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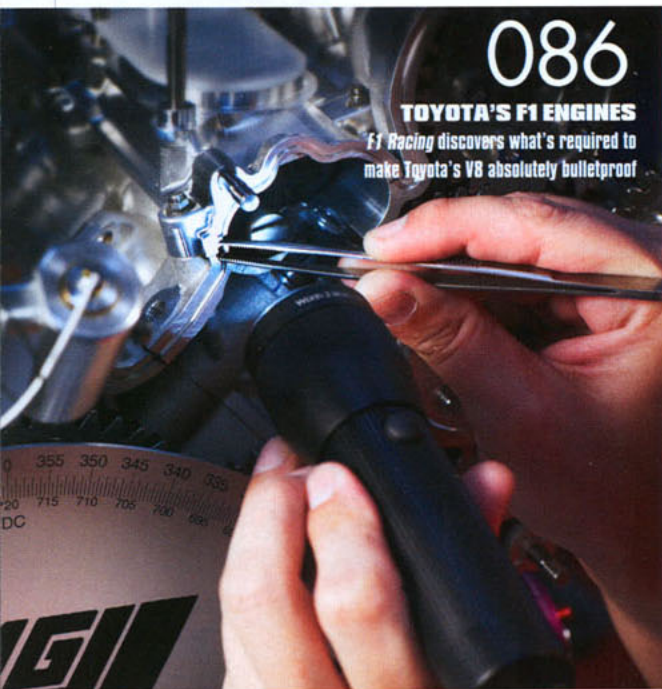
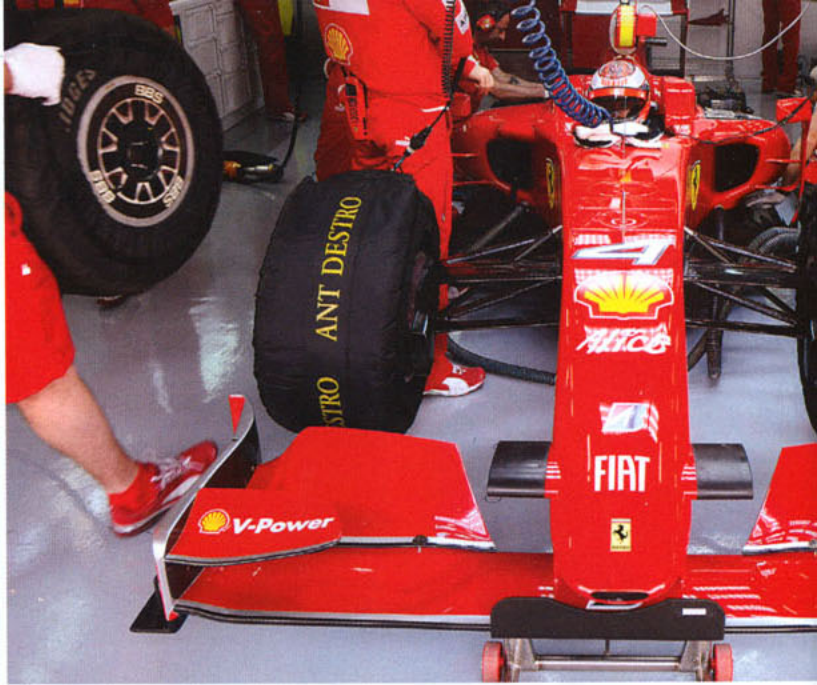


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COVER PHOTOGRAPHY SAM BARKER



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ROBERT KUBICA

He says he's raring to go. We think he's just excited about our darts challenge

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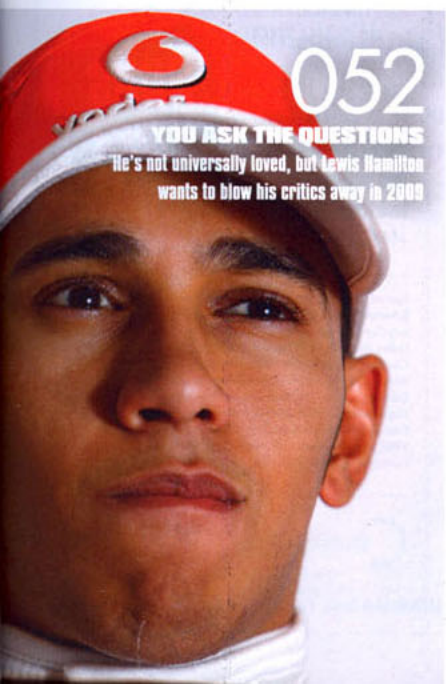
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From the editor HANS SEEBERG

ARE YOU GETTING excited yet? With less than a month to go before the first race, tension is mounting at *F1 Racing* Towers as we wait for the start of the new F1 season. While the teams pound through their testing programmes, only one thing is clear: the field looks more closely matched than ever in spite of the biggest rule changes for 25 years. The current crop of drivers is probably the most talented we've seen in decades, and we believe at least five men have a real shot at the title. To figure out who's got the best chance of lifting the crown in November, we went straight to the people who know. Starting on page 44, ten former world champions give their verdict on who to put your money on in 2009.

This month, we've burned the midnight oil to produce an 85-page season preview, giving you the complete lowdown on what to expect this year. There are profiles and features on every team and we've spoken to some of the sport's biggest names: world champion Lewis Hamilton answers your questions (p52), we ask Robert Kubica to do his best Muhammad Ali impression (p70) and Sir Frank Williams shows he's lost none of his competitive fire (p112). If all that hasn't got you up for it, then how about this: *F1 Racing* is setting up its own F1 team! Well, nearly. Our grand prix editor Peter Windsor is one of the brains behind a brand new F1 venture in 2010: read our exclusive Q&A to find out more (p16). In spite of the economic doom and gloom, the future looks bright... welcome news for all of us who love F1. Roll on Melbourne!

BEHIND THE SCENES ON F1 RACING THIS MONTH



Picture editor Jonny Reynolds 'borrows' some new rims and rubber for his Vauxhall Nova during a photoshoot for a feature - they didn't fit

Matt Warwick indulges his dream of one day running his own F1 team, while meeting the brains behind Force India's technical partnership (p120)



We sent Alan Henry to Red Bull to find out if Mr Newey's still got his design mojo. See p104

Photographer Sam Barker juggled a boxing ring to Spain to capture Robert Kubica (p68)

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PARADE

Fire starter

Kazuki Nakajima's exhausts light up the unburned fuel on his Williams during testing. He's running with green-striped tyres, which Bridgestone are trialling to denote their softer compound slicks

Where Jerez, Spain

When 11.46am, Wednesday February 11

Photographer Charles Coates/LAT

Details Canon EOS-1D MkIII,
600mm lens, 1/160th at F13



RACE TO LEAD
DIRG

Gulf
MOTOR RACING

GREGG
GREGG



PARADE

Blast from the past

The striking colours of the new Renault streak into view. At the wheel Fernando Alonso is putting miles on the R29 and early indications show he could be a contender for the title again this year

Where Algarve, Portugal

When 12.52pm, Wednesday January 21

Photographer Drew Gibson/LAT

Details Canon EOS-1DS MkII,
200mm lens, 1/40 at F22





PARADE

On your marks...

It's unlikely that Sebastian Vettel can outprint the RB5, so perhaps he's getting a better look at the unique pullrod rear suspension. Either that or he's lost his car keys...

Where Jerez, Spain

When 4.30pm, Tuesday February 10

Photographer Emily Davenport/xpb.cc

Details Canon EOS-1D MkIII,
85mm lens, 1/320 at F7.1





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The stories that matter from the world of Formula 1 this month



Born in the USA: Peter Windsor's USF1 team want to bring American sponsors to Formula 1

USF1

EXCLUSIVE!

OUR MAN SETS UP NEW F1 TEAM

F1 Racing's Peter Windsor reveals why there's no better time to start a team in America, and how USF1 will line up on the grid in 2010

OUR VERY OWN grand prix editor Peter Windsor is starting his own F1 team... in America. And we've been granted exclusive access to the plans for his new operation.

He's been working on the new project with ex-F1 engineer Ken Anderson for the past four years and the pair are planning to base the team in Charlotte, North Carolina.

Over the course of the year USF1 plans to find two young American drivers who will race for the team when they line up on the grid at the start of 2010. But reports that female Indycar racer Danica Patrick will be involved are wide of the mark.

Windsor and Anderson first met in the mid-'80s and have a wealth of experience between them. Windsor first started working in F1 in 1972 and had stints at both Ferrari and Williams, while ex-Penske man Anderson worked for Ligier and Onyx in F1 before returning to the US as technical director of Chip Ganassi Racing.

The pair have been looking for an opportunity to put together an F1 team for a while, and believe there is no better time than 2010, as the sport's regulators plan serious cost-cutting. The team wants to showcase American technology on a global platform and part of the finance for the project is coming from the IT industry.

"The driver selection for USF1 will be a reality TV programme"

Board members of the team include Emmet Keefe and Maurice Martin, who own Californian-based IT company iRise.

American channel Speed TV marked the official launch of the new team on February 24 and USF1 are housed next to the station's new high-definition facility in Charlotte. Windsor, who also works for Speed, says that TV will play a big part in USF1's plans to enable sponsors to get a significant return on investment.

Down the road from the team's base is Windshear, which was built by Ken Anderson and is owned by US racing stalwart Carl Haas. It's one of the few 100 per cent, full-scale rolling-belt windtunnels in the world and has been used by a number of F1 teams already.

And although a small European site will be found for logistical purposes, the whole team will fly the flag for America. "Obviously we want to be competitive in the shortest timeframe we can," says Windsor. "Ken has won the Indy 500, CART championships, scored podiums in F1 and I've been with Williams and Ferrari when they've been successful, but we have to be realistic. In year one we'll be a young team, learning and proving we can build a car outside Europe – and then we'll grow from there. Both Ken and I want to win."

Although USF1 will make their debut in 2010, the team did discuss bringing the project forward a year and had discussions with Honda about using Super Aguri's engines when the minnows dropped out of the sport in May 2008.

Windsor has been with *F1 Racing* for 12 years and over the course of the 2009 season will continue to give monthly

updates on the progress of his new team.

But for now we asked Windsor the key questions about the announcement...

Why didn't you buy Honda F1?

"It never occurred to us to be honest, because Ken and I started planning this team four years ago. We took a clean sheet of paper and looked at the technology in America – composites, machine parts, material research, CFD, IT and aerodynamics – and we wondered if we could build a team there. Actually there's great technology in the US, which is a trickle-down from the aerospace industry."

Why are you entering a team in 2010?

"Things started to gravitate towards 2010 particularly when the FIA started to talk about cost-cutting measures and reducing the cost of engine supply, plus increasing the life of engines and gearboxes – all of which helps give opportunities for independent teams coming into F1."

What about the cost of running a team?

"If you look at how much it would cost to design and build an effective operation, and you compare those numbers with what the F1 teams are spending in Europe, I genuinely can't work out why they are spending so much money. Where is it all going? If you need to cut in every area of operation in the team, then starting a team from zero gives you a better opportunity to do that. And if you keep every aspect of the operation as efficient and lean as possible then it's easier to keep costs down." >

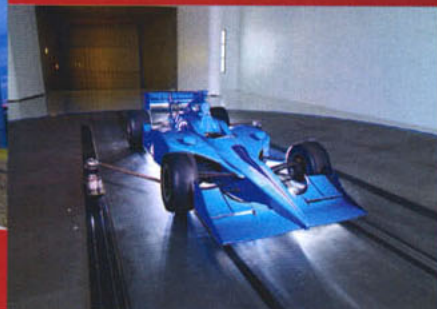
PITPASS



Ken Anderson (above) has worked in Indycar and Formula 1 and built the Windshear windtunnel – one of the few 100 per cent, full-scale rolling-belt windtunnels in the world



The view of the entrance to the Windshear facility in Charlotte, North Carolina. The plan is for USF1 to be based nearby



Why base the team in America?

"In the past Americans like Roger Penske entered a team in F1, but did it the British way, basing a team in Poole for example. We wanted to know whether we could break the mould and build a car in America. That was the big question and it didn't take very long to answer. The Windshear windtunnel was the first step and Ken achieved that. Then, in terms of logistics, Charlotte has direct flights with Gatwick, Munich and Frankfurt. And flying cars across the Atlantic isn't that expensive, relative to the cost of driving them all over Europe in trucks. We could even get the cars back to Charlotte after a race before most European teams have driven back to base. It looks good logistically as 50 per cent of the championship is outside Europe now."

But will you have a European base?

"Logistically we need a place for trucks; a motorhome, pit equipment and an assembly base for despatching freight for flyaway races. Ken and I want it to be somewhere that would be attractive for Americans to visit. We've had a look at a place near Bilbao, Spain – where the sportscar team Epsilon Euskadi is based. It's an interesting area because it's in the centre of the Spanish aerospace industry and has a lot of composites around there."

Is America ready for an F1 team?

"Well it's a pretty big country and we thought about having two American drivers, which is something that American companies can get behind and support. It's actually a good marketing platform from which to build a team. We're not trying to convert Americans into Formula 1, NASCAR is too big and we can't rival NFL, baseball and basketball. But we can offer a platform where we can take America to F1 and compete on the global stage."

Who will drive for USF1?

"If we go with an experienced driver then he will be a quantum leap ahead of the team already. Every time we hit a stumbling block the driver is going to get frustrated and we won't grow at the same rate. But if we start with two relatively young guys then we'll grow at the same rate and pace. There are some good American drivers out there: Jonathan Summerton, Charlie Kimball, AJ Allmendinger, Ryan Hunter-Reay, Colin Fleming and Jonathan Edwards – there's also a new generation in Josef Newgarden, Alex Rossi and Conor Daly. The driver selection programme will be part of the story of this year, and we'll make it a reality TV programme."

How will you market the project?

"We will be led by television. We are going to make this as fan-friendly as possible. We want cameras in the factory to allow people to watch the car build, and we will have a TV production company built into our factory."

Where is the finance from the project coming from in this difficult economic time?

"It's relatively straightforward. We believe sponsorship is easily obtainable. NASCAR has a lot of cool brands like Kellogg's Corn Flakes or US Army that you never see in F1 – that's because in NASCAR they get a much higher return on investment. The amount of money NASCAR teams ask from a sponsor is relatively small, but they get a lot of TV exposure for that price and we will try and give that sponsor the same amount. There's actually a lot of American money in F1 at the moment, like AT&T, Hilton and Intel."

When will the car be ready?

"We'll build the car throughout the year and it will be ready to hit the ground around Christmas time. For engines, we'll be talking to suppliers in the next couple of months."

"We're trying to do something positive when the world is being negative"

As an American team we want to work with someone who also wants to work with us, so it will be mutually beneficial. But it's not urgent – not like the old days of an engine company working exclusively for us."

What's the reaction in the US been like?

"Well we weren't actually planning to say anything until the car was ready, but since we have it's been huge. Our website had over a million hits in four days and I now get 300 emails a day from people wishing us well. A policeman in America wrote to me saying that we have the whole support of the American police force behind us! I might be naïve but so far everyone has been very kind to us. We're putting together a new team with a fresh approach and we're trying to do something positive when most of the world is being negative at the moment."

What will your role be?

"Ken will be the team principal – he has the vision and it was his idea from the start. He has a great pedigree and a great network of people that he works with in the US. He'll look after the engineering side and I'll concentrate on the sporting side. But this year I'll still be *F1 Racing's* man at grands prix and working with Speed TV."

THIS MONTH'S BIG DEBATE



Red Bull, Williams and Toyota are all names that you'd get long odds on winning the first race of the season. And yet...

Will there be a surprise winner in Australia?

Yes



Sergio Rinland
Former Arrows and Brabham designer

"MELBOURNE WILL be one of the most open races in years. It'll be very interesting to compare the performance of the top two teams with the Red Bull and Williams. Also Toyota have been going well in testing.

Looking at the new cars, I think Red Bull have one of the surprise packages. The team is unique in running pullrod rear suspension and that makes the car inherently lighter and will lower the centre of gravity. Plus the RB5 also has a lower engine cover than most teams and that will give a better airflow onto the rear wing and the diffuser – they might just have the advantage.

But I think the biggest factor will be who gambles with running the new kinetic energy recovery systems (KERS).

This is a fantastic time because KERS is a technology that has never run before and there are a lot of new systems that are running in the cars. The biggest problem is cooling the batteries. Laptop batteries get very hot – imagine having 30 of them and trying to keep them cool. I'm surprised more teams haven't gone the flywheel route like Williams.

In terms of speed KERS will be advantageous, but because of the reliability concerns, any team that builds the ultimate car without KERS could have the advantage.

The field will be wide open and that's the beauty of new rules – anyone could be in with a shot of victory. I'm looking forward to Australia a lot."

No



Anthony Davidson
Ex-Super Aguri driver and BBC 5 Live pundit

"I THINK THAT Formula 1 is reasonably predictable. Those teams that normally have been successful continue with that form when there have been a number of rule changes. That's mainly because they have the budget and resources to develop their cars early and so have an advantage. Remember when there were big rule changes at the start of 1998 – narrow-track cars and grooved tyres? McLaren were well ahead. It's all about understanding the new rules the best, finding the loopholes and exploiting them.

Occasionally you get teams like Renault coming good, like they did a couple of years ago when they were on the Michelin tyres, but generally I think the top two teams from last year

will be at the front again.

Sometimes in testing you see the BMW or Red Bull putting in some quick times, but you can never read into the times as teams are very secretive. Also you don't know what the tyre wear or fuel loads are like, or the conditions at the track.

Throw into all of that the fact McLaren has one of the best simulators in the business and, with a huge cut-back in testing, their drivers can get a lot of confidence driving the simulator. That will be a huge boost to Lewis Hamilton, on top of the fact he's world champion.

On saying that I hope that one team does surprise us this year, but actually I would put money on McLaren and Ferrari being at the front in Melbourne."

PITPASS

In Formula One is in the balance

Confident that F1 squad will be snapped up

This is a completely different Both the

of engines for the with the Australia up h. year Honda nor Y the issue yester

offer could so management

FORMULA ONE Honda confirm Virgin move as Senna waits for chance

Virgin linked to move for Honda team

Alan Brash

Richard Branson's Virgin Group has made an offer for the Honda Formula One team, according to a Reuters report last night. "They have made a bid to purchase the team," said the source close to the Japanese car manufacturer who declined to be identified. A spokeswoman for Branson declined to comment, saying the group was "continually" engaged in speculative discussions.

If confirmed, the offer could scupper a planned management buy-out being led by the team's chief executive, Nick Fry, its principal, Ross Brawn, and three other

The sale of Honda has left James Branton in limbo and the team's 200 employees in Brackley fearful for their jobs

senior Honda Racing executives. With the Formula One season due to start in Australia on 29 March and time running out for a rescue of the Brackley-based team, a decision by the Japanese manufacturer is likely by the end of the month and possibly within days. Honda put their team up for sale in December after announcing they were withdrawing from the sport due to the global credit crunch. The decision left scrambling the jobs of the team's 200 employees. Since the announcement the sport has moved to slash costs and the governing body wants to go further for



Honda's hopes lie with Branson moving swiftly

Virgin could step in to buy

Motor racing

Edward Gurney
Motor Racing Correspondent

The Honda Formula One team has reportedly confirmed that they are in talks with Richard Branson's Virgin Group about a possible deal to buy the team after the Japanese car giant's decision to withdraw from the sport. A spokesman for the 100-strong Honda team, who include James Branton, the British driver, was quoted as saying: "The car negotiating with several buyers and one of them



Sport

Virgin Group linked with bid for Honda

Motor racing Virgin Group, founded by Richard Branson, the British entrepreneur, has made a bid for the Honda Formula One team, according to reports last night. "They have made a bid to purchase the team," a source said.

A spokesman for Branson declined to comment, saying that the Virgin Group was "constantly" named in speculation and rumour, while Honda said: "We do not comment on speculation." If confirmed, the offer could scupper a planned management buyout being led by Nick Fry, the chief executive, Ross Brawn, the team principal, and three other senior Honda executives.



Honda pull out

THE SAGA OF HONDA'S RACE TO FIND A BUYER

After two months of speculation the team still want to race at Melbourne

COULD RICHARD BRANSON'S Virgin empire be the saviour of Honda Racing – or will the current team bosses Ross Brawn and Nick Fry buy-out the team themselves?

As *F1 Racing* was closing for press there was still no official word on the future of the Brackley-based team, but at the factory intensive work was continuing to get both of the cars to the season-opening Australian Grand Prix in Melbourne. We've taken an overview of the speculation that has circulated since Honda pulled the plug on the team in December...

December 21

The Mail on Sunday reports that Greek shipping tycoon Achilleas Kallakis and former BAR boss David Richards are interested in buying Honda. "There are people in the Middle East who want to support an F1 entry for me," says Richards.

December 28

Reports in South America say Mexican businessman Carlos Slim is eyeing up the Brackley team. Slim owns Telmex, which is the parent company of Bruno Senna's personal sponsor Embratel.

January 8

Fry says there are 12 interested parties in the team, but David Richards rules himself out. "Initially 30 people came forward," says Fry at the *Autosport* International Show.

Richard Branson's Virgin Group latest to be linked with Honda Formula 1 team

December 29

Ross Brawn tells *The Daily Telegraph*: "We would love it if [the Carlos Slim story] was true, but it's pure speculation I'm afraid. It's just one of those rumours that has a life of its own."

"We've narrowed that down to 12. Bernie Ecclestone said that he was 100 per cent confident we'd be on the grid in Melbourne."

January 29

The Guardian newspaper suggests that Honda are talking to the British government

about receiving part of the £2.3billion bail-out package that is being earmarked to support the ailing car industry in the UK. Honda say the story is untrue.

Mercedes-Benz open to supplying engines to Honda

February 8

An insider at Honda tells *F1 Racing*: "We're just carrying on going to work each day as normal. It's tough but we have to put in the work in case we get the green light at any moment." It looks as though there will be a management buy-out of the team led by Brawn and Fry.

February 14

It's rumoured that Brawn sent an email to the staff to prepare for the start of the season, while *The Guardian* suggests the team has the finances to compete in the first four grands prix – with Bruno Senna partnering Jenson Button at the team.

The stumbling block is convincing Mercedes-Benz that the team will be able to pay for a season's worth of engines.

Honda could line up on the grid in Australia

February 16

A management buy-out has been put on hold after a new bidder arrives on the scene... Reuters news agency says the Virgin Group is the latest party to take an interest in buying the beleaguered team. Richard Branson is close friends with Adrian Reynard – one of the initial founders of the BAR team.

February 18

If Senna does drive for Honda and the team doesn't have time to test, his first ever run in an F1 car will be during practice for the Australian GP – making him one of the most inexperienced F1 drivers ever. "It would

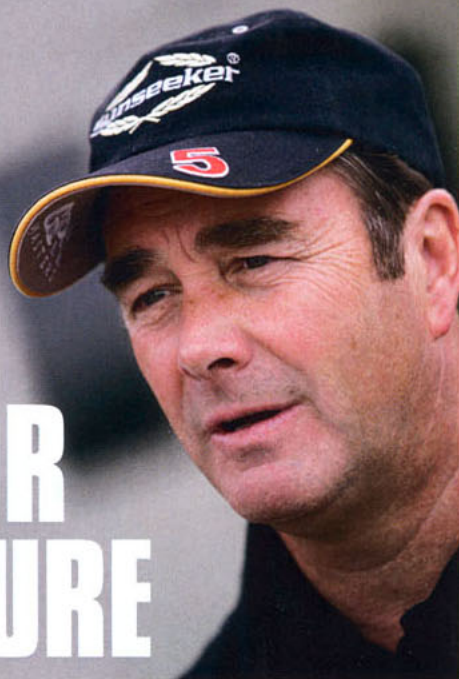
Bruno Senna set to partner Button in revived Honda team

certainly be a big challenge: I think no driver in the last few years has had his F1 debut with so little testing mileage," Senna told Italian magazine *Autosprint*.

February 20

Bernie Ecclestone tells Reuters: "I've spoken to Richard [Branson]'s people. He would love to do it. It would be super. We're working to try to make it happen." The saga continues...

CRIKEY! MANSELL FEARS FOR F1'S FUTURE



1992 champion has urged more teams to join the grid, and says KERS should be banned

FORMER F1 WORLD champion Nigel Mansell believes that Lewis Hamilton's world title is "20 per cent less credible" than his own, because of the fewer cars on the F1 grid in 2008 compared to 1992.

And he has issued a stark warning that unless budgets are cut more teams will follow Honda's lead and quit the sport.

Speaking on the eve of the new season, Mansell told *F1 Racing*: "I sincerely hope F1 survives – the sport can't afford to lose any more teams. I mean no disrespect to Lewis, but what's the point of a championship where you only have 18 or 20 cars running? When I won the title, I beat 25 other cars and that makes Lewis's title 20 per cent less

"The sport is cutting costs and then it introduces kinetic energy recovery systems – and some teams have invested tens of millions in that. The team that's mastered KERS could walk away with the world championship in 2009. It could be a one-horse race and that's worrying because the biggest question is: who will be there for Lewis to beat?"

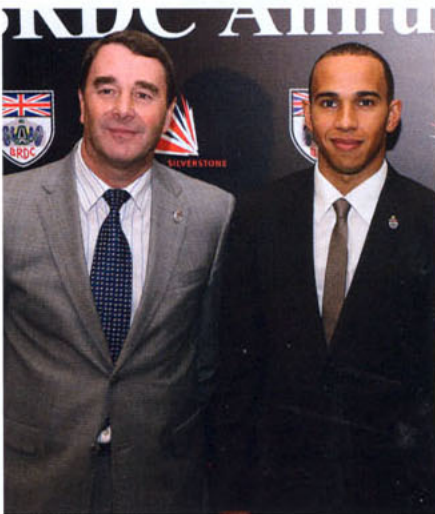
"Personally I think the system should be banned and they should save the money. All that's happening is that smaller teams will end up buying it off the bigger ones, and all while they're trying to save costs."

● Turn to page 126 for our feature on how the new 2009 rules will impact on F1

"I sincerely hope F1 survives – the sport can't afford to lose any more teams from the grid"

credible than mine was. We need more competitive teams on the grid."

Mansell urged the need for cost cutting and suggested that the new-for-2009 kinetic energy recovery systems (KERS) were a waste of valuable time and expenditure. He was also worried that their introduction could affect the closeness of the racing.



Mansell believes his world title was worth 20 per cent more than Lewis's because there were more cars on the grid in 1992

ANDREW FERRARO/IAF; STEVEN TEE/IAF; ALASTAIR STALEY/IAF; GLENN DUNBAR/IAF; LORENZO BELLANCA/IAF; MARK THOMPSON/GETTY IMAGES; KOICHI KAWASHIMA/GETTY IMAGES; XPR.CC



FERRARI GIVE THEIR BLESSING FOR KIMI TO GO RALLYING

Räikkönen takes part in two competitions prior to the new season but keeps the Ferrari family happy by competing in a Fiat Abarth

KIMI RÄIKKÖNEN HEADED to the Arctic Circle to enter his second rally of the winter just days after testing in the sun and sand of the Bahrain desert.

Ferrari gave permission for Räikkönen to fly home to compete in the second round of the Finnish Rally Championship – at the wheel of his Fiat Abarth Grande Punto S2000 – after he'd completed hundreds of testing laps of the Bahrain circuit.

And the Finn had no trouble swapping from 30-degree heat, the demands of KERS and slicks to below-freezing temperatures, pacenotes and studded snow tyres.

His first experience of rallying came a month earlier when he took part in the Arctic Rally in northern Finland and finished 13th overall. Kimi completed 30 miles of

testing prior to the rally and had four-time world rally champion Tommi Mäkinen sitting next to him for guidance. For the actual event he was partnered with Mäkinen's former co-driver Kaj Lindström.

"Kimi just loves to drive anything fast – whether that's motorcross bikes, rally cars or

"Kimi just loves to drive anything fast. It's great Ferrari allow it"

F1 cars," said his manager Steve Robertson. "It's great Ferrari allow him the freedom to compete for a bit of fun. I saw some on-board footage and it was unbelievable to see his arms react on the ice and snow – it's great for keeping up his reactions."

Räikkönen wasn't the only driver from F1 competing in the Arctic Rally. He was joined by compatriots Mika Häkkinen, JJ Lehto and Mika Salo, all in Mitsubishi Lancers.

"I am very happy that the team let me do it," said Räikkönen. "It's fun for me. I have lots of hobbies that are not the safest of things, but I try not to take risks."

Räikkönen was again partnered by Lindström for the Mikkeli Rally in Finland, which was scheduled to start after *F1 Racing* closed for press.

Don't do that! Kimi gives his employers a fright during the Arctic Rally



"I'll try a back-flip on the next stage, yeah?" Kimi enjoys his adrenaline-filled past-times



F1 MASTERMIND

Test your knowledge with our fiendishly tricky quiz



- 01 In which position did Jean Alesi finish on his F1 debut?
- 02 Which driver holds the record for the most pole positions in one season?
- 03 How many wins did Mike Hawthorn take en route to the 1958 world championship?
- 04 Who is the only female F1 driver to score world championship points?
- 05 Which team did Zsolt Baumgartner make his F1 debut with in 2003?
- 06 Which driver tangled with Ayrton Senna at the first corner of the 1994 Pacific Grand Prix?
- 07 Which was the only team that Argentine driver Oscar Larrauri raced for?
- 08 How many grands prix did Jan Magnussen contest for McLaren?
- 09 Derek Warwick raced for Lotus, Arrows, Footwork, Toleman, Renault and who?
- 10 Who finished second at the inaugural Singapore Grand Prix night race last year?



Answers 1 Fourth 2 Nigel Mansell, 1992 (14 poles)
3 One 4 Lella Lombardi 5 Jordan 6 Nicola Larini
7 Eurobrun 8 One 9 Brabham 10 Nico Rosberg

ASK F1 RACING

All your questions answered

In a picture of the McLaren from a recent test I noticed that there was a load of green stuff on the car behind the front wheel. Had Heikki Kovalainen driven through a puddle of paint? Ashley Mason, London



No the McLaren hasn't been tagged. A 'flow vis' test helps develop the car's aerodynamics

Although that would have been good, he didn't – the paint was applied deliberately. Known as a 'flow vis' test, the fluid (usually paraffin and fluorescent powder) is applied to the side of the car

and as the air flows over it at speed the liquid is dispersed. The streaks are observed to see how the aerodynamics, particularly the front suspension, are managing the airflow over the car.

Send your F1 conundrums to askf1racing@haymarket.com

PADDOCK SPY

If you think the new 2009 F1 cars are ugly, check out these eyesores from the past...



Pascal Fabre took the curious-looking El Charro AGS JH22 to ninth place at the 1987 French GP



Bubbed the 'teapot', this gargantuan airbox appeared on the Ligier JS5 during the 1976 season



Williams quickly ditched the 'Walrus-nose' from their FW26 in 2004



1979 wasn't a vintage year for cars: here's Arrows' 'brick'



The Spirit 201 sprouted a double rear wing device in 1983



Not all Alfa Romeos are things of beauty - as proved in 1979. Again



Ensign's 'step-ladder' was made in '79. And dumped in '79



In 1995 McLaren built a car with an odd engine-cover winglet



Tyrrell had the audacity to run these awful 'X-wings' in 1997



The 'ironing board' was tested in 1971 on the March 711



The Kojima KF007 finished a steady 11th at the '76 Japanese GP

WEBBER RECUPERATES IN -130°C FREEZER

Brrrrrrrr! Three minutes in a freezing chamber helps to heal the Red Bull driver's broken leg

MARK WEBBER HAS been freezing his body in a minus 130-degree Celsius chamber, in a bid to be fit for his home race.

The Australian broke his leg and fractured his shoulder in a cycling accident last November and has visited a cryogenic freezer a number of times over the past few weeks to speed up his recovery. Cryotherapy is common with athletes who are recuperating from fractures and broken bones.

Liquid nitrogen cools the room to minus 130 degrees and then Webber was subjected to the frozen temperatures for three minutes, wearing nothing but a pair of pants, gloves and socks to avoid frostbite.

"You go from a normal, ambient room temperature into a chamber of minus 50 degrees Celsius for about 30 seconds - then for another three minutes into minus 130 degrees," said Webber.

"The effect is to stress the body, and so when entering normal room temperature again, it increases the circulation of the blood, particularly the flow around the fracture," he added. "It's very good for your general well-being, your immune system, and apparently it's good for cellulite..."

In addition to the cryotherapy, Webber has been undergoing extensive gym training and swimming to maintain his blood circulation.

Although the Australian was still limping when he first took to the wheel of the RB5 after it was launched in early February, he expects to be fully fit when he lines up at Melbourne for the opening grand prix of the year. Fortunately Red Bull's late launch date meant that he didn't miss out on any valuable testing mileage in the new car.



The iceman cometh... out of the freezer. Webber has also been training intensively in the gym

LETTERS

Honda's bad years... Sir Jackie on Zandvoort '73... and sadness for Sato

It all seems to go wrong for Honda when the year ends in an '8'. Better wait 'til 2019 before that comeback then



BEWARE OF THE YEAR THAT ENDS IN AN '8' (IF YOU'RE HONDA)

I have recently been reading the January 2006 issue of *F1 Racing*. A piece written by grand prix editor Peter Windsor highlighted a series of fascinating facts about Honda... 1968: The death of Jo Schlesser leads to their withdrawal from Formula 1; 1988: They dumped Williams for a series of less successful teams; 1998: The ill-fated prototype and plan for their own team. Surely 2008 must have been a better year?

Jerry Bruce

Las Vegas, USA

Good point, but don't forget McLaren's domination in '88 with Honda engines!

TRAGIC CIRCUMSTANCES

Jackie Stewart's safety record cannot be underestimated, but there is a stain over it: Zandvoort 1973, when Roger Williamson was tragically killed. Stewart led the field past the frantically gesticulating David Purley, who



Zandvoort 1973: Roger Williamson lost his life in this accident due to inadequate basic safety provisions at the Dutch circuit

was attempting to free Williamson, twice at low speed until it was over. Of course, it was never the drivers' job to act as marshals, but at the time the reality sometimes made it necessary.

He may be right to criticise Hamilton now, but in 1973 Stewart's stature was such that had he stopped, so would the others. This was Stewart's last F1 win and the 100th by a British driver... but at terrible cost.

Ales Norsky

North Andover, USA

We contacted Sir Jackie about the letter, and he responded as follows...

"This is quite a powerful observation, but that race should never have been allowed to continue: it was the same with Piers Courage at Zandvoort in 1970, and Jo Schlesser at Rouen in 1968. The clerk of the course should have stopped the race, which he didn't do, even though there was radio contact with the marshals.

I don't want to make excuses, but I didn't think, 'I'm winning the race, I'm not stopping.' The driver has no opportunity to make a decision of that kind because you don't know the seriousness of the accident. When you're driving through smoke and fire, you don't know if the other guy is in there. It's not the responsibility of the drivers in the race to assume whether the driver is still in the car.

David [Purley] was following this accident when it unfolded, but I wasn't there when it was still in motion, so to speak. And I don't think that the others would have stopped if I had - they would simply have assumed I'd broken down."

STAR LETTER

WHAT ABOUT TAKU?

I have just read the news of Toro Rosso's decision to snub Takuma Sato for the 2009 season, and I believe that the team have been short-sighted.

Firstly, it seems ironic that the man who made a number of outstanding passing moves over the past few years will not stand to benefit from the new overtaking-friendly regulations.

Secondly, we need to understand that this move is now depriving Japan of its most marketable commodity. Formula 1 will come to recognise that it needs Sato more than it ever realised.

Adrian King

Rushden, UK

Everybody needs a Taku, so let's keep our fingers, and arms, crossed



Many fans believe Takuma Sato's entertaining driving style would be great value with the overtaking-friendly rules

STAR PRIZE

Adrian wins an Italian leather holdall from Caracalla Bagaglio's Commemorative Motorsport Collection. For more information visit, www.cbfil.co.uk



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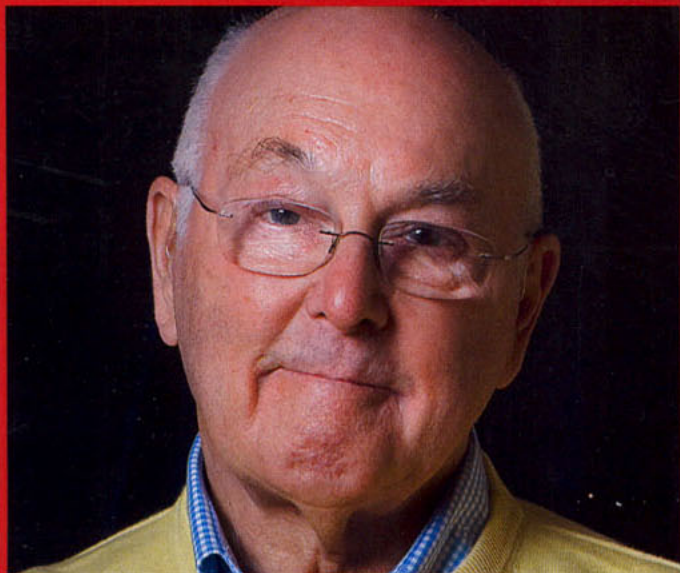
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Tocco

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PLEASE TOUCH

SAMSUNG



MURRAY WALKER

The voice of Formula 1 speaks his mind every month – only in *F1 Racing*



Murray interviews Ron at the Autosport Show in January, just before he announced he was stepping down

RON MOVES ON

"Ask me anything you like" said a tanned, relaxed and smiling Ron Dennis as he settled himself into the settee next to me at the NEC in Birmingham. It was the prestigious Watkins Lecture at the Autosport Show, and before us were some 500 people – doctors, marshals, key motorsport figures and the great Professor Sid Watkins, to whom motorsport will forever be indebted for his pioneering work on safety. I wasn't to know at the time, but it must have been one of Ron's last interviews as McLaren's team principal, for only a few days later he announced that he was handing over to his

gigantically able colleague Martin Whitmarsh, in order to concentrate on driving the McLaren Group onwards and upwards.

But where do you start with the man who has masterminded the fabled F1 team that has won 17 world championships on his watch, who is responsible for the formation and development of the eight-company McLaren Group, the superb McLaren F1 road car – which in modified form won the Le Mans 24 Hour race – and the awesome McLaren Technology Centre at Woking? Plus his recruitment of, and association with, many of the greatest personalities in the history of F1: designers John Barnard,

Gordon Murray and Adrian Newey; world champions Niki Lauda, Ayrton Senna, Alain Prost, Mika Häkkinen and Lewis Hamilton, to mention but a few. Ron can rightly be described as Britain's Enzo Ferrari although he might not like it too much if he was.

It was an enthralling 75 minutes, as he told us about his life and times – about his burning desire always to be the best at everything. "The best facilities, the best drivers, the best designers, the best people, the best sponsors." And he has been the best. He is truly a driven man, and he admits that his obsessive attention to detail and orderliness can make him a difficult person

to live with. Was it true, I asked, that he had his gravel drive at home lifted and washed every fortnight? Just one time apparently, and the story grew from that, but somehow it seems to fit the man.

His success has been down to good old management: picking the right people, giving them the right working conditions, and leading, incentivising and supervising them. He inspired loyalty and played fair with them, but it certainly hasn't been roses all the way. Coping with the mutual suspicion and dislike between Ayrton Senna and Alain Prost in 1989 and the fractious Fernando Alonso in 2007 would have tried the patience of a saint, and Juan Pablo Montoya certainly didn't fit into the McLaren mould. But how Ron and his colleagues soldiered on during the hideous days of 2007, with their endless dramas and accusations, and that obscene £50m fine, is beyond my understanding. But they lived to triumph, phoenix-like.

As you listen to Ron's riveting revelations – his philosophy, his beliefs, his remaining ambitions and his warmth for his protégé Lewis Hamilton, you appreciate the truth of his sincere conviction, and that humans are special animals – if you want something badly enough you can achieve it. "But I'm not retiring, in fact I'll be working harder than ever," he said. Who can doubt it?

I like Ron. He's always been very kind and helpful to me. I have an enormous respect and admiration for what he has done, but I'm not going to trot out the cliché of saying that he'll be sadly missed. F1 is in his blood and I know he's still going to be up there on the pitwall at the races he chooses to attend, and that he'll still be behind the scenes, calmly determined to do whatever is in his power to help McLaren beat what Tony Vandervell used to call, "Those bloody red cars."

CRAZY TOMMY BYRNE

Thinking of Ron Dennis put me in mind of a potential world champion who, in 1982, had tested very impressively for a McLaren F1 drive – but who had about as much chance of joining the team as I had. Tommy Byrne was (is) a wild Irishman who had demonstrated gigantic talent, but was also very much his own enemy. To understand his personality – which made him breathtakingly irresponsible, a non-conformist rebel and an utterly brilliant racing driver – you'll need to send £6 to Amazon and get yourself a copy of his superb biography, co-authored by Mark Hughes. But here's a personal reminiscence...

The scene is the day after the first F3 Macau Grand Prix in 1983, brilliantly won by Ayrton Senna in his Ralt Toyota. I was there to commentate for Sky TV – Tommy Byrne was competing and so were Gerhard Berger, Martin Brundle and Roberto Guerrero. On the day following the race Gary Gibson, a wild Irishman like Tommy, phoned me at my Hong Kong hotel. "Murray, the manager of

the Mandarin Hotel is a mate of mine and he's lending us the hotel's junk for the day. Want to come?" Now, the Mandarin is no ordinary hotel – it's one of the best in the world and its junk was no ordinary junk. It had been fitted with every conceivable luxury for the Mandarin's high-rolling guests, including two powerful Chrysler diesel engines, so I didn't need asking twice.

It wasn't long before Tommy and his mates were throwing people into the South China Sea and I was only saved when Gary shouted "NO! He's old." I didn't know

whether to feel glad or insulted, but was relieved to depart to do a recording. After a heavy lunch things got really lively, culminating with the Chinese captain being thrown overboard. Back at the controls and furious over his loss of face, he opened both throttles, beached the junk and stormed off. Was Tommy "Don't tell me what to do" Byrne McLaren material? I think not. And what did the Mandarin Hotel think of it all? Pass. I was on the plane by then.

This was small beer compared with the rest of Tommy's chaotic life. Get the book!

"Ron Dennis can rightly be described as Britain's answer to Enzo Ferrari"



It could only be 1982: Murray struggles with what appear to be FIA regulation shorts, as he prepares to interview Tommy Byrne

JEFF BLOXHAM/LAT; JOHN TOWNSEND/F1 PICTURES

{ WHATEVER HAPPENED TO... }



Then Amon heads to second place during the 1968 British GP in his Ferrari



CHRIS AMON

THE EX-FERRARI AND MATRA DRIVER WHO NEVER WON A RACE TURNED TO FARMING IN HIS NATIVE NEW ZEALAND

History remembers Amon as one of the unluckiest men in motor racing – the best driver never to win a world championship race.

The New Zealander was no slouch. In 1968 – the year he should have won the title driving for Ferrari – he was on the front row eight out of 11 times, and at Spa he was on pole by a clear four seconds. But a combination of accidents, poor reliability and bad luck denied him.

It was always a case of being with the wrong team at the wrong time, but you sensed it didn't concern Amon *too* much. He just loved racing and treated it as one of life's pleasures rather than a day-job.

An attempt to race his own car was not a success, and after turning down a drive with McLaren, and a second offer from Ferrari, he called it a day in 1976, returning to New Zealand and to his new life...

"I was a full-time farmer in Taupo until about six years ago, and I farmed much longer than I raced. I still have a 25-acre farm now, but I'm basically retired. Even though I grew up on a farm, I went motor racing pretty much out of school, so when I did start it was a fast learning experience.

"My father was a sheep and beef farmer, but I switched to dairy and arable. It's the old story of wanting to do something different to your dad, but the land I ended up buying was my father's 1,000 acres at favourable rates. That's big enough to hold a couple of racing circuits.

"The hours were awful. We had to milk these things at five in the morning and then again 12 hours later. It's actually not easy to

find people who will get up at that time.

"I was hands-on during the first few years of the farm, but I soon tried to divorce myself from the dairy side and get more on the arable – rather than just pulling tits, as it were. The animals were mostly Friesian, and the crops we grew were barley and wheat – but mostly maize.

"We never made a lot of money out of it to be honest, but I made a living. I was lucky being under contract to Toyota as a consultant during that time.

"We had our own combine harvesters and tractors. I used to think that the reliability of my machines was about the same as the Formula 1 cars I drove – but I had no mechanics that could fix it quickly!



Now Chris Amon worked on his 1,000-acre farm in New Zealand but is now retired

"While I've been farming the development of agricultural machinery has just been huge. We now have combine harvesters that steer themselves and can be plugged in to analyse about 50 different settings.

"I was recently chatting to John Watson about growing potatoes, but I couldn't give him any tips – it sounds like he knows what he's doing.

"I've never regretted stopping racing when I did, because I was young enough to still have enthusiasm for another career."

THE TOP TEN...

SEASON-OPENING RACES

The first GP of the F1 calendar is always very special – unless it's Phoenix...

1 ARGENTINA 15 RACES

Of the 20 races held, 15 were at the start of the season in Buenos Aires. The circuit was built under the reign of President Perón and was named El Autodromo 17 de Octubre, which was the date of Perón's accession. More recently it was modified and renamed after local racer Oscar Galvez.

2 AUSTRALIA 13 RACES

The up-coming race will mark the 13th time Australia has been the curtain raiser. Traditionally the race used to close the year at Adelaide, but when Melbourne was introduced in 1996 the country's place on the calendar was switched to the start. There's no better reason to get out of bed at 7am.

3 BRAZIL 10 RACES

In recent years, Brazil has found a comfortable slot as the venue for a championship showdown – which also happens to be at prime-time Sunday evening for European TV viewers. But in the days when Rio de Janeiro held the race, the teams loved the chance to soak up some sun after a long cold winter.



Brazil's had many slots, but soaking up the Rio sun for the season's start (here in 1986) was one of the best

4 SOUTH AFRICA 9 RACES

Back in 1968, Kyalami started the new grand prix season as early as New Year's Day – four months before round two at Jarama... The track then started the year in the spring until the early 1970s when it followed the South American double header in Argentina and Brazil. It made a brief return as the first race in 1992 and '93.

5 MONACO 5 RACES

In Argentina's absence, the Monaco Grand Prix first opened the F1 world championship in 1959 and then again intermittently throughout the early 1960s. But traditionally the race takes place in May on the Sunday that falls closest to Ascension Day, too late for a modern season-opener.

6 USA 3 RACES

In the recent past a race at Long Beach has opened the Champ Car year, but back in 1981 it hosted the first F1 race of the season. Nine seasons later F1 hit a low when the bland street circuit at Phoenix, Arizona, hosted the first two season-opening races in 1990 and '91. Few turned out to watch them.

7 SWITZERLAND 2 RACES

The sweeping, 4.2-mile Bremgarten track hosted the Swiss Grand Prix, and it opened the season in 1951 and '52. The circuit was laid out on the outskirts of Berne, but has since been lost to urban development. All motor racing was banned in Switzerland following the Le Mans tragedy in 1955.

8 BRITAIN 1 RACE

Silverstone had the honour of holding the first ever world championship grand prix back on May 13 1950. Giuseppe Farina was the victor in that first grand prix at the wheel of his Alfa Romeo 158 and was presented the winner's trophy by His Majesty King George VI.

9 HOLLAND 1 RACE

The dunes around the beach resort of Zandvoort resounded to the sounds of racing back in the spring of 1962. Graham Hill conquered all to notch up the first win in his title-winning year for BRM. During the last 59 years the winner of the season-opener went on to be champion on 30 occasions.



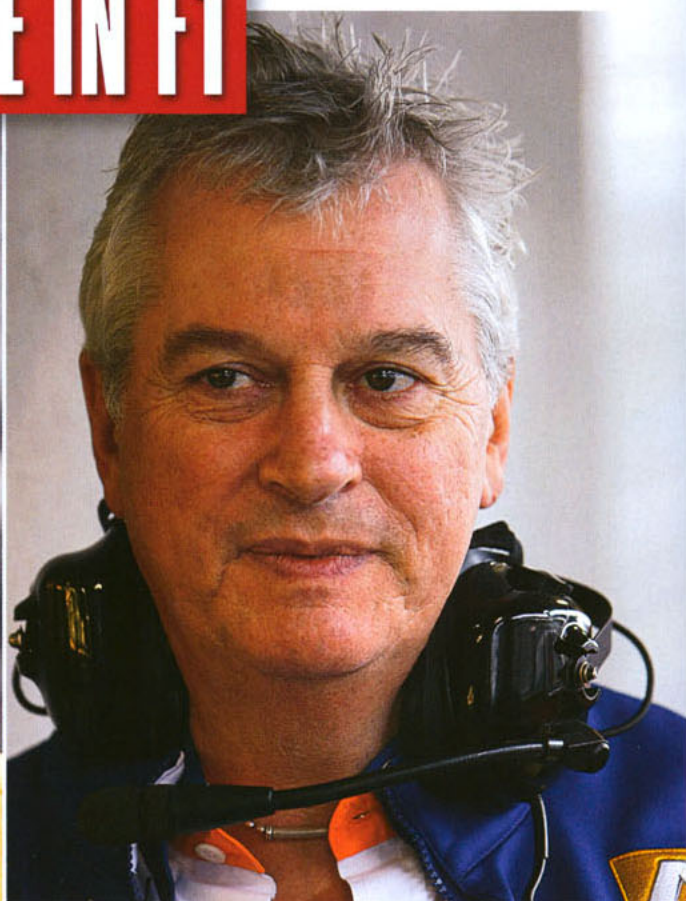
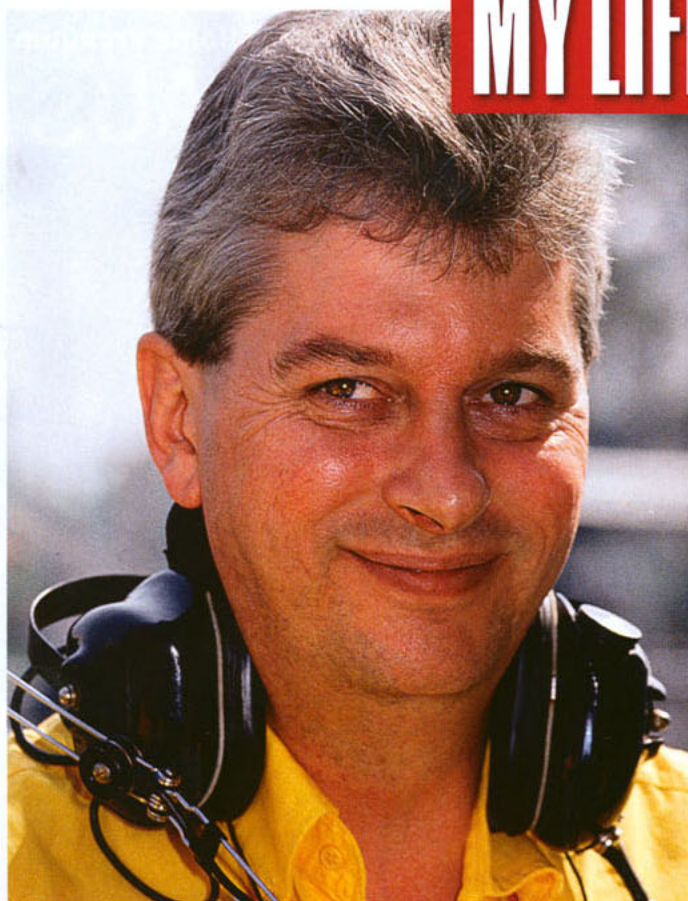
"I say, what a spiffing season-opening race victory" Graham Hill takes the win at Zandvoort in 1962

10 BAHRAIN 1 RACE

In 2006, Australian GP organisers requested its opening-race status was shifted back a month because Melbourne was busy hosting the Commonwealth Games. So Bahrain did the honours: Fernando Alonso won from Michael Schumacher, and Nico Rosberg scored two points on his debut.



Go wild for me Argentina: Carlos Reutemann takes third place at the 1975 Argentine Grand Prix



PAT SYMONDS

The Renault man loves Jean Alesi – as long as he's not anywhere near a car

ONE OF PAT Symonds' first jobs was designing Royale Formula Ford cars before moving to Toleman, first in Formula 2 and then Formula 1. And he's effectively been there ever since... Although the name and the ownership of the team has changed over time – firstly Benetton (1986-2001) and now, Renault (2002-present) – Symonds has been a vital presence.

In his guises as technical director and executive engineer at the Oxfordshire-based team he's overseen world championships with Michael Schumacher in 1994 and 1995 and a decade later with Fernando Alonso in 2005 and 2006.

And now, with more than 30 years of experience in motor racing, he reflects on his life at the sport's top table.



FAVOURITE RACE 1986 MEXICAN GRAND PRIX

"Team owner Luciano Benetton made a rare appearance at that grand prix; he was a super guy. I remember one of the organisers asking me which national anthem we should play for the winning constructor, so I asked Luciano and he said the British one. That showed what a good character he was; it was a lovely gesture. We stayed in Mexico for a few days after the race, and there were some people who were definitely in bad shape by the time they got on the plane home... I think one of them was probably Gerhard Berger!"

FAVOURITE CAR BENETTON B194

"It's easy to say a title-winning car is best, but the early B194 was fabulous. It didn't react quite so well when all the cars got neutered after Imola – and at Hockenheim, when we had to put the planks underneath and cut the diffusers – but in its first guise it was wonderful. To be honest I've loved every car I've worked on. Some have been evil – the first Toleman was pretty bad, but cars like that are like when one of your children has been bad. It doesn't stop you loving



FUNNIEST MOMENT TESTING WITH TEO FABI

"We were at Nürburgring in '85, with Teo Fabi and Roberto Moreno. They were out on the track and we made a modification to the gearbox oil system, which was a disaster. Both gearboxes broke at the same time out on the track. They'd stopped near each other and wandered back to the pits, deciding they were going to wind me up saying they'd collided out on the circuit. They absolutely had me going... I was livid. We had so little money and they were talking about how they ran into each other as they were dicing on the track. I was shouting and screaming at them!"



EARLIEST F1 MEMORY SILVERSTONE 1971

"The first F1 race I went to, I'm told, is the 1953 British GP and I was about two months old. But I remember a school trip to Silverstone for the non-championship F1 International Trophy race. That was the first time I saw Formula 1 cars. I grew up in Norfolk and used to go to Snetterton with my dad and friends. By the time I was 13 I was hooked and did everything I could to go to grands prix – I used to hitchhike to Brands Hatch and crawl under the fence, because I couldn't afford to get in. As a 13-year-old kid, if I could have thought that in 40 years time I'd actually know people like John Surtees and Jackie Stewart, and could count them as friends, I'd never have believed it."

BEST RACING MEMENTO A HYDRAULIC SEAL

"On my desk I have a piece of the Benetton B193. I have several things to remind me to keep my feet on the ground and this is a little bit that failed when we were leading Monaco [1993]. It failed because we had a procedure that wasn't as good as it should've been. I keep that piece on my desk to remind me that attention to detail matters. Michael would have won the race by miles, but at Loews the car lost its hydraulic oil from the seal failure and that was it."



FAVOURITE DRIVER JEAN ALESI

"The obvious answer to this question would be the world champions, wouldn't it... Ayrton Senna, Michael Schumacher, Fernando Alonso. But I have to say, as a person, I just love Jean Alesi. Professionally, he was one of the worst guys that I've ever worked with. If you put him anywhere near a Formula 1 car he was just a nightmare – take him out and he was just wonderful. He's a real human being; a lovely guy. He was incredibly frustrating to work with, but one of the nicest guys you could meet. One of the great things is that most of the people I've worked with, almost without exception, are nice people."

THE ULTIMATE 2009 SEASON PREVIEW

The most unpredictable racing year of all time is upon us! *F1 Racing* presents a colossal 85-page guide to F1 2009, rammed with detailed features and profiles, expert analysis and the lowdown on the all-important rule changes

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Ten ex-F1 world champions give their views on the most unpredictable season ever



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On March 29, Lewis Hamilton will line up on the grid in Melbourne as F1 world champion. Robert Kubica and Fernando Alonso, to name but two, want to make sure he won't be doing the same in 2010. As 10 former world champions exclusively help preview the new season for *F1 Racing*, they all agree on one thing: 2009 is going to be a classic...

LET BATTLE COMMENCE

WORDS BRADLEY LORD
PORTRAITS SAM BARKER

You can always trust an Aussie to tell it like it is – especially when his name's Alan Jones. "People come along once in a while that prove themselves to be absolutely fantastic talents. That's Hamilton – no matter what he's had his arse in, he's won. And at some point, that ceases to become coincidence..."

On the eve of the 2009 season, one thing says it all about Lewis Hamilton's quality: whether you love him or hate him, he's just too good to ignore. His detractors say he's had every opportunity gifted to him; that his record compares to Jacques Villeneuve

in his first two seasons of F1. Oh, and he was only one point away from being a two-time championship loser after some crass errors during 2008. On the other hand, it's impossible to explain away the impact of those remarkable first two seasons; Lewis was also only two points from becoming a double world champion. There was his first-corner, first-race pass on Alonso to signal a spectacular arrival; and there were sublime performances, such as Silverstone 2008 – one of the all-time great wet-weather drives.

The truth lies somewhere between those two extremes. "Had he not been with >

McLaren, it would have been a typical second year in F1," believes triple champion Jackie Stewart. "There were mistakes in there – and sometimes glaring. These are the things that would happen, and perhaps should happen, to an inexperienced driver. But it's got to be a painful experience for you to learn in such a way that it may never happen again."

Stewart's analysis may seem harsh, but it's typically perceptive. Hamilton was far from flawless in 2008, and more inconsistent than in his debut season. Ron Dennis has suggested we will see a calmer, more confident driver this year: "If you are a climber and you've climbed Everest, then you don't fear doing it again," he said at the McLaren launch. True, up to a point. But a climber also seeks a new challenge rather than climbing the same mountain twice. So, can Lewis re-motivate himself to challenge for another championship?

"When you break the barrier of winning a grand prix, the second win is easy, the third win even easier, and things start happening automatically," explains double world champion Emerson Fittipaldi. "It will be easier for Lewis now, because he's going into the season as world champion. He will be much more confident, and pumped to succeed again."

The question of motivation is perhaps something of a red herring. One school of thought suggests that last year he achieved what he'd been working towards for his whole career, and that he might tail off in '09. But racing drivers don't necessarily work that way: when they're karting, the good guys are focused on winning the championship they're in; if they do that repeatedly, and well enough, they eventually find themselves in F1. So in many ways, 2009 is just another championship for Lewis to tackle – as he implied when declaring he was going out to win, not to defend, the title.

So what can Hamilton change to make his life easier than it was last year? Opinions are divided. 1980 world champion Alan Jones says, "At times, he was probably trying to win the championship at the first corner – he was too over-zealous. I think he'll have learned that he doesn't have to do that, and his driving will be better because of it." 1964 champ John Surtees and Jody Scheckter (the 1979 winner) believe Hamilton's aggressive style is fundamental to his success. "He mustn't lose that competitiveness – it's what brings out the extraordinary moves," says Surtees; while Scheckter explains, "Schumacher improved a lot in his first few seasons, because he was too aggressive. I thought most of what Lewis did last year was perfect, and penalties like he received in Fuji were total bullshit."

The key to 2009 for Lewis won't be speed – he has that in spades. It's consistency, and managing the bad results so that they don't affect his outlook. Hamilton scored fewer points to win the championship in 2008 (98), than he did to lose it in 2007 (109)

– and there were more races last year. Not since 2003, when the current points system was introduced, has a champion scored fewer points: on that occasion, it was Michael Schumacher, who claimed the crown in similar scrappy fashion at Suzuka.

Nigel Mansell, winner in 1992, believes that while Hamilton won a "very lucky" title in '08, he has a unique opportunity for 2009. "He has a good chance to win it properly, outright, doesn't he? It's a great opportunity to defend a title in the manner in which he won it – a chance that I never had. So he's in a fantastic position, in a team that's less likely to be affected by the current economic climate than some others. I think he's right at the top before the season even starts."

Overall, the resounding impression from the former champions is that Hamilton will be significantly stronger than he was in 2008. "He's better prepared for 2009 because he has more experience," emphasises Jackie Stewart. "It's essential to

"Lewis mustn't lose that competitiveness – it's what brings out extraordinary moves" John Surtees

have experience before you can accumulate any real depth of knowledge. And it takes time for that to fully apply." Stewart's former rival, Fittipaldi, agrees. "More miles in grands prix will make him stronger and stronger. He's starting his third season, and he's already world champion. You could ask, how can he improve? Imagine what he's going to be like in years four and five..."

It's probably no coincidence that Fernando Alonso and Robert Kubica are such firm friends: as drivers, and characters, they are remarkably similar. Both go into 2009 as legitimate title protagonists – although both, for different reasons, have question marks hanging over them.

One man who has worked with both is the 1997 world champion Jacques Villeneuve – as team-mate to Alonso in late 2004, then with Kubica at BMW. "I told Flavio that he should sign Alonso when he was in F3000," reveals Jacques. "Fernando's an amazing racer. He's always stronger in the race than qualifying and he never gives up. Kubica is very talented but he seems to not react as well under pressure. He drove amazingly until he got a shot at the championship. Alonso is the current F1 driver I rate the most." Villeneuve is not the only one to place Alonso at the top of the pile. "Alonso is by far the most mature driver and he drives in a

very quiet, calculated and well thought-out fashion," asserts Jackie Stewart. And triple champion Niki Lauda adds, "He has the same speed as the other guys, but more experience and more brain."

The numbers show that, in the most basic terms, Alonso remains the most successful driver in F1 today: he's won more championships, and more races, than anybody else on the grid. His drive at Fuji last year was a case study in what sets the Spaniard apart: as the first stint came to a close, Alonso became the strategist who, from the cockpit, instructed his engineers to fuel him light to gain track position; Alonso the relentless competitor then took over, producing a second stint of qualifying-style laps that earned him the victory. It's questionable whether any other driver on the grid could have done the same. "I respect him a lot," enthuses double world champ in '98 and '99 Mika Häkkinen. "It's great to see him driving and fighting so hard for results. He has a true champion's attitude: the bloke just keeps on pushing, and I love it." Mansell echoes him, "He drives with his heart. He pushes the car to its limits, and I like that. I rate him very highly."

Kubica, on the other hand, doesn't yet boast a track record to match his promise. Much of that is down to circumstance – he hasn't yet driven a car with the speed to consistently challenge for the title – but it also reflects the fact that he hasn't been judged against a yardstick of proven quality. Unlike Hamilton, who wrestled with the challenge of Alonso as team-mate in his first year, Kubica can only be compared directly with Nick Heidfeld – and each has 'won' a season so far. What's more, Kubica goes into 2009 with just one win to his name – is it enough of a platform from which to mount a title challenge? "I don't think that's an overbearing negative," analyses Jackie Stewart. "From a racing driver's point of view, it's the past. He knows what it takes to win, he knows how to drive and he's got an incredible amount of natural skill. All the ingredients are there." Indeed, in recent memory, both Alonso and Häkkinen began their first title-winning seasons with just one win to their name; even Schumacher had won only twice before his first title-winning campaign in 1994.

Both Kubica and Alonso delivered the consistency that the title contenders lacked in 2008. In the second half of 2008, Alonso scored 48 points; only Massa (49) and Hamilton (50) did better, and neither of them had to drive the Renault R28. Similarly, Kubica kept himself in the title hunt with his BMW F1.08 thanks to an ability to extract the maximum from the package; late-season drives such as Valencia, or Fuji, bristled with an intelligent opportunism and tenacity that reminded people of, well, Alonso.

It's a fallacy to suggest that either man outperformed his equipment last year – their results simply highlighted how their team- ➤



In the second half of 2008 Alonso scored 48 points - just two fewer than Hamilton



mates under-performed. But it's intriguing to compare how their teams reacted.

Alonso's return galvanised Renault, and his precise, informed feedback helped focus the development push through the season; it's the kind of nurturing atmosphere in which he thrives, where the character flaws seen at McLaren are unlikely to be exposed. Kubica, on the other hand, almost found himself pulling against the team as they reached mid-season: he wanted them to push on with development of their 2008 challenger to assist his legitimate hopes of a title charge, while the team stuck rigorously to 'the plan' and diverted resources into the 2009 car. While those tensions have seemingly been smoothed over this winter, it's clear Kubica's status at BMW is subtly different to that Alonso enjoys with Renault – it could prove crucial if he finds himself in the title hunt.

Both teams also have question marks over their ability to deliver a car genuinely capable of challenging for the championship. For BMW, the reason is simply that they have never done it before. They have enjoyed a steady upswing in performance in recent years, and their decision to concentrate early on the new regulations should pay dividends. "I expect them to be a force to be reckoned with," agrees John Surtees. "They have made positive decisions about how to go racing, and they have strength in depth. This is the

Mistakes were nearly very costly for Lewis last year, as he took the title by 11 fewer points than when he was runner-up in 2007 – and there were more races in 2008

team that reminds me most of how Honda used to work when they were successful." For Renault, though, the situation is different. The talk this winter has been of squeezing even more from lean resources, after having pushed development to a very late stage in 2008; that strategy paid off with the late-season wins that bought the team some breathing space, but it's as yet unclear how this has affected their 2009 chances. Since Renault officially returned to F1 in 2002, the team has consistently finished around fourth in the championship, with the exception of the two title-winning seasons; the bold R29 will have to propel the team back to those heights to secure their future. For some, though, the situation is already clear-cut. "If the Renault goes like it looks, then Alonso's got no chance," jokes Alan Jones.

What's not in doubt is that both teams are being led by headstrong, tenacious characters who, with even a sniff of a win, are likely to be right there to pick up the pieces – even if they need to wrestle the performance from a less-than-perfect car. Kubica has been circumspect ahead of the opening race, but Alonso is bullish. "There's

one target – we need the championship. If we don't win the championship, it will be a disappointing season." For all he's extolled the power of positive thinking, it's hard to escape the thought that there's method in his outspoken statements. Credible rumours emerged during the winter that the Spaniard has already signed a Ferrari contract for 2011, and possibly 2010 if circumstances allow. Gunning openly for the title from the outset ensures that there's no wriggle room for Renault if the car's not up to scratch – and who knows what contractual clauses that might trigger? The tensions that bubble beneath the surface in both Alonso and Kubica's relationships with their teams will be carefully scrutinised as the season unfolds. They may not be decisive in terms of performance – after all, Alonso proved in 2006 and 2007 that he can fight hard even when he knows he'll be leaving a team – but they'll certainly add another layer of intrigue to a title fight.

Ranged against Hamilton, Kubica and Alonso are Ferrari – the only team that goes into 2009 with two genuine title contenders on their roster. Massa and Räikkönen both have questions to answer: can Felipe follow up last year's impressive, critic-silencing season with more of the same? And can



Kubica was frustrated by BMW's lack of car development in 2008. The relationship with his team could depend hugely on what they come up with for 2009

Kimi show he still has the hunger and commitment to be a genuine title challenger?

"Räikkönen has a lot to prove," believes Damon Hill, the 1996 champ. "He's uncommunicative and expensive, but fastest will always be forgiven. To be those things and not fastest?" That loaded question mark over Räikkönen's motivation, and by extension his future, was much debated in 2008 – but with a driver like Kimi, who by Ferrari boss Stefano Domenicali's own admission is "on a different planet", it's hard to know if anybody understood whether or not that was the cause of his inconsistency. His unwillingness to self-analyse in front of the media makes evaluating his state of mind, and performances, more of a guessing game than with any other driver.

One man who is possibly better placed to judge than most is Häkkinen. "Kimi is a superb natural talent – and capable of great performances in races that no other driver is capable of doing," believes his fellow Finn. "But you have to be on top of your game, all the time, and be a superb tool for the team. There are areas it would be easy for him to improve, and I don't understand why he doesn't go and do it. I think he understands what he would like to do – he's not the type of guy who says, 'No big deal' if he loses. So the determination is there; but you need the knowledge of how to do it, you need to go deeper and motivate the team and your allies to support you."

Alan Jones shares Häkkinen's belief that Kimi's motivation is intact. "I've got a

"If the Renault goes like it looks, then Alonso's got no chance" Alan Jones

sneaking suspicion that it's in his make-up to prove the critics wrong. He'll go out to show he deserved his world championship." The hints are there: Ferrari colleagues have alluded to the fact Kimi has lost weight this winter, which could be an oblique suggestion that he was perhaps not in peak condition last year – a symptom, perhaps, of wandering focus. Whatever it meant, it's clear that something's changed for 2009.

There is the possibility, too, that Kimi was genuinely at a loss to explain last year's lack of performance; that he felt he was trying as hard as ever, but the natural alchemy he relied on to produce his speed simply was not working. It's something Jody Scheckter experienced the year after his own title success: "I had a bad year in 1980. The car was lousy, but I had been as quick as Gilles [Villeneuve] in 1979, whereas the following year I wasn't. I felt I was trying as hard as ever, but I realised that when I woke up in ▶



Hamilton has been one of the quickest in testing in the McLaren MP4-24



Massa declared himself happy with the F60 after testing it in Bahrain



The F60 was the first new car to be launched for the coming season



Alonso believes Renault must win a title this season with the R29



This is BMW's big year, and a chance for Kubica's natural talent to shine

the middle of the night, I wasn't thinking about F1 as much as before. At the track, I felt I was doing the same things; but I wasn't putting the same amount of effort in, every minute of every day – and I didn't even know I wasn't doing it." Scheckter, of course, retired the following year; Kimi hasn't done so, with the implication that he's out there to turn things around. "He might be hungrier now," speculates Scheckter. "Once people spend a little while losing, they realise it's not as much fun as when you're winning..."

Kimi's poor performance in 2008 was, of course, relative – and magnified by the brilliance of Felipe Massa. The hints had been there in 2007, when he was still fighting for the title until Monza; but in 2008, after

"Kimi can do things that no other driver is capable of"

Mika Häkkinen

a shaky start, the Brazilian got it together – and truly led Ferrari for the first time. "He was never that good in the past," admits Niki Lauda. "But my logic is that if he has got that far, then he can definitely sustain it in 2009."

In many ways, the contrasts between Massa and Räikkönen couldn't be starker. As Häkkinen remarked, Kimi has a huge natural gift – he was born a great F1 driver, if you will. With Felipe, we've watched him make himself into a serious contender through diligent application, absorbing the lessons of his six seasons to become a top-level driver. If life is a journey of self-improvement to make the most of the talent

you've been given, Massa cannot be faulted. There is, in some quarters, a tendency to revere the 'natural' talent more, but John Surtees insists, "A manufactured talent, if it is a talent, cannot be denied. Yes, Massa has had good opportunities, but the fact remains that in many cases, people don't take them up. And he has been astute enough to do so."

Felipe would argue that he worked to engineer those opportunities. And that's the secret to understanding why Massa will be a contender again in 2009 – the fact that his performance in 2008 owed nothing to luck, and everything to the committed way in which he has transformed himself into a complete 'package'.

It would be easy to think that losing the world championship at the last in 2008 might have scarred him, but Emerson Fittipaldi disagrees. "He went through a very emotional situation, but it showed him how motor racing is. Right until the very end, you never know what can happen. He matured with that experience in Brazil, and there's no doubt he will be a big challenger." Ultimately, Massa is in the situation Hamilton was 12 months ago, having come so agonisingly close to the title. The experience only made Lewis even hungrier for success.

The key factor within Ferrari may then be who wrests control of the team in the opening races. There's no suggestion of preferential treatment – the Scuderia have successfully managed two title campaigns within the team in the last two years – but a subtle momentum establishes itself within any racing team over the year. Massa has the deeper roots in Ferrari, having been under contract to the team since 2001; Räikkönen must establish a strong relationship with his new race engineer Andrea Stella in order to get the most from the car and give himself the opportunities he needs to win.

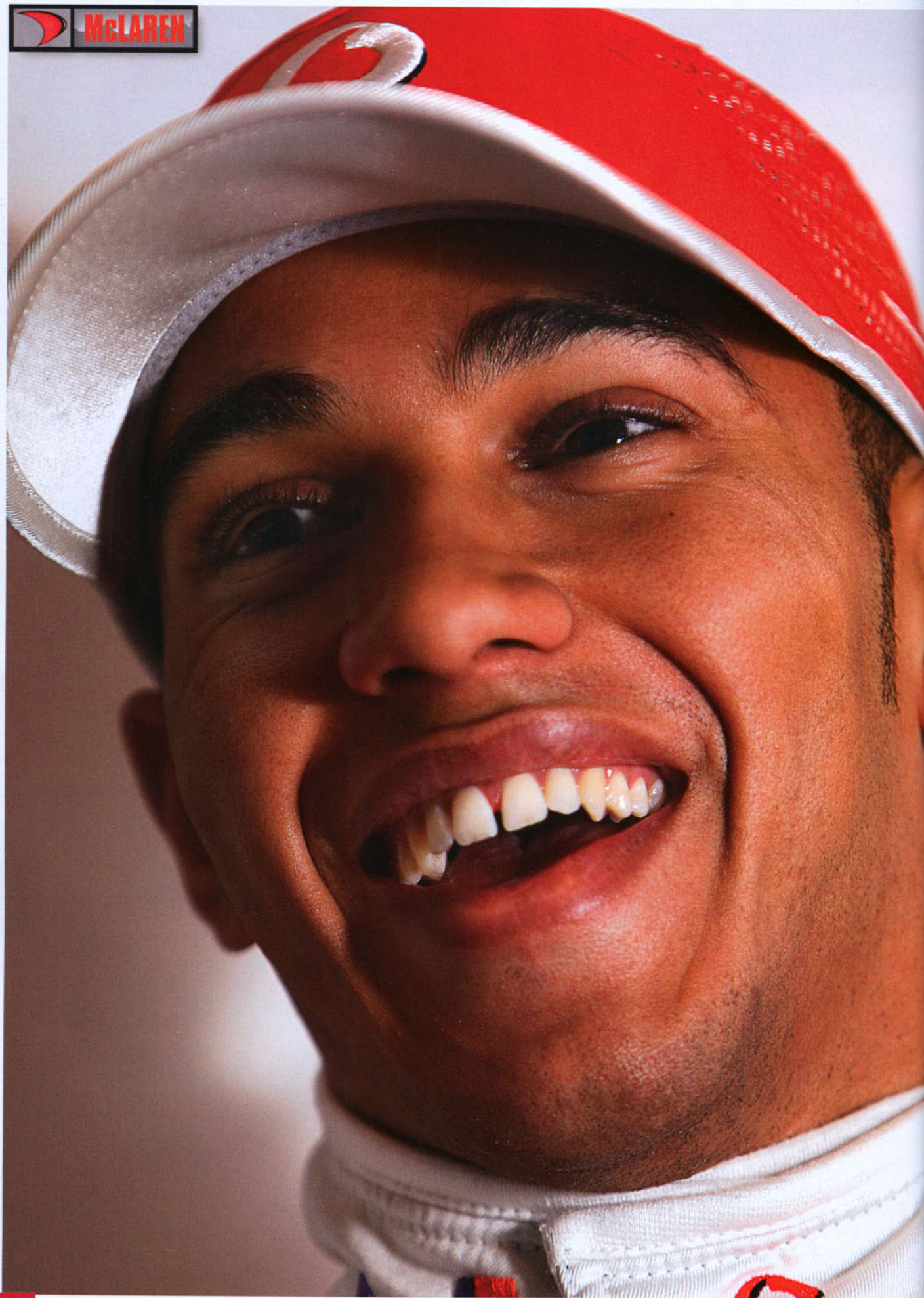
"The team gets behind the guy who's in front," believes Scheckter. "There are very few exceptions." Alan Jones agrees: "Each of them will be out to assert his superiority very early on. Räikkönen will be keen to show he's capable of doing the job; Massa will want to show it wasn't a fluke last year. It's going to be very interesting to see how those two flex their muscles..."

We know very little about what the true state of play will be in Melbourne – the regulation changes for this year are too big for anything but foolhardy speculation. The group of top drivers may yet be joined by Vettel, "One of the most level-headed, exciting drivers to appear for a number of years," according to John Surtees. Or Kovalainen, "He will be a contender for victories and pole positions," believes Häkkinen. Or another name entirely, whose team get things right and give him the necessary edge in performance to run at the front. But one thing's for sure: if Lewis Hamilton is to retain his title, it's not going to be a cakewalk. Because, as Häkkinen says, "There is no perfect driver out there."

Hope springs eternal before the start of any new season, but the chances of a surprise are greater than ever this year, and the level of competition is awesomely high. Writing about Muhammad Ali, Norman Mailer once asked rhetorically: "What else is genius but balance on the edge of the impossible?" In that question lies the real reason why we'll be on the edge of our seats early on Sunday March 29, waiting for those five red lights to go out. Waiting to see these gifted men tread the fearsomely thin line between triumph and disaster. And hoping for one of them to take our breath away by making what previously seemed impossible, come true. **F1**

ANDREW FERRARO/LAT; CHARLES COATES/LAT; XBP/CC





{ YOU ASK THE QUESTIONS }

LEWIS HAMILTON

Alonso, Ferrari, Eddie Murphy in a lift... F1's world champion is in candid mood. "I know a lot of people don't like me, but this year I really want to blow people away. They're going to *feel it*"

WORDS TOM CLARKSON PORTRAITS GLENN DUNBAR/LAT

“You'd better make this the last question, Lewis,” says the marginally stressed McLaren PR lady. The Formula 1 World Champion has been pouring through questions put to him by readers of *F1 Racing* – not easy when there's only been a 15-minute slot allocated in this global megastar's *very* busy schedule. But, as the clock shows, he's been going for nearly 40 minutes already. It's no

wonder she's getting agitated. Yet Lewis Hamilton wants to carry on. “Can't I keep going?” he smiles. “I don't want to leave anyone out.”

Detractors of Lewis Hamilton might want to note that he is currently in his ninth hour of PR activity at the McLaren Technology Centre. It's been a long old day. He's barely had time for lunch, and he's got a stinking cold. You'd forgive him for just wanting to get this interview

over and done with and get himself home to his Pussycat Doll. But there's not a bit of it: this is Lewis Hamilton at his most lucid and honest, discussing everything from Felipe Massa and that nice Nicole Scherzinger, to his hopes for 2009, his new-found friendship with rapper Queen Latifah and, ahem, chicken fajitas. Food issues aside, though, it seems that he's not going to give up his title without a fight... ▶

{ YOU ASK THE QUESTIONS }

Have you talked to Felipe Massa since the world championship showdown in Brazil?

Hector Sagues, Spain

I didn't see him after the Brazilian Grand Prix, but as a family we sent him a bunch of flowers over Christmas to say thank you for the challenge, and thank you for being such a great sportsman. The first time I actually saw him was at the FIA prize giving in December, when I received my world championship trophy.

You said after a number of the races in 2008 that they were your best ever win. So which one is your best win to date?

Anand Choksi, India

I guess your last win is always your best win. I think China '08 was a great one for me because I had lots of people against me during the build-up to the race. There was a lot of negativity around, but I stood strong and had great support from my family and won the race.

Michael Schumacher once said that he doesn't care about his records. Do you?

Yousef Faqih, Bahrain

It's not something I focus on; it's not my goal. My goal is to win races, and if you do that enough, inevitably that means you'll sometimes break records. I feel very blessed to have made some records over the last two years, and being the youngest world champion is probably the one I'm most proud of.

Every driver in F1 must believe that they are the best. Given this assumption, who do you rate as the greatest driver currently in Formula 1, aside from yourself of course!

Dana Atwood, USA

In terms of talent I would say Fernando Alonso is probably one of the best drivers that I've come across. In terms of personality and as a whole package, I would say. He's done a great job.

If you were stuck in a lift, which three people would you like to be stuck with?

Stephen Cull, Ireland

As a guy, I'd have to say I'd prefer it to be women rather than any dudes, because dudes are quite greasy, sticky and smelly people. I'd say my girlfriend

for sure. I guess I've got to be careful who else I choose. The second would be Queen Latifah. I've got to know her quite well – she's such a hilarious woman and a great actress. I think I'd make the third person Eddie Murphy. He's a great actor. He'd make us laugh.

How important is the presence of your family at grands prix? How would you react if your dad missed a race?

Geert Deschacht, Belgium

I love the fact that my family comes to all the races. Although it's work, and you don't take people to work really, they've been there since day one and this is very much a family business for us. It was always a family outing; we used to pack into the Vauxhall Cavalier and go to the track and freeze in the back of the trailer together, drinking hot soup. We travel around together now and support each other. I can always rely on



Racing is very much "a family business" for Lewis

my family. They mean everything to me. My dad has never missed a race in any formula, so he's formed the backbone of my career. He keeps me going and it's knowing that he'll be there, kicking me in the arse if I don't keep myself going. The day he misses a race will feel weird, but I'd carry him with me throughout.

Massa, Alonso, Kimi Räikkönen and Robert Kubica are all realistic challengers to your title this year. Which of them do you see being your toughest rival in 2009?

Martin Wellbelove, UK

Felipe will be strong because he's coming off the back of a stunning season, and he has Ferrari in the palm of his hand. He's definitely going to be as hungry as ever. Fernando had a strong end to last year and I expect they'll have a more competitive car this year and will be challenging for wins. Robert had a steady season last year. He was very consistent and he'll be aiming for that

again. I grew up racing with Robert and I will do everything in my power to make sure I finish ahead of him, as I've always tried to do over the years.

What is it that makes you, you?

Jon Wills, UK

I'm stubborn, competitive and passionate; I have good taste and more often than not I'm very well balanced. I'm also very honest when it comes to owning up to my mistakes. I'll be the first in every circumstance to own up to something if I think it was my mistake. The energy I get from the people around me is what makes me, me. It all adds up.

What's your favourite hobby outside motor racing?

Heath Richards, South Africa

I love all kinds of sports, but I love music and I love going to the cinema. I watch a lot of movies, and whenever I get time I go to the cinema. I'm in hotels a lot of the time, so I watch pretty much every film going. Also, my brother and I still race remote control cars. It's a good hobby and we sit out in the cold like normal people freezing our arses off. We don't get special treatment and people leave us alone. That's probably my main hobby at the moment.

If you could have a special power for the day, what would you choose and why?

Karen Hobus, UK

To be able to hear what women think in the way that Mel Gibson could in the film *What Women Want*. But you'd need to be able to switch it off, like in the film, or you'd get fed up with them talking too much!

What is the strangest thing that you have read about yourself in the press?

Claudio Pietrobelli, Canada

One strange story was when someone said I was going to take my family into space. Some dude who worked for that company must have said it to get some interest in the project, but it's rubbish.

Are you planning to go back on Top Gear and set a lap faster than The Stig in the Reasonably Priced Car?

Pierre Duval, France

I'm definitely planning to go back this year. I want to go when the weather's good because I can't understand for the



Lewis, here testing the new McLaren MP4-24, hopes the rule changes produce more overtaking



life of me why I was only 0.2secs slower than the other guys on a wet and oily circuit. What the hell were they doing? In the dry I can't believe I'd only be 0.2secs faster than last time.

What is the funniest question a fan has ever asked you?

Lucia Dimartino, Germany
Will you marry me? There's also a Japanese fan who bought me some Japanese underwear. I can't get them past my knee because they're so small.

What do you think about the new rule changes? Do you think they will improve the racing this year?

Mitchell Tattersall, Australia
I have no idea. The racing's been quite good recently and I don't have the answer as to what we can do to make it more exciting. Maybe with less aero grip and slick tyres people will make more mistakes and there will be more overtaking as a result. I hope so anyway.

What music do you play to psych yourself up for a race weekend?

Michael Cox, Australia
I don't listen to music at a race, but it's more because I need to be relaxed. If I did listen to music, it would be calming music like Marvin Gaye or Bob Marley. You can listen to those guys day in, day out. Before Melbourne last year, I watched a comedy while I was getting changed. I had my headphones on and was just laughing my head off.

Have you ever been tongue-tied or star-struck when meeting anyone. If so, who?

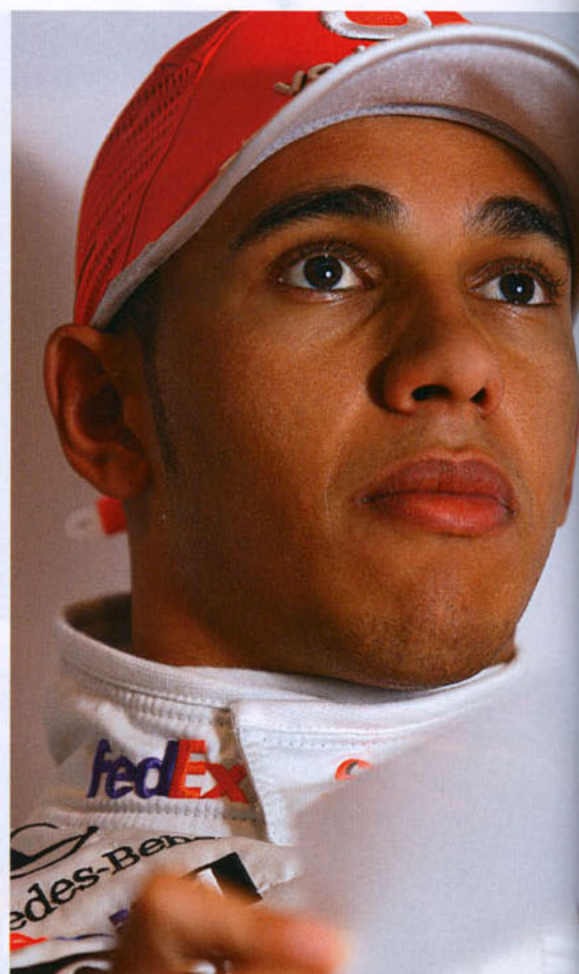
Victoria Palmer, UK
I've never really been star-struck, but I guess I've had small cases of it when I've met people. Meeting Nelson Mandela last year was very special. I wasn't star-struck, but I was in awe of him. Something changed when he walked into the room. There was a bubble around him and he welcomed you into it like a fatherly figure. It was great when I met Queen Latifah recently, because she is one of the coolest women out there. I found myself thinking, "I'm standing next to Queen Latifah!" It's very rare that I'm actually like that, but I'd probably be the same if I met Eddie Murphy.

Considering that Massa won more races than you in '08, what areas of your overall driving performance do you think need improvement?

Albert N Sansores, USA
There are always areas where you can improve, and this year I want to avoid

“My brother and I still race remote control cars. It's my main hobby”

MAIN PIC: DREW GIBSON/LAT. INSET: MARK THOMPSON/GETTY IMAGES



{ YOU ASK THE QUESTIONS }

making mistakes and I want to be more consistent and slightly less aggressive. I took too many chances last year by being too aggressive and I want to improve in that area.

What's the oddest message you have received from the pitwall while racing at McLaren?

Eli Howard, USA

Nothing comes to mind. I get so many messages, some of which I've wondered what the hell they're talking about. They sometimes laugh about the messages they receive from me. Before coming in for a pitstop, I might say something like, "Can I have one hole of front wing, please?" They really laugh when I say please at the end of each request.

You've won the championship – the ultimate goal of any racing driver. What are your new goals aside from another championship?

Ian Pestell, UK

I have many other goals to achieve, but none that are at the front of my mind right now. My main focus is F1. I want to re-focus, and I'm not approaching this year as champion; I want to go into it with a similar attitude to the one I had at the start of my second year. I want to have more wins, I want to have fewer mistakes and I want to blow people away. I've done pretty well up until now because there have been races in which I've blown people away. But I really want to knuckle down this year. They're really going to *feel* it. That's my plan.

When you're at home entertaining friends and you're in the kitchen, what is your signature dish?

Paul Andrews, UK

Good question. I live in a three-bedroom apartment in Geneva. It's great, but I haven't got all my furniture in place. I've got a beautiful dining table with loads of chairs, but the flat isn't properly finished. I've not had a house-warming party yet because I'm a perfectionist. There are still things that haven't been put up, like paintings. Once everything's in place, my signature dish will be chicken fajitas.

What do you think the pressure of defending a world title will be like? Can you handle it?

Max Paterson, UK

I'm taking a different approach. I'm not going to defend my championship, I'm

going to win the world championship. It takes that pressure off. But having won it, there won't be the pressure from the media and everyone else asking if I can do it. I've done it; you don't need to question me anymore. Without that pressure, I can be even better.

After two seasons in F1 you have had many fights and victories. But which racing season was the most difficult during your 13-year career?

Rutger Vanhee, Belgium

I can't lie. F1 is the pinnacle of motorsport, and if I said another series it would be a lie. 2007 was pretty easy because everything was new and I was a kid in this world, and I was just enjoying it. But last year was very tough



Mandela: "I've invited Alonso too - hope you don't mind"

Like Marmite, people seem to either love you or hate you. Why do you think this is?

Ebru Kucukkavruk, Turkey

Well, I'm involved in a sport that is fortunate to have massively passionate fans, and people tend to support the driver from their country. For example: Brazil and Felipe, the atmosphere was crazy because everyone was so excited to see him. I am lucky to have the same at Silverstone. People get really passionate about it. I know I've got a lot of people that don't particularly like me, but there are also people who are there supporting me. You just have to rise above it because everyone's entitled to his or her own opinion. I don't particularly like Marmite either.

Would you like to have driven in the '80s against the likes of Ayrton Senna, Alain Prost, Nigel Mansell and Nelson Piquet? And who would have won?

Garry Robinson, UK

I'd never compare myself to Ayrton Senna. He was the best driver there ever

was. I think the '80s was a great era of F1 and I'd like to have driven in around '85, the time I was born. My favourite car from that era has to be the '88 McLaren – the MP4/4. That was pretty cool.

When people say things like "Hamilton is the best ever," do you think they're crazy, or they're right – using the evidence of the last two seasons?

Jesse Friszell, USA

You can't ever say someone's the best ever. Muhammad Ali was the best ever because, back in the day, he *was* the best ever. He's the one that stays in your mind and you don't believe anyone could be better than him. For me, I'm going to continue to work hard to ensure that maybe one day, when you ask that question to me, I can't tell you, 'No.'

How do you think the British press would have reacted to you had you not passed Timo Glock in Brazil?

Vito Fava, Denmark

They'd have come down on me like a ton of bricks, and I'd have done the same.

You and your dad have such a great relationship. Do you ever see a time when you both feel it right for him to step back and for you to have an independent manager?

Harry Tangye, UK

My dad does an incredible job. It's very much a family business because my step-mum takes care of certain things; I've got my trainer, with whom I spend pretty much every day; his wife is my PA, so we're a very close-knit unit. In life you pick up people, but it makes no sense for me to go and hire people and pay them to look after me when my dad enjoys doing it and he's done a phenomenal job until now. We've come this far together and to tell him to step down would be disrespectful. I'd never do that. Blood is definitely thicker than water. None of the other drivers can trust their managers like I can trust mine, because he makes choices for the right reasons.

Have you ever taken your dad for a spin in a two-seater F1 car?

Sheila Barton, UK

No, but I tell you what – I'd love to! **FO**

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Want to put a question to an F1 star? Visit www.f1racing.co.uk and join the Reader Panel. We'll let you know which interviews are coming up

**McLAREN****CARS 1 AND 2****McLAREN MP4-24 POWERED BY MERCEDES-BENZ FO 108W**

MCLAREN

Lewis will want to retain his title, but taking the constructors' trophy back to Woking will require more consistency from Heikki Kovalainen

"THE GREAT FALLACY is that the game is first and last about winning. It is nothing of the kind. The game is about glory, it is about doing things in style and with a flourish."

The words are from Tottenham legend Danny Blanchflower, but they could as well be applied to Lewis Hamilton's approach to F1. Hamilton is the kind of sportsman who doesn't know when he's beaten. He wants to win every lap, and that's what makes him so compelling – a magnet for both drama and melodrama. On some days, like Silverstone last year, his instincts produce drives of sublime genius; on others – say, Fuji 2008 – they lead him to make rash moves that call into question his judgement. All of it further

feeds the hullabaloo that surrounds the sport's most high-profile driver.

Strange as it seems to say of a world champion, there are still question marks hanging over Hamilton. Firstly, can he recover the kind of consistency he showed in 2007? Like any champion, he teases the limits of the rules with his driving, but he too often fell foul of the stewards in 2008 – improving his understanding of how those calls are made would make his life easier. While in 2008 his performance peaks were undoubtedly higher than in 2007, he also plumbed lower depths – see Canada for proof. Ironing out that inconsistency will be crucial in the face of a sustained title

challenge from a relentless rival such as Robert Kubica or Fernando Alonso.

Secondly, there's the question of his temperament under pressure. How will Lewis react if results don't go his way in the early races? In 2008, he showed signs of fraying nerves at the French Grand Prix when things weren't working for him, or after the 'red mist' moments of Fuji. He hasn't yet dealt with the challenge of sorting out an indifferent car, either, and when it happens, as it inevitably will at some point in his career, his ability to pull the team along with him will be put into sharp focus. Whether 2009 will prove to be that year, only time will tell.

McLaren have produced consecutive title-challenging, driveable cars – suggesting the 'good year, bad year' inconsistency of the recent past has been ironed out of their design structure. While the team is losing

Strange as it seems to say of a champion, there are question marks over Hamilton



MEET THE TEAM

TEAM HISTORY

Founded 1963
First GP Monaco 1966
GPs started 648
Wins 162
Poles 141
Fastest laps 136
Constructors' points 3,779.5
Constructors' titles 8
Drivers' titles 12

DRIVER CAR 1

LEWIS HAMILTON
Born January 7 1985
Place of birth Stevenage, England
Lives Switzerland
Status Single
Height 1.74m
Weight 68kg
Race engineer Phil Prew
Airbox camera colour Red
Website www.lewishamilton.com



F1 HISTORY

Debut Australia 2007
GPs started 35
Wins 9 **Poles** 13
Fastest laps 3
Points 207
2008 position 1st



TEAM PRINCIPAL MARTIN WHITMARSH



Ron Dennis has handed the team principal reins to **Martin Whitmarsh**, while **Norbert Haug** continues to lead Mercedes-Benz. Trackside, old hands **Dave Ryan** (sporting director) and **Pat Fry** (chief engineer for MP4-24) will ensure the team are again one of the sport's slickest

CHAMPIONSHIP POINTS SINCE 2004

2004 69pts (5th)
2005 182pts (2nd)
2006 110pts (3rd)
2007 0pts (11th)*
2008 151pts (2nd)
 *disqualified

DRIVER CAR 2

HEIKKI KOVALAINEN
Born October 19 1981
Place of birth Suomussalmi
Lives Switzerland
Status Single
Height 1.72m
Weight 66kg
Race engineer Mark Slade
Airbox camera colour Yellow
Website www.heikkikovalainen.net



F1 HISTORY

Debut Australia 2007
GPs started 35
Wins 1 **Poles** 1
Fastest laps 2
Points 83
2008 position 7th



VP MERCEDES MOTORSPORT NORBERT HAUG



FAST FACTS



APART FROM 2007, McLaren have had a Finnish driver in their team every year since 1994. Heikki Kovalainen is the fourth Finn to drive for the team

SINCE HIS switch to car racing Lewis Hamilton has never finished lower than fifth in a championship

HEIKKI KOVALAINEN was one of the only two drivers (Felipe Massa was the other) to qualify in the top 10 in every race in 2008

BY BEARING 22 on his car Lewis Hamilton was the highest numbered world champion since Ayrton Senna triumphed with 27 on his car in 1990

IN HIS TWO seasons in F1 Lewis Hamilton has yet to finish in two points-scoring positions – sixth and eighth

PRIOR TO THE return of slicks this season McLaren won the last race using them, with Mika Häkkinen claiming the European GP at Jerez in 1997

LEWIS HAMILTON and Heikki Kovalainen are the only team-mates to have made their F1 debut at the same race (Australia 2007), albeit with different teams.

HEIKKI KOVALAINEN is the only current F1 driver to have won the Race Of Champions outright

LEWIS HAMILTON has led 65.7 per cent of the F1 races he has competed in (23 out of 35) – the best percentage on the current grid

LEWIS HAMILTON'S record as the youngest ever F1 world champion could be beaten by Sebastian Vettel or Sébastien Buemi in 2009 or 2010, and Buemi in 2011 or 2012 at a push

MCLAREN ARE the only current constructor to have won the Indianapolis 500, triumphing three times in 1972, 1974 and 1976



Ron Dennis's iconic presence on the pitwall, the planned transition of power should have little impact on the team's trackside operations. What's more, KERS is exactly the kind of innovative challenge McLaren thrive on. The project is on time and running the package with Force India will add vital development miles. But there are potential pitfalls: the team pushed development until the final race of last year – was it at the expense of 2009? They say not, and that the new car has enjoyed 18 months of design work and optimisation.

This season, McLaren's goals will be two-fold: helping Hamilton retain his title and mounting a sustained challenge for the constructors' crown. It will rankle that the title of 'best team' in 2008 went to Ferrari, and the key to avoiding a repeat will be to ensure that Heikki Kovalainen is able to perform to his maximum more often. Part of that responsibility rests with the Finn, who was sometimes lacklustre in 2008. But the team needs to help him help himself. Too often, he had to qualify with several laps more fuel than Hamilton – and paid the price in the critical opening stint. A more supple, and subtle, approach to race strategy will be important in allowing Kovalainen to race regularly at the front of the field – and play the tactical role the team seek of him.

McLaren's chrome MP4-24 looks even more sleek now that aero additions have been banned

THE INSIDE STORY OF F1'S MOST IMPORTANT TEST... EVER

With testing outlawed after Australia, Ferrari had fewer than 20 days to prepare their title defence - then a sandstorm blew into Bahrain. This is how the world champions coped...

WORDS BRADLEY LORD
PICTURES CALLO

The face of Ferrari chief mechanic Francesco Uguzzoni is deep in concentration. "These are important times. We have to be ready to run every morning when the track opens. We have to run as many miles as possible. If we don't do them, we've lost part of the testing we wanted to do before Australia. We're under pressure, and for good reason."

Uguzzoni speaks patiently in his deep voice, but he'd prefer to be fettling the shiny Ferrari F60 sat in the garage a few metres away. That's not necessary just now though, because the circuit's closed and the red lights are on. We're in the heart of the most important F1 pre-season in decades, and Ferrari have been tripped up by an unexpected sandstorm. "There's not much you can do," grimaces team manager Luca Baldisserra. Frustrating? You bet it is.

Every odyssey comprises challenges that must be overcome to prove the hero's worthiness and Ferrari's testing trip to Bahrain is no exception to that rule. The job list for the first race of 2009 is probably the

most extensive any F1 team has ever had to face. It's a direct consequence of the much-discussed new rules and the need to simultaneously understand how to get the most out of the radically different aero package and slick tyres, plus make the KERS

system race worthy - all in the space of fewer than 20 days' pre-season testing.

"These are certainly the most important winter tests since I've been involved in F1," agrees Ferrari's newly promoted chief engineer, Chris Dyer - the man who guided both Michael Schumacher and Kimi Räikkönen to world championship success. "The combination of the rule changes and testing restrictions, means that every day is very, very critical at the moment."

Ferrari, and all the other teams, have effectively been given an impossible equation to solve ahead of the new F1 season. They have more work to do, lots more work, and less time in which to get it done. Plus the ▶







deadline of the first race is, to all intents and purposes, final: in 2009, no testing will be allowed (aside from the odd day for evaluating young drivers or aero testing) between the start of the season and December 31. The obvious answer to doing more, quicker, is to say 'work harder'. But what do you do when you're an F1 team that already pushes everything to the limit?

"It's made things more complicated," continues Chris Dyer. "In the past, with more time, you had the luxury of working on things independently. Now, we're trying as many things as we can, without compromising the individual programme for each item too much."

Anybody who paid attention in their school chemistry lessons knows that to carry

If Ferrari don't do more than 300 miles a day this winter, it's been a bad one

out an effective experiment, you only change one variable at a time; the challenge for this winter is to change four or five things, without compromising the accuracy of the end result. "It's a matter of finding things that are compatible to go on the car at the same time, in such a way that the effects don't get confused," explains Dyer. "We can't afford to sit down and say, 'Today's about tyres, tomorrow's about KERS, the day after's about aero.' We have to come up with a programme so we can work through them concurrently."

Every team's number one priority when they begin testing a new car is to do lots of laps. It's a winter cliché when a harassed-looking technical boffin announces, 'We're not looking at performance yet,' but to some extent at least it's true. In order to understand and improve a car, you first have to be certain the thing's not going to break down every five laps. Teams need to run their engines up to their expected mileage limits, of around 900 miles, test their four-race gearboxes can cope with the strain and make sure that every part on the chassis will be fit for purpose over a full race distance.

Once that baseline has been established, and a good basic set-up found, they then begin working on simple set-up changes to improve the handling, and evaluate the car's responses to them. For all the simulation and modelling that's been done back at the factory, nothing can replace this practical engineering, as driver and engineer start building their mental databases about the

Ferrari came to test at Bahrain's Sakhir circuit to get away from unpredictable weather in Europe - then this happened



Felipe Massa checks telemetry with race engineers Rob Smedley (middle) and Giuliano Salvi



Mechanics work calmly yet urgently on the car - every minute the F1's not on track is a minute lost



Massa heads out on another 12-lap blast around Sakhir



Ferrari take around 50 people to a test, many of whom spend time studying the endless telemetry

car, and working out what they need to do to make the thing quick.

This phase is the bread-and-butter of any winter testing programme and nothing is more important – not even KERS, nor adjustable front wing flaps. If Ferrari don't complete more than 300 miles each day this winter, it's been a bad one; they're aiming for around two complete race distances (approximately 400 miles) per day. To do that, the car needs to be Formula 1's equivalent of a Duracell bunny.

It's a gruelling schedule for the team – mechanics, engineers, even the drivers. And it's why, even though this winter's job list of new items to test is even longer than usual, the team cannot compromise its rigorous standards of preparation; the risk

of losing mileage is just too great.

"Nothing goes on the car until we're confident it's got a reasonable chance of working," continues Dyer. "Even though the workload has gone up this winter, and the track time has gone down, it doesn't mean we can throw new parts on the car that we're not prepared for. In fact, even less so, because we can't afford to have problems during the day and stop running. You just miss too much time."

Formula 1 lives and dies by fractions of a second; the relentless pressure of the clock is omnipresent. When it's ticking, and the cars aren't running, every minute that passes is a minute lost; a tiny compromise introduced into the team's level of preparation for the opening race.



A lone Ferrari F60 sits in the oversized Bahraini garages. Unmolested by mechanics, it's a thing of beauty – elegant in its simplicity, deft and subtle in its enforced ungainliness. Looking at it, one fancies that it simply has to be fast.

"For me, the new car is perhaps the most emotional moment of the season. And it usually comes at Christmas time, too, so you can compare it a little bit to that," explains Francesco Uguzzoni as he gazes at his new baby. "When you see the design and how it goes together, you can perhaps understand a little bit of whether it will be quick. Certainly, you know pretty quickly how hard it's going to be to work on..."

It sounds like an expression more suited to Kwik Fit but 'service intervals' matter in F1. The quicker the mechanics can complete basic operations, like spring changes, ride-height alterations or ballast moves, the more time the drivers can spend out on track learning about the thing. The new breed of cars appear more simplistic, but is their appearance deceptive?

"Some things are more complicated,

"It's the most important winter since I've been in F1" Chris Dyer

some a bit easier," says Uguzzoni. "When a part is designed with freedom, they take account of the fact we need to service the car quickly. But in many cases, the regulations mean the designers can't do things in the simplest way, so certain jobs take us longer."

When running eventually begins, it's striking how fast everybody works in the garage: there are no scrutineers observing, no fans or cameras watching, but the commitment is every bit the equal of that at a race weekend. Ferrari bring approximately 50 people to a test, and most of them seem to crowd around the car as it returns to the garage, all working with an urgency that shows nobody underestimates this winter's challenges – but equally with a calm that indicates everything's under control. Every mechanic wears a pair of thick rubber gloves; even when KERS isn't running, it's part of the standard operating procedure to ensure nobody forgets them at a more critical moment. And they all wait for the aural starting gun – a radio message saying, "You can touch the car" – before getting to work.

In the midst of this peaceful frenzy, Felipe Massa sits in his cockpit discussing a telemetry printout with his two race engineers, Rob Smedley and Giuliano Salvi, huddled around the cockpit. The mood is industrious but happy: Massa's long runs ▶



The sands of time are running out: Kimi Räikkönen rallies back into the pits. Below: with new race engineer Andrea Stella

have been consistent, and they're making solid progress with the set-up. Then the impromptu conference is over, the tyres are back on and Felipe's gone; calm reigns once more and the mechanics wander away from the garage, smiling and sharing a joke as Massa begins a 12-lap run. Rob Smedley cuts a solitary figure in the garage, scrutinising the real-time telemetry on screen. And the pits fall quiet once more as the serious



"I know that if we get the testing wrong, it's finished" Francesco Uguzzoni

business of winter testing continues.

It carries on like this. And on, and on, for nine nearly uninterrupted hours each day – when the weather plays ball, at least. But work in F1 is like an iceberg: what you see above the waterline, out on track, is only a fraction of what's really there.

"At a race, the most running we do is on Friday – a total of three hours," concurs Uguzzoni. "Here, we run from 8am to 5pm and we're always changing things through the day, to keep putting miles on the car. It's all so we can take parts to the races that are fully ready. But it means we spend many hours servicing the car, because we do so much running in one day. Often, we work until the small hours of the morning. And in the first winter tests, we have a nightshift."

It feels almost impertinent to ask the chief mechanic of the great Scuderia whether testing ever gets, well, a bit boring? What's the reward for doing a good job in near-total obscurity? Uguzzoni stares intently as he answers: "I've been at the track for 15 years and I know that if we don't do this job

properly, then nothing happens. Doing it well means that perhaps, during the season, you'll have a chance to win. But if you get this wrong, it's finished."

In many ways, watching testing this winter is like seeing a dying art expire before your eyes. The days of dedicated F1 test teams are over: up and down the pitlane, they're either being disbanded or the personnel 'reassigned'. These are some of the most important tests ever seen in the sport, but they're also the last we're going to see for another 12 months. The old game of bluff, double-bluff and misinformation will become seasonal – an annual component of the sport's pre-season hype rather than an on-going subtext.

It also means that this winter's tests are something of a training ground for how the teams will work at race weekends this season, when Fridays will provide the only real opportunity to conduct on-track car development. Preparing for a race while

simultaneously evaluating new parts will be critical if a team is to maintain its competitiveness over the season.

"All the teams are going to be using Friday to evaluate development items much more than they did in the past," reveals Dyer. "Those items won't be on the car the day after – they may appear at the next race, or even later. It's going to be an interesting juggling act, trying to find the right trade-off between the time spent developing the car, and time spent preparing for that weekend's grand prix."

For now, though, the phoney war continues. Massa's gold Maserati Quattroporte stands proudly in the middle of the paddock as he pounds around the circuit; an assertive aside that somehow reinforces the Brazilian's growing stature. And his team continues its methodical approach to the season ahead: ignoring the wild speculation over pace, crunching their numbers and cryptically pronouncing the relative speed of the different cars to be "interesting". The lap-times at this stage mean everything, yet nothing. "We need to understand compared to the others," concludes Luca Baldisserrri. "Toyota and BMW are good teams, but we need to run with McLaren to really see where we are."

In the weeks ahead, Ferrari will agonise over where to test, fret about weather forecasts and do everything within their power to maximise track time. But all the while, the clock will tick on. As they run, or as they wait for the weather to clear, the pressure ratchets up another notch. Every lap becomes that bit more important, every glitch that bit more annoying. And Melbourne inevitably, inexorably, will draw closer. Signor Uguzzoni is absolutely right: these are important times indeed. **FO**

**FERRARI****CARS 3 AND 4****FERRARI F60 POWERED BY FERRARI 056**

FERRARI

They've got the strongest driver line-up in F1. And if their new car can live up to expectations, 2009 could be a very good year for Ferrari...

TWO CONCURRENT scenes epitomise the 2008 Formula 1 season, one played out in front of a record-breaking global television audience, the other behind closed doors in a man's home: Felipe Massa, red-eyed but dignified after the Brazilian GP, having found that winning flawlessly from pole position is sometimes still not quite enough; and Ferrari President Luca di Montezemolo, having watched that crucial grand prix unfold thousands of miles away, furiously putting his foot through his plasma screen TV. Passion and performance, ecstatic highs and searing lows: more than any other team, Ferrari are what Formula 1 is all about.

Ferrari had a championship-winning car in 2008 and Massa could so easily be cruising into '09 bearing the number '1' on his car. But at times, both the F2008 and the team's operations seemed curiously vulnerable. The

If the Ferrari F60 is more to his liking, we may see the Kimi magic finally return

car was much gentler on its tyres than its main rival, McLaren's MP4-23, but when temperatures dipped below the optimum for a given compound, it was unable to generate sufficient grip. This was demonstrated most graphically by Massa spinning five times in the wet at Silverstone. And on occasion, Ferrari's pitcrew weren't at the top of their game, releasing drivers before the fuel-hose was uncoupled – which memorably cost Massa victory in Singapore. The recruitment of the talented Massimo Rivola from Toro Rosso should bring more consistency to this area of operations in '09.

Massa swiftly forged a reputation as an accident-magnet when he burst on to the F1 scene in 2002. He's spent the majority of the intervening years dismissing those first impressions until only one significant question remains about his ability: is he only at his best when leading from the front? In Australia last year he showed that things can still get scrappy when he's on the back foot; but still, he had fewer 'off-days' than Lewis Hamilton in '08 and would have been a worthy world champion. His sportsmanship and gravitas during the emotional post-race tumult of Brazil were examples many of his peers ought to take note of.

On the other side of the garage matters are tougher to assess. Chris Dyer has moved to a

MEET THE TEAM

TEAM HISTORY

Founded 1929
First GP Monaco 1950
GPs started 776
Wins 209
Poles 203
Fastest laps 218
Constructors' points 4,023.5
Constructors' titles 16
Drivers' titles 15

CHAMPIONSHIP

POINTS SINCE 2004
2004 262pts (1st)
2005 100pts (3rd)
2006 201pts (2nd)
2007 204pts (1st)
2008 172pts (1st)

DRIVER CAR 3

KIMI RÄIKKÖNEN
Born October 17 1979
Place of birth Espoo, Finland
Lives Switzerland
Status Married
Height 1.75m
Weight 62kg
Race engineer Andrea Stella
Airbox camera colour Red
Website www.kimiraikkonen.com



F1 HISTORY

Debut Australia 2001
GPs started 138
Wins 17 **Poles** 16
Fastest laps 35
Points 531
2008 position 3rd



DRIVER CAR 4

FELIPE MASSA
Born April 25 1981
Place of birth São Paulo, Brazil
Lives Monaco
Status Married
Height 1.66m
Weight 59kg
Race engineer Rob Smedley
Airbox camera colour Yellow
Website www.felipemassa.com



F1 HISTORY

Debut Australia 2002
GPs started 105
Wins 11 **Poles** 15
Fastest laps 11
Points 298
2008 position 2nd



TEAM PRINCIPAL

STEFANO DOMENICALI



TEAM MANAGER

LUCA BALDISSERRI



Affable team principal **Stefano Domenicali** remains top dog, and tech director **Aldo Costa's** team should again produce a top-drawer car. Trackside operations will be boosted by new sporting director **Massimo Rivola**, allowing **Luca Baldisserri** to re-focus on his engineering and strategy duties

FAST FACTS



FERRARI WON the 2008 constructors' championship with the lowest number of points (172) since 2003, when they won with 158 points

FERRARI LED more races, 13, for more laps, 541, than any other team in the 2008 season

KIMI RÄIKKÖNEN managed 10 fastest laps in 2008, more than the rest of the grid put together

FERRARI HAVE won two of the last three constructors' championships when the year has ended in a 9. McLaren won the other

ON THE Forbes Celebrity 100 list in 2008 Kimi Räikkönen was placed as the fifth highest-paid sportsman behind Tiger Woods, David Beckham, Michael Jordan and Phil Mickelson

WORLD RALLY CHAMPION Marcus Grönholm and former F1 driver JJ Lehto were also born in Espoo, Kimi Räikkönen's birthplace

FELIPE MASSA'S worst grid position of 2008 was P9. Every other driver started from lower down at some point

FERRARI HAVE won 116 races since Enzo Ferrari's death, as opposed to the 93 wins they managed whilst the Old Man was alive

CUSTOM MOTORBIKE manufacturer Walz Hardcore Cycles have built Kimi two bespoke bikes, Iceman 1 and 2

FERRARI PRESIDENT Luca di Montezemolo is the only non-driver to win the Lorenzo Bandini Trophy, presented to an outstanding figure from the world of racing – an award he received in 1997

FELIPE MASSA'S favourite actor is Robert de Niro



"Er, it's still got the barcode on it..." Massa puts the new Ferrari F60 through its paces

senior trackside role and handed Kimi's race engineering duties to Andrea Stella. Ferrari have prided themselves on promoting talent from within, yet it's symptomatic of Kimi Räikkönen's patchy 2008 form that this news was greeted with a flurry of rumours that Dyer and the '07 champ had fallen out.

Kimi is an enigma, a man seemingly marooned on an island of his own indifference. After Lewis Hamilton rear-ended him at the Canadian GP, Kimi coolly patted Hamilton on the back, gestured towards his eyes and at the still-blinking light, then sloped off without a word on the matter. His past team-mates speak with a mixture of envy and awe at the way he manages to drive so quickly without putting any effort into technical details. Räikkönen detests understeer, a trait Ferrari have worked hard to eliminate from the '09 car. If the F60 proves more to his liking we may see the Kimi magic finally return. It may be aligned with a new work ethic: he's trained hard and lost weight over the winter.

As the most successful team of the past decade, Ferrari certainly have the strength in depth to adapt to the 2009 changes. They hit the track early to iron out reliability issues and the F60 has already shown some ingenious interpretations of the new rules. Expect it to be a formidable front-runner.



THE CONTENDER

IN THE WHITE
CORNER SITS
ROBERT KUBICA
– AND HIS SIGHTS
ARE SET FIRMLY ON
LEWIS HAMILTON'S
WORLD TITLE

WORDS JAMES ROBERTS PORTRAITS SAM BARKER

There's commotion coming from behind the closed doors of garage number 29. Inside, Robert Kubica is on his knees in the middle of a makeshift boxing ring, fists clenched, roaring like a bear. The atmosphere is hushed, the onlookers' expressions tense. Then Robert starts to laugh.

As he picks himself up off the floor, the first thing you notice is that Kubica has presence. He's a tall bloke, to the point of being intimidating as he stoops over you. And as he talks, even his impeccably polite manners can't disguise the steely, sharp determination that lies inside. It's day two of his 2009 season, at a cold, crisp Valencia where he's been putting miles on the brand new BMW Sauber F1.09. His mood, even after hamming it up for the cameras, is jovial and relaxed – an indication already of the team's bullish optimism that their new car can challenge for the world championship.

Kubica leans against the garage wall, and his broad face lights up when he gets the chance to explain his enormous admiration for 'precision sports', such as snooker or darts. But his angular features constantly betray a subtle hint of the aggression that characterises his whole approach to Formula 1. In 2008, he confirmed his status as one of the sport's elite, took his first win and still railed against his team's poor development rate costing him a shot at the championship. But in 2009, his time may have come. If you were Lewis or Kimi, you'd be checking your mirrors by now, searching out the urgent style of that white BMW. Because the overriding impression is that Robert's ready to get his hands on the title... >

Are you ready, mentally and physically, to win the championship this year?

I'm not saying this will be my year, but I will be giving everything I can, 100 per cent, to make it possible for it to be my year. In 2008 the first half of the season was good for us, we won our first race, and after seven races I was leading the drivers' championship...

Were you surprised by that?

Not really. I was surprised to be on the front row in Australia, but slowly we lost ground, and that didn't help. Unfortunately we missed third place in the drivers' championship in the last race, so this year we want to do better. The team are aiming very high and everybody is working in the same direction. I think if everybody gives the maximum we can achieve some good results.

Last year BMW shifted focus away from the 2008 car to concentrate on the F1.09, which you were unhappy about. Did you discuss it with them?

I don't think there was a lot to discuss. Of course we had meetings reviewing last season, but I will concentrate on this year. Sometimes it's very difficult to understand some situations but everybody has different views, so I accept it.

Who will be your closest title challenger? Lewis? Fernando?

I think it might be too early to say. This season there are many teams who would like to win; McLaren and Ferrari are nearly guaranteed to be fighting for the championship. I think Renault will come back strong and Toyota are expecting quite a lot. We want to achieve our targets too. Many teams are aiming very high and with a big regulation change, you have to be lucky to get things right straightaway.

Lewis Hamilton says you're one of the drivers he respects the most. Do you feel the same about him?

I've known Lewis for a long time. I know what he can do in a racing car. For a weekend we were F3 team-mates at Manor together at Macau. It was not a surprise when he entered F1 and I openly said that he would be very competitive. And he was. He has shown he can win championships, and for sure he is going to try and win it again. I think it's easier if you are defending the title because everything is working well at the team. It doesn't matter if we want to win, we have to be better than all the others – this is our goal.

Do you expect the new rules to throw up any surprises this year?

[smiles] I'm expecting Force India to do well.

Is he joking, or not? Kubica is a renowned poker player and the smile might be a double-bluff. Still, he's got a point. The new aerodynamic regulations, the return of slick tyres and the arrival of KERS are huge

regulatory upheavals for the teams to grapple with. There's no doubt the changes have added a level of unpredictability, making Melbourne the most eagerly awaited grand prix in years... and BMW are hoping they have developed the best car to finish the opening weekend on top.

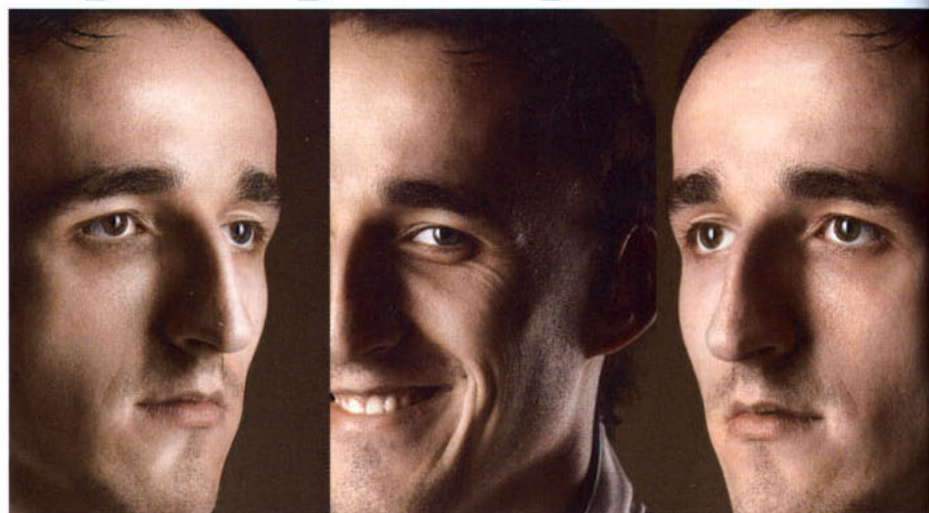
It's not impossible. Halfway through last season the Munich-Hinwil outfit made the decision to shift resources to 2009, which riled Kubica, who felt it diluted his efforts to challenge for last year's title. Yet the good humour he displayed at Valencia makes you wonder whether BMW's decision has been vindicated. Out on the track, with reduced aero and grippier slick tyres, the

that he's happy to be back on slicks, so this is the right way to go. The new wings have cut downforce by 40 to 50 per cent, but in the dry you get some grip back from the tyres. The wet tyres are the same as last year, so it will be much more difficult in wet conditions.

This year the front wing has a movable flap that can be adjusted twice by the driver over the course of one lap. Do you think it will make a difference?

To be honest, I don't think the front wing will be a particularly powerful tool to play with during the race. It might be helpful if you get some graining or some balance problems – you can help solve those while driving.

“Teams are aiming high with the changes, but you'd be lucky to get it right straightaway”



car is naturally going to suit an aggressive racer like Kubica. The only problem is that he doesn't think the new rules will have the desired effect...

How did it feel when you drove the F1.09 for the first time?

It was quite difficult to judge because the condition of the track was poor with little rubber on it. It would have helped if 10 or 15 cars were out there. With the new aerodynamics there are a few new feelings for the driver, but overall the car is responding well to the set-up changes and the evaluations we're doing. This season it's a big change for everyone – from the designers at the factory to the engineers at the track – so it's a big challenge.

Does it feel good to be driving on slick tyres again?

Yeah, of course. I think that grooved tyres were a bit strange. Every driver would say

The power boost from KERS is also activated by a button on the steering wheel – will there be too much for a driver to concentrate on?

At the moment we're developing KERS and there are many different settings as the team is evaluating different options. So at the moment there is a lot of button action while driving, and I have to look down to see what button to press and see what's going on. It's quite complicated, but once the season starts it'll become automatic.

Do you think that the ban on testing during the season will hinder teams this year?

Yeah, from the very first race in Australia until the end of the year there is a complete ban on testing, so it will be very important to get things right in the factory before. The windtunnel simulations need to be totally accurate to ensure that any new bit on the car is delivering on the track, because the ▶





"I could easily take Ricky Hatton - he's only about this tall"

first time that we'll be using them will be at the race - it's something that could be quite risky for any team.

One of the objectives of the new rules is to increase overtaking - do you believe they will achieve that?

I'm not expecting the picture to be changed so much this year. By introducing the new rules it was hoped to make a better show, but the problem of overtaking is in a different area - not in the aerodynamics or the tyres, but the braking zone, which is very short. The

new rules will make the cars wider apart, so if you get stuck behind cars, at least you've now got a chance to overtake. KERS might help you, but only if the guy in front doesn't have it. You might have some advantage then, but I'm not expecting F1 to suddenly become like karting. I don't think the new rules will be the key to changing Formula 1.

What was your reaction when you saw these weird-looking new cars?

Ten years ago, when I was a kid, F1 represented high technology... technology

not even from this planet. Looking at these new cars - this is not high technology. I don't know if this is the right way to go. I find the front wing too wide, and for racing it won't help. We want to have close racing, wheel-to-wheel, and if you have a single-seater car that has a wider front wing than the front wheels, you will not get closer racing. You'll lose a front wing very easily - I'm sure teams will be producing more front wings than normal. My crash in Canada [2007] was caused when the front wing touched another car, went under the wheels and I had no control. All the drivers will have to look out.

What about a bumper on the front of the car, like go-karts have?

That would be good!

He smiles. Kubica loves his karts, and over the winter has established a new karting team. With the lack of testing this year, it's the best training to keep a driver sharp, fit ▶

"The new front wings are too wide, and I don't think they will help improve the racing"

“I really like darts, and other sports where you have to be very precise”

and focused. Robert's happy to don a pair of oily overalls and pound around a kart track all day. There's no doubt that, despite the glamour of F1, the Krakow man keeps his feet on the ground. He's one of the guys; he plays poker, loves tenpin bowling and respects snooker champion Ronnie O'Sullivan. But did he hear that O'Sullivan broke his cue to psych himself up prior to winning a recent tournament?

“No, really?” says Kubica in amazement. “Sometimes I want to hit my car... I did try playing snooker, but it's too difficult. You need a lot of time to train and you need a passion for it. It's crazy how players keep up their concentration for such a long time – it's incredible what they do.”

It's refreshing to hear from an athlete – who's primed for the intense physical demands of Formula 1 – praising the skills of sports that you or I might play in a pub after a couple of pints. So on that theme, has he ever tried darts?

“I've tried it, but I'm not so good. If I train then maybe I could compete in the women's championship... Actually, I watched the world championship a couple of months ago. I really like sports where there is a lot of action and you have to be really precise. The champions of darts, bowling or snooker are all clever and have to be very stable mentally to keep up the concentration.”

It's then suggested there should be an *F1 Racing* end-of-year mini-tournament featuring disciplines such as darts, snooker and bowling, in a pub of Kubica's choosing. And would you believe it, he's up for it! “With no testing this year, I have a chance to train...” Right, Builders' Arms it is then.

Of course, you wouldn't expect anything less from Robert Kubica. There's no way that he would enter a competition without preparing for it. What would be the point of facing an opponent if you're not ready to defeat them? And the same is true for his world championship campaign this year. He is ready, he's psyched up and there will be no stopping him. The only real question is whether he'll take to the oche and the green baize later this year as a Formula 1 world champion. **FO**

The gloves are on – well, one. Despite the new regulations Kubica doesn't think the racing will change that much



**BMW SAUBER****CARS 5 AND 6****BMW SAUBER F1.09 POWERED BY BMW P86/9**

BMW SAUBER

Their plan is to win a world championship in 2009. Ominously for their rivals, BMW have hit every target they've ever set themselves in F1...

IT SEEMS THAT LOW-KEY has become the buzzword of F1 in 2009, as BMW Sauber's launch at Valencia in mid-January mirrored those of their rivals. A blue tarpaulin was pulled off the F1.09 by Robert Kubica and Nick Heidfeld, a photograph or two was taken, and then testing of the new car began in earnest. It was a disciplined, efficient and effective launch. And the Swiss-German team will be aiming to replicate those same attributes in the forthcoming season.

So far BMW have hit all the goals they've set out to achieve. Points in their first season? Yes, 36 of them. Podiums the year after? Yup, two. Better yet, they were second in the constructors' championship.

And last year the breakthrough win came when Kubica beat his team-mate Heidfeld at the Canadian GP. So the target for 2009

is a world championship... And with every box ticked so far, it isn't inconceivable that BMW might tick that one too. "We're aware that we are aiming extremely high," says team boss Mario Theissen (a doctor and a professor, no less). "But this is the final step in our plan, and it will be the hardest one."

After their triumph at Montreal last June, the team took the decision to concentrate resources on 2009, because of the need to steal a march on their rivals in getting to grips with the raft of changes in the regulations (including new aerodynamics, slick tyres and the introduction of KERS). That decision ruffled Kubica's feathers as, with seven podiums throughout '08, he was still a potential championship challenger heading into the latter stages of the season. But there was to be no deviation from the

programme: wins in 2008, world title in 2009. That was the plan and BMW were sticking to it. Here's hoping that his initial pounding around Valencia in the F1.09 has convinced him that it was the right decision.

BMW were one of the first teams to run KERS on-track but in July last year it turned into a high-profile concern when a mechanic was electrocuted after touching a car fitted with the system. Since that early introduction team boss Mario Theissen, along with head of powertrain Markus Duesmann, have conceded that their lithium-ion-battery KERS might not be ready for the season-opener and that the decision to use it would be taken on a race-by-race basis. BMW were determined that KERS would remain part of the 2009 regulations in spite of opposition from some quarters, but they are still weighing up any potential performance gain against the increased risk of unreliability.

**"We're aiming high, but this is the final step in our plan."
Mario Theissen**



BMW hope to bag themselves a title, part of their long-term plan

Despite the cost, BMW's budget last year was a third of what they were spending in 2005 as engine suppliers to Williams. And further budget cuts will be introduced this year and next, partly due to regulations and partly because of internal efficiency. But there were a couple of gaps on the new car, notably where Crédit Suisse and Dell once appeared. Theissen said that while this season's budget was safe, they were looking to fill those spaces. "When we started at the end of 2005, most sponsors came on board for three years. Some of them have renewed, others not," he said. "We are looking for new sponsors as usual, but the current economic climate affects not only F1 but sponsors too, and it's more difficult to convince a potential sponsor of the need to go to F1."

It's probably easier to convince investors if their names are appearing on a car which is winning every other weekend, and that's what BMW have to do if they are to fulfil Theissen's ambitious aim. If they do notch up a title in 2009 – and to do so, they will need both drivers performing to the level of consistent front-runners, something they failed to achieve in the past two seasons – then it would be a remarkable achievement; the perfect case study of how to enter F1 with a plan and conquer it. In a disciplined, efficient and effective manner, of course.

MEET THE TEAM

TEAM HISTORY

Founded 2006
First GP Bahrain 2006
GPs started 53
Wins 1
Poles 1
Fastest laps 2
Constructors' points 272
Constructors' titles 0
Drivers' titles 0

CHAMPIONSHIP POINTS SINCE 2004

2004 34pts (6th)*
2005 20pts (8th)*
2006 36pts (5th)
2007 101pts (2nd)
2008 135pts (3rd)
 *as Sauber

DRIVER CAR 5

ROBERT KUBICA
Born December 7 1984
Place of birth Krakow, Poland
Lives Krakow, Poland
Status Single
Height 1.84m
Weight 72kg
Race engineer Antonio Cuquerella
Airbox camera colour Red
Website www.robertkubica.pl



F1 HISTORY

Debut Hungary 2006
GPs started 40
Wins 1 **Poles** 1
Fastest laps 0
Points 120
2008 position 4th



DRIVER CAR 6

NICK HEIDFELD
Born May 10 1977
Place of birth Mönchengladbach
Lives Stäfa, Switzerland
Status Engaged
Height 1.67m
Weight 61kg
Race engineer Giampaolo Dall'Ara
Airbox camera colour Yellow
Website www.nickheidfeld.com



F1 HISTORY

Debut Australia 2000
GPs started 150
Wins 0 **Poles** 1
Fastest laps 2
Points 200
2008 position 6th



MOTORSPORT DIRECTOR MARIO THEISSEN



Team boss **Mario Theissen** has impressed F1 observers with his leadership of this title-hopeful team. **Walter Riedl** (MD) has marshalled the technical troops, developing the concepts devised by former TD **Willy Rampf**, who will also head up race engineering activities in his new role as technical co-ordinator

TECHNICAL CO-ORDINATOR WILLY RAMPF



FAST FACTS



BMW EQUALLED Ferrari's 2004 record in 2008 by only retiring twice in 36 starts. This was when Robert Kubica had an accident in Australia and a spin in Britain

BY COMPLETING 6,694 race miles in total last season BMW's two cars set a new record in the modern era of grand prix racing

NICK HEIDFELD HAS the most second places (seven) in F1 history without a win

ROBERT KUBICA has yet to finish an Australian GP

THE BRAZILIAN Grand Prix was Nick Heidfeld's 28th consecutive race in which he was officially classified – an all time F1 record

ONE OF ROBERT Kubica's sporting heroes is triple world snooker champion Ronnie 'The Rocket' O'Sullivan



NICK HEIDFELD IS the last person to drive a modern day F1 car around the Nürburgring's Nordschleife. He managed a best of 8mins 34secs in three laps in an F1.06 in April 2007

ROBERT KUBICA IS the current Polish Sports Personality Of The Year – the first motor racing recipient of the award since speedway ace Tomasz Gollob won in 1999

THE TEAM'S one-two in Canada last year was the first time both drivers were on the podium together

NICK HEIDFELD has started every race for BMW Sauber since the team bought Sauber for the 2006 season

NICK HEIDFELD'S only pole position was at the Nürburgring in 2005

HOW TO DESIGN AN F1 LIVERY

You need 45 hours of painting and over 60 stickers to prepare an F1 chassis for the outside world. Getting it all right even makes the car a bit faster. Renault open their doors to explain why...

WORDS TOM CLARKSON PICTURES ANDY TIPPING & LORENZO BELLANCA/LAT

As makeovers go, this is a good one. A Renault R29 chassis enters the building as a black carbon fibre shell; it leaves 45 hours later emblazoned in a vibrant mix of white, yellow and orange paint. Trinny and Susannah would approve.

Presentation is all-important in Formula 1, so the emphasis placed on a car's livery – the contact point between a team, its sponsors and the global television audience – cannot be overstated. It's the head around which a team's identity hangs and sponsorship deals are sold. Hours of work go into the design of each colour scheme as a result.

"We started working on our 2009 livery in February of last year," says Jon Woods, Renault F1's head of graphics. "We wanted it to work with the smoother lines of the '09 car, so we settled on the colours of the flame – red, yellow and orange – and removed the blue, which has been present in our liveries for many years. I was in the design offices of Renault in Paris when we hit upon the final livery last summer."

That design was then refined and taken to title sponsor ING for approval (they loved it), at which point it was ready to become a reality in the paint shops of the Brick Kiln Racing Group. Given the emphasis placed upon presentation, it's ironic that the R29 has to be taken from Renault's high-tech Whiteways Technical Centre in Enstone to have the finishing touches applied at a former brickworks in rural Oxfordshire. But the level of expertise at Brick Kiln is palpable: while the R29 is being worked on in one building, a Williams FW31 is being painted in another – and a Force India VJM02 in another. The company works with half of the teams on the grid, either through its paint shops or

composites department. It has painted every Renault (nee Benetton) since 1988.

When the chassis arrives at Brick Kiln, a team of three guys descends upon it. All of them have previously worked for F1 teams, so they understand the importance of teamwork and meeting deadlines. During the build-up to the new season, they think

Dust particles can upset the aero by two thousandths of a second per lap

nothing of completing 120 hours of overtime a month – a regular occurrence when a chassis comes in for an unscheduled re-spray after being damaged during testing.

Ten people work in what's dubbed the Renault Building and those who aren't working on R29 chassis 003 are painting show cars, wings, headrests and pit garage panels. Everyone knows the painting procedure intimately, having completed a total of 21 chassis (the same one can come back as many as five times during the season), 42 noses, 344 nose shims and 87 headrests for the race team alone in 2008. Add the team's 65 show cars, pit garage tool chests, pit garage panels and Paddock Club panels, and you begin to appreciate the scale of the job.

"We work for several different teams," says Hamish Wood, a director at Brick ▶



The paint shop guys tape up every single nook and cranny, before 'stopper' is applied to fill the tiny weave of the carbon fibre

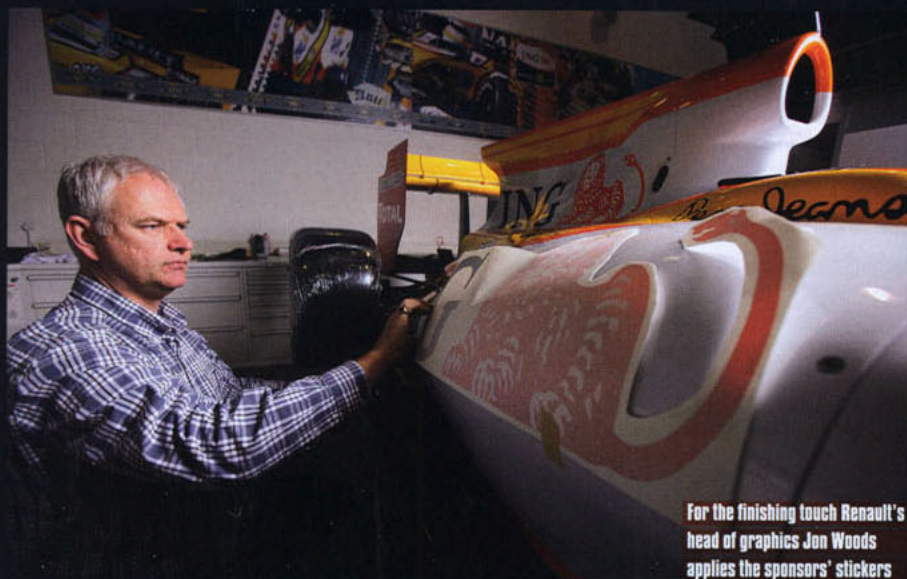


On goes the white base coat, and then the complex stenciling for the colour scheme layout (right)





On goes the yellow coat before the stenciling is removed, revealing yet another fine finish



For the finishing touch Renault's head of graphics Jon Woods applies the sponsors' stickers



Kiln, "but we understand the confidential nature of this business, and for that reason we place our guys in specific teams. No-one working on the R29 can see the Williams FW31, for example; we keep the projects completely separate."

Job number one is to cover with masking tape the areas of the chassis that aren't going to be painted. When the cockpit, fuel cell hole, sidepods and airbox have been covered, the remaining surfaces are cleaned and de-greased. Cleanliness is a recurring theme throughout the painting process because the size of dirt particles gets exaggerated under a layer of paint and can upset the car's aerodynamics by as much as two thousandths of a second per lap. As a result, the chassis is confined to the 'dust extraction area' throughout its stay at Brick Kiln, except when it's actually being painted in one of the building's four giant ovens.

Once clean and grease-free, the chassis is covered in 'stopper', which fills in the tiny weaves in the carbon fibre and smooths over the various joints. After drying, any excess stopper is rubbed off to minimise the weight added to the chassis and two coats of liquid polyester primer are applied to remove any remaining defects. This is sprayed on with a gun, and again all excess primer is rubbed away to save weight.

The first coat of paint to be applied is the white base coat. This is done in the controlled environment of a giant oven, where the temperature is kept at a constant 25 degrees to ensure the optimum consistency of the paint. The solvent fumes are extracted from the oven by a number of huge fans, for which Brick Kiln were required to seek a special exemption from the local authorities.

To minimise the impact of the paint on aerodynamics and weight, each coat is wafer-thin – just 60 microns in depth. It dries in 20 minutes, which is when the stencil work is done to ascertain the precise layout of the colour scheme. The measurements are taken from a template generated after the first '09 livery was completed at the beginning of January under the watchful eye of Renault's head of graphics, Jon Woods. The stencil work done, the remaining base coats are applied, first orange and then yellow.

The job's far from over, however, because there are three clear layers still to be applied. These give the base coats the va-va-voom that makes them stand out on television, and help to give better colour definition. The first coat is gold pearl, which gives the paint what's known in the biz as a 'quality lustre'. Next up are one and a half coats of clear varnish, onto which a full gloss finish is applied last of all.

"We switched to base coat and clear, as opposed to solid colours, in 2002," says Hamish Wood. "It gives a much

better finish and helps to save weight, because we're very conscious that each pot of paint weighs one kilo."

At this point, the delivery driver starts warming his van because it's almost time to return the chassis to Enstone. But before the R29 can leave the building, it has to pass through the polishing and finishing department, where all the lines and bumps are rubbed out by hand. It's a labour-intensive process, but one that's vital in the name of perfection.

The chassis is then wrapped in a protective cloth and transported back to Renault HQ, where it's placed in a race bay and has its extremities – the nose, front and rear wings, engine cover and sidepods – attached. It's now ready for the final bit of the livery process: the sponsors' logos.

In total, there are 67 stickers on the car this year, all of which are produced by Thake Signs in Reading, at a cost of £350 per set. They're laid out on a tool chest according to size, ready for Jon Woods to apply them to the car.

There are 67 sponsor stickers on each Renault, which cost £350 a set



"Before the start of the season," says Woods, "I'll produce a 'sticker bible' for the race team. It will provide them with all the necessary measurements and information to position the logos in exactly the right places. Until I've done that, however, I have to apply them because I'm one of the few people who knows where they go."

He starts with the smallest logos – Total, Bridgestone, Mutua Madrileña, Pepe Jeans

– and applies the bigger ING stickers at the end. But there's no defined order; no strict protocol like in the paint shop.

"The reason I'm applying the ING logos to the sidepods last of all," says Jon, "is down to a change that we're making to the size of the letters. The sidepod of the R29 isn't as curved as last year, so there's no need to distort the letters like we did in '08. We're waiting for a new set of ING logos to arrive, which has all the letters the same size."

The cleaner look of this year's cars has had a positive effect on the sponsors' logos, both in terms of size and visibility. The lack of winglets and chimneys on the sidepods has allowed the ING logo to increase from 700mm to 1100mm, and the more upright rear wing makes the Renault logo more visible, even though it's narrower.

"There are a few things that I'm very proud of with this livery," says Woods. "We've managed to bring all the speed lines together – the red, yellow and orange – while respecting the corporate identities of our major backers. ING want their logo only on a white background, which we've managed, and it's the first time since Renault bought the team that we've managed to have their branding consistently black-on-yellow."

The most complex stickers to apply are those belonging to ING on the top surface of the cockpit, where there are various holes giving access to the inside of the cockpit. To make the sticker fit, and to help it cope with the rough edges surrounding each hole, it's warmed with a heat gun to make it more malleable. This is far and away the most

time-consuming aspect, taking five hours.

The new ING stickers arrive on schedule and, much to Jon's relief, the bigger letters look great on the sidepods. The makeover is complete; R29, chassis 003, is ready.

Almost immediately, a team of Renault mechanics swarm into sight to begin prepping the car for the upcoming test session at Jerez. "It looks lovely," says one. "Now let's see what she can do." **FO**

**RENAULT****CARS 7 AND 8****RENAULT R29 POWERED BY RENAULT RS27**

RENAULT

With Flavio Briatore and Fernando Alonso still pulling the strings, this could be a comeback year for 2008's most improved team

FOR ALL HIS BRAVADO and love of the Eurotrash lifestyle, Flavio Briatore remains one of the shrewdest political animals in the pitlane. He's mates with the sport's main powerbrokers (Bernie and Max); he's respected by the other team bosses ("Never underestimate Flavio," says Frank Williams) and he knows how to manage drivers (Fernando Alonso is happy). For as long as Flavio's at the helm, Renault basically know that everything will pan out okay.

His most recent political masterstroke took place in November when he got the unanimous agreement of the other teams to allow Renault to improve their V8 engine over the winter. The R28 had finished the

2008 season as one of the fastest cars, but that wasn't enough for Flavio; he wanted more performance, and he got it in the form of an extra 30bhp for 2009.

Engine parity with their main rivals should give Renault the impetus needed to be genuine title challengers this year, as they were in 2005 and '06. The initial goal must be to continue where the team left off at the end of 2008, when Ferrari were the only team to outscore Renault in the last six races, and Alonso scored back-to-back wins in Singapore and Japan. The turnaround in performance by season's end was remarkable and proved that the team's technical capabilities – with their new CFD facility and

supercomputer – are still top drawer, as are the brains of the people operating them. But it's hard to say whether the development push in 2008 has impinged on this year's programme, even if technical chiefs have repeatedly said that they have the resources to develop two cars simultaneously.

In one respect, history is already repeating itself, because this year's R29 failed a mandatory FIA crash test at the beginning of January, as did the R25 prior to its victorious 2005 campaign. But rather than sending shockwaves of panic through Enstone, news of the latest failure was greeted by wry smiles. The extra man-hours required to reinforce the chassis would be unfortunate, but the failure provided proof of how hard the team was pushing the boundaries with the new car. The unconventional-looking R29 won't win any beauty contests, but is clearly the result of bold thinking, and its

**“When you have Alonso in your car, there's no excuses”
Flavio Briatore**

MEET THE TEAM

TEAM HISTORY

Founded 1977
First GP Britain 1977
GPs started 245
Wins 35
Poles 50
Fastest laps 27
Constructors' points 1,056
Constructors' titles 2
Drivers' titles 2

CHAMPIONSHIP POINTS SINCE 2004

2004 105pts (3rd)
2005 191pts (1st)
2006 206pts (1st)
2007 51pts (3rd)
2008 80pts (4th)

DRIVER CAR 7

FERNANDO ALONSO

Born July 29 1981
Place of birth Oviedo, Spain
Lives Switzerland
Status Married
Height 1.71m
Weight 68kg
Race engineer David Greenwood
Airbox camera colour Red
Website www.fernandoalonso.com

DRIVER CAR 8

NELSON PIQUET

Born July 25 1985
Place of birth Heidelberg, Germany
Lives England
Status Single
Height 1.77m
Weight 70kg
Race engineer Phil Charles
Airbox camera colour Yellow
Website www.npiquet.com



F1 HISTORY

Debut Australia 2001
GPs started 121
Wins 21 **Poles** 17
Fastest laps 11
Points 551
2008 position 5th



F1 HISTORY

Debut Australia 2008
GPs started 18
Wins 0 **Poles** 0
Fastest laps 0
Points 19
2008 position 12th



TEAM PRINCIPAL FLAVIO BRIATORE



ENGINEERING CHIEF PAT SYMONDS



Team principal **Flavio Briatore's** enthusiasm has been renewed by FOTA's cost-cutting mission but he will expect a good performance from his team. Tech boss **Bob Bell** is responsible for car design, while **Pat Symonds** will oversee chief engineer **Alan Permane** and his team of engineers at the track

FAST FACTS



FERNANDO ALONSO was the only driver to out-qualify his team-mate in all 18 races in 2008

NELSON PIQUET is the 12th and latest son of a GP driver to follow in their fathers' footsteps

FERNANDO ALONSO has led more laps in grands prix (1,221) than any other current driver

WHEN TEAM PRINCIPAL Flavio Briatore married Elisabetta Gregoraci last season Jean Alesi drove the bridal car

RENAULT SCORED only two one-two wins in their history as a team, in France in 1982 and Malaysia in 2006

ON THE NINE occasions he finished a race in 2008 Nelson Piquet always improved on his grid position

RENAULT WON the Laureus world Team Of The Year in 2006 beating Barcelona, Liverpool and New Zealand's rugby union team to the honour. They are the only F1 team to win the award

NELSON PIQUET was born in Heidelberg, Germany, the former headquarters of American military forces in Europe

IN 2007 Fernando Alonso became the second driver, after Michael Schumacher, to score over 100 points in three consecutive seasons

FERNANDO ALONSO is the only Spanish driver ever to win a Formula 1 grand prix

2008 WAS THE first year since his debut season with Minardi, back in 2001, that Fernando Alonso has not started a race from pole



The Renault R28: now that's going to take some getting used to

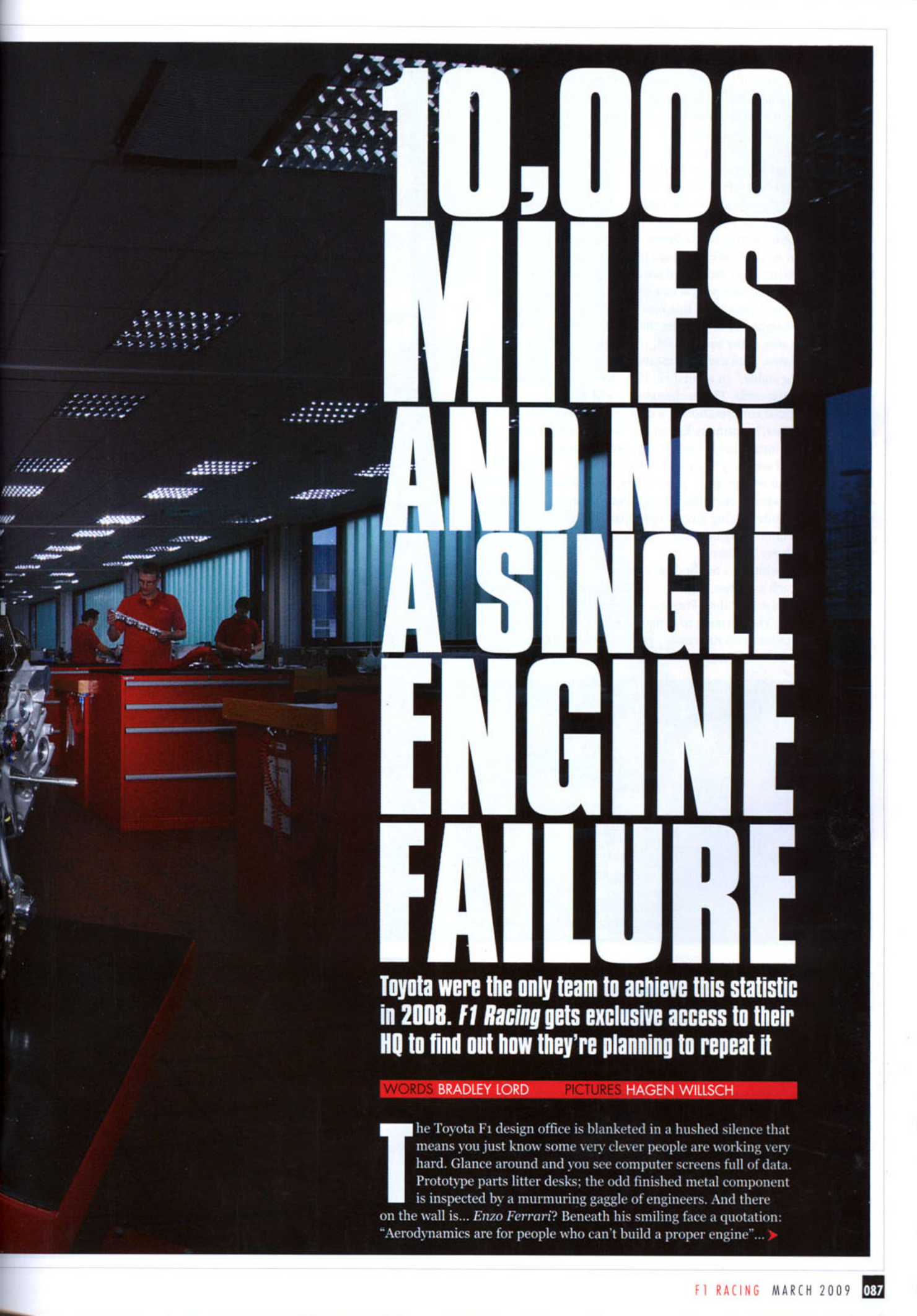
performance has to live up to its promising windtunnel results to give Renault breathing space. They have come under increasing financial pressure from the parent company, and are beginning the hunt for a new title sponsor (not an easy thing to do in the current climate) after ING announced they were pulling out at the end of 2009.

There are no doubts about Alonso. As an all-round package, he remains the best driver in F1: over one lap he's as quick as anyone, but he remains peerless when it comes to race pace. Many believe that had Fernando still been at McLaren last year, his consistency would have seen him wrap up the world title earlier than the final race.

"When you have Alonso in one of your cars, there are no excuses," says Briatore. "We cannot blame the driver if we don't succeed." Fernando's experience will help Renault get maximum value from each test prior to Melbourne and that will be crucial given the in-season testing ban.

As for Nelson Piquet, the jury's still out. He showed flashes of ability in 2008, but he was prone to buckling under pressure at key moments, most notably in qualifying. It's not easy being Alonso's team-mate, nor is it easy carrying the Piquet name, but the young Brazilian needs to deliver more to remain in F1 beyond the end of this year.





10,000 MILES AND NOT A SINGLE ENGINE FAILURE

Toyota were the only team to achieve this statistic in 2008. *F1 Racing* gets exclusive access to their HQ to find out how they're planning to repeat it

WORDS BRADLEY LORD

PICTURES HAGEN WILLSCH

The Toyota F1 design office is blanketed in a hushed silence that means you just know some very clever people are working very hard. Glance around and you see computer screens full of data. Prototype parts litter desks; the odd finished metal component is inspected by a murmuring gaggle of engineers. And there on the wall is... *Enzo Ferrari*? Beneath his smiling face a quotation: "Aerodynamics are for people who can't build a proper engine"... >

Since 2007, when engine homologation rules were introduced to Formula 1, 'performance development' has been outlawed. There have been a few crafty reliability modifications that also brought with them performance benefits. There has been some griping between teams about rivals not respecting the 'spirit' of the regulations – as if that ever mattered before. But to all intents and purposes, the development facilities have been mothballed, costs cut and the engineers left twiddling their thumbs. Haven't they?

"Performance is only part of the engine's contribution in an F1 car," explains Toyota's F1 engine boss Yoshiaki Kinoshita – his eyes coming alive as he warms to his theme. "Having an engine that means you can run without a mileage restriction at the second and third races; having good functional parameters like engine and oil temperatures, so the aero people can be extreme in their designs; achieving good stiffness; all of this means the chance to have a quicker car. Imagine you're walking the wrong way on an escalator. If you want to stay at the same point, you have to work. When you stop, you go down. That's what it means when we talk about the engines staying stable." In a nutshell: if you're not moving forwards, you're going backwards. The unchanging law of F1.

"We had official confirmation of a change in regulations at the start of November," continues Kinoshita. "To change parts for 2009 we had to work immediately, but the amount of changes we could do in this period was very limited. The easy thing would have been to drop down the engine usage parameters, with lower gearshift revs or lower temperatures. As usual, though, our target was to extend the life without introducing any compromises in the way we use the engine. It was interesting because it was a kind of development. But we had a very busy Christmas..."

Yoshiaki Kinoshita is a methodical Japanese manager, explaining his points in such a precise, logical way that he could be talking about the latest Corolla rather than Formula 1. But make no mistake: he *loves* his engine. The decision to extend engine life for 2009 left his team with a challenge on its hands... and very little time in which to meet it. Parts that were designed to last over 600 miles must now be

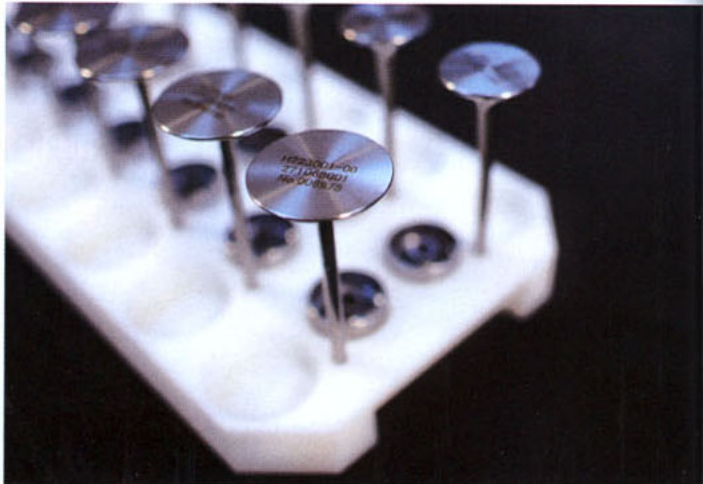
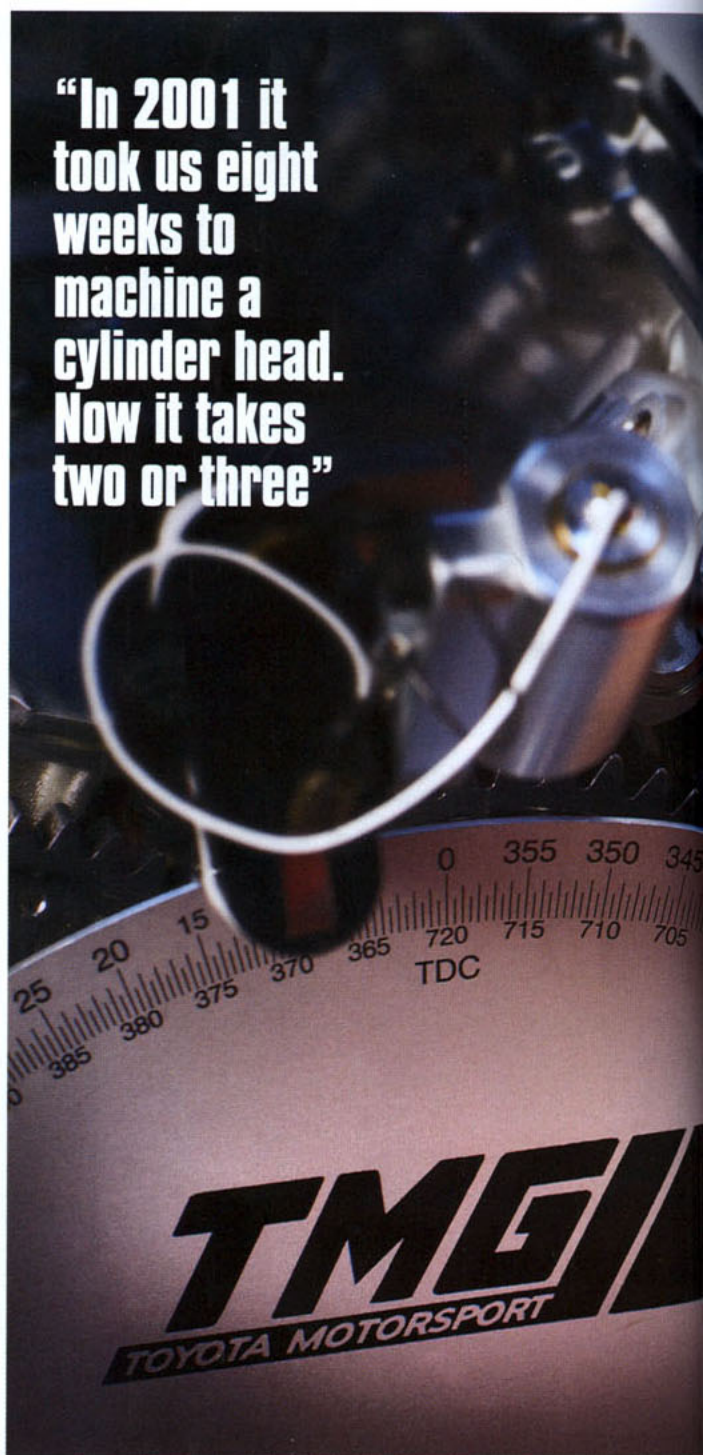


Each cylinder head contains 1,400 individual parts, all of which are hand assembled with unerring precision

coaxed through more than 900. So the atmosphere is one of quiet, urgent industry as *F1 Racing* is led through a sequence of doors, all of which are marked 'No entry', towards the most secretive parts of the Cologne factory. Toyota guard the privacy of their V8 zealously, as you might expect. But they're also *very* proud of its performance.

"You cannot afford any mistakes in Formula 1 today," continues Kinoshita. "In 2008, we did a complete season without a single engine failure. This is good. It shows that the guys are giving the same importance to the last engine like the first one. If you make a small mistake tightening a bolt, the engine might not last for two races." All in all, that means Cologne's race engines completed over 10,000 miles last year without a single problem. Not even a euphemistic 'fuel pump' issue, or 'pneumatic' glitch. There were no failures, and no excuses, on an engine where the cylinder head alone contains 1,400 individual parts. What every engine man up and down the pitlane wants to know is, how did they do it? Especially considering Toyota's first ever F1 engine barked into life less than a decade ago...

"In 2001 it took us eight weeks to machine a cylinder head. Now it takes two or three"





Detail checks on the front end of the engine. Below left: valves for assembly in the cylinder head

“The group had to learn together,” explains Kinoshita. “I don’t want to say they had no experience internally, but they started from zero producing our F1 engine. At the beginning [2001] it took eight weeks to do the machining on a cylinder head. Now, that’s down to two or three weeks. It has been something great to see this improvement, under the same roof, between Europe and Japan. It is one of the big strengths we have at Toyota.”

Design work for an assembly like the cylinder head – which controls the movement of the pneumatic valves at 18,000rpm – is completed in Cologne. Gone are the days where working on CAD models meant arriving at work, turning on the computer... and spending 15 minutes having a coffee and chatting to colleagues as the data loaded. The talk now is of ‘simultaneous engineering’, with production and casting experts working hand in hand with a designer to ensure that any component is not only fit for purpose in the engine, but can also be cast and machined properly. A completed design is subjected to virtual tests of its structural properties before the green

light is given for casting. “This work makes the conceptual design phase much longer,” continues Kinoshita. “But it means that when we get the first casting, it’s already well done. At the very beginning, we were scrapping 50 per cent of the parts. Now, we measure their accuracy in fractions of a millimetre. Having that trust in the production facility means the designers can be more extreme. We have moved the quality process to the source, rather than patching and modifying parts later on.”

All casting of cylinder heads and blocks (around 200 assemblies are produced every year, to cover the needs of Toyota and Williams) is done by Toyota in Japan. Originally the team had several suppliers, to cover themselves in the event of unexpected problems with one or the other – a hiccup in supply would literally leave them incapable of going racing. But now, everything is handled in-house. The casting patterns are assembled by hand, composing over 200 individual pieces, all of which must be positioned with an accuracy of one tenth of a millimetre. And then the aluminium is poured... >

“The V8 contains about 3,300 parts. We have a build-paper 13 pages long. There’s no guesswork”



CAD designers work hand in hand with production specialists to shorten lead times and improve quality

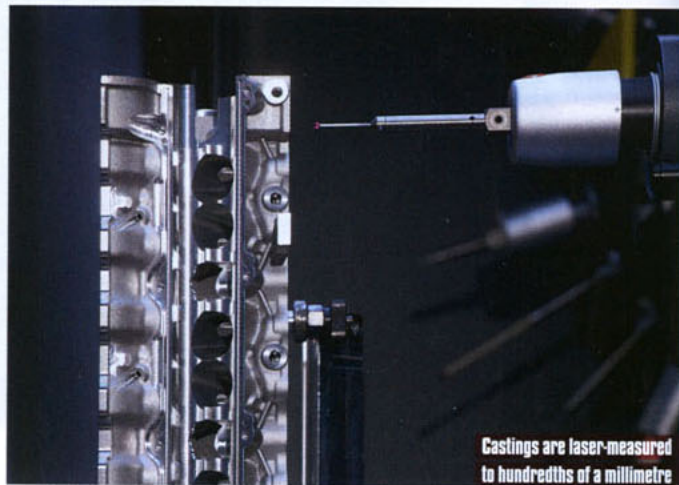
“The casting technology we use in Japan is quite advanced,” continues Kinoshita. The regulations specify that the head must be manufactured from an aluminium alloy – but there are thousands of possibilities that can be used. “We did a special development on this with our colleagues in Japan, and while it’s not ‘exotic’, it’s certainly not a very conventional material. You need an alloy that flows easily around the pattern in the melted state, and doesn’t create any micro-porosity that could cause the head to crack. The system we use is very good at eliminating this, and giving good quality everywhere.”

Finished castings then return from Japan to Cologne for further machining prior to assembly. It’s a process that is laser-measured to hundredths of a millimetre. It may seem laborious and involved, but attention to detail pays dividends, even in a sport where engines are regulated to offer equivalent performance.

“A badly designed head might not fail during its life,” lectures Kinoshita, “but you can get a huge performance degradation with it. For a good engine, the performance degradation over its life is probably one per cent – for a bad one, maybe four. Four per cent is around 30bhp. So two engines might be the same at the first race, but one of them may have 20bhp more at the third event because its degradation is better. This is becoming a very important factor.”

“Check, check, double-check,” smiles Gerd Dicks, a 28-year veteran of Toyota Motorsport. It’s a motto that you sense the engine workshop manager has drilled into his 45 mechanics for many years. “The V8 contains about 3,300 parts and they all have to match together. We have a build-paper 13 pages long that the mechanics have to fill in for every engine, with two pages of measurements. Every single piece has to be checked. There is no guesswork; no saying, ‘We hope.’ If we’re not sure, we don’t do it.”

There was a time not so long ago when the assembly workshop of an F1 team could be likened to a Swatch factory. In relative terms,



Castings are laser-measured to hundredths of a millimetre

they were mass-producing F1 engines, some of which performed brilliantly, others of which less so. A slightly duff unit could be used in the car on a Friday, a very high-power engine for qualifying, then a reliable spec for the race. If an engine showed even the slightest sign of a problem, out it came to be replaced by a fresh unit. Toyota would take 10 to each race meeting. Not any more. Now, an engine change means a 10-place grid penalty. Small leaks can prove catastrophic to a race weekend; a one per cent power drop can ruin a qualifying session. Today, every single engine has to be a Rolex. And producing one of those involves an awful lot of work – and even more checking.

“The mechanics have to be like watchmakers,” explains Dicks. “Assembling the cylinder head takes 16 hours, for one mechanic working alone. If we place an order with the machine shop, they will deliver the head in 10 working days. We do a visual damage inspection, clean it in the ultrasonic machine and then insert the ➤

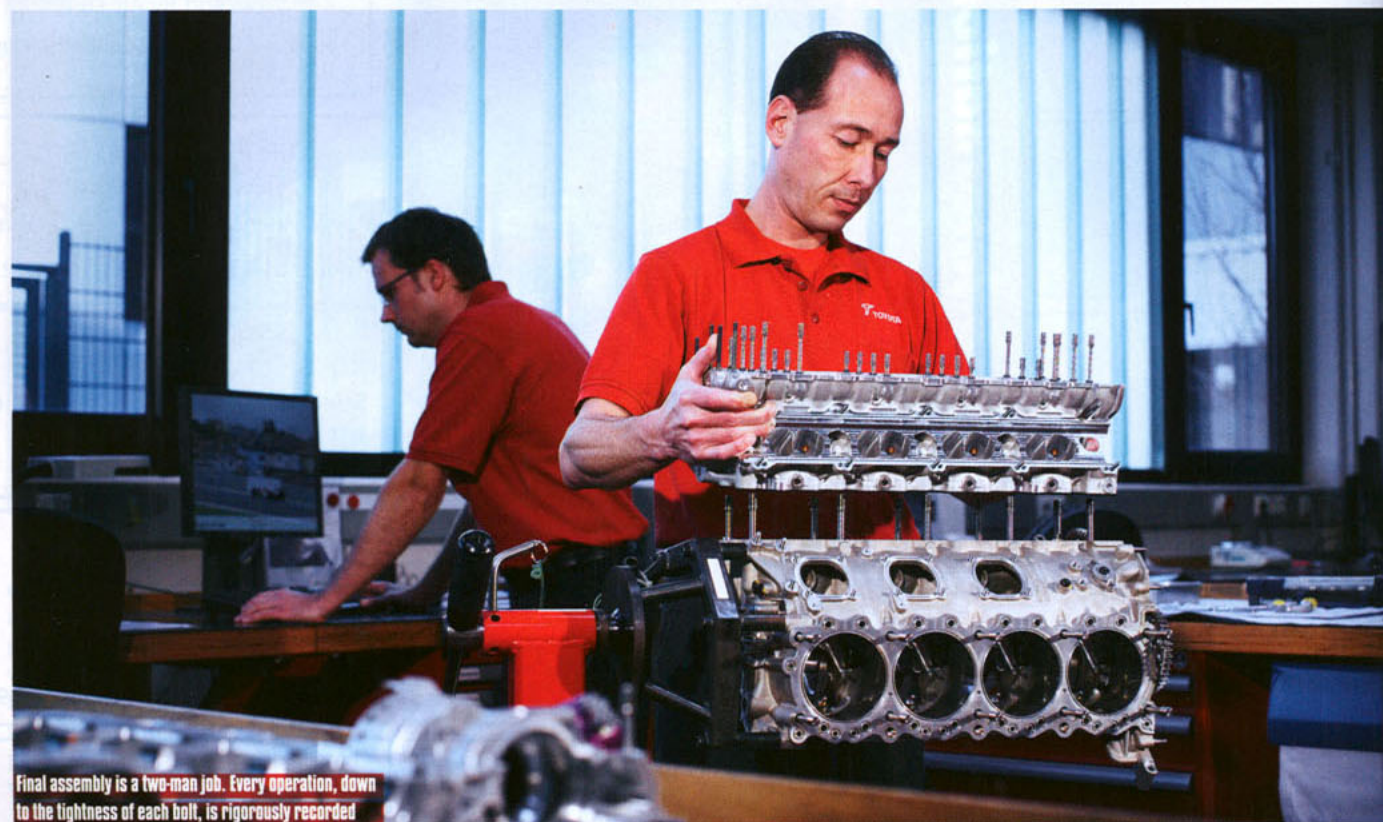
studs for the cam cover. We check the camshaft clearance, then fit the plugs to close the bottom holes. Check the valve-seats, do the barrel housing intake, fit the barrel. We pressure-test the cover, do a final clean, check the cylinder head volume..." You get the picture.

The first F1 engine Toyota put together took them 200 hours. Now, it takes two mechanics four days to assemble the 21 sub-groups the engine is divided into. "Then they check the gear clearance at the front. The last thing is to check the valve clearance again when everything is finished, then put the cover on and basically the engine is ready," continues Dicks.

The engine must then be run-in on the dyno and an oil analysis completed. This is followed by partial disassembly, checks on the bearings, the finger followers for the camshafts and all the components that can be reached without completely dismantling the



Assembly of the cylinder head takes 16 hours. Toyota produce around 200 assemblies a year



Final assembly is a two-man job. Every operation, down to the tightness of each bolt, is rigorously recorded

The first F1 engine Toyota put together took 200 hours. Now it takes two mechanics four days

engine. Inspections are conducted with endoscopes and boroscopes. Then it's put back together, a final power run is completed on the dyno, and the engine receives the seal of approval. After it has been 'kitted' (fitted with assisting systems for installation in the car), then and only then is it ready to see a racetrack. In between races during its life, 38 different checks are completed to ensure the V8 is performing as it should – and will continue to do so. Last year, they even dyno tested the engines *after* they had completed their two-race life.

The intricacy of the procedures is staggering, but the goal of all this work is charmingly human: avoiding the dirty looks from colleagues in the canteen if something goes wrong. "As soon as you see smoke, your heart beats a little faster," admits Gerd Dicks. "When the bloody thing starts smoking, you think, 'It can't be the engine.' I have the phone in my hand and I'm praying it's the hydraulics or something."

It's a lesson that Gerd learned the hard way: as engine builder for the Toyota rally team, he saw the world championship go up in smoke on the final stage of the 1998 season when Carlos Sainz's car blew its motor. "I called the team on the last day," he reflects philosophically. "One of the engineers told me the engine had blown up. I thought they were joking, then I realised they were almost crying. I couldn't believe it. I still can't believe it."

This, then, is where the ultra-scientific, high-tech process of building a modern F1 engine becomes a sport once again. The spirit of competition lives on in the craftsmen who hand-produce these mechanical jewels, each vying to be the one whose creation succeeds out on track – and praying not to be the one responsible for failure. "On the Monday morning after a good result, the first thing they do is see if it was their engine," laughs Gerd Dicks. "They deny it, but I know they do. It's like with the drivers: who do you have to beat first? Your team-mate. There comes a point where there is no friendship."

The door closes on the engine workshop with the mechanics still hard at work; the next batch of faultless V8s is slowly inching towards completion. A season without failure is entirely remarkable. It's a tribute to flawless technology. To impeccable quality processes. To unquestionable human expertise. And to a logic so simple, that it has the ring of absolute truth: check, check and double-check. **FO**

**TOYOTA****CARS 9 AND 10****TOYOTA TF109 POWERED BY TOYOTA RVX-09**

TOYOTA

They may have committed themselves to Formula 1 after Honda's bombshell, but this could still be a make-or-break season

IT'S BEEN A TOUGH winter for Timo Glock. Unfortunate really, as 2008 was a strong season for the former scaffolder. The high point was a competitive second place at the Hungaroring, but his lowest point was the final race at Interlagos where his place in Formula 1 history was sealed.

Everyone knows the story. Struggling on dry tyres on a wet track, Glock ran wide at the final corner. Lewis nipped past, which was enough for him to take the world championship title. Hamilton fans hailed Timo Glock as a hero, while non-Hamilton fans accused the Toyota driver of letting him through. Even the German reporters asked

Glock if he'd done it deliberately. It was hard for poor Timo to cope with.

"Brazil was not an easy grand prix," he says. "In the race we did everything right, but people don't understand what happened on the track. I got a lot of negative reaction – fans wrote things about me and it wasn't an easy situation to deal with." But now, he says, he's put it behind him. "We need to get back ahead of Lewis in 2009."

But can they? There's a very clear message coming from Toyota: they are committed to Formula 1, they just need to start performing.

Since the team's grand prix debut, seven seasons have passed and they have scored

only eight podiums, two pole positions and a big fat zero when it comes to wins. Given the resources at their disposal, it's a particularly disappointing state of affairs.

While Glock looks to build on what was an ever-improving first full season, much of the responsibility for putting the team on the sharp end of the grid will rest on the shoulders of Jarno Trulli. He was heroic and combative at times in 2008, notably on his way to a podium at Magny-Cours. But at other races, he faded – as his critics say he's prone to do. 2009 is the season when the veteran must really step up his form and show he has what it takes to be a true team leader as he carries Toyota forward.

At boardroom level, team president John Howett has spoken about value and the need for Toyota to get a good return on their investment. The question is, will the team's returns finally start justifying the millions

**"If we have a weak season, then we will have no future"
John Howett**



Toyota's 2009 challenger has a radically different nose to the Renault and BMW



MEET THE TEAM

TEAM HISTORY

Founded 2002
First GP Australia 2002
GPs started 122
Wins 0
Poles 2
Fastest laps 1
Constructors' points 219
Constructors' titles 0
Drivers' titles 0

DRIVER CAR 9

JARNO TRULLI
Born July 13 1974
Place of birth Pescara, Italy
Lives Switzerland
Status Married
Height 1.73m
Weight 60kg
Race engineer Gianluca Pisanello
Airbox camera colour Red
Website www.jarnotrulli.com



F1 HISTORY

Debut Australia 1997
GPs started 199
Wins 1 **Poles** 3
Fastest laps 0
Points 214
2008 position 9th



TEAM PRESIDENT

JOHN HOWETT



CHAMPIONSHIP POINTS SINCE 2004

2004 9pts (8th)
2005 88pts (4th)
2006 35pts (6th)
2007 13pts (6th)
2008 56pts (5th)

DRIVER CAR 10

TIMO GLOCK
Born March 18 1982
Place of birth Lindenfels, Germany
Lives Germany
Status Single
Height 1.69m
Weight 64kg
Race engineer Francesco Nenci
Airbox camera colour Yellow
Website www.timoglock.de



F1 HISTORY

Debut Canada 2004
GPs started 22
Wins 0 **Poles** 0
Fastest laps 0
Points 27
2008 position 10th



SENIOR MANAGER (CHASSIS)

PASCAL VASSELON



Ultimate authority rests with team principal **Tadashi Yamashina** but **John Howett** is forging an enviable reputation with his low-key, determined vice-presidency of FOTA. On the tech front, executive VP **Yoshiaki Kinoshita** oversees the design process managed by ex-Michelin man **Pascal Vasselon**

FAST FACTS



JARNO TRULLI was named after Jarno Saarinen, a Finnish motorcycle racer who was killed at Monza in 1973

TOYOTA LED four races in 2008, as many as double race-winning team Renault, but for only a total of 16 laps, compared to Renault's 75

TIMO GLOCK has fewer letters in his name than any other driver on the grid

JARNO TRULLI has started more Formula 1 races for Toyota (71) than any other driver

BOTH OF Toyota's two pole positions came in 2005, from Jarno Trulli at Indianapolis and Ralf Schumacher at Suzuka

JARNO TRULLI and Michael Schumacher are the only German Formula 3 champions to go on to win an F1 grand prix

TIMO GLOCK has competed in four GPs twice: Canada, China, Japan and Brazil. He has scored points in both Canadian races

JARNO TRULLI'S father and one of his sons are called Enzo

TOYOTA STOPPED rallying at the end of 1999 to concentrate on their F1 programme, but they are the most recent competitors on the current grid to have entered the WRC

UNTIL 2008 Timo Glock was the only GP2 champion to have raced in F1 before he won the GP2 title

TOYOTA-ENGINEED cars have been on the podium 12 times: eight for Toyota, three for Williams and once for Jordan



being ploughed into the Cologne operation?

Toyota decided to forego a launch this season on the grounds of cost efficiency (but were the only team to make the lonesome trip to Bahrain for warm-weather testing prior to Christmas), so the new car was unveiled on the internet. Immediately noticeable was the very different design philosophy at the front of the car to, say, the new Renault. Whereas the French firm has gone for a large, low and flat nose, Toyota – under the direction of Pascal Vasselon – has opted to get around the new regulations with a small, high and pointy one... Are Toyota right or have they played it too safe?

Despite a road car division that is advanced in hybrid power, Toyota's F1 KERS operation isn't fully up to speed and might not appear in the car until mid-season. In addition the team has lost engine guru Luca Marmorini, who has been replaced by Kazuo Takeuchi. It will be a tall order for Toyota, with Glock and Trulli, to turn in wildly improved performances. Nobody's expecting them to win titles, but if that race victory came along there would be a huge collective, corporate sigh of relief.

John Howett summed up the situation for 2009. "If we have a weak season, we have no future," he said. It's a stark warning of a desperate need to perform, immediately.



TORO-ROSSO

ITALY'S OTHER F1 TEAM



It's not easy living in the shadow of Ferrari, but a visit to Toro Rosso's factory shows they're far more than Red Bull's 'B team'

WORDS MATT WARWICK PICTURES LORENZO BELLANCA/LAT

It's an inescapable truth that Ferrari exists within the DNA of every man, woman and child in Italy. They are a national treasure, which, quite frankly, doesn't leave much opportunity for any other Italian team hoping to make an impact on Formula 1. It doesn't help that even the main hotel in Toro Rosso's home town of Faenza in north east Italy has a prancing horse as its logo. But in an office adorned with pictures of a champagne-soaked Sebastian Vettel, over looking the race bays in Toro Rosso's factory, a welcoming smile (and a chocolate coin in gold foil) greet *F1 Racing*. "It's a little bit frustrating I must admit," says Gianfranco Fantuzzi, Toro Rosso's team manager and bearer of confectionary gifts. "Toro Rosso are Italian, but Ferrari have a reputation no one else has. It's a tribute that you have to pay."

Born and raised in Maranello, Fantuzzi worked for Ferrari as a mechanic and race engineer before coming here in 1998, therefore he is in the best position to see it from both sides. "Being at Maranello is fantastic for the résumé. Every time you show your

business card... well, it was very good for your ego. But the big difference between the two teams is that, because we are so few, everyone has to do a bit more – and so your personal contribution to the success is bigger."

Located on the corner of Via Spallanzani in a Faenza trading estate, the factory is permeated by the waft of yeast from a nearby brewery; only a now-disused chicken factory stands between them. It's a far cry from Maranello's history-soaked walls, but there's no less character here – this is the first trading estate we've ever seen that's surrounded by pine trees, and with the local species of stork that stand imperiously on top of nearly every lamppost, looking like they're part of the design themselves until they move to ruffle a stray feather.

Everyone likes an underdog, but Toro Rosso did something last year that changed everything. In one of the most unlikely moments >





Above: reception at Toro Rosso's factory in Faenza – have they got enough magazines on that table? Below: a mechanic works on the radiator of Sébastien Buemi's STR03 test car



“Many people don't even know we have a design office at Faenza.”

Franz Tost



in modern Formula 1, the team scored their maiden race victory. In Italy. At Monza. Beating Ferrari at their home grand prix, *fair and square*. “People were gathering outside the factory, and some went on to the main street in Faenza, waving flags and stopping traffic, making noise and drinking champagne. I hope it can happen more often,” says Fantuzzi. “Everything is linked to results. Perhaps in the years before we were a little bit of an invisible company - there were too many Ferrari flags around! But people know who we are now.”

After the team had spent more than 20 years at, or pretty close to, the back of the grid in the much-loved guise of Minardi, Red Bull boss Dietrich Mateschitz bought the team with Gerhard Berger in 2005, eventually bringing in some young beanie-wearing dude from the Red Bull Young Driver Programme called Sebastian Vettel, an Adrian Newey designed car, and an engine from Maranello.

But just because this team of just 175 staff have finally achieved what Toyota and ‘mother team’ Red Bull have failed to do with far more money and people, it hasn't come without a lot of hard graft, and some unfair assumptions from outsiders. “That's one of the



Above: the smallest of Toro Rosso's autoclaves. Bottom: team principal Franz Tost reflects on last year's win at Monza, his “greatest moment”



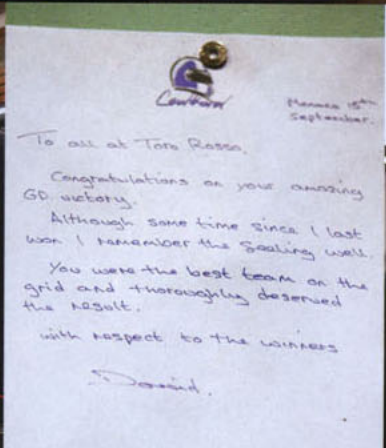
things we want to address here. Many people think that we are just given a car by Red Bull, and then we go and race. But we do so much more – we are a very proud team,” says Fantuzzi.

So let's get this straight for anyone who thinks a lorry from Red Bull Technology parks up outside and rolls out a load of pristine RB-whatevers, that Toro Rosso then plaster with their stickers and take to the track. “We get all the drawings from Milton Keynes, but every single thing is made in Faenza, or sent to us by our suppliers” says team principal and Most Friendly And Approachable Top Dog In F1 Franz Tost. “Many people don't understand that at Toro Rosso we have our own design office – all parts of the car around the engine are designed in Faenza, not in Milton Keynes, as we are running the Ferrari engine, and they are running Renaults.”

The proof lies in the six buildings that house the various projects of Toro Rosso. Machine tool parts are being made, gearbox casings are being checked, while the composites building – which contains the parts production, quality control department and three autoclaves – is buzzing as staff finish the second STR04 chassis awaiting a full build.

A walk through what feels like a Perspex gerbil tunnel from the machining shop brings you to the race bays in the main building. They may be a little quiet at the moment – only Sébastien Buemi's STR03 test car is getting any attention – but that's because most people are behind screens that have been erected around the STR04's mock-up. As open and welcoming as this team are, this is a place where few in the team itself are allowed to venture.

Lunchtime at most F1 factories is usually a quick affair; grabbing a sandwich for 20 minutes before getting back to the desk to continue the close-season onslaught of fettling, testing and redesigning. But for Toro Rosso it's a very different culture. Absolutely everybody leaves for lunch at 12.30pm; it's not just Toro Rosso, it's a Faenzan thing. Typically for Italy, the social touchstone of the area is a restaurant. *La Tana del Lupo* (The Wolf's Lair) is a ▶



Toro Rosso design and build many parts of their cars. Left: David Coulthard's letter of congratulation after last year's win at Monza



"People know who we are now. Everything is linked to results."
Gianfranco Fantuzzi



"We will be running the 2009-spec Ferrari engine because it's linked to the KERS system," adds Tost back in his office, complete with tray of Red Bulls. "But we will wait for Ferrari to run KERS, and so we have planned not to run the system in the first few races at the moment – I think it has too many question marks for us. Also, our hands are full trying to do other things." "It's a significant technical challenge," agrees technical director Giorgio Ascanelli. "Certainly it's the largest rule change since

regular haunt for staff at the factory, and everyone who works in the area. The owner often comes over to the factory himself, bearing endless pastas, pizzas, cakes and ice creams to keep the staff going as they redouble their efforts for a coming season, or impending race.

And working hard they are – about 20 hours a day in preparation for the team's first test just a few weeks before Melbourne. But what is to be expected of Toro Rosso after they exceeded all expectations last year, especially considering the rule changes and uncertainty surrounding this season? "Whenever the regulations change the smaller teams always suffer," says Tost as he sips his cup of tea and readies himself for a plate of tagliatelle. "The top teams, with their infrastructure, tools and manpower can work in a very small timeframe and solve problems. For us it takes longer. It really depends how good the new car will be – it would be nice, but I don't expect to be on the front of the grid in Melbourne."

As lunch comes to a close, the boss's mobile phone rings. It's Dietrich Mateschitz, calling for an update. Tost furtively slopes off, perhaps to discuss how the new car is shaping up. As social as lunch breaks may be in Faenza, it's time to get back to work.

It's not surprising that Tost and the team are approaching this season with trepidation. Most of the sport's luminaries recognise that these regulation changes are the most far-reaching for nearly 30 years, and considering that, for a team that has spent almost 25 years trying to get to race-winning status, the worst thing would be to go in the opposite direction so quickly.

I started 25 years ago. It's probably comparable to going from turbo-charged cars to the normally aspirated ones."

And although most of the questions being raised in the sport are of a technical nature, Ascanelli – who in 1993 was race engineer to Ayrton Senna don't forget – emphasizes the loss of Sebastian Vettel to Red Bull: "In every form of motorsport the most important element is the driver. I've seen a McLaren with Ayrton and without him – a car is not fast for just any driver."

Everyone at Toro Rosso knows that 2009 could be more difficult than last season – up to 70 per cent of this team have been around since the Minardi days, and they've known the hardship. If a team the size of Ferrari can't be exactly sure of what the future holds in the new Formula 1, then what chance does Italy's other team have?

Sitting at his desk, under the dim light of his reading lamp, Ascanelli doesn't look worried: "Why did we have our best success last year? We had a great driver; the car was very benign and it had the best braking system of the whole grid.

"There are a lot of good people in here who belong to this team," concludes Ascanelli. "They never believed they could do it before, but they pulled in the same direction, and all of a sudden it was possible."

The team may have lost their star driver and have a lot of development to do with limited resources. But, as we all saw when the team jumped up and down under the flashbulbs at Monza on that thunderous Sunday afternoon last September, Toro Rosso's spirit will never be taken away. **FO**



TORO ROSSO

Some are writing off Toro Rosso for 2009, but you can't discount a team that last year went from also-rans to dominant race-winners

TIME WAS WHEN Toro Rosso and the comfortable expectation of failure marched hand-in-hand. But 2008 was the year when the outfit that used to be Minardi abruptly cast off 20-odd years of cosy mediocrity and finally looked like a serious race team – serious about *winning*, not just making up the numbers.

How did this happen? It's more than just a magical combination of proper drivers, an Adrian Newey chassis and a Ferrari engine. Sebastian Vettel, after blitzing the Italian GP from pole position in the wet, summed it up:

"The mentality has changed – the atmosphere is fantastic. When I jumped into the car before the race at Monza they said, 'Now destroy them.' I was pushing like hell, they were looking forward. In that sense you could say we had the balls to do it today."

The new atmosphere of confidence – of swagger, even – began at the Monaco GP, when they got their hands on the latest chassis from Red Bull Technology. After a tough weekend getting to grips with the new car they made relentless progress over the following races, snapping at the heels of and then regularly beating Red Bull's 'A team', who griped that their Renault engine was down on power compared with Toro Rosso's Ferrari unit.

The achievement is more remarkable in the context of the ongoing will-they-won't-they drama in which both co-owners – Gerhard Berger and Red Bull magnate Dietrich Mateschitz – were understood to be selling their stakes in the team. Or perhaps it isn't so surprising, in that a successful team is a more valuable property

than an unsuccessful one. In any case, the protracted dance ended with Mateschitz changing his mind and buying Berger out.

Toro Rosso are not responsible for the main design concepts of their cars, which enables them to stay focused on squeezing the best out of what they're given. In this they have the benefit of technical director Giorgio Ascanelli, a canny street-fighter as well as an intuitive technician. Operating without the burden of expectation, he's been able to make the kind of buccaneering strategic calls – such as the one that put Vettel on pole at Monza – that operators further up the grid, with more at stake, would balk at. Compare and contrast with McLaren, whose tactical paralysis grounded Lewis Hamilton in Q2 at the same race.

But Monza also illustrated that while STR can pull out a race-winning performance, they struggle to lift both cars to that level

They have Giorgio Ascanelli, a canny street-fighter and intuitive technician

MEET THE TEAM

TEAM HISTORY

Founded 2005
First GP Bahrain 2006
GPs started 53
Wins 1
Poles 1
Fastest laps 0
Constructors' points 48
Constructors' titles 0
Drivers' titles 0

CHAMPIONSHIP POINTS SINCE 2004

2004 1pt (10th)*
2005 7pts (10th)*
2006 1pt (9th)
2007 8pts (7th)
2008 39pts (6th)
 *as Minardi

DRIVER CAR 11

SÉBASTIEN BUEMI
Born October 31 1988
Place of birth Aigle, Switzerland
Lives Bahrain
Status Single
Height 1.76m
Weight 63kg
Race engineer Claudio Balestri
Airbox camera colour Red
Website www.buemi.ch



DRIVER CAR 12

SÉBASTIEN BOURDAIS
Born February 28 1979
Place of birth Le Mans, France
Lives Switzerland
Status Married
Height 1.79m
Weight 72kg
Race engineer Riccardo Adami
Airbox camera colour Yellow
Website sebastien-bourdais.com



F1 HISTORY

Debut Australia 2009
GPs started 0
Wins 0 **Poles** 0
Fastest laps 0
Points 0
2008 position n/a



F1 HISTORY

Debut Australia 2008
GPs started 18
Wins 0 **Poles** 0
Fastest laps 0
Points 4
2008 position 17th



TEAM PRINCIPAL

FRANZ TOST



TECHNICAL DIRECTOR

GIORGIO ASCANELLI



Team principal **Franz Tost** will be flying solo in 2009 following the departure of Gerhard Berger. **Giorgio Ascanelli's** tech team proved their capabilities with the historic Monza win in 2008; new team manager **Gianfranco Fantuzzi** will provide a steady guiding hand at the track

FAST FACTS



SÉBASTIEN VETTEL was the last driver to record a classified finish in 2008, taking until Turkey to do so

THE WINNER of the 1983 Austrian Formula Ford Series was Toro Rosso's team principal Franz Tost

BY WINNING in Italy for Toro Rosso last season Sebastian Vettel became the youngest race winner in F1 history at 21 years and 73 days

2008 DRIVER Sébastien Bourdais is the only driver ever to win four consecutive US Champ Car titles

WHEN THE usual medical car driver, Dr Jacques Tropenat, was suffering from an ear problem at the 2008 Japanese GP, Sébastien Buemi stepped in to substitute

TORO ROSSO'S Italian win was the first by a team based in Italy, other than Ferrari, since Maserati won the 1957 German GP

ALL OF Toro Rosso's eight points in 2007 were scored in the Chinese GP when Sebastian Vettel came fourth and Vitantonio Liuzzi was sixth

GIORGIO ASCANELLI engineered Ayrton Senna to five grands prix victories for McLaren in 1993

FAENZA, home to the Toro Rosso team, is a regular host of World and European Championship motorcross races

SÉBASTIEN BOURDAIS is the only driver on the grid born in February

SÉBASTIEN BUEMI will be the first Swiss driver to take part in an F1 race since Jean-Denis Déletraz in the 1995 European GP



Slick operator? Vettel's replacement Sébastien Buemi puts last year's car through its paces at a Barcelona test

at once. Sébastien Bourdais qualified just behind Vettel at Monza but a gearbox glitch stranded him on the grid. Bourdais won four straight Champ Car titles; irrespective of whether the calibre of the competition in that series is below F1, you don't win that many championships by being slow, clumsy or hard on your equipment. Toro Rosso somehow made Bourdais look all three.

The big question is: will the team sustain their momentum into 2009? Even their management are approaching the new season with some reservations. Team principal Franz Tost believes that it could take the smaller teams longer to adapt to the radical new regulation changes.

"If there is a problem with any of the new elements, the bigger teams can cope better than us. Small teams have a much easier time when there are no major changes and you have a technical status quo."

Red Bull Racing have snapped up Vettel for 2009 and parachuted 20-year-old Swiss Sébastien Buemi into Vettel's vacant Toro Rosso seat, while Bourdais has been re-confirmed. In 2007 Buemi seemed an exciting prospect, but he spent 2008 making the process of setting up a GP2 car for qualifying look more baffling than quantum mechanics. He may find a 2009-spec F1 car tough to master.



Once upon a time he was F1's leading designer, helping Williams to amazing success and Mika Häkkinen to two world titles. Now he hasn't won a thing for 10 years.

With a furrowed brow, *F1 Racing* asks...

HAS ADRIAN NEWWEY STILL GOT IT?

WORDS ALAN HENRY

PICTURES DAVID SHORT

Adrian Newey smiles as he stands in front of his huge drawing board at Red Bull Racing. This is the man whose ingenious engineering solutions helped steer Williams to their raft of world championships in the early and mid 1990s, and Mika Häkkinen's two titles for McLaren in 1998 and '99. It even prompted the motorsport media to ask boldly in 2000, 'Who needs Schuey when you have a Newey?' The man himself recalls the headline with that slightly understated and good-natured courtesy which is his personal hallmark. "I have to say I do remember it. It rather took me back to my days at Leyton House in 1988, when I was praised for doing what people perceived as a really good car. Then in 1989 we had a more difficult season and the press wrote me off. Hero to zero in a single stroke! From that point on I stopped worrying too much what the press said about me... not that I have anything against the press, of course," he adds with a twinkle. The question the press will be asking now is, can this 50-year-old designer prove he's still made of the right stuff? ➤

Newey seems relaxed and confident in equal measure in his environment at Red Bull, but we'll come back to that a little later. He may be a man on whose shoulders rides a huge amount of hope, anticipation and expectancy as he shapes up to deliver the RB5 onto the track at Melbourne, but he also looks like a man who is comfortable in his own skin. And with his status in F1.

"Red Bull is an old-fashioned racing team," he notes with some relish. "It's located in what you might describe as a plain and conventional building and, quite simply, is populated by people who want to do well. It's becoming its own team now, finding its place in the F1 community, if you like. There's a great sense of motivation." So, by implication, does this hint at any criticism of his previous team McLaren? Newey says not, and you are inclined to believe him. Any short-term rancour with Ron Dennis has long since evaporated. These days, Adrian only has positive memories.

"The upside of McLaren was the huge drive generated by Ron," he says. "As they've diversified they have perhaps got slightly less of a feel of a racing team. I came into the business not to design road cars, but to design racing cars – that was my motivation. But McLaren remain a great team."

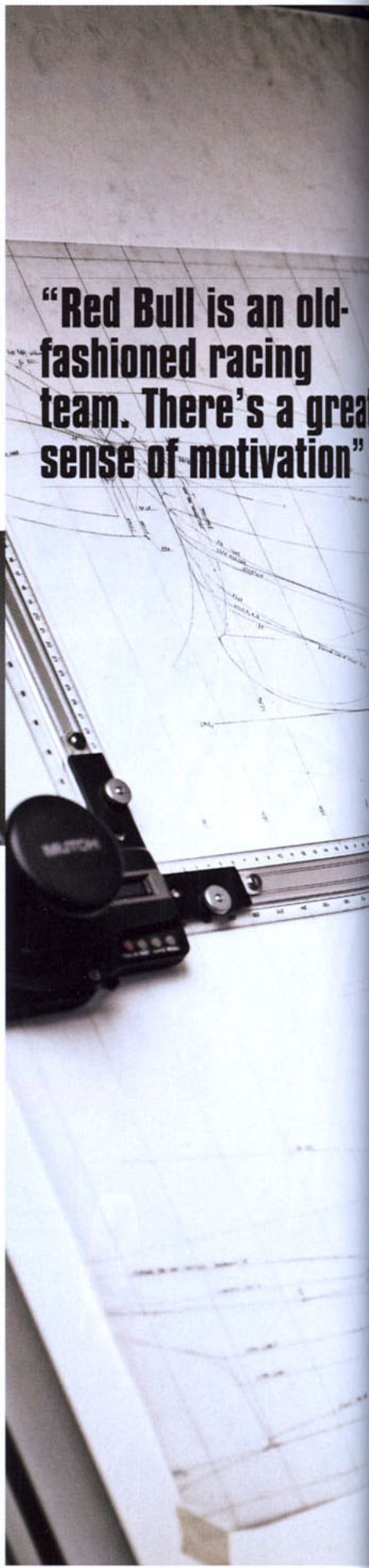
We're forgetting the 'duck-egg blue' episode, of course. When Adrian joined McLaren in 1996 he immediately had his personal drawing office repainted in duck-egg blue, a contrast to the muted grey which dominated elsewhere in McLaren's Woking

Questioned on the famous Leyton House story that in 1990 he was thinking about narrowing the front of the cockpit to the point where the driver would have had to drive with one foot positioned above the other, he shoots it down in flames. "Sorry to disappoint you but it's an old wives' tale, I'm afraid," he grins. "Mind you, I will concede that the 1988 March that I designed did have a very cramped cockpit. Ivan Capelli was a new and inexperienced young driver at the time, so we sat him in front of the bulkhead and repeatedly moved the pedal position back towards him. He kept saying, 'That's fine, that's fine,' until in the end we had a cockpit which was far too tight for him – as he discovered when he first got round to driving the car. In a sense that was a lesson about not asking too much from a willing young driver who wanted the drive so desperately that he was prepared to agree to anything. Don't squeeze them too far."

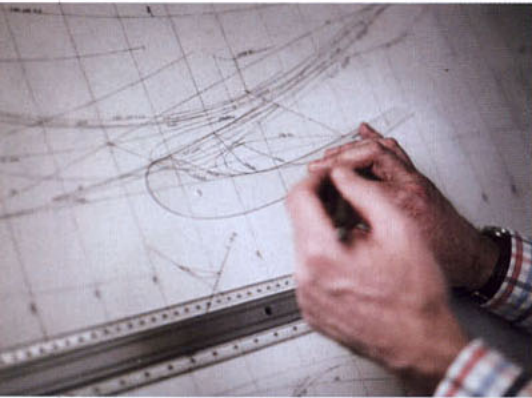


Turning to the subject of this year's Red Bull, is he not worried that the February 9 launch date has left the team dangerously short of track time at the start of a year when testing is banned once the season gets underway? Adrian seems unruffled. "The decision to launch the car late was taken before the ban on testing during the season was imposed," he shrugs. "That's history, we can't change that. But basically the dilemma is, do you go early with an underdeveloped car and find out about the new regulations, or do you go late and give yourself more research development time? I've always been inclined to go late so that we can get the fundamentals of the car right – maximum thinking time, if you like. And if you go early, particularly this year, you're probably going to re-clothe the car aerodynamically before the first race anyway, whereas with the new Red Bull we're not planning to do that."

Newey believes that in 2009 there will still be sufficient technical ingenuity required from the new regulations to stretch all the competing teams. Moreover, his own personal signature speciality, aerodynamics, will continue to offer considerable challenges. "My interest has always been to make the cars go faster," he says, "and over the past ▶

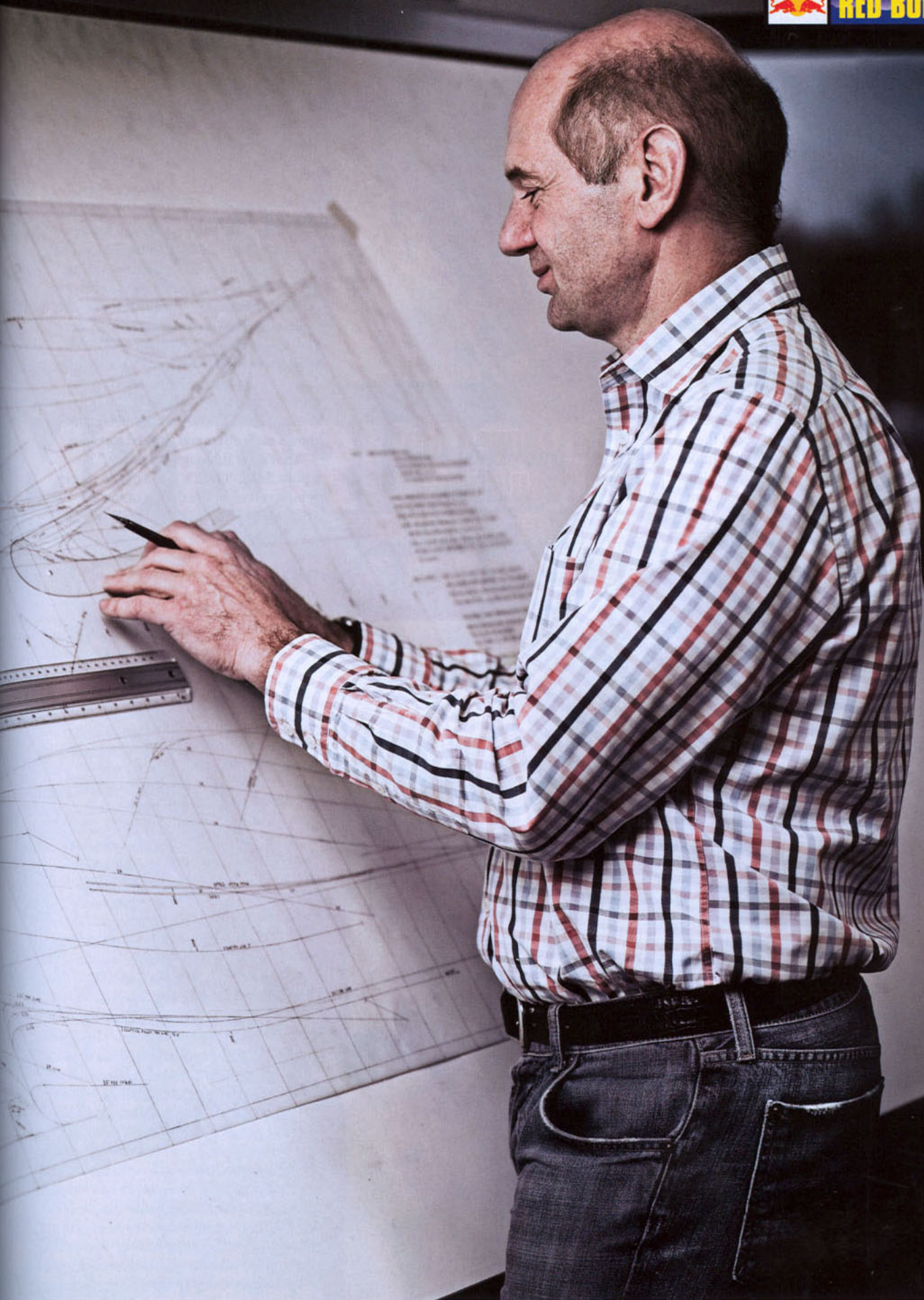


"Red Bull is an old-fashioned racing team. There's a great sense of motivation"



HQ. Ron, so the story goes, walked in, took a good long look at his technical director's revisionist taste of colour, and promptly walked out without making a comment. The matter was never raised again.

Newey still works at his drawing board rather than at a computer screen. "I have a team of people who take my drawings and put them onto a CAD-CAM system," he explains. "I would rather have the whole thing laid out in large scale in front of me. I can draw it without thinking. I think I can get the initial ideas down on paper quicker this way than if I used a CAD-CAM system." So is he still a 'blue sky' thinker? "I try to be, but you do need to be disciplined in such a role. You run the risk of going ahead of yourself."





20 years aerodynamics has been the crucial area." So how does Adrian feel about the scope of the new rules? Does he still think F1 is a sufficiently stimulating technical challenge, or does the engineer inside him hanker after a less restrictive environment?

"I'm looking forward to the new challenge, because I think that, to a large extent, the whole F1 business has become too big and clumsy," he ponders. "It's rather grown out of control. To give you an idea, some teams have had more than 200 people in their aerodynamics department alone, equal to the total head count we had at Williams when I left in 1996. And ultimately this doesn't do anything for the show." That's as maybe, but surely F1 is supposed to be an unfettered, ultimate technical challenge? What would Lotus founder Colin Chapman, one of the sport's greatest and most inspirational engineers, have made of such limitations? "That's a point," replies Newey. "I never met Chapman, but from what I've heard he liked small and lean organisations, so perhaps he would have approved of such changes. Anyway, some teams, if you take into account their engine partners, are now employing more than 1,000 people, and I really think that's too much. It becomes a spending contest in which the contribution of the individual becomes more difficult to identify."

By the same token, Adrian is mindful of the difficulties in trying to restrict the amount of aerodynamic testing which has been imposed under the new rules. In particular, he appreciates that the better-funded teams will look for other areas of simulation to make up for restrictions on windtunnel time. "Once you get to the point where you're trying to restrict simulation work, you might as well put a budget cap in place," he suggests. "The problem with all these things is how to get these restrictions in practice. I mean, how do you police areas like research and development? It all becomes a grey area. But so far I've enjoyed the new regulations – they're something different to focus on."

"I've enjoyed the new regulations – they're something different to focus on"

NEWHEY'S BEST F1 CARS

THE DESIGN GURU'S GREATEST HITS. RED BULL'S RB4 NOT INCLUDED

LEYTON HOUSE MARCH 881 1988

In an era when turbo cars ruled the roost Newey knew that his normally aspirated March would have to be good to compete, so he concentrated on aerodynamic efficiency. Smaller than any other car at the time, it was the first to have a raised nose and front-wing endplates



WILLIAMS FW14/14B 1991-1992

While the FW14 had some problems with Williams' first semi-automatic gearbox, the FW14B, with active suspension, was the class of the field in 1992. A physical car, with huge downforce and steering loads, it didn't give much feedback. But if you kept your foot in it was fine, and that suited Nigel Mansell's style to a tee



MCLAREN MP4-20 2005

Although McLaren didn't win either championship in 2005 Newey was pleased that the MP4-20 saw the team bounce back to competitiveness. He got his head around the aerodynamic changes to the regulations better than most and developed a car that was a trend-setter in a number of areas



Could he rework the car without KERS, if necessary? "If you've designed your car without KERS then you can't add it on afterwards," comes the firm reply. "If you've designed your car with KERS you can take it off, but by doing that you're compromising the car. You'd end up with the car slightly longer than you'd want it, because the KERS installation takes up some of the room you'd need for a fuel tank."

The rule changes are one thing... then there's the Red Bull design hierarchy. Does Newey feel that technical director Geoff Willis is a pragmatic foil for his creative efforts, so to speak? It's a slightly loaded question, given the gossip in Formula 1 late last year suggesting that there was a degree of friction between the two men.

Newey's face betrays not a flicker of evidence that this might be the case, pointing to the length of time the two men have known each other and worked together.

"That's not the way we operate," he replies flatly. "Geoff's job is not so much to be involved in the design of the car, but to make sure that the technical unit works smoothly and everything comes together without a hitch. He looks after the process of how the car is engineered, reliability and quality control systems, engineering practices and so on. Making sure that the whole team functions smoothly as an engineering entity is really Geoff's job."

So the two men get on well on a personal level? "Yes, absolutely. In fact, Geoff was the only person I took with me when I moved from Leyton House to Williams in 1990. He'd been in charge of computational fluid dynamics [CFD], which were very much in their early stages at the time. Then in 1994 I promoted him to head of aerodynamics, so we've worked together for a long time."

Looking ahead to the racing in 2009, Newey admits that he's pleased the FIA have permitted Renault to re-tune its V8 within the terms of the current regulations. "That could give us two-tenths of a second a lap which, if the grids are as close as they were last year, is quite a lot." He's also looking forward to working with Sebastian Vettel as Mark Webber's new driving partner. "Mark brings the experience against Sebastian's raw talent," Newey says. "It's always good to have a pairing like that. Sebastian is very clear about what he wants and doesn't get distracted by things that aren't important. I have to say I'm very impressed with him. Mark is also a driver who is particularly sensitive and has a great feel for the car, so I think we have a good pairing."

Newey's understated confidence conceals the mentality of a driven and committed perfectionist beneath his unruffled outward demeanour. He is a man who thrives on attention to detail. And despite the pressure on his reputation, still comes across as a man with more winning to do. **FO**

COMING SOON

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 **AUTOSPORT**

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New look, new features,
new writers, new season

NEW MAGAZINE

 **AUTOSPORT** ON SALE THURSDAY 12 MARCH

**RED BULL****CARS 14 AND 15****RED BULL RB5 POWERED BY RENAULT RS27**

RED BULL

The team have launched the new car later than most of the others, but their best ever driver line-up should bring them up to speed

GIVEN THE BAN on in-season testing this year, Red Bull Racing took a big risk with the late launch of their new car. The RB5 first turned a wheel on February 9, giving the team's engineers just four test sessions in which to sort through its myriad new systems before the opening race.

The launch date was the choice of chief technical officer Adrian Newey, who placed more importance on prolonging development time in the windtunnel than on reliability testing. He no doubt sees this year's rule changes as an opportunity to reinforce his reputation as one of the most original designers in the pitlane and will not compromise on his desire for performance.

But should the RB5 prove problematic out of the box, like so many of the '09-spec cars, the team will head for Melbourne on little more than a wing and a prayer. Red Bull found speed without reliability in 2007, and produced a reliable car that never quite found a cutting edge in 2008. For 2009, the RB5 must tick both boxes.

Assuming reliability can be found before the first race, there is much to feel optimistic about this year. Their engine has more grunt than in '08, following the unanimous agreement of the other teams to let Renault develop its V8 over the winter, and their driver line-up has seen Sebastian Vettel recruited alongside Mark Webber.

The importance of engine parity cannot be over-emphasised because Adrian Newey usually produces aero-efficient cars that perform well on quick circuits. With another 30bhp in 2009, the RB5 could – make that *should* – be a serious challenger at places like Silverstone, Spa and Suzuka.

As for Webber and Vettel, they form the strongest driver line-up in Red Bull's short history. Both are quick and provide good technical feedback, and they will push each other, and the team, hard. However, they've had their run-ins in the past (most notably at Fuji in '07, when Vettel ran into the back of Webber, who brandished him "a bloody idiot") so the relationship will need to be managed carefully by team boss Christian Horner. Any ill feeling beyond the standard intra-team rivalry would be detrimental to the overall team effort.

Much has been made of Webber's broken

Assuming reliability can be found, there is much to feel optimistic about



MEET THE TEAM

TEAM HISTORY

Founded 2004
First GP Australia 2005
GPs started 71
Wins 0
Poles 0
Fastest laps 0
Constructors' points 103
Constructors' titles 0
Drivers' titles 0

CHAMPIONSHIP POINTS SINCE 2004

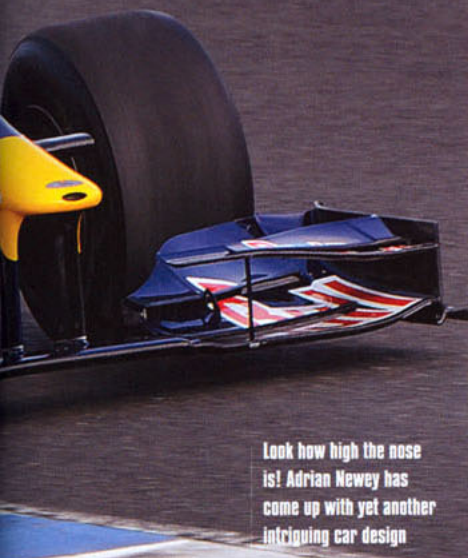
2004 10pts (7th)*
2005 34pts (7th)
2006 16pts (7th)
2007 24pts (5th)
2008 29pts (7th)
 *as Jaguar

DRIVER CAR 14

MARK WEBBER
Born August 27 1976
Place of birth Queanbeyan
Lives England
Status Partner
Height 1.84m
Weight 74kg
Race engineer Ciaron Pilbeam
Airbox camera colour Red
Website www.markwebber.com

DRIVER CAR 15

SEBASTIAN VETTEL
Born July 3 1987
Place of birth Heppenheim
Lives Switzerland
Status Single
Height 1.74m
Weight 64kg
Race engineer Guillaume Rocquelin
Airbox camera colour Yellow
Website www.sebastianvettel.de



Look how high the nose is! Adrian Newey has come up with yet another intriguing car design



F1 HISTORY

Debut Australia 2002
GPs started 121
Wins 0 **Poles** 0
Fastest laps 0
Points 100
2008 position 11th



F1 HISTORY

Debut USA 2007
GPs started 26
Wins 1 **Poles** 1
Fastest laps 0
Points 41
2008 position 8th



TEAM PRINCIPAL CHRISTIAN HORNER



CHIEF TECHNICAL OFFICER ADRIAN NEWEY



Team principal **Christian Horner** runs a tight ship in Milton Keynes, and is adamant that cost cuts will have little impact on the team's operations. The 2009 rules are the blank canvas **Adrian Newey** needs to showcase his genius. TD **Geoff Willis** will have to make that genius practical and reliable

FAST FACTS



RED BULL scored points in their first five races in F1 back in 2005, and matched that run of five consecutive points scoring races in 2008, from Malaysia to Monaco

TEAM PRINCIPAL Christian Horner is a Coventry City fan because his grandfather was once vice-president of the club

IN FOUR attempts at the British GP, the team has yet to score a point

SEBASTIAN VETTEL will be Red Bull's sixth driver in five years

MARK WEBBER has qualified second four times, but only in Spain in 2005 has that resulted in a points scoring finish (sixth)

RED BULL will be the tallest team on the grid in 2009, with Mark Webber and Sebastian Vettel averaging 1.79 metres between them

SEBASTIAN VETTEL won races in both 2007 and 2008, but in 2007 it was in the World Series By Renault

RED BULL also own three football teams: FC Red Bull Salzburg, Red Bull New York and Red Bull Brasil

IF MARK WEBBER starts every race up to and including Monaco, he will surpass Jack Brabham's records of 126 GP starts for an Australian

THE YOUNGEST F1 race winner on the grid, Sebastian Vettel, has replaced the oldest race winner on the grid, David Coulthard

MARK WEBBER won the F1 Pro-Am tennis tournament in Barcelona three times, in 2002, 2004 and 2005



leg over the winter, but he's unlikely to use it as an excuse come Melbourne. Remember that he had two 200mph accidents during practice for Le Mans in '99, yet still refused to bad-mouth Mercedes in the press. And rather than see his recuperation in negative terms, many observers believe that Mark will come back stronger after his enforced eight-week lay-off.

"Psychologically," says Red Bull consultant David Coulthard, "a prolonged rest can be a very good thing for a driver." Webber was back to 90 per cent fitness by the time of his first on-track test at the beginning of February and expects to be race fit come Australia. Luckily, the break was to his right leg, which withstands nothing like the same loads as the left, with which he brakes.

As for Vettel, he's a very exciting prospect. He's the first of Red Bull's junior drivers to race for the works team and, despite being just 18 months into his F1 career, he already has the blessing of F1's biggest names. Bernie Ecclestone and Michael Schumacher are bending over backwards to tell people how good he is, but we'll only have a true gauge of his ultimate potential once he's been up against Webber, who has swept aside Nick Heidfeld and Coulthard in the past.

One thing's for sure: the stock of the driver who's slower will drop dramatically...

“Finished?
Good.
Must get on.
Lots to do.
Thanks for
talking. Bye”

Forty years in F1 and Sir Frank Williams is in a hurry to prove his team can still deliver. “We’re well placed to adapt for 2009,” he says, “but miracles don’t happen overnight...”

WORDS PETER WINDSOR PICTURES BRUNO VINCENT

Early 2009 finds Sir Frank Williams where he likes to be: nestled in his second-floor office, surrounded by letters, contracts, brochures, telephones and, yes, some family photos in shiny silver frames. Lazy days in paradise? Relaxed dinners with friends? Forget it.

Sir Frank is in the centre of his F1 world, projecting calm into a matrix of frayed nerves around him. He grew into the racing life the hard way, living on a dream and as many loans as he could muster. The grit of that climb has remained – Sir Frank doesn’t like disaster, or downward plunges, or headlines of the negative kind, but he is

always ready for them; good leadership, in Sir Frank’s book, is primarily about dealing with the hard times, not expanding with the good. Over the years (and factory growth aside), you’d swear that he has invariably dismantled the structures that have given him his wins, whether they be the engine package, drivers or team of design engineers. It’s as if success for Sir Frank marks the end of a sentence. For the new paragraph, the new challenge, he promptly starts all over again.

The more so, of course, because of his physical situation. Restricted as Sir Frank is, what’s going to get you out of bed faster? Selling out to BMW and checking on your

Wall Street investments or concentrating on how to secure the next sponsorship contract to finance that new fleet of trucks the boys are always on about?

It’s the latter, of course. No decision. Having said that, Sir Frank pre-1986 accident was not a lot different. If I have to freeze-frame today, one image that sums up the name Frank Williams would be him in the early 1970s, when he was juggling about 35 different sponsors, speaking Italian more often than he was speaking English (because Italy was where the money lay), and when his answer to why his cars had qualified at the back yet again was to go for a brisk seven-mile run and worry about ▶



“With the new rules, we have our heads down and we’re working flat-out”



it all upon his return. In other words, when Frank was the perpetual optimist in the face of frighteningly difficult problems.

2009, then, could be a great recovery year for Williams. The changes in F1 regulations, the dramas of the world recession and the recent slump in results are the sorts of minor glitches he eats for breakfast. You sense, as you settle down for a chat, that this 41st year in the F1 life of Sir Frank could, yet again, be “one of considerable significance”, as he would no doubt put it in that conservative-speaking style that is his trademark.

Formula 1’s sweeping rule changes for the forthcoming season are the first topic on the agenda, and Frank enunciates his words clearly and slowly. “*Let there be no doubt,*” is his effective precursor. “Many of the suggestions that have come both from FOTA [the Formula One Teams’ Association] and the FIA are genuinely positive and helpful. They represent a big step forwards for F1 at a time when we needed to make changes and re-adjust the way we present ourselves to the public.”

What about the new rules as a whole? Will they indeed reduce costs and ease the burden on the independent teams? Will the performance gaps be narrowed?

“Generally I would say the new rules *will* be effective,” says Frank after a pause. “I think it’s also true that an independent team like Williams is well placed to adapt to the new era. We grew organically. We have been small, medium and large, if you want to think of it that way. We know how to operate in those different dimensions and we have had our share of success in those modes. Do you know what our budget was,” he asks, staring into the middle distance, “when we won the world championship in 1992 with arguably the most sophisticated F1 car ever built?”

I should know. I was team manager of Williams at the time. The Williams-Renault FW14. Active-suspension, active everything. If ever there was a racing car that said “automotive pinnacle”, this was it. I suspect it was somewhere in the £40millions.

“Thirty-two and a half million pounds,” he says, and then repeats with disbelief. “And that was at a time when some aspects of the car – the computer power, for example – were hugely more expensive than they are now. I’m not saying that we could be competitive today with a budget that low, but I am saying that Williams know how to do it and to some extent we are looking forward to the challenge. Certainly the new engine rules are a step forward for us. The same could also be said about the transmissions.”

The Williams team will adjust; as F1 fans we should have no doubt about that. Processes will be rationalised and other money-generating projects will be considered – Williams’ contract to build the new FIA F2 cars is a good example of that. Nor is this the first time that Williams have diversified.

There was the Indycar back in the early 1980s, the Metro Rally project, the BMW Le Mans car and the touring cars. But there's no doubt that times are changing and companies like Williams must adjust. This being so, how does Frank see the 2009 season developing? Will the new rules allow teams like Williams to race at the front once more?

"Miracles don't happen overnight," he responds. "Ferrari and McLaren haven't dominated the past few years solely because they've been able to generate more income. Equally, our problems have not been entirely due to not having sufficient budget. We have to be honest and admit that we haven't delivered in a number of critically important areas. In 2008 we were not good on fast corners; we established that relatively early in the season but never cracked it. We worked hard. We produced hundreds of new pieces as the season progressed. Towards the end of the year it became clear that the bulk of our effort needed to be on the 2009 car.

"Now, in the stark light of the recession and the new rules, we have our heads down and we're working flat-out. That's all. I will make no predictions beyond suggesting that 2009 could be even more competitive than 2008. I say this for two reasons: one, there are more 'spec' parts on a 2009 F1 car than at any time in the sport's history. I'm sure we all have our opinions about the new front and rear wings but from Williams' perspective there is something attractive about a 'spec' aero part. Take the front and rear wing designs out of your job list and you reduce the number of variables with which you can play. That poses a very different challenge and it means we're basically starting with a fresh sheet of paper.

"Second, we have a profoundly competitive group of people here in Grove. Yes, I think Ferrari and McLaren will still be the teams to beat, but that isn't to say that they will dominate the championship. And we have a good driver line-up: a driver is only as good as the car he is given, but in Nico I think we not only have a driver who sits comfortably amongst the world's top 10, but who is also capable of racing with Lewis – providing he is given the equipment, as I say. And Kazuki is a strong talent who is learning fast, with a very intelligent brain."

So Sir Frank is relishing yet another year in this amazing racing life of his. It is the competitive urge, the endless challenge, that defines his day. He organises his agenda right down to the minute – of a 24-hour clock, of course – and when travelling speaks in terms of "ETD", "Wheels Up" and "ETA", rather than of blandly arriving at the airport or reaching the hotel. He will also be well-versed in national and international politics, company news and other matters of financial importance. He reads history books when he occasionally finds the time and he still finds it easy to learn a foreign language. ➤



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Combined: 62.8 (4.5) – 43.5 (6.5) CO₂ emissions g/km: 119 – 153. Messages to 84880, standard text charges apply.



“I can see the recession working for Formula 1 in a positive way”

He remembers aircraft registrations and contract paragraph numbers the way you and I remember our names. And, despite the wheelchair and the constant monitoring, he remains sharp and articulate – a man who looks forward but never backwards and loves what he does, 24/7. Win, lose or draw.

That day in France back in 1986, when our rental Ford Sierra left the road and trapped us, upside down, is rarely mentioned. It happened and it has passed: these are the unspoken words I feel whenever I spend more than fleeting time with Frank.

It reminds me of the time I really got to know Frank – or to know him about as well as anyone is *allowed* to know him. “For a while,” he said about a year after the accident, “I thought about all the other things I could have done if I hadn’t been racing – you know, the holidays, the family things, the times at home. I suppose I missed all that in the rush but I only realised it as they sat me up in the hospital bed. Then, one day, I woke up and I was back to normal. I just wanted to go racing again...”

Finally, then, Sir Frank Williams gives a state of the union assessment of F1, 2009-style. It can’t be an easy time for Williams and their portfolio of blue-chip sponsors; equally, this won’t have been the first time Sir Frank has faced a choppy sea. “For aggressive, well-funded companies, now is the time to steal market share,” he says. “Formula 1 may be expensive but it gives that back with its global penetration. Barring the Olympics and the World Cup, both of which are every four years, it’s difficult for marketing agencies to come up with another sport to rival F1 in terms of its ability to provide blue-chip, international hospitality and global brand recognition. It’s our job to tailor our assets to the needs of our partners.

“I therefore see the recession working for F1 in a positive way. Many companies will cut back on conventional sponsorships to concentrate instead on F1 – on the sponsorship sweet-spot, as it were. If you’re going to rationalise, you focus on the most *effective* programmes, not the cheapest.” Lenovo, of the Williams sponsors, have backed away from F1 a little, concentrating merely on product supply with McLaren, but Williams for the most part enters 2009 with sound endorsements from many of its key backers, among them Philips, AT&T and Allianz. And although RBS have been hit hard by the recession, they have also declared their commitment to Williams in 2009.

And so Sir Frank – the Frank who has launched more than 100 new Formula 1 sponsors – isn’t stopping now. The racer’s racer is as committed and as hungry in 2009 as he was back in ‘69, when he wore out his shoes about as quickly as young Piers Courage consumed his Dunlops. And, as our conversation reaches its end, he’s still in one hell of a hurry...

“OK? Finished? Good. Must get on. Lots to do. Thanks for talking. Bye.” **FO**

SIR FRANK WILLIAMS: 40 YEARS IN F1

THERE HAVE BEEN HIGHS AND LOWS SINCE HE BOUGHT THAT EX-FACTORY BRABHAM CAR IN 1969...

1969 Frank buys a Brabham Formula 1 car and enters it in a few races for driver Piers Courage. The team get two second places that year



1972 The first Williams F1 car sees the light of day – for a bit, at least. Henri Pescarolo crashes the FX3 on its first run

1977 Frank, along with a young new engineer called Patrick Head, forms Williams Grand Prix Engineering. Their base? An old carpet warehouse in deepest, darkest Oxfordshire

1978 Patrick Head’s first car, the FW06, is raced by Alan Jones

1979 The team expand to two cars and Patrick Head’s new car, the FW07, sends Clay Regazzoni to the team’s first GP win at Silverstone

1980 Alan Jones wins the world championship, but quits the year after following a row with team-mate Carlos Reutemann

1982 Williams’ new driver, Keke Rosberg, wins the world championship despite taking just one win – still a record today



1986 Three years into a partnership with Honda, Williams win the constructors’ championship

1987 More constructors’ championship success, plus a third drivers’ championship for Brazilian Nelson Piquet



1992 Three years into a new partnership with Renault, after Honda join forces with McLaren, Williams produce the devastating FW14B, which propels Nigel Mansell to the drivers’ championship

1994 Ayrton Senna joins Williams, but is tragically killed at the season’s third race at Imola. Test driver David Coulthard is Damon Hill’s new team-mate; Hill loses the title to Michael Schumacher



1996 Damon Hill becomes world champion, followed by Jacques Villeneuve the year after

1999 Frank is Knighted

2008 After some rather lean years success-wise on the track, the Williams team enter their 500th race as a constructor at the Italian Grand Prix



**WILLIAMS****CARS 16 AND 17****WILLIAMS FW31 POWERED BY TOYOTA RVX-09**

WILLIAMS

They're running KERS in a completely different way to all the other teams - and he who dares could have a very competitive car...

IT MIGHT NOT FEEL like it, but it's been 12 years since Williams last won the world championship and five years since they last won a grand prix. Guided by the redoubtable partnership of Patrick Head and, of course, Sir Frank, the team are desperate to put an end to that unfortunate statistic. But the new aerodynamic rules have thrown F1 into a bit of a spin. Nobody quite knows who will have an advantage until we get to Melbourne. Add in the fact teams are set to introduce their new KERS systems at different times of the season and the competitive hierarchy might take a while to establish itself.

Fortunately, in the case of both KERS and aerodynamics, Williams started development early. Last year the team bought a stake in

Automotive Hybrid Power and moved the company in-house to its Grove factory. Whereas most teams are developing battery systems for their hybrid units, Williams have been working on developing a flywheel-based system that uses a Magnetically Loaded Composite (MLC). In simple terms the flywheel contains magnetic particles that reduce eddy currents and enable the flywheel to rotate faster (over 100,000rpm). If it works, reliably, and Williams decide to use the device, it might be more powerful and efficient than battery-based KERS.

Not only that, technical director Sam Michael has admitted the team was conducting windtunnel work on the new FW31 as early as December 2007 and that

was the reason for a lack of development on last year's car - and their slide down the pecking order as the season unfolded.

"The early start on the 2009 car had an adverse affect on the FW30," he says. "We thought our best chance of closing the gap would be in 2009, not in 2008. Whether that philosophy pulls off or not, I don't know."

Chief designer Ed Wood, along with aerodynamicist Jon Tomlinson, have produced a neat offering in the FW31, which appeared for the first time at the new Portimão circuit in the middle of January. Power continues to come from the bulletproof Toyota V8 and the partnership extends to sharing drivetrain development and dynos. Of course, added to that is the Japanese driver Kazuki Nakajima, and while he was initially considered an unfortunate add-on to the engine deal, he impressed last year to the extent that his speed caused

Chief designer Ed Wood has produced a neat offering in the FW31 car



MEET THE TEAM

TEAM HISTORY

Founded 1977
First GP Argentina 1978
GPs started 504
Wins 113
Poles 125
Fastest laps 129
Constructors' points 2,557.5
Constructors' titles 9
Drivers' titles 7

DRIVER CAR 16

NICO ROSBERG
Born June 27 1985
Place of birth Wiesbaden
Lives Monaco
Status Single
Height 1.78m
Weight 73kg
Race engineer Tony Ross
Airbox camera colour Red
Website www.nicorosberg.com



F1 HISTORY

Debut Bahrain 2006
GPs started 53
Wins 0 **Poles** 0
Fastest laps 1
Points 41
2008 position 13th



TEAM PRINCIPAL

FRANK WILLIAMS



Sir Frank Williams continues to lead the team with his own brand of competitive spirit and rigour. Tech director **Sam Michael** is under pressure to produce a more competitive car than in recent years; chief engineer **Rod Nelson** must ensure it performs on track, under **Patrick Head's** eagle eye

CHAMPIONSHIP POINTS SINCE 2004

2004 88pts (4th)
2005 66pts (5th)
2006 11pts (8th)
2007 33pts (4th)
2008 26pts (8th)

DRIVER CAR 17

KAZUKI NAKAJIMA
Born January 11 1985
Place of birth Aichi, Japan
Lives England
Status Single
Height 1.75m
Weight 62kg
Race engineer Xevi Pujolar
Airbox camera colour Yellow
Website www.kazuki-nakajima.com



F1 HISTORY

Debut Brazil 2007
GPs started 19
Wins 0 **Poles** 0
Fastest laps 0
Points 9
2008 position 15th



TECHNICAL DIRECTOR

SAM MICHAEL



FAST FACTS



BOTH WILLIAMS drivers finished 11 consecutive races from France to Brazil – the best of any team in 2008

IN 2005 Nico Rosberg turned down a place at Imperial College in London, studying aerodynamics, to continue his racing career

NICO ROSBERG and Kazuki Nakajima are the only team-mates who were born in the same year, 1985. Nakajima is the older by five months

IN SINGAPORE last season Kazuki Nakajima made it through to third qualifying for the first time in his career, qualifying 10th

IT IS 72 RACES since Williams last won a GP, the longest drought in the team's history

PATRICK HEAD has sailed across the Atlantic as a participant in the Atlantic Rally from Gran Canaria to St Lucia in 2005

NICO ROSBERG completed at least one lap in every position from first to 20th in 2008

WILLIAMS DEVELOPED the Metro 6R4 rally car in 1984 for the World Rally Championship, on commission from then sponsors Rover

IN THREE SEASONS in F1 Nico Rosberg has out-qualified* his team-mate 34 times and been out-qualified 18 times

THE ONLY other occasion two sons of F1 drivers have been team-mates was also at Williams: Damon Hill and Jacques Villeneuve in 1996

WILLIAMS WON 61 of the 162 races during the 1990s – a win rate of 37.65 per cent

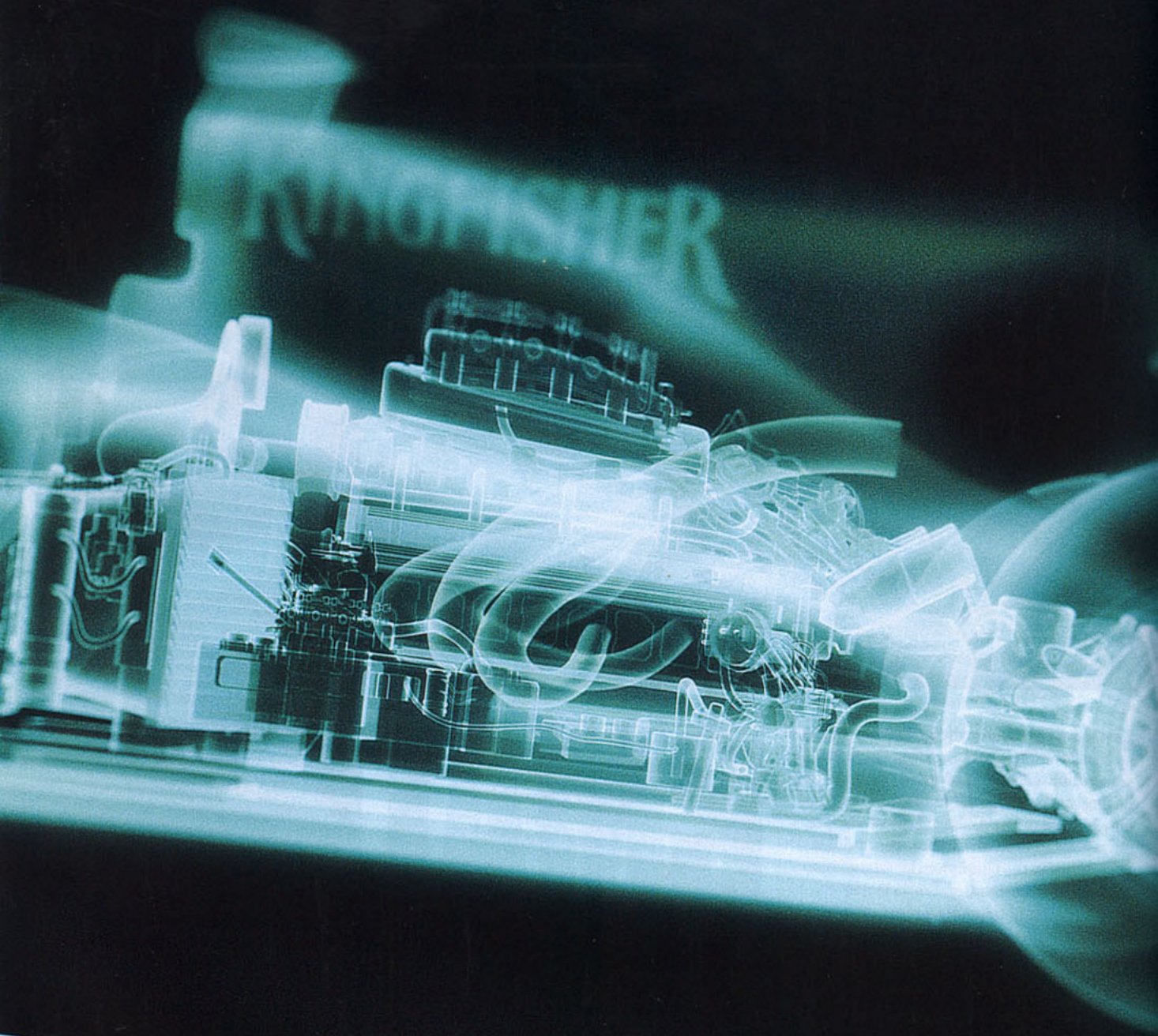


The Williams FW31: the proud winner of the Best Looking Car In A Test Livery award

headaches for Nico Rosberg. As for Rosberg, he has a point to prove in 2009. His 2008 season showed flashes of speed, but too often he threw away valuable points finishes, and only his Safety Car-assisted second place in Singapore allowed him to pull ahead of his team-mate in the championship standings. It's now time for the German to live up to his billing if he's to justify a reputation as one of the sport's brightest talents.

One other concern is the effect the economic downturn is having on the independents from Grove. The beleaguered Icelandic Baugur group (of which Hamley's are a part) was absent from the team's dark blue testing livery, along with Lenovo (having switched to McLaren for 2009), but troubled banking giant RBS continues on the car. However, the team has extended a sponsorship deal with Randstad.

Williams will always adhere to its core engineering values, but at the same time must act to avoid sliding into obscurity. Sir Frank has stated that cost-cutting measures saved the team, but if they are to avoid the fate of other former champions (notably Brabham, Tyrrell and Lotus), then performances must come on the track. Regular points are a must, but a podium on merit would be a bonus – and a welcome sign they are emerging from the doldrums.



DOCTOR VIJAY MALLYA | **PATIENT FORCE INDIA**
PROCEDURE MERCEDES ENGINE, GEARBOX AND KERS TRANSPLANT



OPERATION FORCE INDIA McLAREN

Force India dropped Ferrari engines for a full-scale involvement with McLaren in 2009. *F1 Racing* looks at the nuts and bolts of a technical partnership that could change the face of the sport

WORDS MATT WARWICK ILLUSTRATION PETER CROWTHER PORTRAITS LORENZO BELLANCA

Considering the current 'F1 crunch', 2008 could be seen as a success for Force India... simply because they're still here. With the amount of money and work that goes into this sport, it seems unfair to label any team as also-rans, but in a season where they were the only competitors not to score points, something had to change, despite it being little over a year since Vijay Mallya bought the set-up from Spyker.

Gone is chief technical officer Mike Gascoyne and team principal Colin Kolles, with owner Vijay Mallya taking full responsibility for running the team. Rather than play safe and let the dust settle by building on a year of consolidation from the back of the grid, Vijay has surprised everyone. Firstly, he binned the Ferrari engine, one of the best money can buy. Secondly, after the team had been designing their 2009 car since July '08, he announced a 'technical partnership' with McLaren in November last year meaning they would basically have to start again. Eyebrows were raised: a deal with a team that's never agreed a technical alliance with any other F1 outfit before, with a man who's been in the sport for just over a year.

He may not have a lot of experience running a team, but his success in business would suggest that any sweeping changes he's made in the past have paid off sweetly. And for those who have been at Force India a long time – well, they think it's brilliant. "It's probably the partnership we've always dreamed of," says Ian Phillips, director of business affairs, and a 'lifer' at this team since the launch of Jordan in 1991. "We've had a lot of engine partners over the years. We've always been a customer, but what we're buying is a very proven package."

That sounds like a good start, and the phrase 'technical partnership', associated

with one of the most successful names in Formula 1, has to excite anyone associated with Force India. But what exactly is involved? A Mercedes engine, McLaren gearbox and hydraulic systems – plus Formula 1's Great Technical Unknown – KERS (kinetic energy recovery system).

"Vijay took this decision when realising what he needed," says Phillips. "KERS was the main driver. It was logical for us to get our own solution, and we had to have an off-the-shelf package."

Unsurprisingly, Phillips stops short of revealing the cost for this kind of deal, but assures us that it's "commercially in the right ball-park" for what the team is willing to pay. "This is probably the biggest single technical change for the teams in 30 years, with the KERS and new aerodynamic wing package to promote overtaking," he adds. "It came out of necessity."

The team may consider themselves too small an operation to invest their own time in developing KERS, but this deal has opened up many more doors for Force India than just buying into up-and-coming technologies. Another part of the deal is the change in manpower that the team will see at the factory and at the track.

Chief operating officer for Force India Simon Roberts has come over from McLaren's Applied Technologies arm as a bridge for the project. He has the contacts at McLaren and knows how their system works, as well as how Mercedes work. "The guys at Mercedes and McLaren are putting together the engine and transmission team that will be in Force India's garage," he says. "Five will come from Mercedes and three from McLaren. They will travel with us and wear the same kit as us." ▶



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Each member of the partnership has its own project manager: one at Force India, another at McLaren Applied Technologies and another at Mercedes-Benz, who each manage all the data transfer and technical questions. And it's not like McLaren can't learn a few things from Force India's past experience of being an engine customer: "The guys in McLaren and Mercedes are not used to dealing with another outfit, but the team here are used to dealing with information flows and with other people," adds Roberts.

"We're very careful about the things we ask McLaren for"
Mark Smith

One major part of an independent team's struggle has always been integrating an engine, gearbox and hydraulic system for them to work together. Making three complex parts operate in harmony can be time consuming and costly, but integrating a trusted and reliable engine, gearbox and hydraulic system on to a chassis that isn't a McLaren should be far more straightforward, giving the team the chance to focus on improving other areas of performance.

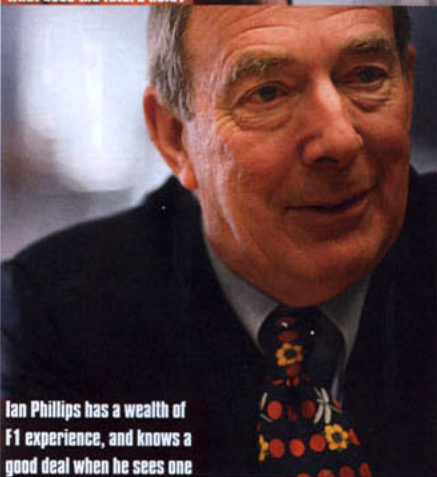
"I feel this is a new benchmark," says Simon Roberts. "We know they're the same engine and gearbox as a McLaren, and whatever differential there is between us and McLaren, we know it's something else to do with the car – so we've got time to focus on other things without worrying about the engine and gearbox. We expect to be able to get performance upgrade packages with the same number of people [in this team], like bodywork updates," he adds. "Also, given the new rules, they'll be early developments as people run with slicks, learning about weight distribution and suspension loads. There'll be a lot to get involved in."

But considering this is far more complex than simply ordering an engine and having it dropped at your front door, there must be information that needs to be shared. "We play it very safe," says design director Mark Smith. "We're conscious of staying within the Concorde Agreement, so we're very careful about things we ask. For example, the engine cooling is very easy to trip up with – you can have set of data on paper, but the reality is that's not how it works. That's where the partnership can help; you can get a bit of feedback without talking in terms of detailed

New boy Simon Roberts has made himself comfortable at the Dadford Road factory



Someone's stolen Mark Smith's crystal ball... but what does the future hold?



Ian Phillips has a wealth of F1 experience, and knows a good deal when he sees one

"When we did the deal, the thought of being able to turn a wheel before going to Melbourne was a distant dream," says Ian Phillips. "We might have been able to shakedown one car before the freight left, and finish the second in the garage in Melbourne – that's what we were faced with. The fact we've been able to gain about three weeks is due to the dedication of the people here, but also with the co-operation of McLaren, who understood we were up against it."

It's that kind of teamwork which has led Force India to succeed in designing the new car. "I personally take the view that we pretty much started the car again once the deal was announced," says Mark Smith. "It was never regarded as a set-back, more as an opportunity. The thing about the design process is that it's repetitive – whatever the part is, the designer will think, 'If I could do that again, I'd do it better.' We'd pretty much designed a whole car when the partnership was kicked off. It meant we had to go through the whole process again."

Considering BMW had been focusing hard on their 2009 car from about halfway through last season, starting again for a small team like Force India might seem like an impossible task. But the situation has inspired everyone at the factory. "In all the years I've been in F1 I've never seen so many people put so many hours into a car as this group has," says Smith. "I've been massively impressed by the work ethic. People aren't being pushed – that's self-motivation."

So for such an uncertain time for the sport, this seemingly unique deal could be the future for how independent teams can operate in the current climate. "It certainly helps," concludes Phillips. "Whether it's the model for the future is open to debate."

But one thing for sure is that Force India are a proud constructor in their own right, and not the 'feeder team' to McLaren that some have suggested. This new racing model could spark a debate that will go on throughout the course of the season, as teams get to grips with the uncertainty of the new regulations. But if Force India stick the VJM02 on the higher reaches of the grid at some point in 2009, the answer could be there for all to see. **FO**

specifications. It's almost self-regulating – engineers have pride and really want to solve these things themselves anyway."

This team has been used to running to very tight deadlines in the past. With the announcement of this partnership coming on November 10 last year, the effort to get the VJM02 up and running for its first test at Jerez was always going to be a big challenge.



FORCE INDIA

A technical partnership with McLaren and Mercedes is the beginning of a new era – but they need to get some test miles in, and fast

FORCE INDIA'S BIGGEST concern in 2009 is time – and the lack of it. Melbourne is fast approaching and the team has only taken part in one test session since last year's season-ending Brazilian GP.

The shakedown of the new car, the VJM02, was due to take place in the first week of March (after *F1 Racing* had closed for press), but that leaves the team very little time to understand the car – and the complex set of new rules – before it has to be shipped to Melbourne.

The team has retained Adrian Sutil and Giancarlo Fisichella for 2009, but that continuity might not be an asset when so much of the car and team structure has changed over the winter. The lack of testing will handicap both drivers when they come

to Australia, as they'll have little experience of the behaviour of the car with the new aerodynamic changes with slick tyres.

Throw into the mix all of the new cost-cutting regulations that include banning testing from Melbourne until December 31 and the team could have a difficult time – particularly at the start of the season, when they need running time to make reliable a car they can then develop.

The only test before Christmas attended by the Silverstone-based team was at Barcelona, but the majority of running was conducted by McLaren's test driver Pedro de la Rosa. The Spaniard was drafted in because of the new technical alliance between McLaren, Mercedes and Force India that was announced last November. It meant that

any progress that had been made on the 2009 car was halted, as the chassis had to be adjusted to accommodate a Mercedes V8 powerplant, rather than the Ferrari engine used previously. Over the winter the team has been working frantically on the VJM02 as parts from Woking and Brixworth arrive.

"The way the front of the Mercedes engine attaches to the chassis is different in detail to the way the Ferrari is attached, and that installation knocks on to the rest of the chassis," says design director Mark Smith. "The radiator configuration is different, and that affects the sides of the chassis. Also, parts of the suspension had to change."

On the top floor of the Dadford Road base, new chief operating officer Simon Roberts has been making himself comfortable at his new desk after coming over from McLaren Applied Technologies

Given the late announcement of the deal, it'll be a tough season for the team



MEET THE TEAM

TEAM HISTORY

Founded 2007
First GP Australia 2008
GPs started 18
Wins 0
Poles 0
Fastest laps 0
Constructors' points 0
Constructors' titles 0
Drivers' titles 0

CHAMPIONSHIP POINTS SINCE 2004

2004 5pts (9th)*
2005 12pts (9th)*
2006 0pts (10th)**
2007 1pt (10th)***
2008 0pts (10th)
 * as Jordan
 ** as Midland
 *** as Spyker

DRIVER CAR 20

ADRIAN SUTIL
Born January 11 1983
Place of birth Gräfelfing, Germany
Lives Switzerland
Status Single
Height 1.83m
Weight 75kg
Race engineer Jody Egginton
Airbox camera colour Red
Website www.adriansutil.com

DRIVER CAR 21

GIANCARLO FISICHELLA
Born January 14 1973
Place of birth Rome, Italy
Lives Italy
Status Married
Height 1.72m
Weight 66kg
Race engineer Bradley Joyce
Airbox camera colour Yellow
Website www.giancarlofisichella.it



Don't panic! Force India aren't cheating with all these aero bits... it's Adrian Sutil testing last year's car with slicks



F1 HISTORY

Debut Australia 2007
GPs started 35
Wins 0 **Poles** 0
Fastest laps 0
Points 1
2008 position 20th



F1 HISTORY

Debut Australia 1996
GPs started 212
Wins 3 **Poles** 3
Fastest laps 2
Points 267
2008 position 19th



TEAM PRINCIPAL VIJAY MALLYA



CHIEF OPERATING OFFICER SIMON ROBERTS



It's all change in top personnel for the new season, with owner **Vijay Mallya** taking up the role of team principal to be more hands-on. **James Key** remains as the team's technical director, while, as part of the technical partnership with McLaren, **Simon Roberts** comes in as chief operating officer

FAST FACTS



FORCE INDIA is the only team on the grid to be co-owned by a former member of parliament – Dr Vijay Mallya has sat on the Indian Rajya Sabha (Council Of States)

FORCE INDIA were the only team who failed to score a point during the whole 2008 F1 season

SUTIL AND FISICHELLA outqualified each other nine times in 2008 – the only team-mates level after 18 races

FORCE INDIA'S drivers have the biggest age gap between them of all team-mates – 10 years separate Adrian Sutil and Fisichella

THERE WERE just five races in 2008 when both Force India cars finished – the lowest number for any team

ADRIAN SUTIL is a talented pianist and his father played violin in the Munich Philharmonic Orchestra

THIS SEASON will be the first time since 2001 that any incarnation of this team has retained its drivers from the previous season

GIANCARLO FISICHELLA is fifth on the all-time list of grands prix contested, with 212 starts

ADRIAN SUTIL spent more laps in 16th place (162) than any other driver during the 2008 season

LAST SEASON was the first time an Indian-registered team had ever competed in Formula 1

■ **2008 WAS** the first full F1 season that Giancarlo Fisichella failed to score a point in. The only other time he failed to score points was in his eight races for Minardi in 1996



to oversee the technical alliance between McLaren and Force India, while team owner and 'bling king' Vijay Mallya will take a more active role at grands prix as team principal. Former charismatic team chief Colin Kolles – a stalwart from the original Jordan takeover by Midland – has departed to run Audis at Le Mans this year.

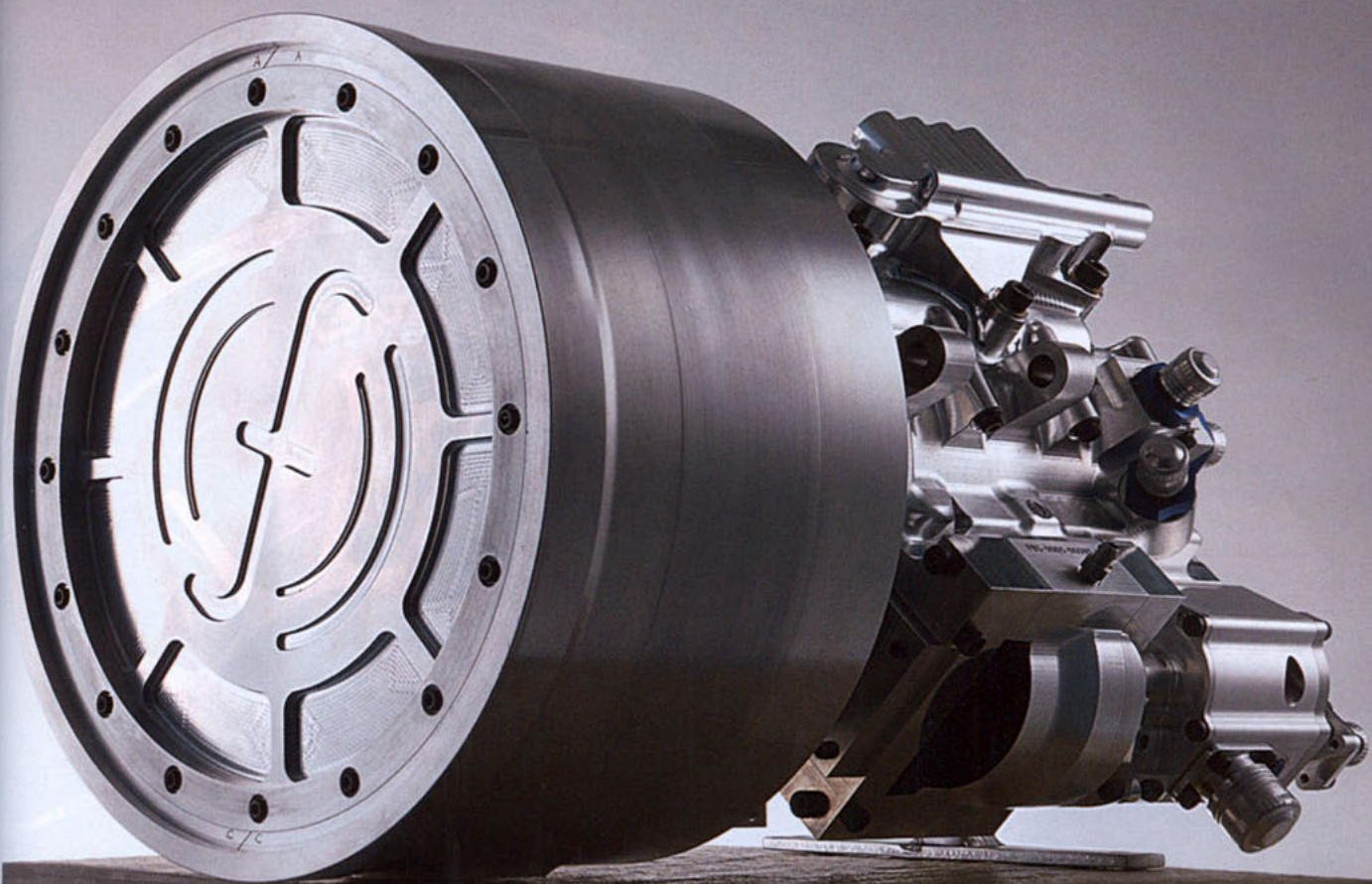
Given the late announcement of the deal, it will be a tough season for one of the smaller teams in Formula 1. But it's exactly the sort of partnership they need to lift them off the back of the grid. For example their lack of budget would never have allowed them to fund and develop a KERS project, whereas with their McLaren-Mercedes deal one comes included. It helps McLaren too, as the lack of testing means that engine data acquired at races will come from not just two, but four cars. The main area of concern is that the team doesn't fall into that awkward grey area of the rules where more than just the drivetrain is shared between the teams... They must avoid the tag of being the 'McLaren B-team', something that the larger-than-life Mallya will be adept at dismissing.

The only thing missing now is results to fuel and excite the many potential fans in India. The New Delhi GP is pencilled for 2011 and that is the timeframe this team has to turn their fortunes around.

THE NEW RULES OF 2009 EXPLAINED

New rules have had far-reaching consequences for the 2009 breed of F1 cars. Here's the in-depth guide to what's changed and why it matters

WORDS BRADLEY LORD
PICTURES TED HUMBLE-SMITH & ADRIAN MYERS



KINETIC ENERGY RECOVERY SYSTEMS (KERS)

"This is the kind of brave, innovatory engineering that Formula 1 has forgotten how to do." Max Mosley's provocative words leave no room for doubt: not only is KERS good for F1, it's here to stay.

The concept is simple: a very high-tech power boost button. Kinetic energy is recovered under heavy braking, stored onboard the car and then released via a steering wheel-mounted button. In a single burst, this will provide the cars with a power boost of up to 80bhp for about seven seconds per lap – which could be an important spur to overtaking. The device is also likely to be used to save fuel during in and out laps, or behind the Safety Car; at that point, it will help improve fuel efficiency like a road-going hybrid.

As always in F1, the devil is in the detail. The key technology involved in the KERS system is the energy storage device. Currently, the rules only allow a maximum of 400 kilojoules of energy to be stored per lap, which can be collected at a maximum rate of 60 kilowatts (the equivalent of 80bhp) and released at the same rate.

Many teams have opted to store the energy in high-tech batteries, a low-risk solution that is similar to what's already used in some road cars. Williams, notably, has developed an alternative by storing energy in an electric flywheel spinning at up to 100,000rpm. Another independent supplier, Flybrid Systems, has developed its own mechanical flywheel system (pictured above) for less than £2million. It has already survived an F1 crash test undamaged.

The downsides of KERS, from the teams' point of view, are dual: safety and weight. A KERS Safety Working Group has been established to work through potential safety issues, while teams have provided additional training (and lots of rubber gloves) to handle the high-voltage systems. The weight issue is potentially more problematic: the battery systems favoured by many teams

can weigh up to 40kg, which makes the performance trade-off marginal: a car without KERS could be faster at some tracks.

A number of teams are likely to turn up in Melbourne without the system fitted, but the experts don't think this makes the initiative any less credible. "If not every team makes it to the grid with KERS fitted, then I think you've demonstrated it was sufficiently difficult," explains Jon Hilton, one of the brains behind Flybrid.

In spite of what some teams have said, the right KERS system is very much road-relevant, contributing to the FIA's goal of showing how F1 can assist in the development of energy-efficient technology: this stuff is truly cutting-edge. "I think we'll look back on it as something that had to happen," admits Williams technical director Sam Michael. "We're currently working on a KERS system for Jaguar road cars," adds Hilton. "That device is so similar to the F1 system that a passer-by wouldn't be able to tell them apart."

The most important thing is that 2009 is only the starting point. The FIA wants this sort of technology to become a 'performance differentiator' – a factor that makes the difference between a car being quick, and not. To do so with KERS will mean upping the energy storage capacity and power delivery. Mosley wants it to happen in time for 2010, with the systems storing twice the energy and delivering power at up to 100kw (approx 130bhp).

The current system will recover approximately eight per cent of the total available energy per lap; experts think that it's not unreasonable to target levels of up to 50 per cent as the technology develops. "The rules were written so that in year one, running without KERS won't cost you the world championship," concludes Sam Michael. "In a few years' time, it's going to bring over half a second per lap. Then, you won't be able to race without it." >



SLICK TYRES

Perhaps the most fundamental regulation change for the 2009 season is the return of slick tyres. KERS will generate the sport's positive PR stories, the wings will attract widespread comment, but the biggest factor for the teams to adapt to is the more subtle change to the bits of rubber at each corner. "The tyres are the biggest driver of our design philosophy," explains Sam Michael. "Even our aerodynamic concept is designed to get the maximum out of the tyres."


In basic terms, a slick tyre is a 'stronger' design than the grooved tyres used from 1998 to 2008, thanks to its uniform tread surface. "Grooves make the tread surface weaker than with a slick, and there is more movement in the tyre," explains Bridgestone's director of motorsport tyre development, Hirohide Hamashima. "This means that a grooved tyre requires a harder compound than a slick tyre of the same size. A slick is a stronger tyre in terms of wear, but one that offers higher grip because of being able to use softer compounds."

The return to slicks was, in part, motivated by a desire to maintain the cars at 2008 speeds, and the FIA say cars will gain between six and eight per cent mechanical grip, according to the compound. But more importantly, the slicks mean the relationship between aerodynamic and mechanical grip has been altered: the mechanical component now forms a greater percentage of the car's overall grip.

"More reliance on mechanical grip means that how drivers use their tyres should be more of a factor," continues Hamashima. "A driver

who is not sensitive to his tyre's needs will not be rewarded by the same amount of longevity of grip as a driver who is more forgiving in his style."

What's more, the new slicks have pushed the teams towards a more forward weight distribution and aero balance than in 2008 – and that's a direct consequence of the change in the grip ratio between front and rear. "When we moved to grooved tyres we had to make a wider and larger diameter front tyre to counteract the grip lost at the front due to the smaller contact patch and the graining,"



"The tyres are the biggest driver of our design philosophy"

Sam Michael - Williams

continues Hamashima. "However, the change back to slick tyres has not been accompanied by a reduction in size of the front tyres. The change in grip ratio for the 2009 tyres means more grip from the front, which encourages an oversteer balance from the cars." This means that looking after the rear tyres – both in terms of set-up and driving style – will be an even more critical parameter in 2009, especially at more severe circuits for rear tyre usage.

The advantage of having a single tyre supplier is that the hardness of the compounds becomes a 'lever' to improve the racing. At times in 2008, the two available dry tyre compounds at each race were nearly identical in performance, which rendered the rule requiring the teams to use both during the race meaningless. For 2009, Bridgestone have therefore worked hard to introduce a bigger difference in behaviour between the two compounds available at each event. "They will differ in terms of temperature working range," reveals Hamashima. "One tyre will quickly be in its working range and deliver a fast lap time relative to the other compound, which will take longer to get to its working temperature, but once there will deliver constant lap times."

One other thing to watch out for is wet-weather performance. While the introduction of slick tyres has partly compensated the loss of downforce in the dry, the wet-weather compounds are exactly the same as last year – so the full effect of the new aero package will be seen. It also means the performance differential between running on a wet and dry track will be greater – and, by extension, that the teams who calculate the optimum moment to switch from wet to slick tyres on a drying track, will potentially gain even more time than they did last year. More than ever, it would seem, he who dares wins. >

NEW AERODYNAMIC REGULATIONS

Some would say they're so ugly only a mother could love them; others reckon, "We'll get used to it." But regardless of the aesthetic verdict on the wide front wings and narrow rear wings of 2009-spec F1 cars, only one question really matters: will the changes work?

The weird wings, plus a much-revised diffuser and appendage-free bodywork, are the results of the Overtaking Working Group, which comprised the technical directors from Ferrari, Renault and McLaren, plus the FIA's Charlie Whiting.

Their target was to devise new aero rules that cut downforce by 50 per cent, in order to minimise the wake created by the cars, allowing rivals to follow closer behind and make overtaking easier.

The result is that front wings are 400mm wider than last year and 75mm lower to the ground, with a 500mm 'neutral zone' in the centre of the mainplane which the teams are not allowed to develop. The rear wings are 250mm narrower and positioned 150mm higher; coupled with the diffuser modifications, these changes should reduce the average following distance to about one second, compared to last year's two seconds.

Of course, the story's not that simple: ever since the rules were published, the teams have been beavering away in their

windtunnels, trying to find the downforce (and performance) they've lost. "It's a big challenge for the teams," explains Williams' Sam Michael. "It's also much harder to claw back the downforce because the OWG have given us a restricted envelope in which to work." Talk before the end of 2008 was of teams recovering all but 20 per cent, but that target now seems optimistic.

The changes should reduce the following distance to one second, from last year's two



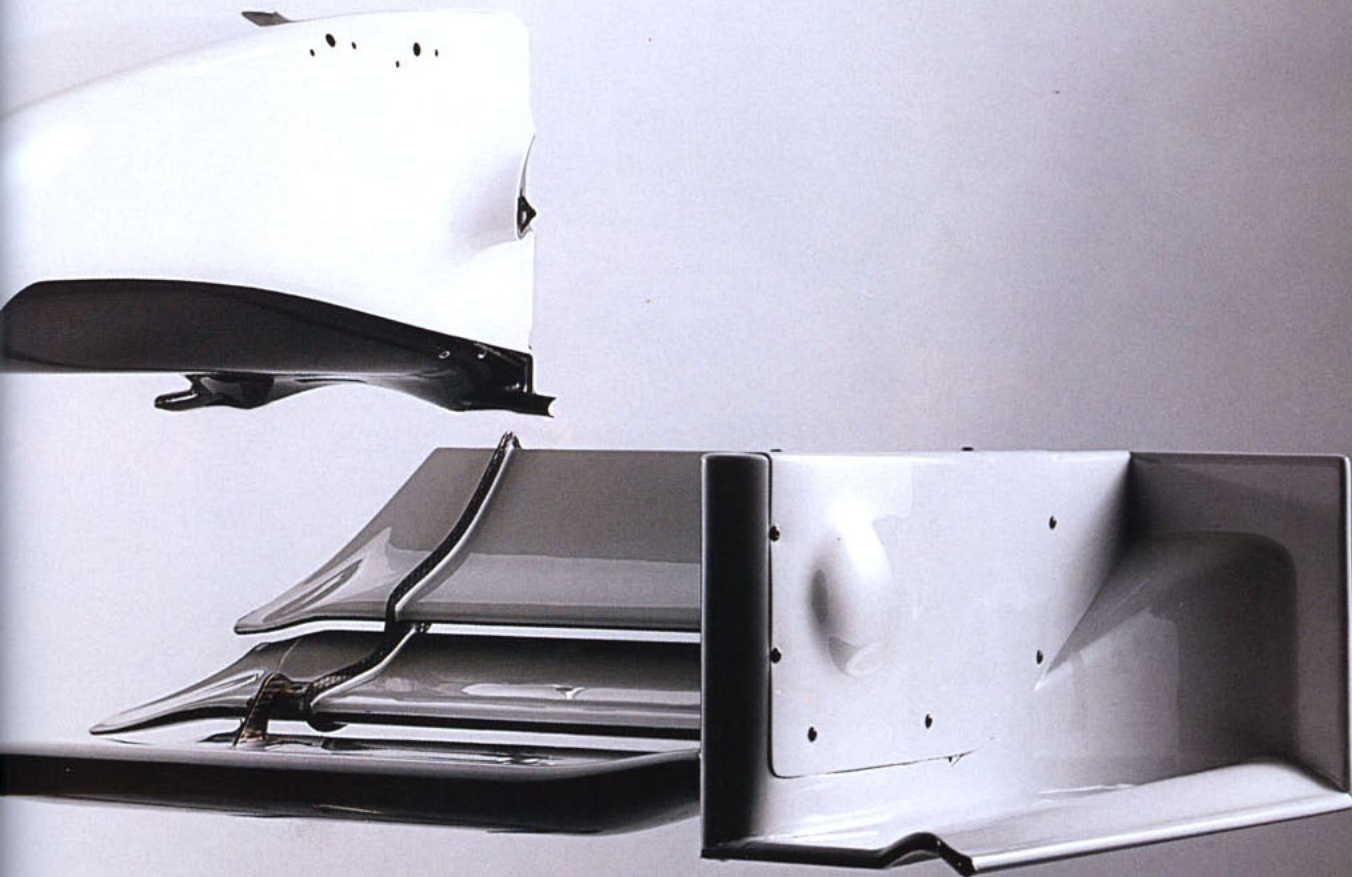
As ever, the new aerodynamic restrictions have given birth to some intriguing interpretations: Ferrari and Red Bull have incorporated clever turning vanes in the sidepod area, while Williams and Toyota have both exploited the diffuser rules in ways that have left rival teams scrabbling to catch up. Michael highlights the differences in front wing design as a potent example of this. "When you look at the plan view, there is a maximum surface area that we can work in. Some teams have used it all, whereas some have not. The bigger the wing, the more forward aerodynamic balance the team will be looking to run." And the further forward the cars' weight distribution is likely to be, too.

The other crucial factor with those new wings is that they'll move – legally. The front flap (the upper element of the front wing) can be adjusted by six degrees, twice every lap. At circuits where a long straight is preceded by a fast corner – think Shanghai and the approach to the back straight – the driver of a following car will be able to crank on a little more wing to neutralise the understeer normally experienced when close behind another car. This wing angle will then be reduced after the corner to give enough straightline speed to attempt a pass. "I think the adjustable front

flap will be a good contributor to overtaking," says Sam Michael. "Plus the car in front won't really be able to use it to defend: if your car is already balanced through the high-speed corners then adding more front wing would simply create too much oversteer."

When the advantage of the adjustable front flap is combined with the power boost provided by KERS, the potential exists for exciting racing. It may not come at circuits with only one passing opportunity, where it would be easy to use KERS in defensive fashion to neutralise the power boost of the car behind. But at a track like Monza, with three or four potential passing opportunities, the following car can choose when to pounce – and if the car in front has already used its KERS boost that lap, the chances of seeing some overtaking are much increased.

"You've got to see the changes as an overall package," explains Michael. "The main mandate for the Overtaking Working Group was the theory that reducing downforce, and increasing the friction coefficient by using slick tyres, would help improve the racing. If that doesn't happen this year, it will mean the premise of the OWG's mandate was wrong." We'll soon find out the truth, because Melbourne's just around the corner... **F1**



DO RULE CHANGES

The new 2009 regulations are aimed at better racing, but what did such moves do for F1 in the past?

WORDS ALAN HENRY PICTURES LAT ARCHIVE



YEAR 1983

RULE CHANGE Ground-effect cars banned and flat-bottomed cars introduced to limit aerodynamic grip

EFFECT Competitive racing, lots of overtaking, a variety of race winners. Just like in 1982, in fact

IMPROVE RACING?



Study the F1 history books in detail and there is an abiding lesson for us all: the teams' engineers have generally been cleverer – or perhaps it's more accurate to say 'more devious' – than the rulemakers at the FIA. They've usually managed to work out ingenious ways by which to side-step the meaning and effect of restrictive regulations in a bid to unlock an extra performance edge. Uniquely, for 2009 we have a totally different state of affairs to be handled by the competitors. In what Adrian Newey has called "the biggest regulation change since the flat-bottom rule in 1983", the governing body will be putting to the test its newly developed aerodynamic package – devoid of the ugly spats and spoilers which previously proliferated – in a bid to produce better racing and more overtaking. But is it reasonable to expect this aim to be successfully achieved? And, crucially, how has the racing been affected when the rules have been changed in the past?

Paddy Lowe is McLaren F1's engineering director and has been a leading light within the FIA's rather quaintly titled Overtaking Working Group. "I really hope it does make a big difference. I'm reasonably confident that what we learned through the Overtaking Working Group programme will produce a good step. To say it's the ultimate solution for overtaking in F1 would be incorrect, but I expect it to make a significant difference. Perhaps drivers will now be able to take greater advantage of when the car in front makes a mistake. The rules should allow for more of that."

What's different about the new package of rules being introduced in 2009 is that it results from a focused and proactive process brought together under the auspices of the FIA. It's not reacting to a set of specific and established problems, or ambiguity in the rules. This is real blue-sky conceptual stuff on a clean sheet of paper. And it just might make the racing better, something which reactive rule changes in the past singularly failed to do. Most of the time, anyway... >

The first major rules upheaval after the establishment of the official world championship in 1950 was the introduction of the 2.5ltr engine regulations for the start of 1954. When the championship began it had inherited what can only be described as a 'rag bag' of technical rules and regulations. Cars could be 1.5ltr supercharged, or up to 4.5ltr normally aspirated. There was no quantifiable technical rationale behind this 'equivalency' formula, which had been just plucked from the ether.

Still, it worked well enough until the end of 1951, at which moment the absence of sufficient cars (while manufacturers prepared for the new 1954 regs) prompted the governing body to change the championship to 2ltr F2 regulations up until the end of 1953. No better racing was delivered; in fact, far from it. Alberto Ascari and the Ferrari team held the championship in a vice-like grip across both these interim seasons.

For 1954 a new 2.5ltr F1 was introduced,

On the other hand, the advent of the 2.5ltr regulations certainly provided a fertile breeding ground for Tony Vandervell's efforts to establish his Vanwall cars as world-class competitors. That aim was successfully achieved, and you could argue that the racing was certainly improved during 1957-58 by the presence of the first world class British Formula 1 team. But attributing the emergence of the Vanwalls to the change in regulations is to construct a tenuous link. Had the 2ltr regulations been retained into the mid-1950s the British team might have competed anyway, although it is questionable whether Mercedes would have joined in without the technical spur of the new F1 rules in '54, offering them a clean sheet of paper.

At the end of 1958, with British fans in the throes of celebrating Mike Hawthorn's achievements in becoming the country's first world champion, the governing body – the CSI, as it then was – threw a curve ball into the equation by announcing that a new 1.5ltr

YEAR 1961

RULE CHANGE Introduction of 1.5ltr engines
EFFECT Ferrari, having already developed a suitable small-capacity V6 engine, dominate the 1961 season. The high point is a resounding 1, 2, 3, 4 result at Spa



YEAR 1988

RULE CHANGE Minor revisions to turbo engine regs ahead of brand new, non-turbo rules for 1989
EFFECT McLaren dominate the championship, winning 15 of 16 races – an all-time record

heralding one of the golden periods in the sport's history. With a blend of great diversity and technical innovation, this was the era of the Maserati 250F, Mercedes-Benz W196, Lancia D50, Ferrari Dino 246 and Vanwall. It would be difficult to claim that the change in regulations generated great racing during that period, but it certainly generated a wide variety of race results. Apart from what some cynics still regard as a set-piece battle for the lead of the 1955 British GP at Aintree (in which Stirling Moss just pipped Juan Manuel Fangio for victory by a length), which was the first half of a Mercedes 1-2-3-4 grand slam. It was hardly the most entertaining of contests.

F1 would be introduced from the start of 1961. This downsizing was justified variously on the grounds of safety and offering up a new technical challenge, although the cynics complained that this was another example of the governing body pandering to Ferrari, who were already up and running with a small capacity V6 engine which looked just the job.

Maranello, of course, duly dominated the first year of the new formula and, to be fair, the racing through to 1965 was pretty good. At least it was in the wake of Jim Clark's dominant Lotus-Climax, which breezed to the world championship in 1963 and '65, and should have done in '62 and '64 as well. If the rule makers thought the 1.5ltr switch was justified on safety grounds, within a few years the general consensus began to swing in the other direction.

For 1966 it was decided to replace these 'gutless wonders' with a new generation of 3ltr engines. However, concerned



that there would not be sufficient engine makers queuing up to participate, the rule makers left the door ajar for an alternative development route. It would take another decade, but eventually that door would be blown off its hinges as Renault put their turbocharged shoulder into the job. F1 has never been quite the same since that day.

When the CSI left the provision on the statute book at the start of '66 providing for the use of 'forced induction 1.5ltr engines', they could have had no inkling of its long-term effect. The reason for the rule was to allow competing teams to supercharge their old 1.5ltr engines as a temporary measure if they were unable to get their hands on a state-of-the-art 3ltr unit.

Fast forward to the 1977 British GP at Silverstone. Down at the back of the field, sizzling, popping and banging, was the first Renault F1 car driven by Frenchman Jean-Pierre Jabouille, powered by a 1.5ltr engine equipped with an exhaust-driven

This is real blue-sky conceptual stuff, and it just might make the racing better

turbocharger. Keith Duckworth, the co-founder of Cosworth Engineering and the architect of the epochal DFV V8 which had been dominating the scene for much of the previous decade, was spitting tin-tacks. In his view a turbocharger driven by exhaust gases was not the same as a mechanically operated, direct-drive supercharger. They might both have been 'forced induction' systems, but that was about as far as it went.

In the excitement of the moment, Duckworth's reservations were swept aside. Two years later, all those who witnessed René Arnoux's Renault turbo banging wheels with Gilles Villeneuve's flat-12 3ltr Ferrari 312T4, as they battled for second place in the French GP at Dijon-Prenois, might have been forgiven for thinking turbos were a good thing. Here were two top cars, each with very different performance parameters, thanks to the rulemakers, thrown into luridly close competition. Or was it simply two pumped-up drivers giving their all?

The late 1970s and early '80s marked a period of extraordinary technical growth, with engine makers working flat-out on the new generation of turbos and chassis designers squeezing every ounce of potential from 'ground effect' – under-car aerodynamics. Ground effect, as pioneered by Lotus founder Colin Chapman, proved ▶

to be something of a double-edged sword. Moreover, as F1 increasingly became polarised between FISA-aligned 'grandees' such as Ferrari and Renault, and the teams loyal to Bernie Ecclestone and the F1 Constructors' Association, there was pressure to neuter the competitiveness of the UK teams. That meant knobbling ground effect.

At the end of 1982 the FIA announced that a 'flat bottom' rule would be introduced for '83. Frankly, they had a point. The cars

"It will be easier to overtake, but it won't be like MotoGP."
Pedro de la Rosa

were banned at the end of the '88 season and everybody began re-learning the art of going racing with a new generation of 3.5ltr naturally aspirated engines. Honda remained one of the leading engine manufacturers, but the grids tightened up initially. Until a new generation – in this case the Williams-Renaults – seized the upper hand.

One of the best recent examples of the legislators triggering an improvement to the cut-and-thrust of wheel-to-wheel racing



were getting too fast for the circuits. Nelson Piquet, driving one of the 'pitstop' Brabham BT50s designed by Gordon Murray, had bagged pole position for the Austrian GP at the Österreichring at an average speed a tad over 151mph. It was eye-watering stuff. Nevertheless, Murray pressed ahead with a definitive 'half tank' ground-effect BT51 challenger for 1983.

"I was concerned that there might be a last-minute rule change," Gordon says, "but Bernie kept saying, 'Don't worry.' Then one day, he came in, looked at me and said, 'Worry.'" Murray shakes his head. "The whole transmission was designed, the patterns underway – and then we lost the skirts [ground effect]. So it was back to the drawing board in a big way. The transmission had to be thrown away because it was all wrong for what I had in mind for a flat-bottom car. We needed a completely new design."

The result of the team's super-human efforts, starting in November '82, saw a couple of brand new Brabham BT52s on the starting grid for the first round of the '83 world championship, the Brazilian GP at Rio, on the following March 13. Piquet

YEAR 2005

RULE CHANGE Introduction of single-tyre-per-race

rule to try to reduce cornering speeds

EFFECT Variable performance profiles during the race and lots of passing as teams struggled with tyre wear

drove the BT52 to the second of his three world championship titles – and the racing throughout the season was of a generally high standard thanks, at least in part, to the FIA's restrictions on under-car aerodynamics.

It's an F1 truism that rules stability helps close up the field, following the law of diminishing returns. But history has delivered the lesson that stability sometimes serves only to entrench one team's, or manufacturer's, competitive advantage. Think 1986 British GP at Brands Hatch and the following year's race at Silverstone; the Williams-Hondas of Nigel Mansell and Nelson Piquet put a lap on the third place finishers, respectively Alain Prost's McLaren-TAG and Ayrton Senna's Lotus-Honda. In 1988, the McLaren-Honda turbos took their opposition to the cleaners, winning 15 out of the season's 16 races. Finally, turbos

came in 2005 – although maybe it was a touch by accident. Anxious to cut speeds after the teams failed to agree a package of regs changes, the FIA implemented rules permitting teams to use only one set of tyres for qualifying and the race, as part of a broader package of measures. The result, as many drivers struggled with late-race tyre wear, saw plenty of overtaking but also put Bridgestone at a decisive disadvantage relative to rivals Michelin. The rules reverted to shorter-life tyres for the 2006 season.

Making sweeping generalisations about the correlation between rule changes and close racing is an imprecise science. That said, it's the view of most insiders that the raft of changes being introduced for 2009 will tax the drivers and designers in equal measure. But will they make overtaking easier? "Yes, definitely," says McLaren test driver Pedro de la Rosa with optimism. "But remember that this is F1 – if people think the new rules are going to transform the sport, then forget it. There will still be aerodynamic effect and off-line will stay dirty. It will be easier, but it won't be like we see in MotoGP. And people need to understand that." **FO**

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FROM AUSTRALIA

Taking in 16 countries through nine months, Formula 1 2009 will be the greatest show on Earth

MAR 29 AUSTRALIAN GRAND PRIX



CIRCUIT ALBERT PARK
LOCAL START TIME 1700
LAPS 58
LENGTH 3.295 MILES



APR 05 MALAYSIAN GRAND PRIX



CIRCUIT SEPANG
LOCAL START TIME 1700
LAPS 56
LENGTH 3.444 MILES



APR 19 CHINESE GRAND PRIX



CIRCUIT SHANGHAI
LOCAL START TIME 1500
LAPS 56
LENGTH 3.387 MILES



JUN 07 TURKISH GRAND PRIX



CIRCUIT ISTANBUL PARK
LOCAL START TIME 1500
LAPS 58
LENGTH 3.317 MILES



JUN 21 BRITISH GRAND PRIX



CIRCUIT SILVERSTONE
LOCAL START TIME 1300
LAPS 60
LENGTH 3.194 MILES



JUL 12 GERMAN GRAND PRIX



CIRCUIT NÜRBURGRING
LOCAL START TIME 1400
LAPS 60
LENGTH 3.199 MILES



SEP 13 ITALIAN GRAND PRIX



CIRCUIT MONZA
LOCAL START TIME 1400
LAPS 53
LENGTH 3.600 MILES



SEP 27 SINGAPORE GRAND PRIX



CIRCUIT MARINA BAY
LOCAL START TIME 2000
LAPS 61
LENGTH 3.148 MILES



OCT 04 JAPANESE GRAND PRIX



CIRCUIT SUZUKA
LOCAL START TIME 1400
LAPS 53
LENGTH 3.608 MILES



TO ABU DHABI

APR 26 BAHRAIN GRAND PRIX



CIRCUIT SAKHIR
LOCAL START TIME 1500
LAPS 57
LENGTH 3.363 MILES



MAY 10 SPANISH GRAND PRIX



CIRCUIT BARCELONA
LOCAL START TIME 1400
LAPS 66
LENGTH 2.892 MILES



MAY 24 MONACO GRAND PRIX



CIRCUIT MONACO
LOCAL START TIME 1400
LAPS 78
LENGTH 2.075 MILES



JUL 26 HUNGARIAN GRAND PRIX



CIRCUIT HUNGARORING
LOCAL START TIME 1400
LAPS 70
LENGTH 2.722 MILES



AUG 23 EUROPEAN GRAND PRIX



CIRCUIT VALENCIA
LOCAL START TIME 1400
LAPS 57
LENGTH 3.367 MILES



AUG 30 BELGIAN GRAND PRIX



CIRCUIT SPA-FRANCORCHAMPS
LOCAL START TIME 1400
LAPS 44
LENGTH 4.352 MILES



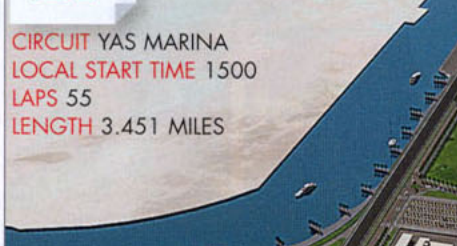
OCT 18 BRAZILIAN GRAND PRIX



CIRCUIT INTERLAGOS
LOCAL START TIME 1400
LAPS 71
LENGTH 2.677 MILES



NOV 01 ABU DHABI GRAND PRIX



CIRCUIT YAS MARINA
LOCAL START TIME 1500
LAPS 55
LENGTH 3.451 MILES



HOW F1 USED TO BE

Amazing shots from the days of yore

IT ALL KICKS OFF...

It's the season-opener in Melbourne, 1996, and a young rookie threatens to overshadow his famous team-mate. Sound familiar? This time it was Indycar champion Jacques Villeneuve, who stunned the F1 world by out-qualifying Williams team leader Damon Hill and taking pole on his grand prix debut.

Martin Brundle spectacularly shunted his Jordan on lap 1, but for the restart (right) Villeneuve and Hill engaged in a ferocious battle for the lead that lasted until the Canadian's car suffered an oil leak. Under orders from the team to slow or risk a blown engine, Villeneuve reluctantly let Hill through for the win.

WANT THE CHANCE TO WIN A PRINT OF THIS GREAT LAT PHOTO?

Email your answer to the following question below (including your name, address and daytime telephone number) to f1racing.competitions@haymarket.com. Please write 'How F1 Used To Be' in the subject line of your email. The winner will be the first correct entry drawn.

This race was Michael Schumacher's first for Ferrari. But where did he score his first win for the marque later that year?

- (a) Germany
- (b) Canada
- (c) Spain

The closing date is April 2, 2009. For full competition terms and conditions, please refer to www.f1racing.co.uk

1 JOS VERSTAPPEN

Verstappen proved a sensation in practice, running his Footwork-Hart comfortably in the top 10. But his race didn't go quite so well, ending with an engine failure. The accident-prone Dutchman raced intermittently in Formula 1 until the end of 2003

2 MIKA SALO

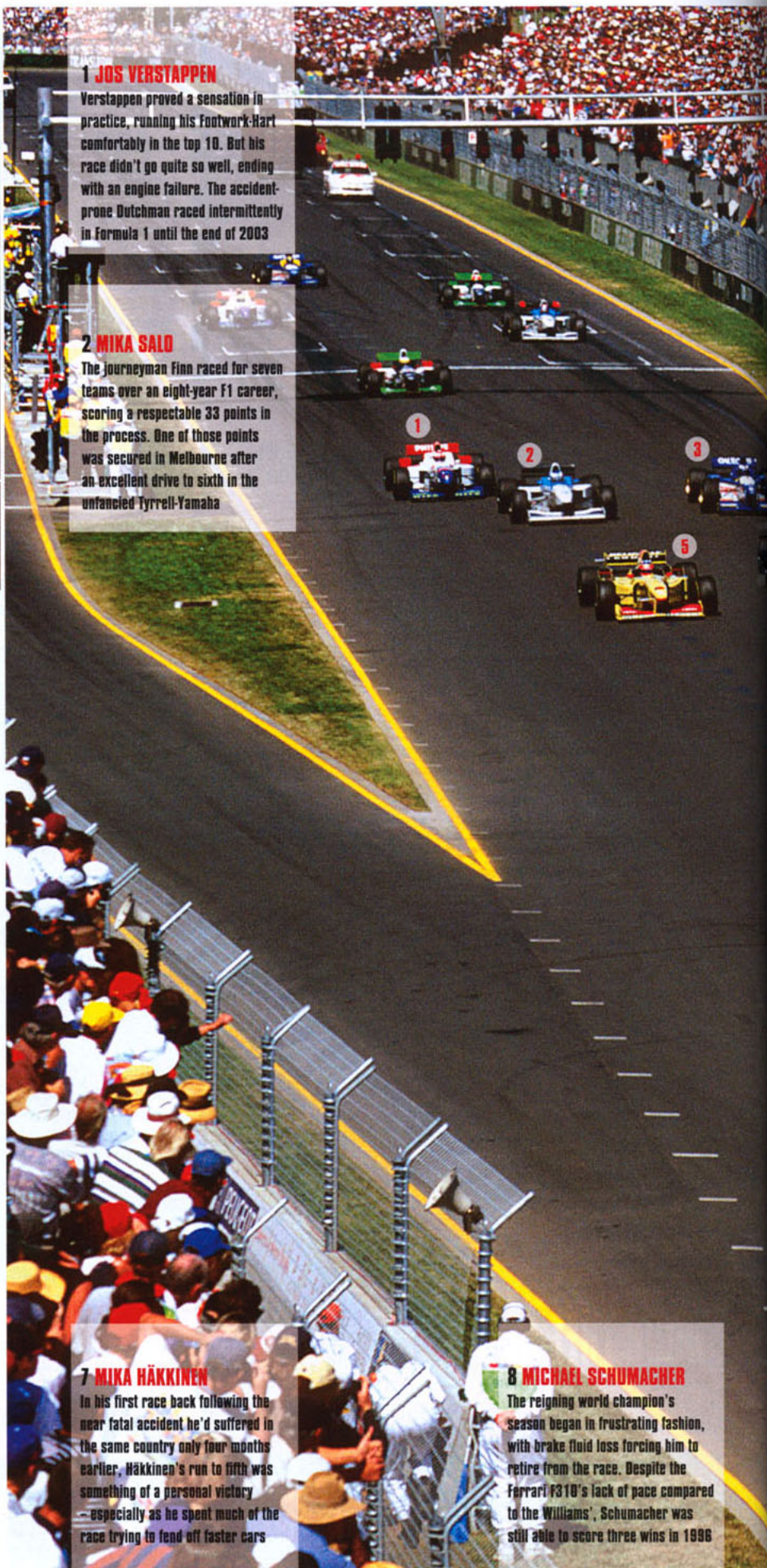
The journeyman Finn raced for seven teams over an eight-year F1 career, scoring a respectable 33 points in the process. One of those points was secured in Melbourne after an excellent drive to sixth in the unfancied Tyrrell-Yamaha

7 MIKA HÄKKINEN

In his first race back following the near fatal accident he'd suffered in the same country only four months earlier, Häkkinen's run to fifth was something of a personal victory – especially as he spent much of the race trying to fend off faster cars

8 MICHAEL SCHUMACHER

The reigning world champion's season began in frustrating fashion, with brake fluid loss forcing him to retire from the race. Despite the Ferrari F310's lack of pace compared to the Williams', Schumacher was still able to score three wins in 1996



3 OLIVIER PANIS

With a new Mugen-Honda engine in the back of his Ligier, Panis had reason to be hopeful in 1996. An uneventful run to seventh was all he could achieve in Melbourne, but five races later he would take a surprising maiden victory in Monaco

4 HEINZ-HARALD FRENTZEN

Frentzen had mixed fortunes at Melbourne. After his Sauber stopped with an electronics problem on the parade lap he was given a reprieve by Brundle's accident. He took the spare car for the restart and crossed the line in eighth place

5 RUBENS BARRICHELLO

Melbourne marked the start of the Brazilian's fourth and final season at Jordan. Engine failure on lap 29 forced Barrichello into the first of many retirements in 1996 and the following year he left Jordan to join the new Stewart team

6 GERHARD BERGER

Berger suffered from an unusual lack of engine power in qualifying. He decided that his seating position was to blame, causing his helmet to block the air intake. With the problem solved for the race, Berger went on to finish fourth



9 JEAN Alesi

The French-Sicilian's debut GP for the Benetton team was a nightmare. After engine failure on Saturday morning and an "undriveable" car in qualifying, Alesi added to his woes with retirement following a botched overtake on Eddie Irvine's Ferrari

10 EDDIE IRVINE

Starting his first race for Ferrari, Irvine caused a stir by out-qualifying new team-mate Schumacher, before collecting a solid third-place finish in the race. Over four years Irvine won four races with Ferrari before an unsuccessful spell with Jaguar

11 DAMON HILL

He started the season as champion-elect in the dominant Williams car but had to settle for second on the grid. Hill pressured Villeneuve into a mistake on lap 34 and, with the Canadian's car problems, took his first victory en route to the title

12 JACQUES VILLENEUVE

He made a perfect getaway and led until the first round of pitstops, when he lost the lead to Hill. Villeneuve re-took the lead with a brave move around the outside only to suffer a loss of oil pressure. He also set the fastest lap on a stunning debut

FINISHING

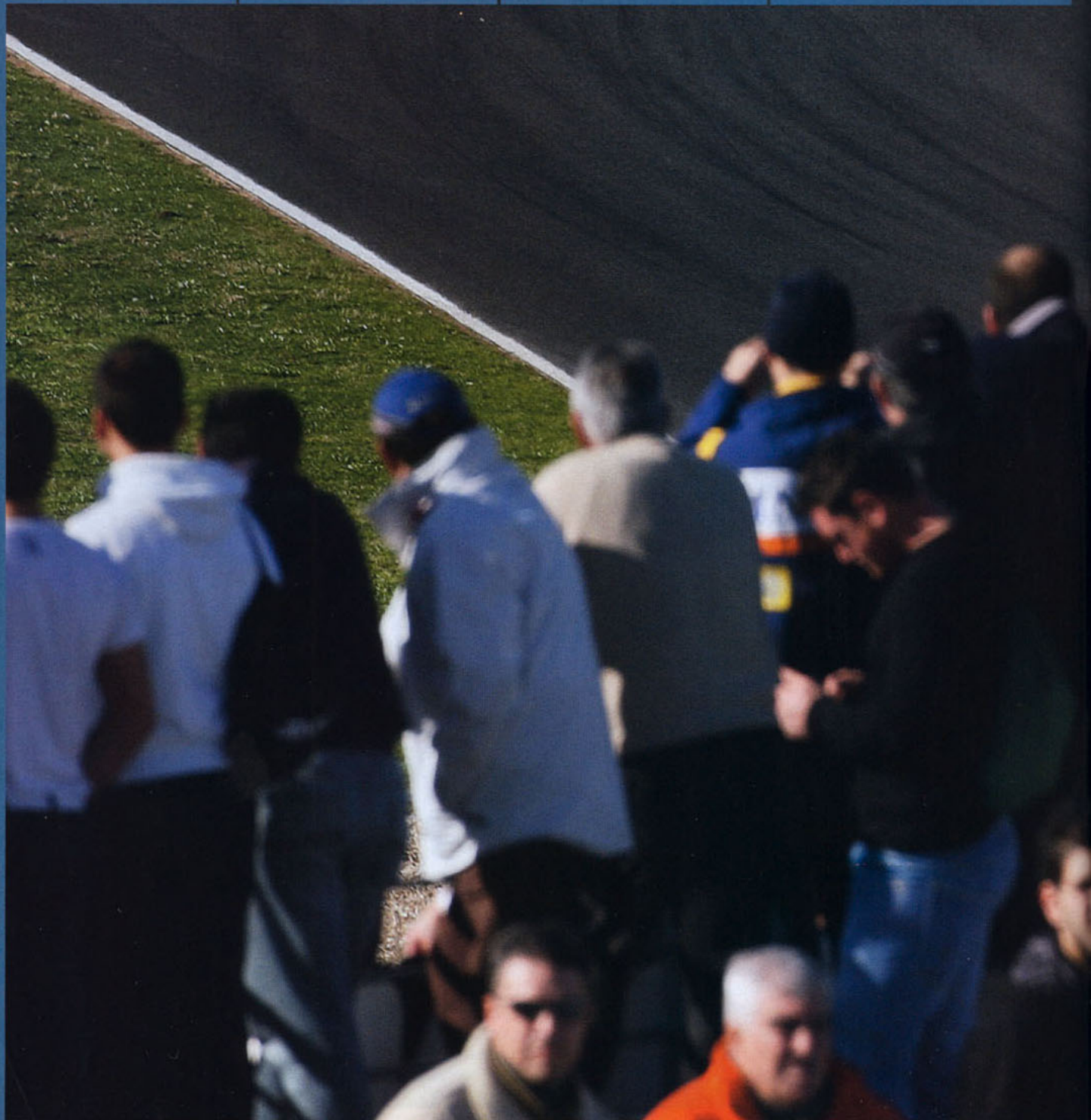
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Such is the excitement for 2009 that crowds have even gathered at tests – here checking out the new Renault R29 at Jerez

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Drink lots of water, stuff ice cubes down your racesuit... anything to avoid the heat





PETER WINDSOR

Forthright views from our man inside the F1 paddock

Ready for some good news for a change? TV ad revenues for the Superbowl – one of the biggest sporting events of early 2009 – broke all records. Although sales on the day were down £20m compared with 2008, the sporting public still

managed to spend over £160m in just one weekend of watching football.

So don't tell me that Formula 1 is about to collapse. In times of recession (and I'm referring to historical trends here, not just Superbowl XLIII) people tend to play and watch more sport, not less. "Sports exploded in popularity during the Great Depression

"Formula 1 is placed to play a starring role in the return to the good times"



Formula 1 will survive the recession in good health, because advertisers know the importance of the sport's global reach

of the 1930s because they provided cohesion during a time of dislocation," an article in the financial press reminded us recently. The same piece went on to say that things are slightly different today of course, in that racial injustice and politics are less entwined with sports. But are they, when you think about it? For race and politics 1930-style, read 'TV-centricity' in '09-speak. In times of recession, in other words, it's easy to stay at home, watch the flatscreen and cheer for Lewis, Ferrari, or all things BMW.

I predict that our corner of the recession will therefore not be about the flushing-out of excess, but also about bigger and better TV deals and 24-hour sports television. This is because F1 is perfectly placed to play a starring role in the centre of every living room for the return to the good times. For one thing, it's the world's biggest TV sport: no doubt about that. It's bigger than the Olympics, the soccer World Cup and the America's Cup because it happens annually. And it's, of course, truly global – the 2009 media vernacular of '24/7'.

If the Superbowl exceeded all expectations it was because the gloom merchants forgot that many sponsors (or 'partners', as F1 teams like to call the companies that buy their real estate) are not cancelling their budgets; they are rationalising them, focusing on the sports that give truly global penetration and/or a huge ROI (return on investment). The former, in an F1 sense, is

a no-brainer; the latter is all about numbers. It's therefore necessary for all the F1 teams out there to ensure that their asking prices are commensurate with today's sponsorship spending. To do this, they must not only rely on rule changes, they must also change the way they operate. They must deliver for sponsors (via the public and the media) between the Formula 1 races as well as during the live events. And they must be conscious of F1 being primarily about entertainment – of it being a TV show that never ends. In the recession, it's no longer good enough for the F1 teams to tell the television crews that drivers aren't available for interviews because they are "de-briefing" or "with the physio". It's no longer acceptable for F1 teams to refuse media access to their garage-mahals. The teams need the media to wring every ounce of "entertainment" from their industry. If not, they should stay quiet and not complain about the shrinking economy.

F1 has a huge head start over all other forms of motorsport and most other sports: most of its events are underwritten by governments of countries, not entrepreneurs who are exposed to the ups and downs of the stock market. Its competitors receive a large chunk of their revenue from said governments and global TV, hospitality, freight and signage rights. In all other forms of racing (NASCAR being a good example), the wealth of the teams is directly related to the expenditure of the sponsors. It's now up to the F1 teams – not the FIA, and certainly not the governments who underwrite the races – to step up and deliver the show to the media and to the public. Twenty-four hours a day. Seven days a week.

TEDDY MAYER 1935 – 2009

I WAS VERY SORRY to hear of the passing of Teddy Mayer, the former McLaren co-owner who was there with the team from the start, shoulder-to-shoulder with Bruce McLaren. I always respected Teddy. I saw Tim,

his brilliant younger brother, race in Sydney only a few weeks before he was killed at Longford. And then, with amazement, I watched Teddy carry on with business, head down, rushing from race to race, Brooks Brothers



McLaren co-owner Teddy Mayer was an inspiration to many people in F1

briefcase in hand – even as Bruce, too, was lost to us. I learned much from Teddy's legally trained mind; I learned much from his ability just to carry on. It's because of Teddy and his ilk that we do what we do.



ALAN HENRY

It's a Max special: on the Presidency, Ferrari and 'listed' races

I didn't bother taking the short walk in the rain down to the local bookmaker to inquire what the latest odds against Max Mosley offering himself, again, for re-election as the FIA President next October. Why? Because the guy behind the counter would have replied, "It's a bleedin' cert, mate, I couldn't take your money." Or something like that. Instead, I'm staying indoors in the dry penning this column.

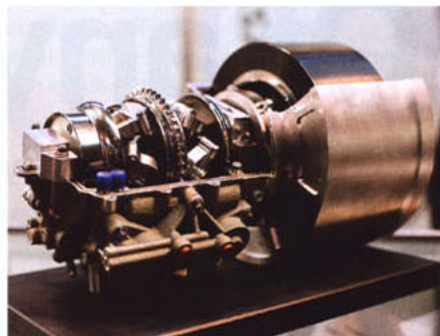
We've all said it many times before, but Max is Teflon-coated, extremely persuasive and cloaks a Machiavellian intellect beneath a glisteningly self-effacing veneer of charm. Listen to him for just 10 minutes and you begin to melt. Then you pinch yourself in an effort to reset your own mental hard disk drive. Or at least you try to.

At a lunch in London recently Mosley dropped a sledgehammer hint that he is likely to stand again for the most prestigious job in motorsport, despite the fact that last year he predicted he would stand aside for a successor to his throne.

"If a lot of people are saying, 'You should stay' then perhaps it would be churlish not to," he said. "On the other hand, like guests at a party, it is better to go too soon rather than too late. I'm still undecided at the moment, but I realise that a decision is needed by the summer."

Mosley's big challenge is to convince everybody who takes an interest in Formula 1

that the FIA is really serious about long-term cost containment. The dilemma, voiced privately by some of the teams, is obvious.



The sport must watch its budgets, but KERS is one of the most expensive research and development projects in F1 history

How can the governing body continue to pedal the line that F1 costs are unsustainable when the Mosley regime has been responsible for what many insiders claim is the biggest single R&D investment for many years – namely the kinetic energy recovery systems (KERS), which are supposed to enhance the sport's green credentials?

Don't get me wrong, financial profligacy is not the exclusive preserve of the FIA. The logic of their viewpoint that nobody in the seventh row of the grandstand gives tuppence whether an F1 gearbox is made from aluminium alloy or deep-mined unobtainium is unarguable.

Yet Formula 1 has traditionally been a sport that exists to evolve cutting-edge

"Mosley must convince people the FIA is serious about cost containment"

engineering, so why the hell should the governing body of this sport be allowed to dictate to independent companies just how much money they should spend on their motor racing?

"It is a question of sustainability," comes the reply from Mosley. In a world where one team has a float of 13 engines just to test gearboxes you find yourself agreeing with Max that Planet Formula 1 has finally gone completely mad. But then you ask what business it is of the FIA's and you find yourself back at the start of the puzzle all over again.

MY FAVOURITE MOSLEY ARGUMENT

BEING INVOLVED in the F1 business is sometimes akin to being locked in a cinema watching *Gone With The Wind*, knowing full well that if you nod off you'll have to wait about six hours for your favourite bit to come round again.

Max Mosley likens the argument that the teams on the grid should have a stake in the world championship by saying: just because you are a regular customer in a restaurant you should have a stake in that too. Or should that be a steak?



Max Mosley says Ferrari have been in F1 the longest, and so deserve a bigger slice of the pie

But Mr Mosley clearly believes that there is particular merit attached to Ferrari, simply because the team has been competing in the Formula 1 World Championship since its inauguration in 1950, and that "everybody else ducked in and out when it suited them". Perhaps then, he might like to consider that figureheads like Frank Williams would have been just eight years old when it all began in 1950, and that Bruce McLaren was 13 years old. You see my point?

PROTECTED STATUS?

I THOUGHT there were a handful of European grands prix, including the British, which are 'FIA protected' in recognition of their classic status.

The FIA Prez said, "Our deal with Bernie says that he cannot present a calendar without the traditional grands prix." OK so far. "But it is not our role to insist that a grand prix takes place in a sub-standard venue. And we cannot force Bernie to race below the going rate." My answers are: A) Interlagos, and B) perish the thought.



TIMO GLOCK'S RACE PREVIEW

THE AUSTRALIAN GRAND PRIX

MELBOURNE 29 03 09

LAPS: 58 CIRCUIT LENGTH: 3.265 MILES START TIME (GMT): 07:00

Australia is the most eagerly anticipated season-opener for years. And Toyota's Timo Glock will give us his verdict of every circuit in the calendar, starting with Melbourne...

"There will be a great sense of excitement before qualifying this year because it's only then that we'll get to see the true pace of the new-look cars. None of the teams have shown their hands during winter testing, but in Melbourne everyone will look to maximise what they have at their disposal. With this year's new in-season testing ban, the relative performances of the cars will carry even greater significance because there will be fewer development opportunities from race-to-race. I think everyone will be quite nervous as a result.

The Albert Park circuit is mostly made up of public roads, so the surface is always green and dusty at the start of the weekend. The asphalt rubbers-in quickly, so we usually see a lap-time improvement of two to three seconds over the weekend. There's little point in changing the set-up of the car until the track surface has settled down because if you do, you won't know whether it's the track or the car that's made the difference.

There are a couple of quite tricky corners on the track, so you have to be very disciplined in the cockpit to set a good lap time. It's easy to overdrive and ruin a good run in the final sector because the last couple of corners are inter-linked; a mistake in the penultimate turn will punish you through the final corner and that will affect your speed down the start-finish straight.

More than anything, Melbourne means racing. Everyone on the grid is hungry to race and after the longer than normal winter, we'll be keen for the lights to go out on Sunday afternoon. With the race starting a little bit later than last year the build-up will be long, but it will be worth the wait."



TURN 3: 2ND GEAR, 66MPH

"If you get a decent run out of Turn 2, this can be a good overtaking point. In terms of lap time, it's a tricky corner because your exit from Turn 3 affects your line and speed through Turn 4"



TURN 9: 3RD GEAR, 90MPH

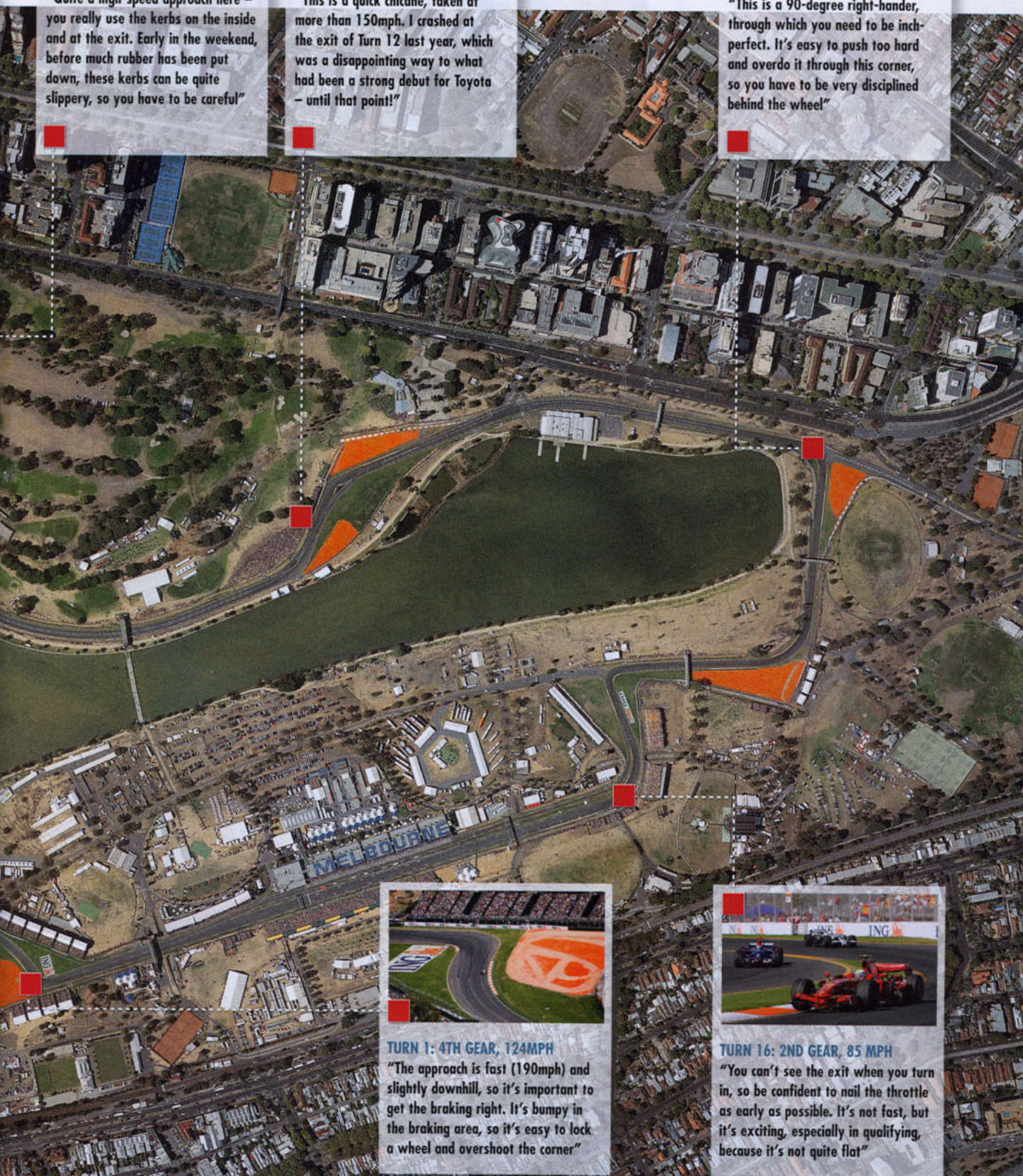
"Quite a high-speed approach here – you really use the kerbs on the inside and at the exit. Early in the weekend, before much rubber has been put down, these kerbs can be quite slippery, so you have to be careful!"

TURNS 11/12: 4TH GEAR, 154MPH

"This is a quick chicane, taken at more than 150mph. I crashed at the exit of Turn 12 last year, which was a disappointing way to what had been a strong debut for Toyota – until that point!"

TURN 13: 3RD GEAR, 89MPH

"This is a 90-degree right-hander, through which you need to be inch-perfect. It's easy to push too hard and overdo it through this corner, so you have to be very disciplined behind the wheel!"



TURN 1: 4TH GEAR, 124MPH

"The approach is fast (190mph) and slightly downhill, so it's important to get the braking right. It's bumpy in the braking area, so it's easy to lock a wheel and overshoot the corner"



TURN 16: 2ND GEAR, 85 MPH

"You can't see the exit when you turn in, so be confident to nail the throttle as early as possible. It's not fast, but it's exciting, especially in qualifying, because it's not quite flat"



TIMO GLOCK'S RACE PREVIEW

THE MALAYSIAN GRAND PRIX

SEPANG 05 04 09

LAPS: 56 CIRCUIT LENGTH: 3.438 MILES START TIME (GMT): 10.00

It's one of the hottest grands prix on the calendar, so get there early to acclimatise to the humidity, make loads of holes in your car's bodywork for cooling and pray your drinks bottle doesn't stop working...

"I will travel to Kuala Lumpur as soon as I can after the season-opening race in Melbourne. The races are just one week apart and I'll want to give myself as much time as possible to acclimatise to the heat and humidity of Malaysia. The real key to survival for a driver – and all of the mechanics, as it gets very hot in the pit garage – is to drink as much fluid as possible during the build-up to the race. I'll think nothing of taking on three to four litres of fluid a day.

The heat also takes its toll on the cars and the tyres. You often see cars with extra holes in their sidepods to help dissipate the heat, and we will really need to look after the rear tyres to stop them overheating. It will be a good challenge.

As for the track's layout, it's quite enjoyable to drive because there is an interesting mix of corners. There are also a couple of long and fast corners, where your car's aerodynamics and stability are tested to the full. Plus there are some slow hairpins as well, where good traction is important. The track's also quite wide, which allows the drivers to take a few different lines and encourages more overtaking.

As for Malaysia the country, I've never had the chance to see much of it. I visited the Petronas Towers in Kuala Lumpur a couple of years ago but I'd like to see other parts of the country. I've been told that some of the islands off Malaysia are nice, so I might check them out before the third race on the calendar in China."



TURN 1: 2ND GEAR, 56MPH

"Braking for this corner is difficult – you slow the car all the way to the apex. It's a good overtaking point, but you need to have a good line for Turn 2, where you can get wheelspin"



URNS 5/6: 5TH GEAR, 166MPH

"This is a really nice, high-speed complex. It's a left-right 'S' and in qualifying you're flat in fifth gear through the left. You then slow the car just as you're turning into the right-hander. It's good fun"

URNS 7/8: 4TH GEAR, 125MPH

"Although these are two separate right-hand corners, you treat them as one – it becomes one double-apex corner. The second apex is difficult to hit, especially if you miss the first one by even the smallest margin"

TURN 9: 2ND GEAR, 60MPH

"There's quite hard braking from 180mph down to second gear for this corner. Beware of the exit though – it is tricky because it's a steep uphill section and you can get a lot of wheelspin through here"



TURN 15: 2ND GEAR, 60MPH

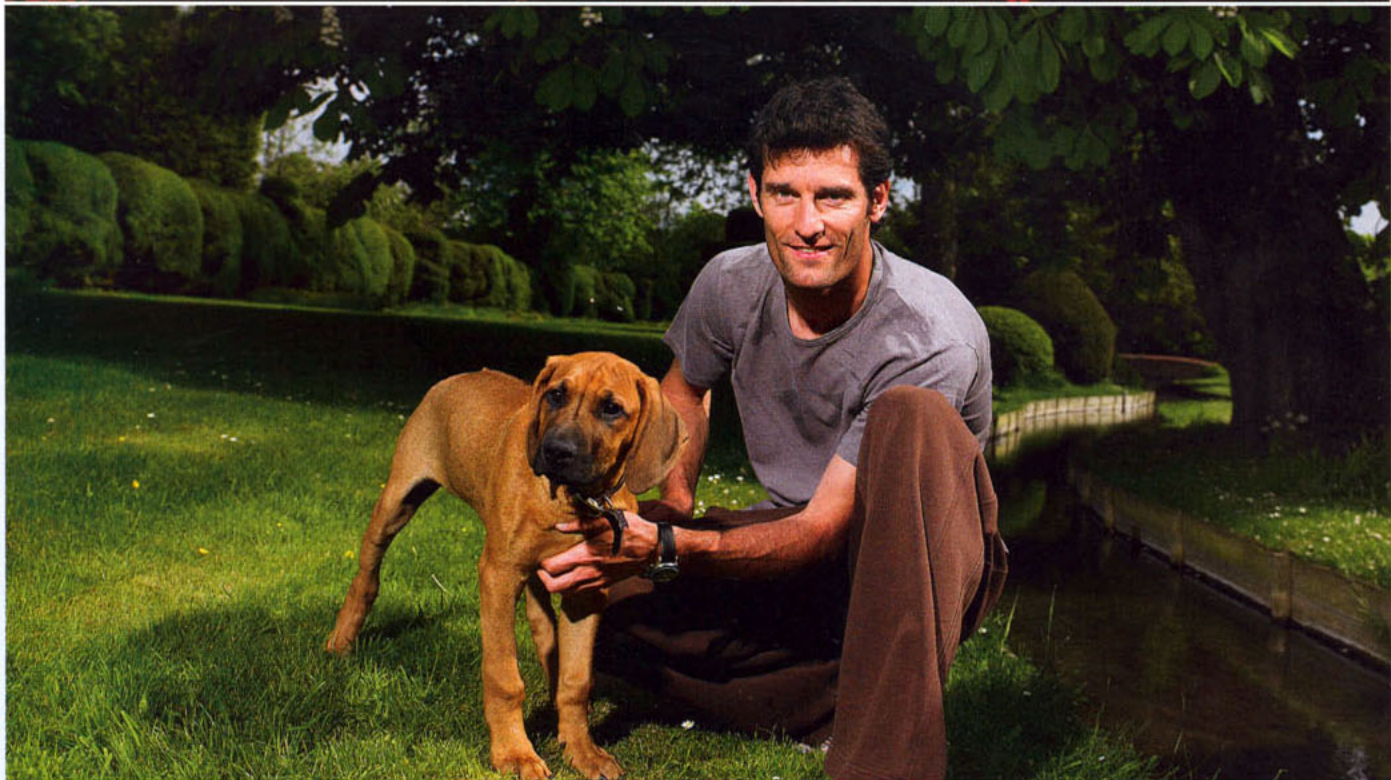
"This is probably the best overtaking point – the preceding straight is long and we're slowing from 190mph. Another straight follows, so it's important to make a clean exit"

TURN 14: 2ND GEAR, 71MPH

"The most crucial part of this corner is the exit, as the long back straight follows. You want to get the power down early and you sometimes get some snap oversteer as a result"

MY ADVICE TO YOU...

Personal wisdom from the great and the good of F1



MARK WEBBER

DRIVER FOR RED BULL RACING

1. BLOOD IS THICKER THAN WATER

"Work hard to stay in touch with your family. The relationship doesn't want to be too suffocating – which isn't a problem for me because I live 10,000 miles from my folks, who are in Queanbeyan! But it's good to maintain a bond with the people that shaped you and made you the person that you are."

2. CHOOSE YOUR FRIENDS CAREFULLY

"Be careful who you trust because it's very easy to get your fingers burned – not just in motor racing, but in life generally. Always be wary and remember that it takes time to earn people's trust."

3. NEVER GIVE UP

"It's amazing what you can achieve if you focus on something. I had a lot of doubters when I was racing in the junior formulas – there were people telling me that if I couldn't raise the finance to do Formula 3, how the hell did I hope to make it to Formula 1? But I never gave up and even used their doubts as a source of motivation... and here I am, about to start my eighth season in F1."

4. RAISE A GLASS FOR YOUR LOCAL PARAMEDIC

"After my cycling accident in Tasmania last November, the paramedics were fantastic. I know they're used to dealing with accidents all the time, but I was seriously impressed by their coolness under pressure at the scene of my crash. I got the best possible care and I have no doubt that their professionalism has aided my recovery."

5. ENJOY THE PRESENT

"I was only in hospital for a week after my crash in Tasmania because I had a compound fracture to my right leg, but I found it very humbling to be surrounded by so many people with bigger problems than me. Most of us don't know how lucky we are to be healthy and out of hospital, because they are not nice places to be around."

6. HAND LUGGAGE ONLY

"When taking a short-haul flight, always keep your luggage with you in the cabin. If you don't, there's a chance you'll never see it again – as I've found out several times."

7. DO YOUR HOMEWORK

"With the inclusion of Valencia and Singapore on the calendar last year, there is now a healthy batch of street circuits in F1. I enjoy this type of track layout because it's a great challenge for a driver, but to maximise your chances you need to do lots of homework during practice. As a result, it's more important than ever to see the chequered flag at the end of each session and not to make any silly mistakes."

8. JUDGE PEOPLE AS YOU FIND THEM

"Don't worry about people's reputations. Give everyone the respect they deserve, whether they are a world champion or a rookie. Form your own opinions and you could end up being surprised."

9. DON'T WASTE TIME

"Always get to an airport as late as possible. Time spent waiting for a flight is time wasted, especially if you travel as much as I do."

10. RESPECT YOUR ELDERS

"Seriously. You might learn something."

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