Brazil's biggest city, home to more than 20 million people. The roads are rough and the traffic is heavy, but the cabbies know how to deal with it. They cut up the inside of other motorists, swerve to avoid the potholes and jump red lights.

"No wonder Brazilians make such good racing drivers," says Taku. "Nothing to do with karting – it's just surviving on the road!"

On walking into Jardineira, there are knowing smiles all round: school dinners.



(Main) Jordan have struggled so far; but they're expecting real progress by the Canadian GP, with the promise of more power from Honda; (left) in Malaysia, Sato ran into team-mate Fisichella. It may be the greatest sin in F1, but Fisi has forgiven Taku. This time...

All around us are red-cheeked diners, all looking slightly nauseous, and the layout is akin to the dining room in *Grange Hill*. Everyone is sitting on long trestle tables and next to each person is a beer mat. One side is green – "Please, sir, can I have some more?" and the flip side is red – "I've gotta stop cos I'm gonna be sick."

The waiters, wincing under the weight of a slab of meat in their hands, hover between tables in search of green signs. On seeing one, they begin to carve. The slice of meat is so thin that it curls downward and you are obliged to grab it with some tweezers to stop it falling to the floor.

We are shown to our table. Stéphane and I sit at one end with the drivers, while their managers, Gianpaolo Matteucci (Fisichella) and Andrew Gilbert-Scott (Sato), share ▶



Dinner in downtown São Paulo

Monosyllabic F1 drivers? Not a bit of it. These two could jabber for England. Or Italy. Or Japan

>Le crunch

(Right) Sato demonstrates the Jordan's seating position. Great for those washboard abs

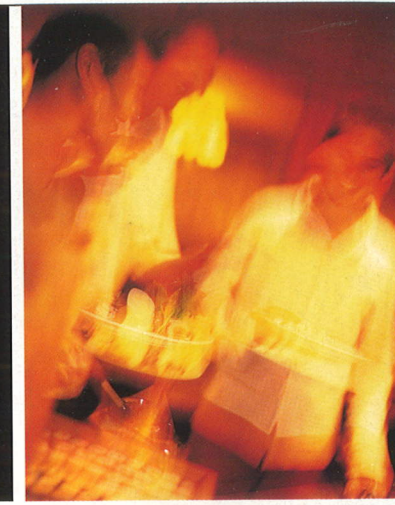


>Fan rouge

(Left) Fisi's a bit of a wine buff and enjoys the chance to flaunt his expert knowledge and tasting technique

>Green and yellor

(Right) Both Jordan boys tucked into plates of healthy rabbit food. They even managed to look enthusiastic



>And relax...

(Left) ... but not too much, because if the waiters think you're not eating enough, they'll fill your plate before you can say, "Mmmffmmuumff"



>Meat...

(Left) ... you just can't beat it. Fisi tucked in heartily (and had pud, too!). Taku doesn't eat cow, but was quite content once he'd found the raw fish

>Flat chat

(Right) *In vino veritas*. A glass or three helped *F1 Racing's* Tom Clarkson get the inside line on that shunt



FISI & TAKU

several bottles of Graves 1996 with Giselle Davies and Mark Gallagher, head of Jordan's communications and marketing respectively, at the other end.

Surrounding us is the entire Formula 1 paddock. Jenson Button and Jarno Trulli give us a wave, and the remainder of the restaurant is filled with F1 marketing men schmoozing their Brazilian sponsors.

The seats are hard and the tables are high - making life for Taku, who is only 5' 4"-and-a-bit tall, all the more difficult. As well as the sign language, there are other protocols that have to be followed in a *churrascaria*. For example, you are expected to get your salad from the salad bar before moving onto the meat.

"I'll just have meat," says Giancarlo. "I don't want any meat," says Takuma. For a bit of fun, and to satisfy Mr Heath's

image-hungry lens, I invite Giancarlo to fill my plate with greens. Whatever you think I'd like, I say. So we venture to the salad bar, around which patient diners circulate in an anti-clockwise direction, but Fisi darts in between them as a motorcycle courier - or a Paulista cabbie - might jive through a traffic jam. He gives me beetroot, eggs, mushrooms and artichokes.

Taku, on the other hand, tucks into the salad bar, wide-eyed and bushy-tailed. To his amazement they serve sushi, so what he expected to be an evening spent eating bread rolls now looks rather better.

On returning to the table, Fisi flicks his sign to green, Taku to red, and they both tuck into the Graves '96. Fisi is a wine buff. His cellar at home holds dozens of bottles of good stuff, and he knows how to get the best from it. Before taking a sip, he holds

the glass by the stem and shakes it violently, the red wine sloshing from side-to-side. "Ah, very nice," he says after trying it, his cheeks beginning to glow from the tannin.

Conversation is free-flowing. Taku's English is grammatically perfect. Fisi is more loquacious than I've ever seen him. Of the two, he talks more. Taku listens intently to his every word, clearly eager to learn from his more experienced team-mate on and off the track.

Taku quickly raises the subject of Interlagos. He drove a Formula 3 car there in December and he reckons the bumps are not as bad as at Thruxton or Oulton Park.



































"It will feel totally different in an F1 car," says Giancarlo. "It's so much stiffer and faster that it finds bumps in the surface that you didn't even know existed."

The situation is compounded for the ▶

Takuma Sato's first full season of car racing was in '99. Just three years later he is driving for a team who have won in the past and still mean business

More Jordan newcomers

As well as the drivers, the other new people this season are...

-  **Gary Anderson** Director of race and test engineering
-  **Michael Blaize** Senior aerodynamicist
-  **Peter Bonnington** Race engineer
-  **Terry Brice** Production manager
-  **Anthony Brinkman** Junior composite designer
-  **Catherine Crawford** Aerodynamicist
-  **Henri Durand** Director of design and development
-  **Steve English** Eddie Jordan's chauffeur
-  **Mark Gillingham** CMM technician
-  **Stephen Goddard** NDT technician
-  **James Henderson** Head of IT
-  **Mike Huggins** Mechanical designer
-  **Mark Hutcheson** Race engineer
-  **Adam Jakeman** Fabricator welder
-  **David Kelsey** Electrical technician
-  **Tony License** Model designer
-  **Steve Martin** Proof test inspector
-  **Martin McCracken** Gearbox technician (race team)
-  **Michael McGee** CAD manager
-  **Maarten Michielen** Test and calibration engineer
-  **Amanda Mills** Van driver
-  **Andrew Morgan** Aerodynamicist
-  **Claire O'Flynn** Administrator assistant (brand)
-  **Martin Owen** Aerodynamicist
-  **Patricia Pittam** Purchase ledger clerk
-  **Nicki Powell** Receptionist
-  **Ian Read** Mechanical engineer (electrical/electronic)
-  **Mark Rehling** Pattern maker
-  **Darren Smith** Quality assurance manager
-  **Brian Snooks** Trimmer
-  **Emmanuel Soula** Control systems designer
-  **Graham Spowell** Aerodynamics general manager
-  **Towie Tanaka** Senior aerodynamicist
-  **Graham Wood** Wind tunnel technician
-  **Marcus Vernon** Junior composite designer
-  **Keith Ward** IT technician



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FISI & TAKU

Sato (right) has shown speed and commitment in his first few races, despite outbraking himself several times; (below) Fisichella retires due to engine failure in Brazil



Jordan drivers this year because their feet are very high relative to their bodies – level with their chins. The result is that they are sitting on their backs, not their bums. Every bump connects directly with the spine.

Fisi is certainly more effusive when talking about wine and the World Cup – “France are the favourites” – than he is about this year’s Jordan. He has already resigned himself to another relatively uncompetitive year, which is made harder to swallow by the new-found pace of Renault.

He could be driving an R202 this year. “Not really,” he says. “Flavio didn’t really want me. He offered me a contract for this year, but it was for less money than in ‘01, and money is one of the ways that a driver knows how much he’s wanted by a team.”

“Anyway, I’m very pleased to be back with Jordan. The only thing that’s not good for my head is all the bad stuff that’s being said about the team. Bad car, no money, that kind of thing. We have a better engine coming for Imola and an even bigger step for Montreal. Then we’ll see where we are.”

Jordan are, of course, a known quantity to Giancarlo. He raced for them in ‘97, his first full season in F1, and he very nearly won the Argentine Grand Prix.

“The team haven’t changed much,” he says. “They’ve got a bit bigger, but there’s still the same family atmosphere that there was in ‘97. There are still a lot of the same people. For instance, my number-one mechanic from ‘97, Nick Burrows, is still my number-one mechanic.”

Sato, on the other hand, comes to Jordan for the first time, having tested for

‘THE OLD MR HONDA THREW SPANNERS AT HIS ENGINEERS. I DON’T THINK THAT HAPPENS NOW...’
TAKUMA SATO

arch-rivals British American Racing last year. “I’m very happy here,” says Taku. “There’s a great atmosphere – very different from BAR, although all the people in both teams are very nice.”

Even now, Fisi still cannot hide his disappointment at being overlooked by the leading teams for this year. “In Italy Jarno [Trulli, Fisi’s team-mate at Jordan last year] and I don’t exist. The only thing that exists is Ferrari, so [test driver] Luca Badoer gets more press coverage than we do because he’s driving the Ferrari nearly every day.”

“And I still don’t understand why McLaren chose Kimi Raikkonen. It was crazy of them to pay Sauber a lot of money for him – because he has no experience.”

All the while we are chatting, Fisi is champing away on his beef without respite. One slice disappears down the hatch and the waiter is back to give him more. When he eventually flips his mat to red, he is close to popping. And he doesn’t stop there.

He has another local dish for pudding: crème de papaya. When in São Paulo, a Roman clearly does as the Paulistas do. “Don’t tell EJ,” he says. “I’ll work it off in the gym.” Taku, who has had a much lighter meal, chooses fresh strawberries for pud.

When this is being served Taku notices on the wall a picture of Ayrton Senna, standing on the podium at Interlagos after winning in Brazil for the first time. “Senna was my hero,” he says. “A great man. I’m looking forward to racing in front of his people this weekend. Mind you, I’d also like to drive that ‘91 McLaren [which Senna drove in the year of the photo]. It had the last great F1 engine made by Honda in it.”

I ask Taku why he thinks Honda have, thus far, failed to get up to speed. “That’s a difficult question to answer,” he says. “I’m sure they’ll get there, but there is a different way of working within the company since Mr Honda died. He used to throw spanners at engineers if they made a mistake, and I don’t think that happens now.”

Taku then asks Giancarlo what car he’d most like to drive. “This year’s Ferrari,” says Fisi, as quick as a flash. “It’s the best on the grid and, in terms of technology, probably the most sophisticated F1 car ever made.”

For the remainder of the evening the conversation strays away from F1. Fisi and Sato talk about music – Fisi prefers disco music and Bob Marley, Taku a Japanese artist called Tsuyoshi Nagabuchi – and films. Fisi likes *Blow* and *Titanic*, Taku *Heat* and *Jerry Maguire*.

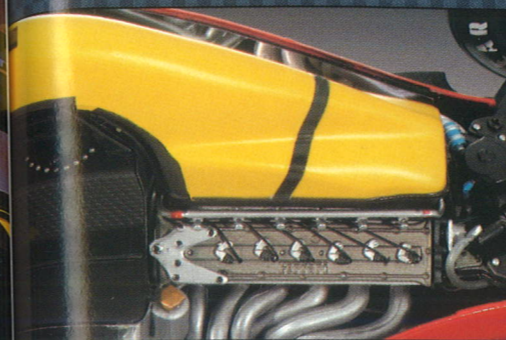
All too soon it’s time to get back to the hotel; 10.45pm is, after all, a late night for modern F1 drivers. So Giselle pays the bill – too kind – and we head back out into the distinctive stink of a São Paulo night.

Jordan might have their problems this year, but the drivers ain’t one of them. They are in this together – meals, shunts ‘n’ all. 1

(Main) Sato lost his fastest qualifying time in Brazil after exiting the pitlane under a red light in Friday practice. He started 18th but overtook several rivals to finish ninth

exoto – simply the best

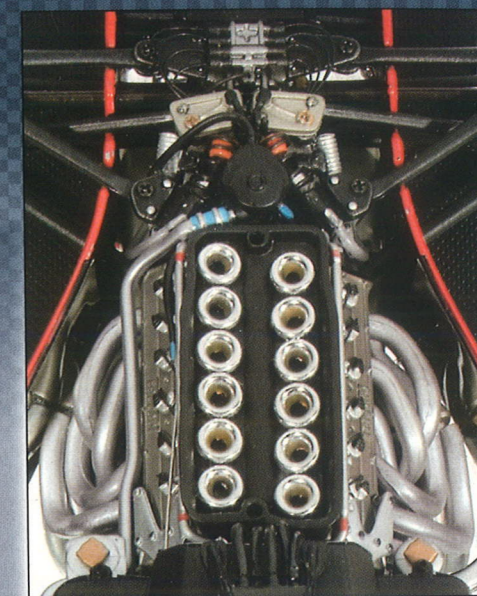
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1990 Ferrari 641/2 1:18
Winner, Portuguese Grand Prix driven by Nigel Mansell.

Qualifying for the Portuguese Grand Prix at Estoril was as close as any Grand Prix in history, when Mansell took pole position only 0.02 seconds ahead of Prost, and Prost put his Ferrari on the outside front row only 0.04 seconds ahead of third man Ayrton Senna!

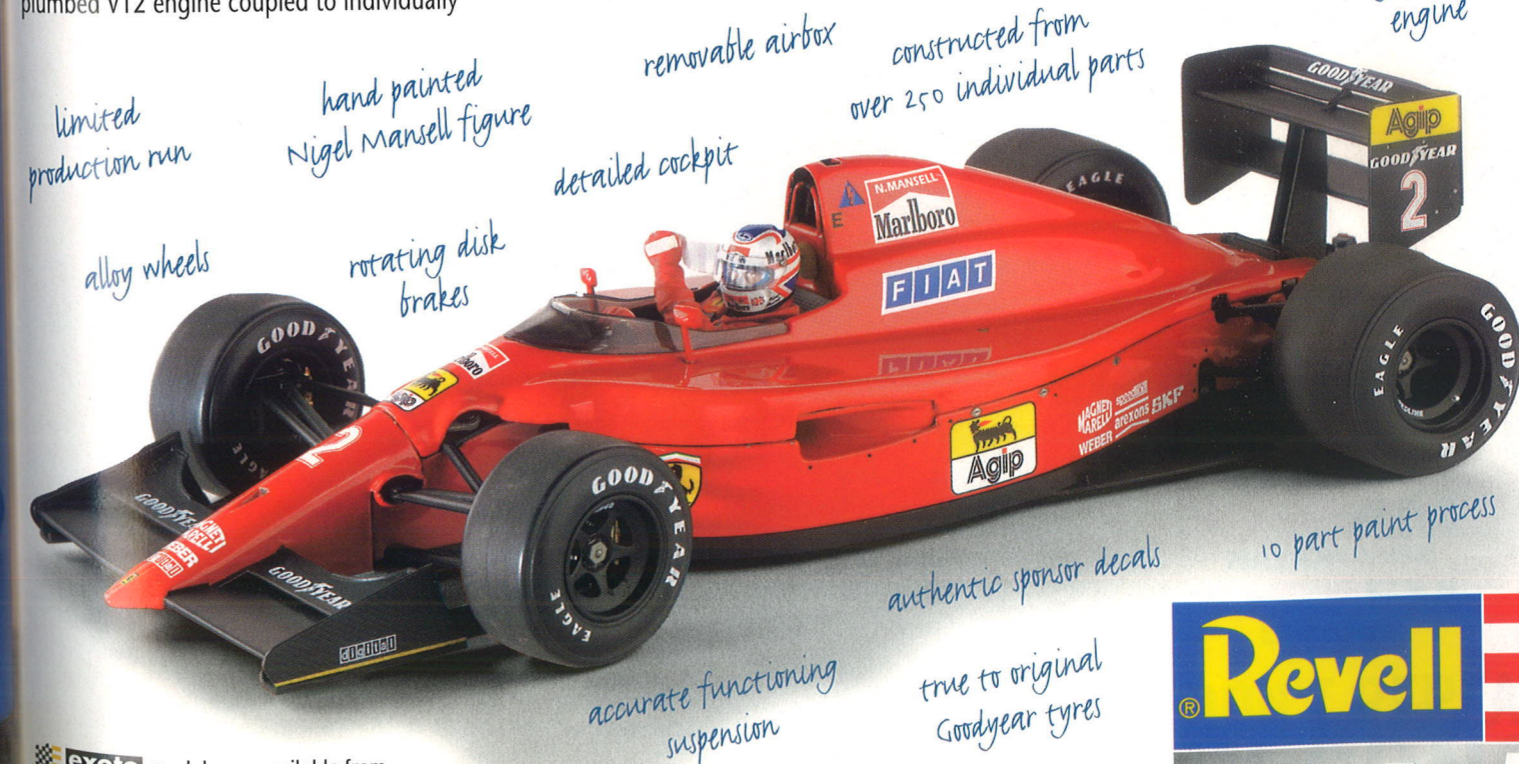
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Hip dude

He has always been one of F1's coolest; now, as lead driver for Toyota's F1 onslaught, Mika Salo finally has backing to match his talent. He ain't gonna waste it

Interview by Tom Clarkson; photographs by Darren Heath

Salo enjoys a strong, relaxed relationship with Toyota boss Ove Andersson (above right). Means he can get on with the job without worrying about the politics (main)

Fancy tatt...it's a wedding ring actually. Mika's beautiful wife Noriko has one too

We haven't had a proper chinwag for ages. Not since Lapland last year, in fact, when Mika Salo and I went mad on skidoos through the Arctic Circle. Huge fun, if rather foolish in hindsight.

Daytime conversations back then were short, thanks to an "unseasonably warm" minus 34 degrees. Soundbite, not frostbite, was Mika's motto. Talking had to be done in the sauna in the evenings because at dinner his drunken, star-struck compatriots would bombard Mika.

Fourteen months later, we're in the Sepang paddock for the second race of the 2002 World Championship. It's plus 34 degrees - warm enough to cajole Mika's vocal cords into action - and the only other Scandinavian in sight is Toyota Racing's President Ove Andersson, and Ove's happy to let us chat.

It's race morning. Mika is waiting in the shade of a white Toyota umbrella outside the team's catering unit. We meet, we greet and we laugh about Lapland ("you were slow"), his Harley Davidson ("I still love it") and his son Max ("He's great"). I reach to press 'Record' on my Dictaphone.

"Hang on a minute," he says. "It's too hot out here. Let's go inside." Too cold, too hot... speak to me, Mika!

Don't get the impression, however, that Mika Salo is another reticent and aloof Finn. He speaks very good English, thanks



in part to living in London for six years and having a long-term management deal with Englishman Mike Greasley. Communication with his Japanese model wife Noriko (he raced in Japan for four years) has all been in English, as he doesn't speak Japanese. He talks to the team in English, too.

We go into the air conditioned catering unit and choose a table in the far corner. Mika indicates to one of the waitresses that he'd like a boiled egg and she runs off to place the order. Out of his pocket Mika pulls a box and places three tablets on the table in front of him. With the help of some Evian he - somewhat laboriously - swallows them one by one.

He notices me watching. "I have no idea what these are," he says. "My trainer tells me to take them because they are good for me, so I do." Mika is not the only driver with such a lack of interest in nutrition. Several others take their diet at face value as well. They're told, "Eat this; it's good for you," so they do. ▶

> Mika Salo: career stats

A few rides for Ferrari in 1999 gave Mika the chance to show what he's capable of

Debut	Japan 1994	Fourths	1
Starts	95	Fifths	7
Best championship finish	10th ('99)	Sixths	5
Points	32	Poles	0
Wins	0	Fastest laps	0
Seconds	1		
Thirds	1		

Correct up to and including Malaysia 2002

