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F1
RACING

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EXCLUSIVE**

**MARK
WEBBER**

**WHY
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F1**

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- > The Ferrari
"opportunity"
- > Saying "no"
to Red Bull
- > The "perfect"
Porsche future



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Cover: Spencer Murphy/
Red Bull Content Pool



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All eyes are on
Mark Webber
following the
announcement
of his retirement



Ignition / Anthony Rowlinson / 10.13

We celebrate a selection of Formula 1 greats

Most of my memories of Mark Webber involve pain. The first knuckle-busting handshake down the unfashionable end of the paddock in the Minardi days. Then, a few years on, ten days of suffering in Tasmania as a participant in the first Mark Webber Challenge. Five years on, news of the horrible leg injury he suffered, again on his Tasmania Challenge event, following a high-speed bike accident. The abiding impression, then, is of the grittiest of competitors; of a straight dealer with no time for the sport's fripperies; a driver who wanted a fair chance in a quick car and to be left to get on with doing what he does best: racing hard and fast.

It was unfortunate for Mark's career and ambitions that his moment in an Adrian Newey car should coincide with Sebastian Vettel's explosion onto the F1 scene. But Mark has never complained about being measured against the best – after all, any top sportsman wants to find out exactly where they stand in relation to their peers. And over the past five seasons he has done just that: not quite able to vanquish Vettel over a season, yet frequently capable of beating him and anyone else, for that matter. The victories have all been top-drawer; the 2010 championship miss a frustration that took more than a season to get over.

In a different era, Mark might have strolled to a title in cars as fleet as those produced by Adrian Newey and co since 2009; certainly, less talented drivers can call themselves 'world champion'. Nevertheless, he'll swipe

out of the Interlagos paddock gates on 24 November, happily, his head held high, with the prospect of something exciting to look forward to: leading Porsche's assault on the World Endurance Championship.

It's no surprise that Mark is leaving F1 on his own terms, for having ground a path into the sport largely on talent alone, then proceeding from foothills to peaks without ever taking a backward step, he's more aware than some have been of 'the right time to stop'. And, as he explains at length to Peter Windsor in our exclusive interview on page 42, that time is now.

One man who's witnessed every moment of Webber's F1 career is photographer Steven Tee, whose work often graces the pages of *F1 Racing*. In Singapore he'll notch up a remarkable stat: 500 consecutive grands prix since San Marino 1984, shooting some iconic F1 images along the way. Benetton mechanic Paul Seaby in flames? That'll be one of Steven's – along with many others (see page 93). Unlike Mark Webber, Mr Tee shows no sign of wanting to leave F1. Long may he continue to aim his lens at this most photogenic of sports.

We pause to celebrate another good friend in this issue, too: Murray Walker, who celebrates his 90th birthday on 10 October, happily past the worst of his recent health troubles. And a footnote on a fallen idol: if you read only one thing in this issue, make it Peter Windsor's lyrical remembrance of François Cevert (page 32). It'll take your breath away.



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Contributors



Maurice Hamilton
Master of lunchtime conviviality

Former McLaren and Ferrari tech director John Barnard was infamous for giving interviewers short shrift back in the day – but Maurice, as ever, got him talking (p84)



Fernando Alonso
F1 Racing's new-found photographic talent

Not content with being a 32-time grand prix winner and double world champ, Alonso also shoots a mean lens. Check out his skills in our 'Parade' on page 14



Marc Cutler
An institute man who's not institutionalised

As co-editor of the FIA's *Auto* magazine, Marc has his ears to the ground on racing matters. See which grands prix are set for a popular comeback on p64

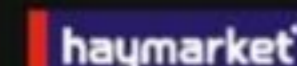


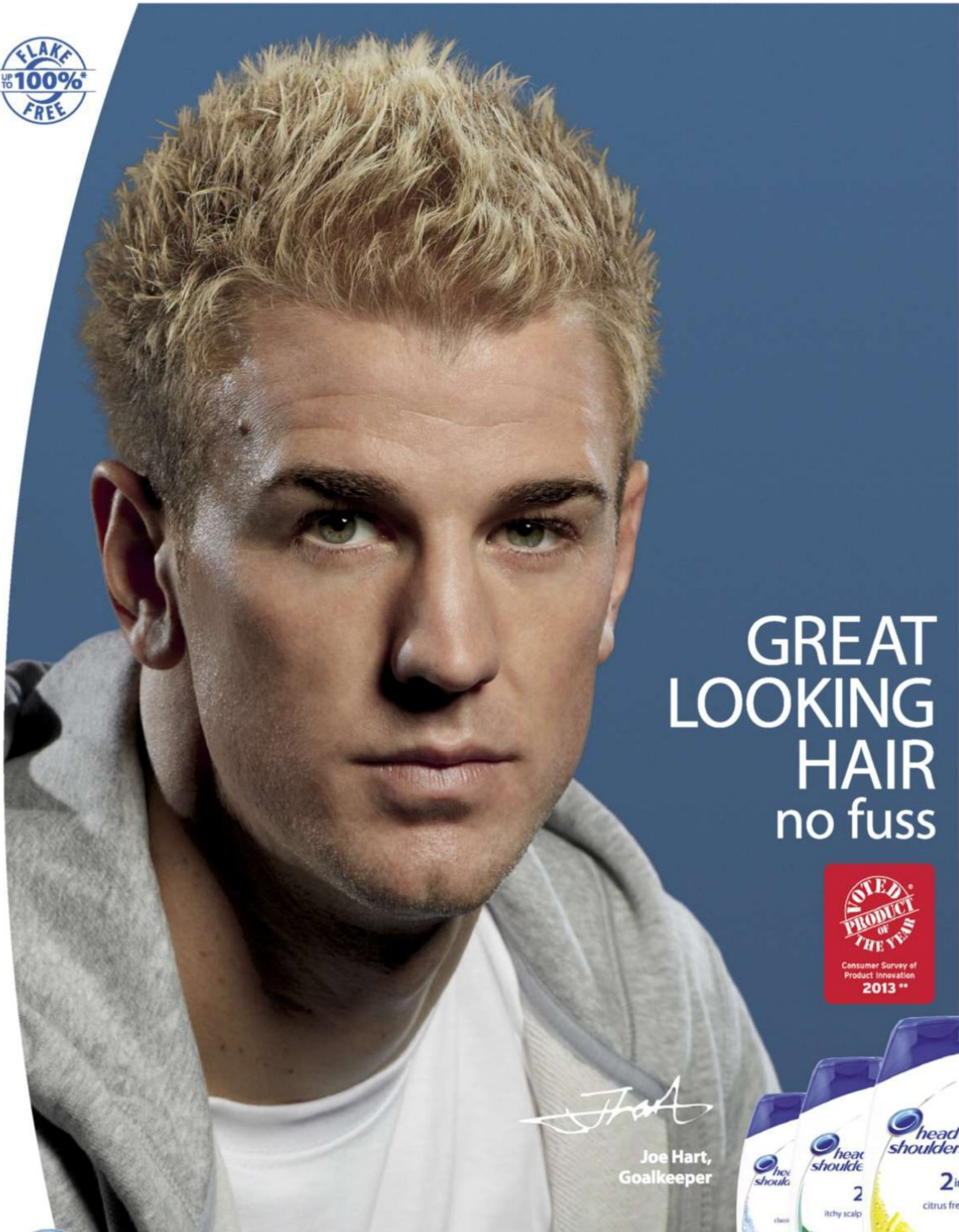
Steven Tee
Loquacious lensman of legendary longevity

500 not out! Steven hasn't missed a grand prix since he made his F1 debut at Imola in 1984. Turn to p94 for a selection of his greatest photographic hits



Thanks to Charles Best, Matt Bishop, James Cartwright, Tim Clarke, Glenn Dunbar, Sophie Eden, Fiona Fallon, Kerry Fenwick, Andrew Ferraro, Bernd Fisa, Ross Gregory, Rob Holloway, Oliver Kraus, Bradley Lord, Mercedes-Benz UK, Anthony McDonald, Spencer Murphy, Ann Neal, Kat Osman, Mary Paslawski, Catherine Shaw, Steven Tee, Katie Tweedle, Ricky Sowten, Richard St Clair-Quentin, Alex Wurz, Tom Webb, Mark Webber, Kevin Wood, Tim Wright, Hannes Wucherl





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Parade

On La Source Mark Webber tiptoes around Spa on intermediates as rain hits the track in the dying minutes of qualifying. Ahead of him is a lap into the unknown as he discovers the lack of grip through Raidillon, Pouhon and Blanchimont. These are the challenges he'll miss when he departs F1...

Where Spa-Francorchamps, Belgium **When** 2.57pm, Saturday 24 August 2013

Photographer Steven Tee/LAT

Details Canon EOS-1DX, 20mm lens, 1/250th at F6.3



Parade

Say cheese! When one of *F1 Racing's* regular contributing photographers asked Fernando Alonso to take his camera onto the Monza podium, he refused. In parc fermé he gave Alonso his own iPhone and asked again. This was the result. A cheesy 'selfie' in front of thousands of wild Italian tifosi

Where Monza, Italy **When** 3.41pm, Sunday 8 September 2013

Photographer Fernando Alonso / Lorenzo Bellanca

Details Apple iPhone 5, 1/800th at F2.4







Parade

Park and hide Lewis Hamilton's weekend drive through the historic Monza parkland wasn't up to his usual exacting standards. After failing to make Q3 in qualifying, he said he'd driven like an "idiot". But despite a problem with the car's floor, a spirited comeback on Sunday helped restore the faith

Where Monza, Italy **When** 2.24pm, Friday 6 September 2013

Photographer Steven Tee/LAT

Details Canon EOS-1DX, 200mm lens, 1/500th at F8





Räikkönen rejoins his old team on a one-year contract with an option for 2015

NEWS

Kimi to partner Alonso at new Ferrari super-team

Räikkönen will replace Massa at a revamped Scuderia, creating F1's strongest line-up of 2014

Ferrari's decision to sign Kimi Räikkönen for 2014 as a replacement for underperforming Felipe Massa and a team-mate to Fernando Alonso will create a super-team that, if it works, could become one of the most powerful forces in F1 in 2014.

Ferrari's record in recent seasons has been underwhelming. Although Alonso narrowly missed out on titles in 2010 and 2012, on both occasions he was fighting

against the odds in a car inferior to Sebastian Vettel's Red Bull.

The relationship between Ferrari and the man who, in that period, almost single-handedly made them look respectable, has grown tense over the past year. Trust between the two began to erode as Ferrari questioned whether Alonso was getting the best from the car in qualifying, while Alonso questioned why the team's faith in him had dimmed

and whether they would ever be able to build a competitive car.

Fearing Alonso had grown too comfortable with Massa's level of performance, Ferrari concluded that more consistent pressure from the next-door garage would ensure he always performed at his highest level. Hence their signing of Kimi Räikkönen.

But a fair few people within F1 believe this pairing will not end well. Räikkönen was originally

lined up because thought had been given to getting rid of Alonso altogether. Ferrari needed a top-line driver in case that happened.

It didn't happen though, so Räikkönen has been given only a one-year deal, with an option for 2015. But his presence in the team is effectively a snub to Alonso, who is contracted to the end of 2016, but is believed to have ways of getting out of his commitment to the team.

Despite the sang-froid with which Alonso has greeted the news, it is hard to imagine that there won't be a blow-up at some point next year. The majority view in the paddock is that Alonso won't be at Ferrari in 2015.

Ferrari are serious about addressing the weaknesses in their structure that have led to the tensions. Realising all was not well within the design group and aware that they can't afford to make mistakes with the 2014 regulations, they have drafted in Rory Byrne as a consultant. Byrne was chief designer during the Schumacher era at Ferrari and is the only man in F1 whose record compares with that of Red Bull's tech chief Adrian Newey.

And earlier this year, Ferrari poached Lotus's highly rated technical director, James Allison, to lead their design department as technical director (chassis). Allison was part of the Byrne-Schumacher-Brawn-Todt super-team at Ferrari, before leading Alonso to two championships at Renault in 2005 and 2006.

The elephant in the room is the V6 turbo engine. The word in F1 at the moment suggests Ferrari are struggling to find required fuel efficiency from the engine. And a lack of efficiency means a lack of performance in a new formula



Massa: next move currently unknown

that includes fuel restrictions. If that's true, it doesn't matter how good the car is, or how fast Alonso and Räikkönen drive it, Ferrari won't win anything.

The news eclipsed the announcement of Daniel Ricciardo's move to Red Bull, and came just after Felipe Massa said he was leaving Ferrari. As *F1 Racing* went to press, Massa had not confirmed where – if anywhere – he would go next, but a return to his former team, Sauber, is one possibility. Another option would be a straight swap with Räikkönen, resulting in a move to cash-strapped Lotus. Lotus have also been linked with Sauber's Nico Hülkenberg, but he brings in little money, while incumbent Romain Grosjean is more likely to stay thanks to €6m backing from Total.



Kimi left Ferrari in 2009, following speculation over his commitment. His last race for them was at Abu Dhabi, where he finished 11th

WINNERS + SPINNERS

UPS AND DOWNS ON THE F1 ROLLER COASTER

GOOD MONTH FOR

Fans of two-wheeled sporting activity

Fernando Alonso will become a team owner in world cycling after buying the Spanish Euskaltel Euskadi setup. The team were set to close due to a lack of funding, but Alonso's move will now ensure they continue in events such as the Tour de France.

British drivers in F1

James Calado will dovetail the remainder of his GP2 campaign with a new role at Force India. The 24-year-old drove in Friday practice at Monza and is set to retain the role as test and reserve drive into 2014.

Aficionados of sudden bursts of enormous activity

Lotus PR man Andy Stobart deserves recognition after he gamely cycled – yes, *cycled* – between the Belgian and Italian Grands Prix. Over nine days, he covered nine countries and 750 miles between Spa and Monza. Great effort.



Robin Frijns

Sauber have just informed the talented Dutch driver Robin Frijns that he will not continue as the team's reserve driver moving into 2014. With Sergey Sirotkin already lined up for the role, it seems that money talks...

Shell

The fuel company were title sponsors of the recent Belgian Grand Prix. Worryingly for the circuit owners, environmental protesters from Greenpeace managed to evade security and scale the main grandstand and sabotage the podium to protest about Shell's plans to drill for oil in the Arctic.

Nervous flyers

A draft 2014 calendar was doing the rounds in the paddock at the Italian GP. The schedule featured 21 races, with the last seven of them taking place outside Europe. Flying between Singapore, Japan, Russia, Abu Dhabi, Mexico, USA and Brazil means 25,000 miles in the air.



BAD MONTH FOR

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F1 Mastermind

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- 1 Which former grand prix circuit had corners named Dry Sack and Angel Nieto?
- 2 What do the 1975 Austrian GP, the 1984 Monaco GP and the 1991 Australian GP have in common?
- 3 Who partnered Arturo Merzario (below, left) at Ferrari in 1973?
- 4 Paul Belmondo and Bertrand Gachot drove for who in 1994?
- 5 Which Brit's first F1 start came at the 1981 Las Vegas GP?
- 6 Where did Michael Schumacher (below, right) score his 91st and final victory in Formula 1?
- 7 Whose autobiography is called *Beyond The Limit*?
- 8 Which landmark was achieved at the 1990 Australian GP?
- 9 Who won more F1 races: David Coulthard or Jacques Villeneuve?
- 10 With which number does Caterham driver Giedo van der Garde race this year?



THIS BOY CAN DRIVE

Keeping an eye out for the stars of tomorrow



Stefano Coletti Who is he?

Coletti is a 24-year-old racer from Monaco, who competes in the GP2 Series for Rapax.

How good is he?

Pre-Monza, he'd notched up three wins to lead this year's GP2 series. But he's failed to score in the last seven races and has now dropped to third in the standings.

Anything else we need to know about him?

It perhaps doesn't quite fall into the category of 'need to know', but if you're interested, Coletti

claims to have been conceived by parents Armande and Gianluigi while they were holidaying on board Keke Rosberg's yacht in autumn 1988. He caught the racing bug when his father took him to a kart circuit and he bumped into 1970s motorcycle champion Guido Mandracci, who took Stefano under his wing.

F1 chances

He's has been competing in GP2 since 2009 and despite his recent poor form and a lack of F1 running, he is still a title contender. Much depends on his recovering his lost form.

NEWS



Nicolas Todt wanted to take PDVSA funding over to Sauber

Situation at Sauber still far from certain

As Sauber sought to address their financial shortfalls, driver-manager Nicolas Todt briefly stepped forward as a potential new leader

Sauber received welcome news of much-needed extra funding thanks to the striking of a deal with three Russian investors over the summer. Even so, the Swiss team remains plagued by uncertainty.

They are attempting to ready Russian teenager Sergey Sirotkin for a potential F1 debut in 2014. This scheme is ongoing, and the 18-year-old is set to drive a demo for Sauber at the new Sochi track in Russia this month.

But while Sauber insist that doubts over the credibility of the Russian deal are nonsense, other people have been keen to take the team in a different direction.

In the background, Nicolas Todt – son of FIA president Jean, manager of Felipe Massa, Pastor Maldonado, Jules Bianchi

and others – had been trying to engineer a takeover.

Todt wanted Maldonado's sponsor, the Venezuelan oil giant PDVSA, to extricate themselves from their deal with Williams and help him buy Sauber, take Maldonado with them and put Todt in charge. It was a big ask, since a watertight contract locks PDVSA into Williams for another two years. Without them, Maldonado has no backing.

Todt's plans finally foundered when he and his partners were put off by a list of Sauber's creditors. But if nothing else, the situation gives a sense of the scale of the ambitions of a man who, while a constant presence in the paddock for some years now, has tended to be fairly low key. So far...

Answers: 1 Jerez 2 Races were stopped early and half points awarded 3 Jacky Ickx 4 Pacific 5 Derek Warwick 6 2006 Chinese GP 7 Professor Sid Watkins 8 It was the 500th world championship F1 grand prix 9 Coulthard 10 21

PHOTOS: CHARLES COATES/LAT; GLENN DUNBAR/LAT; ALASTAIR STALLEY/LAT; ANDY HONE/LAT; LAT ARCHIVE

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Mark Webber



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Romain Grosjean tries the long-wheelbase Lotus E21 in practice at Monza



PHOTO: STEVEN TEE/LAT

NEWS

Lotus choose not to race their long-wheelbase car

As Räikkönen's title hopes diminish, Lotus temporarily withdraw a new version of the E21

In an attempt to gain performance for the final races of the season, Lotus trialed a long-wheelbase version of their E21 in practice at the Italian Grand Prix. This variant model would have been introduced a few races earlier, but could not be tried as intended at the Silverstone young driver test because Lotus had failed to pay a supplier.

Lotus team boss Eric Boullier says the team needed to push the modification through to validate whether their simulator, which drove the upgrade, was working well as part of their development progress. However, the team

decided to play it safe at Monza, and after testing the longer wheelbase car in Friday's free practice they chose to revert to the old setup for the remainder of the weekend.

There is no major change to the structure of the car – the front suspension wishbones have simply been angled further forward to create more space for aerodynamic aids that are fitted between front wheels and sidepods.

Moving the front wheels forward will change how the car responds in corners, making it feel more sluggish to the driver. And moving the driver backwards in relation to the

front wheels will mean he can feel oversteer more quickly, which could help reduce tyre wear and degradation.

Lotus will now re-evaluate the longer wheelbase car at another race later in the year. Regardless of its effectiveness, their title hopes have now been reduced by Kimi Räikkönen's retirement from the Belgian Grand Prix and his first-corner clash at Monza. Post-Monza, Räikkönen sits fourth in the standings, 88 points behind championship leader Sebastian Vettel, with Lotus team-mate Romain Grosjean down in eighth place.



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Post-Monza, Alonso was 53 points adrift of Vettel – a gap he must close if he wants to keep Ferrari working on the current car

NEWS

Ferrari's focus on 2014 could threaten Alonso's title hopes

Closing down Vettel's points haul is crucial to securing Ferrari's development of the 2013 car

Ferrari team boss Stefano Domenicali says his team are: "Working very hard to make sure we can fight up to the end of the championship." But the reality is that their lead driver, Fernando Alonso, has now entered the last-chance saloon.

Alonso must be within striking distance of Red Bull's Sebastian Vettel after the forthcoming Singapore Grand Prix, or Ferrari will effectively turn off the taps on car development for this year and transfer their focus entirely to 2014.

"September is the month we start to shift, as the 2014 project is very complex," said

Domenicali. "At the end of September we will switch everyone, depending, of course, on the situation with the championship."


Alonso is desperate to win a third title so he can draw level with his hero Ayrton Senna in terms of championships won. And his frustration at being no closer to this has been mounting. He knows that to keep his dream alive he must win in Singapore. If this does not happen, the championship will be, at best, a remote possibility for Alonso, and Ferrari cannot be blamed for then devoting their attention completely to the complexities of the 2014 project.

Some engineers believe Ferrari are lagging behind both Mercedes and Renault in terms of powertrain output for next year. This has arisen from the fact that Ferrari have been most vocal in their complaints during meetings of the engine working group about fuel restrictions being imposed with the switch to new 1.6-litre V6 turbos.

That could be a bluff but, if not, Alonso faces a difficult 2014 following on from disappointments in 2010-2013. In which case, few would bet on him remaining with Ferrari, despite his being contracted to drive for the team until the end of 2016.

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NEWS

Todt faces opposition in FIA presidential elections

Former Mosley aide David Ward announces his bid to challenge Jean Todt for the top job in world motorsport



Ward: wants to challenge spending at the FIA HQ

Jean Todt is facing a threat to his future as the head of the FIA, motorsport's governing body, after Briton David Ward announced that he would be standing as a candidate in December's presidential elections.

Ward, 56, has resigned his post as director general of the FIA Foundation for the Automobile and Society in order to fight the election, although technically he did not need to. "It will be necessary for me to approach FIA members to secure nominations," Ward said in a statement on the Foundation's website. "In these circumstances, I think the correct course of action is to resign.

The FIA took Ward on in the mid-1990s. Previously he had a career as an adviser to the

late Labour Party leader John Smith. He is also a former aide to Todt's predecessor, Max Mosley, and knows Bernie Ecclestone well.

It should be noted that Ward has no great desire to become president. His reason for standing is that he wants to shine a light on aspects of Todt's leadership with which he does not agree. Chief among his concerns is spending at the FIA's headquarters. An election challenge, he believes, is the only way to ensure these issues come out in the open.

At present in F1, there are more crucial matters to be resolved, such as the sport's future tyre supplier, the lack of a Concorde Agreement, and the financial problems facing many of the teams. One concern is that

Todt's focus may shift from sorting out these pressing matters to fighting the election.

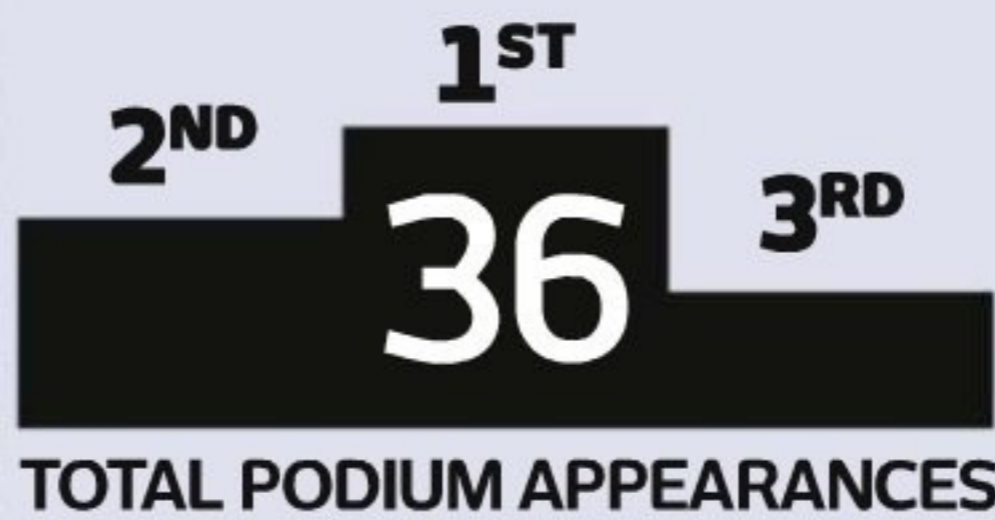
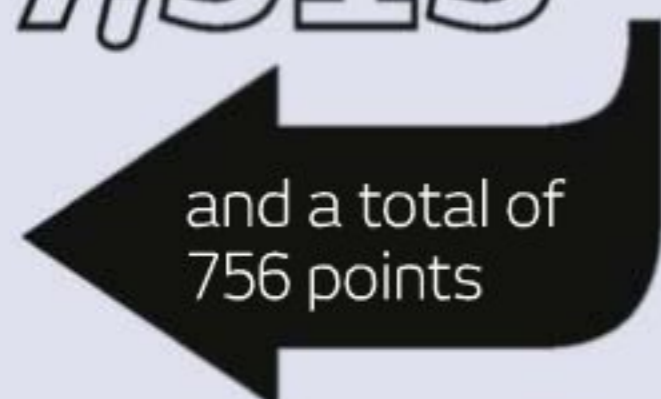
Can Ward win? According to those close to him, that is not the point. He's not fighting to win, he's fighting to bring out into the open issues with which he disagrees. Nevertheless, his supporters also claim he thought very carefully before taking this step, insisting he would not have thrown his hat into the ring if he felt he could not succeed.

So it seems that a highly charged election process is on the cards this autumn.

STATS

What Massa did for Ferrari

He might be packing his bags, but Felipe's achieved a lot in his eight years at Maranello*



POSITION MOST RACED IN



2 YEARS, 2 MONTHS, 6 DAYS

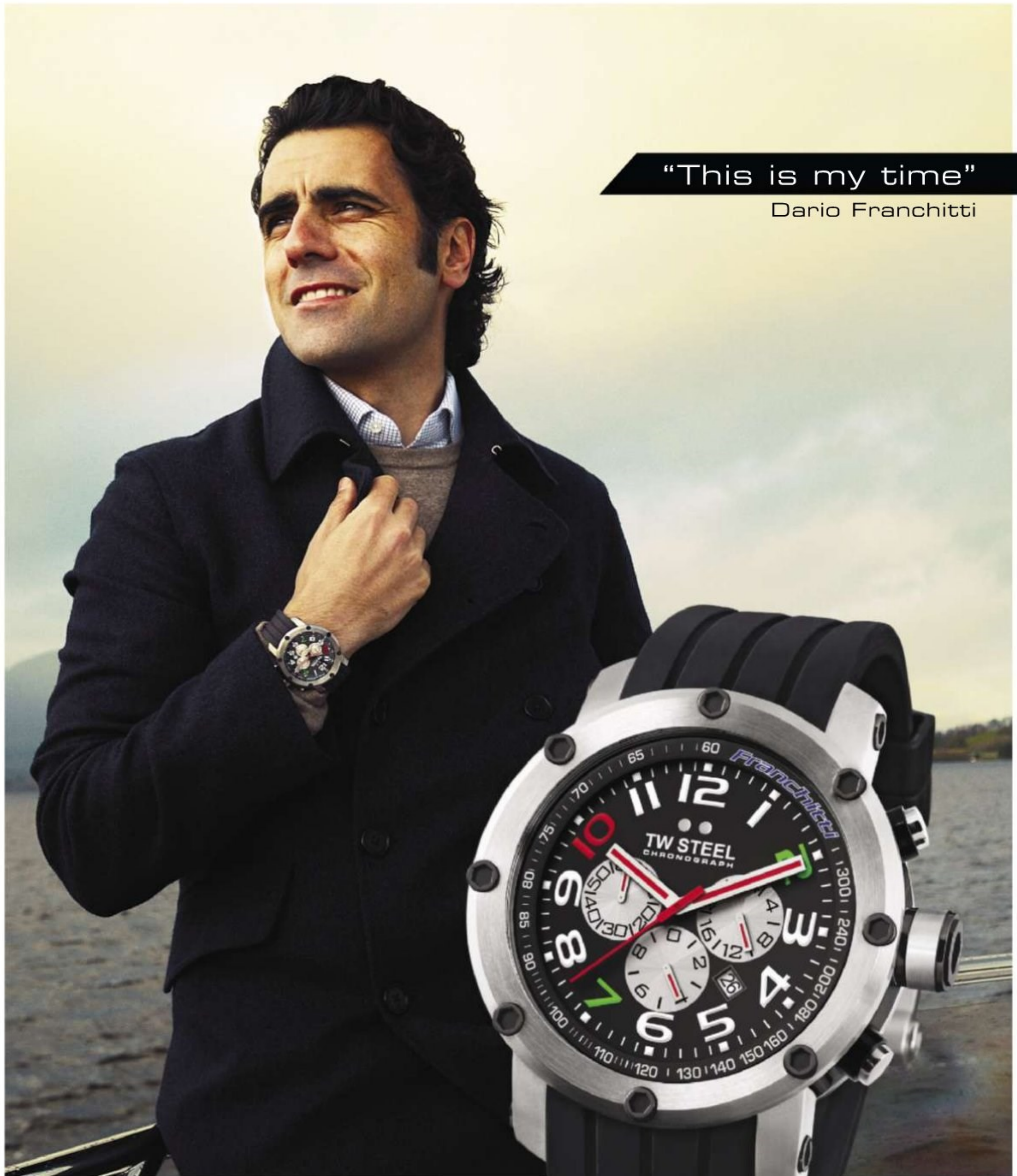
The gap between his first and last Ferrari wins

*ALL STATS CORRECT AS OF 2013 ITALIAN GRAND PRIX

PHOTO: FIA

"This is my time"

Dario Franchitti



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NEWS

Michelin seek F1 return

Various technical and commercial hurdles could impede their comeback, but Michelin remain keen

Michelin have thrown their hat into the ring as potential Formula 1 tyre suppliers for 2014, making it clear that they are keen to make a return to a sport they left in 2006.

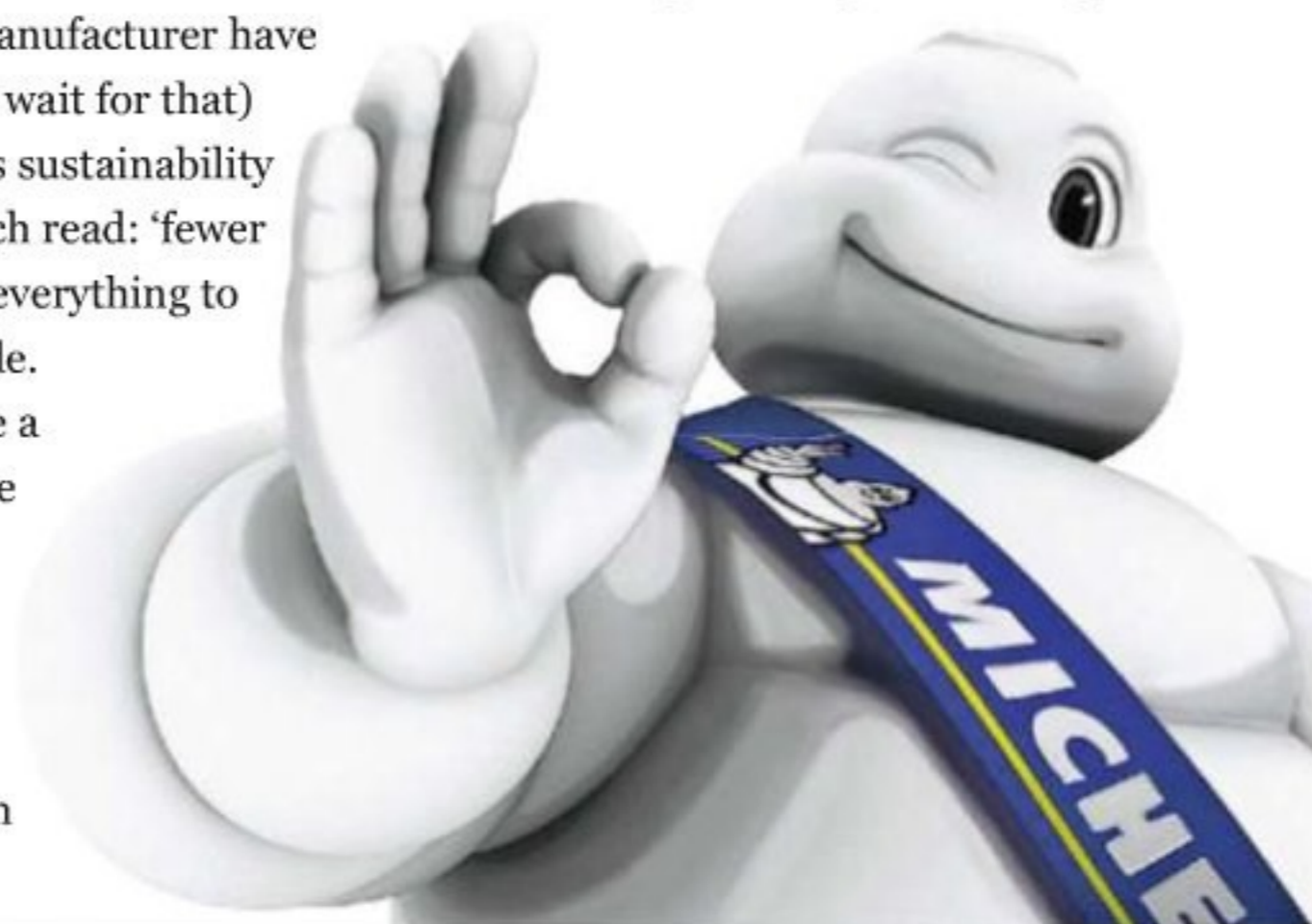
But just how likely is this? On the face of it, Michelin's return would be welcomed with open arms by teams and drivers alike, who are tiring of constant problems with Pirelli rubber. The fractured state of F1's relationship with their official tyre supplier following the problems of the last few months was laid bare at the Belgian GP, when two perfectly normal punctures led to a crisis that had drivers expressing concerns over tyre safety.

Although memories of the disastrous 2005 US Grand Prix at Indianapolis remain fresh – only six cars raced on Bridgestones due to safety problems with the Michelin tyres –

these concerns would evaporate if Michelin returned. But before that can happen, there are some significant barriers to hurdle. These are nothing to do with Michelin's desire for 18-inch wheels (the French manufacturer have made it clear that they can wait for that) or better and more obvious sustainability in the regulations (for which read: 'fewer tyre stops') – but they are everything to do with the commercial side.

Pirelli have already done a deal with Bernie Ecclestone for track signage, which is worth £25m a year. And they have signed contracts with several teams, who each pay £1.3m to Pirelli for their tyres.

Neither of these issues would prevent the FIA appointing Michelin as tyre suppliers, but they do raise the possibility of Michelin racing on tracks with Pirelli signage everywhere – unless they can strike their own deal with Ecclestone. And as things currently stand, he would rather stick with Pirelli, with whom he has a long-standing relationship.



CALENDAR

Mexico in; New Jersey out

Next year's Formula 1 calendar is starting to take shape, with some new venues on the horizon

The 2014 Formula 1 calendar remains in a state of flux amid uncertainty regarding several of the races.

In theory, there will be new races in New Jersey, USA, and Sochi in Russia next season, but doubt now surrounds both venues. Mexico is set to make a return for the first time since 1992, and it is believed that Bahrain asked not to open the 2014 season, to give them more time to get the facility in a state where the race can be held under floodlights.

The situation with Sochi has been caused by a dispute between the organisers and the Russian motorsport federation, along with the



The way things were: the last Mexican GP in 1992

country's failure to lodge its entry with the FIA in time. But since Russian president Vladimir Putin was present at the announcement of an inaugural Russian Grand Prix, it seems likely

that all parties will somehow find a way to make the race go ahead.

India has now dropped off the calendar for 2014, and will return in early 2015 for the first of the final two years of its contract.

There had been grave doubts about the race at Yeongam in Korea, but these seem to have receded somewhat. The Korean Grand Prix now looks to be moving forwards in the schedule to the week after China

Mexico's Autódromo Hermanos Rodríguez circuit is being upgraded and has been given a slot a week just before the race in Austin in November on a provisional draft calendar.

 **Monaco**
24/25/26 May

 **Singapore**
21/22 September

 **Abu Dhabi**
1/3 November

 **Austin**
15/16/17 November

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Pat Symonds'

PITPASS TECH

Explaining the hidden brilliance that drives Formula 1 forward

THE SCIENCE BEHIND...

Construction materials

What materials are used to build Formula 1 cars?

When engineers first started constructing cars, they regarded metal as the only material that could provide the strength and stiffness required for industrial purposes. We still use a lot of metals, each tailored to a particular application. For example, on an F1 car you will find over 20 different types of aluminium and 30 different steels – as well as more exotic metals such as titanium, magnesium and Inconel (superalloys made from nickel, chromium and iron).

When plastics were developed in the early 20th century, they opened up new opportunities of formability and lightness but, unfortunately, they were neither strong nor stiff. Composite materials, and carbon-fibre reinforced polymers in particular, give the best of both worlds, being around five times stronger than steel but only a third of the weight. This is why they are used so extensively in F1 car construction.

How were these composite materials first developed?

There were several composite materials available before carbon fibre was developed, including, of course, glass fibre. These days, however, we

Carbon-fibre parts are five times stronger than steel – but only a third of its weight

tend to think of carbon fibre when we speak of composites. Carbon fibre was first developed commercially at the Royal Aircraft Establishment at Farnborough in 1963. It cost around £300 per kilogram to make then, which is equivalent to around £5,000 per kilogram at today's rates. Now it costs around £14 per kilogram and is predicted to fall to half of that cost within the next five years as the aerospace and mainstream automotive industries start to use it more.

Unfortunately, having developed the first practical production of carbon fibres, the UK soon lost its leadership of this particular technology as it became more commercialised. Japan in particular has invested heavily in manufacturing expertise, and this has been followed by further developments in the USA as the material's suitability for space and military applications became apparent.

Are all composites the same?

No. Just as we use far more than 50 types of metal on an F1 car, so too do we use a lot of different types of composite materials. In fact around 30 types of carbon-fibre composites may be used, although there are hundreds of different combinations available – as well as composites reinforced with materials other than carbon, such as Kevlar and Zylon.

What do you mean by 'combinations'?

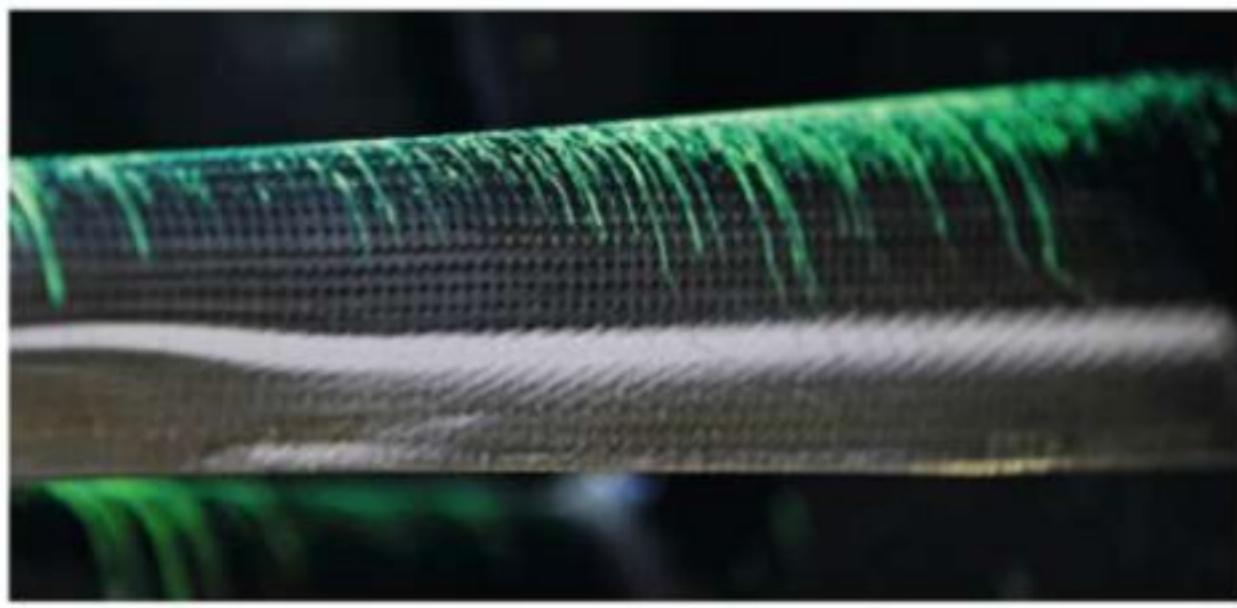
Carbon-fibre composites are sometimes known as carbon-reinforced plastics. This implies that there are two distinct components to the composite: the underlying polymeric resin and the reinforcing fibres. The fibres themselves are made in different ways to achieve different design goals, such as extremely high strength



▲ Making a front wing Small pieces of carbon fibre are cut from a roll and stuck into place on moulds to create front and back 'skins'. Once the two skins have been cured in the autoclave at high temperatures, they can be bonded together to form the lightweight and ultra-resilient wing

or perhaps extreme stiffness at the expense of some strength. The fibres themselves, which are filaments of pure carbon around one-tenth of the thickness of a human hair, are twisted together to form what is known as a tow, which may contain between 1,000 and 12,000 filaments.





IS THERE ANY ROOM FOR IMPROVEMENT IN COMPOSITE TECHNOLOGY?

Apart from basic improvements to strength and stiffness, much can be done to improve polymeric resin. Processes constantly improve; even in F1 we now use tooling and mandrels made by rapid prototyping that can be washed out of the finished

component, allowing us to make ever more complex shapes ever more quickly.

The next big step will be nano-technology and carbon nano-tubes, which will be used to further reinforce the materials. This will represent a quantum leap forward.




laid into moulds (which are themselves often made from carbon fibre). Various laminate plies are laid on top of each other in precise locations. A laser or other visual system is often used to guide the laminator into placing each ply in the exact position that the designer has determined. The plies are then covered with cotton-like cloth, which will soak up any excess resin, and an impervious plastic film is finally sealed onto the entire job. A vacuum is then applied to the laminate to consolidate it securely in the mould. The entire mould and component are then placed in an autoclave, which is essentially a huge pressurised oven that will cure the resin and produce the finished component.

Once made, does the material degrade at all?

Not really – at least not in this particular context. The biggest problem with maintaining the material in service is to ensure that it does not get damaged. When a metallic component is damaged, it is normally easy to detect because the part will either be bent or cracked. There are numerous non-destructive test techniques that have been established over the years to detect cracks in metallic components, but many of these rely on the fact that a crack will always appear on the surface of a component.

Carbon fibre, although effectively consolidated during the manufacturing stage, still has a number of surfaces because it is of a laminated construction. Special techniques, such as ultrasonic scanning, are required to detect any sub-surface delamination that may lead to catastrophic failure of a component that, to the naked eye, looks perfect.

Will we see similar breakthroughs in metallic materials?

Yes – we already use a lot of metal-matrix composite aluminium materials that employ a reinforcing material, usually silicone-carbide, to reinforce the aluminium. There is already one in use that has nano-sized particle reinforcement. Even steel, which has been around for years, is constantly being developed to offer ever better properties. 



These tows can be woven into various types of cloth, each of which has different properties for any given type of carbon. The simplest is 'uni-directional' carbon fibre. As its name implies, the strands or tows all run in one direction, giving the cloth uge strength that way, but very little at an angle 90° to the direction of the strands. More common are woven materials, where the tows are intertwined as they are in cloth fabrics. This gives a more omni-directional strength.

It is not just the different carbons and weaves that offer different properties, however. The

carbon is embedded in a polymeric resin and different varieties of resin are used to balance cost with usability and temperature resistance. The type of carbon-fibre composite used in a Formula 1 car is 'pre-preg'. This is material that already has its carbon strands embedded in an uncured resin.

Can you describe the basic manufacturing process?

The details of manufacturing can get pretty complex but, essentially, the pre-preg cloth is



Peter Windsor RACER'S EDGE

Authority, wit and intelligence from the voice of *F1 Racing*

THE ETERNAL SPRINGTIME OF FRANÇOIS CEVERT

I suppose it's inevitable that most of the talk round about now will concern François Cevert's accident at Watkins Glen. The 40th anniversary of that sad, sad day is 6 October. Like spring, though, François was all about life, not death. I prefer to remember him as I knew him – and as I knew *of* him.

I first met François in South Africa in 1972, by which time he was already a grand prix winner. More than that. He was a star. I remember standing in the open-air Tyrrell 'garage' at Kyalami on the Thursday before the race. Roger Hill, Jo Ramírez and the boys were in blue overalls, squatting beside the cars. The smell of brake fluid and industrial cleaner sat heavily in the hot afternoon air. Next to me was the curvy, blue monocoque of François Cevert's Tyrrell. Tiny leather-rimmed steering wheel. Carefully shaped gear-lever knob. Glistening pedals. Protective carpeting around the fuel filler.

Then, all of a sudden, the voice. Deep. Golden. Smooth.

"Hello boys. How's it going?"

I looked up and saw only the eyes. Côte d'Azur blue. Mesmerising. He glanced at me, smiled – bright white flash against dark, suntanned skin – and then bent down to have a word with Jo.

François Cevert.

I guess it was because I was young – still 19 – and because I'd only *read* about him in the past. Whatever. François for me, from that point, was much more than just an F1 driver. He was a part of a dazzling, untouchable French world filled with names like Elf, Matra, Jabouille, Beltoise, Pescarolo, Depailler, Laffite, Jarier and Jaussaud. The whole

French motor-racing resurgence. Something beyond anything I'd ever known. Misty mornings in Paris. Blue sky at Ricard. Leafy shade at Rouen. Mountain air at Clermont. Martini. Alpine-Renault. Antar. Motul. Ford France. The *Autoroute du Sud*. Johnny Rives. José

Rosinski. Manu Zurini. Edouard Seidler. François, for me, was at the pinnacle of this wonderful new force. It was synonymous with sun-filled days, Naza overalls, amazing magazines like *Scratch* and the intense aroma of Gitanes. There was an *expectation* about the time that you could touch and feel.

François had everything – but then you've heard all that before. What that *meant* was settling into the flight home from Johannesburg the following year, 1973, and finding yourself sitting the row behind François in the SAA 747. They're serving the first round of drinks, and François is lighting up his first Gitanes, when you hear the edges of the conversation.

"Could I ask you a very, very big favour?" asks the golden voice. The air hostess is already blushing, despite her tan.

"You see, I'm a racing driver and this week I have a very, very important test at Le Mans – an endurance test with Matra – you know Matra, the famous racing-car company – and it is very, very important for me to get some good sleep on this flight and what I would like to do is take all those four seats in the middle and to make a real bed there so that I can rest and sleep and arrive very refreshed...."

"But I can't just ask all the passengers to move... and what about your seat belt... if you need to fasten your seat belt...."

"I am sure you will come along to see if I need any help." (The smile, the eyes.) "Please. *Please*. I must get my sleep and this test is so important for me. For France. For everyone...!"

A few minutes later, François is shuffling and re-shuffling his fellow-passengers (including me). And, yes, later, when the lights were out and we were cruising smoothly towards Europe, I'm sure François' stewardess tiptoed over, just to see if he was okay...

The François I knew in '72 and '73 was very much in the mould of Jackie Stewart – which says tons about the man. Put him in a Matra sportscar against his French peers and François was always the fast guy, the quickest guy – the *really* quick guy. At Tyrrell, though, you saw the real side of François. As good as he was, as brilliant as he was, he had the brains and the humility to listen, to learn and, for the most part, to do as he was told. I can't recall another driver, before or since, who has been so self-critical and so ready to mould his style and his knowledge around that of another driver.

Teacher and pupil: Tyrrell team-mates Jackie Stewart and François Cevert in Brazil, 1973





Cevert on his way to ninth in the Tyrrell-Ford at Kyalami in 1972, just after his first meeting with Peter Windsor



From the start, François was the pupil and Jackie the teacher. François wore Jackie's own-brand sunglasses; he wore Jackie's brand of overalls; he wore Jackie-like floral shirts when chilling at the Hotel Île Russe in Bandol. He asked Jackie about gear ratios, camber angles, caster, toe-in, braking points, turn-in points, kerb usage, start procedures – and,

“As brilliant as François was, he had the brains and humility to listen, to learn and to do as he was told”

when he had covered all that, he would criticise himself a little more and ask Jackie about the technique for neatly passing the backmarkers. Not once would he concede that he was as *good* as Jackie (although there were times, when he was shadowing the great man, when Jackie would do that for him) but in terms of pace – yes: François knew he was there.

It began with Jackie showing François around Zandvoort in 1970, and it came full-circle, when Ken Tyrrell asked François to lead Peter Revson (who was on that occasion racing a third Tyrrell) around Watkins Glen in 1971. At that moment, I think, François graduated from college. Next on the agenda: his Masters.

Even after a bad day, François was courteous, charming and happy to be living the dream. I don't recall him swearing; nor do I remember him complaining, although he was, of course, very much a part of the Jackie Stewart Safety Movement. He was rational, multi-lingual, an accomplished pianist.

I could go on – but I prefer to stop here. I wasn't at Watkins Glen in 1973. I last saw François at Monza, where he finished fifth to Jackie's fourth. I remember him in the lovely old cobbled paddock, sharing Jackie's championship-winning delight, joking about the old man needing to make way now for the faster young French blood.

The smile, the eyes. The very, *very* fast racing driver who died too young and way before his prime. 🍷

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The stories F1's bigwigs would rather you didn't know...

HOW ECO WARRIORS EXPOSED FLAWS IN GRAND PRIX SECURITY

"While Greenpeace's protest was peaceful, rooftop activists could easily have launched armed attacks from their vantage point"



Greenpeace's Belgian GP protest may have fallen short of its objective of embarrassing title sponsors Shell over their Arctic exploration activities, because an offshoot of FOM produces the television footage and exercises full control over visuals. Still, the incident highlighted F1's inadequate security at events, particularly in public areas and around the podium.

That two paragliders were able to fly to Belgium from the German border despite airspace restrictions, then hover above Spa displaying eco-messages beggars belief. Doubly so that six activists – representing as many nationalities – were able to acquire specific back-row gold seats, from which they scaled the roof of the grandstand to unfurl a 20-metre anti-Shell banner. Then, as well as a hoarding on the outside of Eau Rouge, protesters also managed to activate two remote-controlled banners, and an activist got within metres of the podium after accessing the elite (\$4,000 per head) Paddock Club area. Greenpeace maintain their banners were installed a fortnight before, with one activated as an FOM official removed the other.

While Greenpeace's protest was peaceful, one shudders at the potential risks of such slack security. On the podium with the top three drivers were two government ministers, a senior Shell executive, and the president of the Royal Automobile Club of Belgium – coincidentally a former CEO of Total. Equally, the paragliders might have harboured evil intentions, rather than seeking to publicise the plight of polar mammals, while the rooftop activists could easily have launched armed attacks from their vantage points. Yes,

reports make clear the local *gendarmierie* knew the protest was peaceful – but only after negotiations began.

According to sources, Shell anticipated Greenpeace disruption last year. When nothing happened, the guards were dropped, an attitude underscored by the all-clear given to Spa's promoters by the police on the eve of this race. Three years ago, promoters instituted security searches of spectators, but ceased after complaints to local authorities. All of which

begs the question: who is responsible for security at races – the local promoter, FOM as the commercial rights holder, or the FIA as the governing body?

The answer is as complex as F1 itself. Events are promoted by commercial entities granted the rights by FOM, but such events are sanctioned by the FIA through its local national sporting body (ASN), to whom promoters apply. Promoters hold commercial agreements with FOM, while tripartite agreements define the obligations of FIA, ASN and promoter.

FOM has certain sacrosanct areas such as its Paddock Club, the podium and overall paddock complex, and bears no responsibility for circuit security. To date, its security detail has concentrated rather more on ejecting unauthorised folk from its areas than establishing their (innocent or malicious) intentions. No doubt this will now change dramatically.

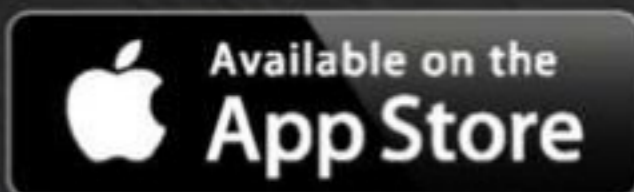
The FIA is responsible purely for track, driver and team safety and, as such, Greenpeace's activities are of no direct concern to it. Yes, activism *could* impact on track safety, though in this instance it did not – but the fact remains that vigilance needs to be stepped up drastically. There are those who point to the FIA's involvement in the Bahrain situation but, in that case, the FIA, as the only authority empowered to cancel the event, demanded (and was granted) assurance by the kingdom that on-going civil unrest posed no direct danger to F1 personnel or spectators. In this respect, the Bahraini and Belgian situations differ totally.

Local promoters, in conjunction with local civil and police forces, are responsible for event safety and security. Here, differing national legal systems complicate matters – making it impossible for the FIA to set standards, for what is acceptable in one country may be intolerable in the next. In Singapore, race-goers undergo X-ray searches, but in European countries, such checks would be deemed breaches of human rights; equally, in the USA, all media-pass holders are required to sign indemnities despite the FIA's complex documentation. And in Bahrain, cars are searched inside and out.

What is clear is that an overall tightening of safety and security procedures during races is long overdue. It should be at the top of any to-do list compiled by the next FIA president. That said, we can expect circuits to take heed of events in Belgium and react accordingly. Ultimately, that will result in a massive hike in costs and huge inconvenience to the innocent.

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VALTTERI BOTTAS ROOKIE YEAR

The Williams racer reveals all about his first season in F1

NOW WE'VE LEFT EUROPE, IT'S TIME TO TACKLE THE 'NEW' CIRCUITS

Now that the European races are over, we enter a very tough stage of the world championship. There are seven grands prix to come over the next ten weeks, which will take place in the Far East, the Middle East and both North and South America. While this is my first season racing in Formula 1, I did travel to those races last year in my role as Williams' reserve driver so I have got some idea about how tough it is going to be both mentally and physically.

One of the biggest challenges for me will be coping with the travel and adjusting to the various different time zones. I have a few tricks to help me cope with the jet lag, and the most important thing I've learnt is to rest whenever I get the chance. For everyone involved in the sport, from the drivers to the mechanics, this phase of the season will be taking up a huge amount of energy and it isn't going to be easy.

Last year I drove in the Friday morning free practice sessions at most of the upcoming tracks, but two I haven't driven on yet are Singapore and Austin. I'm looking forward to the Singapore Grand

Prix especially because that will be my first night race, and although it's going to be tough because of the heat and humidity, I know that the fitter I am the easier I'll find it in the cockpit.

I've never had a problem with learning new circuits;

it honestly takes me only a couple of laps and I'm up to speed straight away. Years ago, when I was karting, my father could never understand how I was able to be on the pace so quickly. I remember going to one track and setting my fastest lap time on only my third run. So learning tracks is something that has never been a problem.

Ahead of Singapore and Austin, I will probably spend two half days in the Williams simulator to familiarise myself with the circuits and to help me learn the racing line.

I'll also watch onboard footage and memorise a track map to help me with the corner sequences. When I'm out on the track for the first time, as soon as I have exited a corner I then start to think about how I could have gone faster through it. So on the following lap, on arriving at that same corner I take a better line through it. And I go through the same process again and again. After just a few laps the speed builds, and by the fourth lap I'm just a few tenths off my best time.

Now we've left Europe behind, we're travelling to countries with grand prix circuits that are only a couple of years old. If I'm honest, I actually prefer to race at classic venues like Spa, Monza and Suzuka. They have a different feeling about them because they are steeped in history. Drivers have been racing at them for decades and they are filled with a sense of tradition.

"When you see pictures of Spa from the '60s, with walls jutting onto the track and spectators standing behind bales of straw, you appreciate how standards have improved"

Something I don't like about modern circuits, such as Korea and Abu Dhabi, is that if you go wide or make a mistake at a corner, you have the run-off area to drive into. You simply drive back onto the track without any damage to your car. I know there are important safety reasons for having these areas, but if you make a mistake at a track like Suzuka, you know that it's not going to be good. The narrow circuit and lack of run-off is an added test of driver skill and one that separates great drivers from good ones. That's also why street circuits are so much fun and another reason why I'm looking forward to going to Singapore.

Don't get me wrong – I don't want circuits to be unsafe. When you see pictures of Spa from the '60s, with walls jutting out onto the track with no protection, and spectators standing behind bales of straw, you appreciate how standards have been improved over the years. Looking at the photos, you see things that just wouldn't be allowed today and everything is much better now for the drivers and spectators.





Still, I have great respect for the drivers who used to lap places like the old 8.7-mile Spa circuit in cars that really weren't safe. It was normal for them then and they didn't know anything else. I wonder if 50 years from now, people will look back at the 2013 season and say the same thing...

Bottas at Suzuka in 2012: he prefers to race at the older tracks, which are more of a test of driver skill



PHOTO: GLENN DUNBAR/LAT

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What about what the fans want?

It was a brilliant piece by Pat Symonds in August's *F1 Racing*, explaining the ERS-K and ERS-H systems and 2014 engines. But... I don't care!

I've watched F1 for 30 years and I always say you have to see how things develop race by race and season by season to know what's going on. I want to see a good car, a good driver and a good team triumph through the odds. And not necessarily all at the same time. I want to see Alonso fight through in a car that's not as good as that of Vettel, or for Williams to throw a spanner in the works. I don't want a field of homologated cars with engines smaller than the one on my drive, separated only by bodywork, covered flywheels and batteries that are invisible to the spectators. KERS is bad enough. Is the pass KERS-assisted, or is the car in front slower? Without an on-screen graphic we'd never know. How many graphics will we need in 2014 to explain RPM, KERS, ERS-K, ERS-H and DRS?

I applaud the filtering down of tech, but I want to see racing. If I can't, could you tell me how to buy a season ticket to Honda's R&D lab next year?

Mark Ackroyd

By email



STAR PRIZE

Mark Ackroyd wins a Silverstone Single-Seater Experience. For more details visit www.silverstone.co.uk/experiences. Hotline number: 0844 372 8270



Is Luca the next Bernie?

Talk of Bernie Ecclestone stepping down within the next few years has been taking form recently, and everyone is suggesting names. Sure, the CEO of Sainsbury's would do well on the business front, but what F1 needs is someone from the racing side. I think Luca di Montezemolo would be the perfect fit. He has business, money and sporting knowledge as well as being an experienced and well-known face. But most importantly, I believe he can help bring stability to F1 in these tough times.

Stephen Harwood

By email

You get what you pay for

Marussia sporting director, Graeme Lowdon, has been widely quoted in the press recently, on the subject of his support of a salary cap in Formula 1. It makes me think he's competing in the wrong sport.

F1 is supposed to be the pinnacle of motorsport and needs to be able to say that it has the best engineers and the best drivers. Can you imagine if as soon as a driver wins a championship or a designer designs a championship-winning car they immediately leave the sport to take up a more lucrative offer in another racing series? F1 should limit the number of people in each team, but not the quality of the people.

Steve Webster

By email

A foregone conclusion

I'm 61 and have watched every F1 race since the 1979 Argentine Grand Prix. Today, just before the cars reached the end of the Kemmel Straight on lap 1, I went for a walk.

That's all.

Rod Hawkins

By email

NEXT MONTH...



ALONSO: THE WAY OF THE SAMURAI

The warrior philosophy that inspires F1's feistiest driver **PLUS...**

- > The chosen one: Red Bull's Daniel Ricciardo
- > Hooray for Marseilles – hanging out with Jules Bianchi
- > From victory to viticulture! Lunch with Jarno Trulli*

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* date to be confirmed

Now *that* was a car

No 20 The Ferrari 126C4

A final hurrah for the Scuderia's turbo-powered 126C series

The 1984 season marked the final outing for the 126C generation of Ferraris that had first raced in 1981, the designation coming from the 120° V6 engine. Although Ferrari had been using flat-12 engines in Formula 1 for many years, they had form when it came to using fewer cylinders; a 1.5-litre naturally aspirated 120° V6 had powered Phil Hill to world championship glory in 1961.

Even so, they faced a learning curve with turbocharging. Thus the block of the V6 was cast in iron, the better to withstand the anticipated internal pressures. And numerous turbochargers were tested before Ferrari settled with the German KKK (Kühnle, Kopp and Kausch) brand.

"From a performance point of view, the two KKK turbos undoubtedly offer notable power," Enzo Ferrari remarked at the time. "The problem regarding turbo lag no longer exists and we have a fast response, like you would get with a normally aspirated engine. There were initial problems regarding the cooling of the inducted air, because it should


not be inducted at a temperature in excess of 60°C. Work carried out at the Fiat research centre has produced new heat exchangers to resolve that problem."

The development of the 126C chassis family gained momentum after the arrival of Harvey Postlethwaite. His 126C3 – with a newly mandated flat bottom – won the 1983 constructors' championship for the Scuderia. The C4 featured a lighter engine and gearbox and bore a distinctive arrow-shaped design. Airflow was critical and this particular shape meant that air entered the radiators behind the front wheels, then passed through the heat exchangers before being expelled through the sides in front of the rear wheels.

Joining Ferrari for 1984 was Michele Alboreto, the first Italian to race for them since Arturo Merzario in 1973. The 126C4 made its debut at the season-opening Brazilian GP and Alboreto qualified second on the grid, ultimately retiring with a broken front brake calliper. Meanwhile, Alain Prost won in his McLaren-TAG turbo... a portent of the season to come.

Whereas in previous years Ferraris had been extremely powerful but cumbersome to drive, the C4 had almost the opposite characteristics. Although the engine featured redesigned cylinder heads and a deepened crankcase, along with a revised version of the transverse-mounted gearbox, it didn't perform well on the faster circuits. Problems with the tyres, suspension and the complicated new fuel-injection system meant it secured only one grand prix victory in 1984. Alboreto won at Zolder, two years after Gilles Villeneuve's tragic accident there.

New regulations for 1984 restricted fuel-tank capacity to 220 litres, while mid-race refuelling had been banned. Ferrari were not the only team to introduce an electronically controlled injection system to improve fuel economy, but theirs proved more problematic than others.

Michele Alboreto and René Arnoux finished the season for Ferrari, each with less than half of Niki Lauda's points tally. The Austrian took the title by half a point from his McLaren team-mate Alain Prost. The writing was on the wall for the 126C and Ferrari were forced into a rethink for the following season. 



WORDS JAMES ROBERTS PICTURES JAMES MANN



FERRARI 126C4 TECH SPEC



Engine	1.5-litre turbo Ferrari 031
Layout	V6 (120°)
Power	660bhp
Maximum revs	11,000rpm
Weight	540kg
Wheelbase	2,600mm
Transmission	Ferrari 5-speed manual
Fuel and oil	Agip
Tyres	Goodyear
Notable drivers	Michele Alboreto René Arnoux

STOCK



Advance, Australian Fair

Without doubt the most popular driver in the F1 paddock, Mark Webber will be hugely missed when he leaves the sport at the end of this season. In this world-exclusive interview, he tells old friend **Peter Windsor** why leading Porsche's sportscar programme was too good an opportunity to miss

PORTRAITS
THOMAS
BUTLER

Unsurprisingly, Mark emerges from the nearby court with tennis rackets in hand, sweat on brow and Mitch Evans not too far behind.

"So, who won?"

"Long second set, mate. Then we had to close it down because we knew you boys were coming."

"In other words, me," smiles Evans, rolling his eyes as if to say '*Always the competitor...*'

Flash back to the Sydney Cricket Ground a few years ago when Steve Waugh produced a one-liner of which Mark Webber himself would have been proud. After listening to the clipboard-holding TV producer outline one scene after another of Mark and Steve chatting about their respective sports, Steve, who was already pressed for time and had planned to stick around for about 30 minutes maximum, as agreed over the phone, fixed said producer with a steely glare and enquired: "So you're filming a full-length documentary, then?"

Not wishing to initiate a similar response from Aussie Grit now, Tom, our photographer, has already set up his backgrounds and lighting.

"Give me five to have a shower and I'll be down," says Mark. He's true to his word: Aussies long ago won the patent on 20-second dips.

"Right mate. Fire away," he says, hair still wet. And so it begins – the conversation, the interview, that I had never imagined would ever happen.

I first heard of Mark Webber in early 1996, when my old friend, Mike Kable, rang me from Australia to tell me about this talented young kid who would be racing that year in Formula Ford.

"Watch out for him," said Mike, who was one of my journalistic mentors. "He's a good guy. He's got what it takes."

I did my best. We met socially. I introduced him to a few friends. I even introduced him to Frank Williams after the Formula Ford Festival at the end of that first, dreamlike, year. "I'm interested," Frank had said in that keep-the-options-open way of his, "but I can't offer Mark anything now. Let's talk again in a few years..."

Those 'few years' have long since passed. Minardi-Jaguar-Williams-Red Bull. Two Monaco GP wins. Two Brazilian GPs. A German GP. →

2004

In a season dominated by Ferrari, Webber manages to split the scarlet cars in qualifying at Sepang, earning his first ever front row.

2003

At Interlagos, in his third race since joining Jaguar, Webber produces a brilliant qualifying lap to give the team its highest grid slot – third.



On Paul Stoddart: "Stoddy was brave and tried to take on a lot of people with Minardi. He bankrolled me initially"

2002

Webber finishes fifth on his debut, claiming Minardi's first points in three years. They finish ahead of Toyota in the constructors' championship.

← Mark Webber: the F1 years

JAMES ROBERTS LOOKS BACK OVER MARK WEBBER'S 12 SEASONS IN THE SPORT

A Hungarian GP. A Spanish GP. Two British GPs. And now, in 2013, an end.

"After all this," I say, kind of sadly, "you're retiring from Formula 1?"

"The timing looks pretty exceptional for me," he says, thinking before he speaks. He's sometimes finding it difficult to choose the right words – which is unusual for the most voluble driver to walk a pitlane since Mario Andretti. This is as emotional as Mark Webber gets.

"I've been on the edge with Formula 1, I think, motivation-wise, for the past couple of years now. You have to be *driven*. You turn yourself around each winter and the fire in the belly is not quite what it was when you were 24. It's inevitable. It happens, unfortunately. You never imagine it can happen, but it does. And I can tell you this: if I had won the championship in 2010 I would have retired there and then. Bang. Not even sportscars."

He didn't win though and thus spent three more seasons battling Sebastian Vettel before this, the opportunity to head up the FIA World Endurance programme for Porsche, a brand close to his heart – whose cars he *chooses* to drive – and do something new, something *good*.

"I remember hearing something about sportsmen and women years ago," he reflects. "They'd say that as long as they could keep their motivation, they would keep going. I could never work out what they meant. How could you lose your motivation? But questions keep coming to me more and more often that were never there in the past. It's not about driving or racing, it's about keeping my own F1 programme going



On Alonso: I've raced him since F3000, so I've known him a long, long time. On a Sunday afternoon, he's incredible"



On Newey: "He's a big reason why I continued for as long as I did. He's an inspiring guy to work with"

beyond the ken of any peer, just to keep things real in those soft-paced winter months.

"Yeah, you always want more," he smiles, "but when I left Queanbeyan I never in a million years imagined I'd have the career I've had or that I'd be here for as long as I have. And there are still new opportunities. Maybe to spend a bit of time with the family, do a few other things, see the parents. There are just so many things over the past 20 years that have gone past, so maybe it's time for a change – and out of choice, not because I'm being shown the door."

News of Mark's retirement has been out for a while, but it's still disconcerting to hear him talk like this. It's a reminder of the passage of time. Can Mark Webber ever be anything but the super-fit racing driver who was always unafraid to speak out about matters of importance, beyond the bandwidth of his track rivals and who was equally unafraid to take the shitbox Jag through the full gamut of steering angles on that fifth-gear left-hander in Shanghai?

He continues: "What people don't see is the work that goes on below the radar in F1. It's part of the remit of being a professional at F1 level and I've never seen it as a sacrifice. If you want to get to where you need to go, these things have to happen. With the category changing next year from a technical perspective, it was the perfect opportunity for a completely new challenge, with my future sorted. It's a great opportunity for me to be associated with Porsche."

The future, then, is settled. So what, in order of importance, have been the hardest things over the past decade or so? →

for 11 months of the year, year after year. And I've just got to a point where it's like, well... I've achieved quite a lot of things."

So something fresh, something *new* was needed. Something more to achieve, beyond the narrow straits of motorhome alley. This, you remember, is Mr Tasmania Challenge – the driver who created a physical-endurance event

2005

The first podium comes at last but Webber isn't smiling. Having moved to Williams, he is on course for a strong result at Monaco. But then the team choose to pit Nick Heidfeld before Webber, 'Quick Nick' finishes second to a fuming Webber's third.

2006

One year later, Webber is heading for another third-place finish for Williams at Monaco, when a spectacularly fiery exhaust failure dashes his hopes.

2007

Now at Red Bull, Webber's best chance of a win comes in torrential rain at Fuji. He's sick in the cockpit due to food-poisoning, and is doggedly chasing down Lewis Hamilton for the lead when the Safety Car is deployed and future team-mate Sebastian Vettel drives into the back of him. It's the start of an *interesting* relationship...



On the best car he's driven: "The RB6 at Budapest 2010. I won when Seb had a drive-through and I had to get a lap over Fernando. That car, around there, was just amazing. Turns 8 and 9 were what I remember most. Just phenomenal"

On celebrating that first Monaco win in 2010: "I'm annoyed I lost my boots. Probably got nicked when I jumped into the pool..."





On Haug: "I had a really good time with Mercedes [in sportscars] and Norbert was always a supporter"

"Travel and hotels. And probably the repetitive nature of certain aspects of the job. A bit of media. Lots and lots of small things that you're happy to deal with when you're bright-eyed and bushy-tailed. But it does, in the end, force you to ask the question: 'Do I have to be here, doing this?' And when Porsche came along I could look myself in the eye and say, 'Well, you know what, I probably *don't* have to do some of those things any more.'"

Mark is muscle-toned and tall without an ounce of excess of body fat. Always has been. None of that has just *happened*, however. Beyond the usual super-nutrition and tailored exercise, there is, in Adrian Newey chassis terms, something more: there is the 'extra' bodyframe weight that could be better used lower in the car.

"The weight is something that gets a bit boring," says Mark. "I still enjoy my fitness, but to hold 75kg for 11 months – that's just something that has to happen but I have to work harder at it than other people do because of my height. My comfortable, fit, body weight would easily be 6-7kg heavier than that. We have the weight-distribution regs in F1 but I'd still much rather have that weight on the floor. I'd rather have 6-10kg on the floor of the car than higher up. It was at its worst, probably, in 2010, when, with the Bridgestones, we needed to get the weight rearwards, which I couldn't do. But that comes with the game. So my fitness has all been about massive discipline and portion control. Size of the meals. Not that I crave it, but junk food isn't ever on the radar. Eating



On [his manager] Briatore: "I can't say a bad word about what Flavio's done with me. He's always boxed my corner"



On Mateschitz: "He's been great. Always replies. Always available. I look forward to working with him in the future"

well, spreading the meals out. It's a bit like being a jockey – and with Porsche it'll be there but only for eight months of the year. It'll give me a much better personal balance. "

I wonder if Mark would be feeling the same way had he won a few races in the first half of 2013 and was, say, leading the championship?

"For sure, I'd like to have had a better season this year, but the decision was made before we started. It'd be nice to go out with some top results and there's still a chance to do that – but I'd still be leaving F1 even if I was leading the championship right now. As I say, I almost retired in 2010. I made the final decision when I was in Noosa, in Queensland, over Christmas. Places like Noosa show you another part of life. That's good. You work hard for things and you still want to enjoy the toil and hard work you've put in but, at the same time, you want to keep your feet on the ground and remember where you've come from. It's an interesting point, and it's a sensitive point, to think that when things start to go well, and you've had some incredible highs – and winning grands prix is still a pretty decent drug, don't get me wrong – then you still have to find the time to say: 'Let's stop.'"

For much of his F1 career, Mark could be seen at Luton, deplaning from Ryanair more frequently than most of us catch a train, so I wonder whether he'd be feeling a bit warmer about the travel if he'd taken the private-charter route, as some of his peers and many other of the world's leading athletes have done?

"I have travelled privately in the past few years, and maybe I could have done so a bit earlier in my career," he admits. "I still don't feel hugely comfortable doing it, but private travel is a very good investment in terms of time, efficiency and even career longevity. →"

PHOTOS: ANDREW FERRARO/LAT; ANDY HONE/LAT; GLENN DUNBAR/LAT

2008

A second year with Red Bull gets off to an inauspicious start for Webber when he qualifies 14th at his home race then crashes out. It is a disappointing season, with fourth in Monaco the only highlight.

2009

Pre-season, Webber breaks a leg and shoulder during his Tasmania Challenge charity event. Red Bull underline their competitiveness with their first victory as new team-mate Seb Vettel leads Webber home in China. At the Nürburgring, Webber scores his maiden pole and win.

2010

The Turkish GP reveals the simmering tension between the Red Bull drivers: while battling for the lead, Vettel hits Webber, scuppering either driver's chance of victory. Three races later, at Silverstone, Vettel gets priority with a front-wing update and Webber makes it clear he feels unsupported. "Not bad for a number two driver," he quips after winning the race.



The metal rod that held Mark's leg together following his cycling accident in 2008



"I think it's also the effort you have to make with team relationships. "There are a lot of great guys at Red Bull and I've known them for a long time, but it's human nature sometimes to want a change of scenery, to turn the page. And for me it's better to go and do it where your future is, learn who's good at what they're doing and also have some influence on a fresh programme. If I'd gone to another F1 team I wouldn't be in it for a further three or four years, so I'd be putting in all that effort just for one year, probably.

"I had the opportunity to go to Ferrari and I could have stayed with our friends at Red Bull for a little while longer. For the future, though, the best decision is to drive for Porsche."

I want to know, too, about how Mark feels physically. He had that big shunt on the bike in late 2008 – plus he's had a few knocks in cars. That aside, how does he score his fundamentals – his eyesight, his reflexes, his 'feel'?

"Eyes, reflexes etc are all just as they were, but I think you lose a little bit of that cheetah-like movement that you have when you're 25. It's inevitable. But experience does count for a lot. You can use that on a rising scale. I think between 22 and 30-odd you're obviously at your absolute peak. Risk-taking... everything. I probably peaked in terms of sheer physical athleticism at that point, but my really successful years were still ahead of me. It's because of the crossover with experience. Those curves are absolutely natural and it's still going on."


And then there's the politics: "There's always an agenda and always something going on. Massively. It comes with the territory. It's the

nature of the sport when there's a lot of money around. So you make sure you put in the effort to keep certain members of certain media happy, because that's where the team has a lot of influence. That's just the way the sport is with a lot of different partners now. We also have the Pirelli scenario, where drivers can't talk how we want to about the tyres or the sport because it might upset people. We'll still have that at Porsche, but it'll be much, much smaller."

So what of the remainder of the year? How does he feel about these last races? What does he expect from himself? "I still enjoy being belted in the car and driving down the pitlane, which is a bit disappointing, but I've spoken to some really good sportsmen and women who have been at this crossroads where making the call was not easy and they messed it up. They hung on too long. As I've said before, I'm probably leaving F1 a year too soon but with the reg changes in the sport next season and the opportunity to join Porsche, it's the best move for me."

What will he never forget?

"My wins at Monaco; they were very special for me. Without the Safety Cars in 2010, I would have won the race by 40 seconds. I really felt in charge of the race – it was a beautiful feeling. My 2012 win was different – we were nowhere in practice, but then in qualifying I put the car somewhere it shouldn't have been on the grid; I was a thousandth of a second away from pole. Nico and Michael are no slouches around Monaco, so that qualifying performance really meant a lot to me. The win was a lot more difficult on the Pirelli tyres; it was harder to enjoy the race because I was always thinking through the tactics – you know, 'Don't get too big a lead because if there's a Safety Car you've used the tyres up,' and so on. It was different from driving two hours pretty much flat-out which I had done in 2010. I haven't had anything like the success I'd like to have had since we've changed to Pirellis. I just haven't."

Tom tells us that he's ready to shoot. Mark stands to oblige. This time, though, it's different. 

2011

Webber takes his only win of the year at the season-ending Brazilian GP. He finishes third in the drivers' world championship, having clocked up seven fastest laps – more than any other driver that year.

2012

More rancour at the Brazilian GP as Vettel homes in on his third world title. He needs a good result to acquire it, but Webber subtly impedes his progress by squeezing him at the first corner. A spin later in the lap forces Vettel to charge back through from 22nd.

2013

Animosity spills out in public again as Vettel refuses to obey the team's coded 'multi-21' order to remain in formation, bullying his way past Webber to win the race. The TV broadcast from the drivers' pre-podium 'green room', mercilessly exposes the frosty atmosphere between the team-mates.



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PORSCHE

"I'd stand on my head for *F1 Racing*..."

Mark Webber made his presence felt in this magazine even before his F1 debut, and he's indulged us with some of our most off-the-wall ideas ever since. Here are a selection of our favourite Webber moments – and, yes, he really did stand on his head...

WORDS STEWART WILLIAMS





January and February 2002

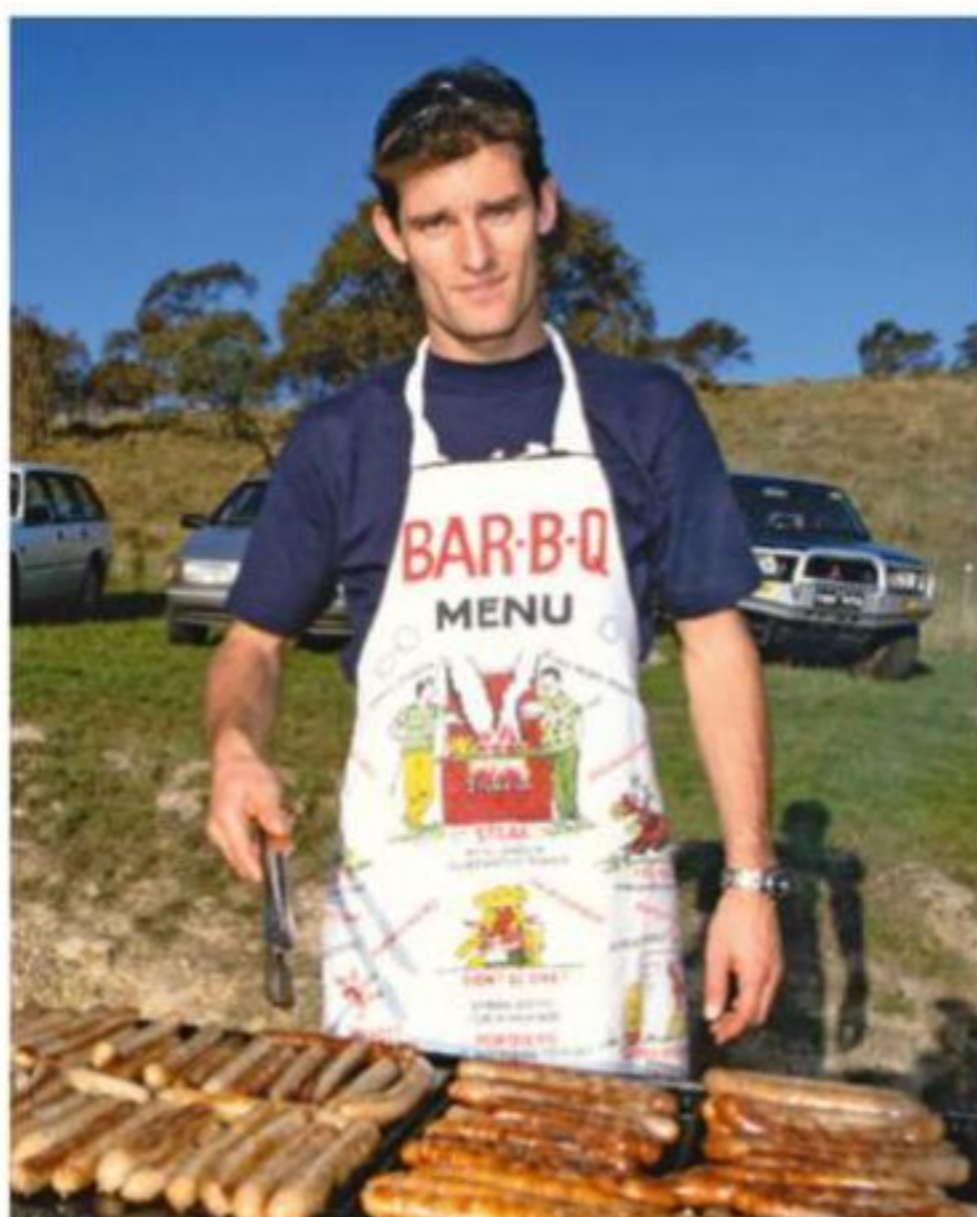
When *F1 Racing*'s GP editor, Tom Clarkson, decided to do a charity bike ride from John O'Groats to Land's End at the end of the 2001 season (this was back in the days when the final race took place in mid-October), various members of the Renault F1 team agreed to join him along the way. Mark, who was the team's test driver at that stage, joined Tom on day one... and stayed right until the end.

Tom readily admits that without Webber's cajoling and encouragement he'd never have

"Mark never lost his sense of humour, asking locals when Tom dropped back a bit: 'Anyone seen a 95-year-old on a bike round here?'"

made it through the 14 days and 932 miles; for a good many of those miles, Mark took the lead and let Tom shelter in his slipstream. Through wind and rain Mark never lost his sense of humour, asking the locals in Scotland when Tom dropped back a bit: "Anyone seen a 95-year-old on a bike round here?"

Even when times got tough for Webber (he found out during the ride that he'd lost the Renault test-driver role to Fernando Alonso) he just took out his frustrations on the road, refusing to pack it in. This was *F1 Racing*'s introduction to @AussieGrit.



April 2002

Before, during and after his dream Formula 1 debut – when he finished in the points in fifth place on home soil with Minardi – Mark and his friends and family allowed us behind the scenes for an up-close-and-personal view of his week, which resulted in a 'local hero' scrapbook that included pictures of a good old traditional Aussie barbie with his proud parents.



June 2002

We were there to witness the action when, along with five other F1 drivers, Mark Webber took part in a charity pro-am tennis tournament before the Spanish GP. Mark was centre stage for many reasons – not least his eye-watering Day-Glo yellow shoes. And – surprise, surprise – Mark and his pro partner Sandon Stolle beat Oliver Panis and his pro partner in the final.



December 2002

Eleven years ago, Webber made his *F1 Racing* cover debut, albeit as one of eight drivers in our Man of the Year awards. The self-portraits – activated by remote shutter release – on the cover and inside the issue, showed Mark's willingness to pose for us. We would remember that for many years, as our 2002 Rookie of the Year continued to make a name for himself...



July 2003

In one of our more ambitious photo shoots, done in the days before digital manipulation was rife, we asked Mark if he'd be prepared to reprise his Superman pose – this time emerging from his new Jaguar. Since this entailed taking him to a studio, putting him in a harness and hoisting both car and driver 20 feet off the ground, we wondered if he'd say no. Of course he didn't. →

PHOTOS: STEVEN TEE/LAT; NEALE HAYNES; ANDY EARL



November 2003 / January 2004

When Mark founded the Mark Webber Tasmania Challenge – a charity cycling, running and canoeing trek around Australia’s island state – he invited *F1 Racing*’s Anthony Rowlinson to join him and his select group of outdoorsy types. Some initial training involved a trip down to Poole Harbour with Mark – just 16 hours after he’d finished seventh at the Italian GP.

Having convinced the money men it was a good idea, Rowlinson departed for Tasmania and the challenge itself. We got to see an F1 driver *really* pushing himself, while at the same time giving as much help and encouragement as possible to Rowlinson – plus the occasional celebrity (including tennis player Pat Rafter and athlete Cathy Freeman) who dipped into the challenge.



May 2004

Mark’s own *F1 Racing* highlight was when we sat him down with Australia’s two champions, Sir Jack Brabham and Alan Jones. His first words were typically self-effacing. “Hey, what am I doing in this company?” he said. “Mate, these guys have done it all. I’m still trying.” They found common ground, starting with a decision to leave home to race in Europe early in their careers.



January 2005

A switch to Williams had us asking on the cover if Mark could be their next world champion. The piece was aptly titled, ‘Keeping up with the Joneses’ after Williams’ first champion and Webber’s compatriot, Alan Jones. Mark took part in a photoshoot surrounded by giant cardboard cutouts of the seven drivers who have won the title while employed by Frank’s team.



June 2005

The headline was: ‘Here’s something you don’t see everyday – Formula 1 drivers in their underwear’. To elaborate, we were looking for a driver to strip down to their fireproof underwear to demonstrate the differences between Formula 1 drivers’ kit in 2005 and 1965 for a special feature. The question was: who could help? Step forward one Mark Webber...



August 2005

It’s true, Mark really *did* stand on his head for *F1 Racing*, as our cover announced he would ‘turn Williams on its head’. It was a simple yet eye-catching concept, but the effort needed to get it right – despite Mark’s fitness – was intense. And beyond this main feature, we also joined him for a day’s cycling in Wisconsin with Rubens Barrichello and the Discovery pro-cycling team.



September 2009

Now at Red Bull, Mark had started to win races and was chasing down Jenson Button in the championship. The 'drape you in your national flag' shoot we requested for the cover was no problem, and the searching interview included questions about his physical condition after he broke a leg on his Tasmania Challenge. He answered them all with his usual blunt honesty.

August 2010

As the 2010 season reached its halfway point, we pondered whether this was Mark's toughest season to date as he did battle with Sebastian Vettel and the rest of the grid. We wrapped his hands boxer-style and asked him to launch into a series of kickboxing moves. The results, as always, were visually arresting. The shoot took place at the pub he then owned with his partner, Ann, and we rounded off the day with a Mark Webber pizza.



PHOTOS: STEVEN TEE/LAT; MALCOLM GRIFFITHS/LAT; ANDY EARL; NEALE HAYNES; ANDY TIPPING



October 2011

Another cover appearance, this time with F1 legend Alain Prost as he and Webber took part in a very different sort of race – up the famous 21 hairpins of the Alpe d'Huez Tour de France mountain stage. For Mark, it was an opportunity to pit himself against a super-fit Prost (who weighs even less than he did in his F1 days) and a mountain where compatriot Cadel Evans had

gone a long way to securing victory at that year's Tour. He also got to hear anecdotes from Prost's glittering career first-hand. But this was no case of blind adoration... Mark's first question to the quadruple champion was: "Dad and I drove for 14 hours to come and watch you at Adelaide in 1991 – and you didn't turn up! Why was that?" And when the pair hit the slopes, neither held back...



July 2013

There aren't many F1 drivers who would invite us to their house early on a Sunday morning to join them as they take their dogs for a walk. This was Mark's regular routine before every British GP meeting, rising early for a relaxing stroll, before commuting 20-odd miles to Silverstone. It meant he'd get to spend every night of a race meeting in his own bed: a luxury few drivers experience. 🐕

YOU ASK THE QUESTIONS

Pastor Maldonado

It's not been the easiest season for Williams' most recent winner, but he's happy to open up about leading his team, scoring that point – and why he believes things can only get better

WORDS ANTHONY ROWLINSON **PORTRAITS** ANDREW FERRARO/LAT

Like a hurricane becalmed, Pastor Maldonado arrives quietly, graciously and turbulence-free, at the anointed hour, for his grilling-by-proxy from *F1 Racing's* readers. He remains much the same Pastor as the firebrand Venezuelan who blew into motorsport's top echelon in 2010 and who subsequently developed quite a reputation for stirring speed, on-his-day brilliance, and a certain, quaint, out-of-the-cockpit charm that sometimes seems at odds with a driver of such ferocity behind the wheel.

It must have been incredibly tough, we reflect, being Pastor in 2013. The man who demonstrated such combative skill throughout 2012 and has lately managed to curb some of his on-track feistiness would, of course, love to have built on that much-celebrated Spain 2012 win to join the victory-chasing elite-inhabiting seats at Mercedes, Red Bull, Ferrari and Lotus. But it seems the fates haven't written that particular script for Pastor – not yet, at least. Instead, they've taken him from the Elysian fields of front-running pace and banished him

and his team to the Q1 badlands, from where the greatest hope can only be meagre points and respectability, not soul-stirring charges to the chequered flag.

The reversal of fortunes would be enough to make a lesser individual crumble into chippiness and develop a grudge against F1's vicissitudes. That, however, would not be Pastor Maldonado at all, for as we shall see, he remains optimistic, upbeat and as passionately committed as ever to the Williams cause...

Last year you managed to give Frank Williams a win for his birthday. What did you get him this year?

Tom Siegner, Canada

That was a very special day, as you know. We brought everything together to give him a winning day for his birthday. This year it was even more tough, although we were together to celebrate 600 Williams grands prix, which was also very special. It's not as much as a victory, but it was great to be together with him to share such an important moment for the

team. But in terms of achieving another victory... well, that's going to be very tough.

How would you compare your teammates at Williams? Who was fastest? Rubens, Bruno or Valtteri?

Peter Bergquist, Sweden

The toughest one for sure has been Rubens, because of his experience and determination – and I was racing him in my first year in F1. He was the second most experienced driver at the time and he was leading the team. He was still very quick, too. Honestly, I learned a lot from him, a lot about how to drive an F1 car.

What would you say is the most beautiful place to visit in Venezuela?

Geoffrey Viot, France

It depends. We have so many beautiful places in Venezuela, many great tourist places. If you want to go to the beach we have the islands of Los Roques, close to Caracas. The sea there is amazing and it's a very natural place. In the south of Venezuela we have mountains in →



WILLIAMS
F1 TEAM

PDVSA

RENAULT

WIHURI

randstad

Pastor

MCG

Experian
GREGOR

OF
SWISS W
TIRELL



Pastor Maldonado

Amazonas – I got married there, actually, in a place called Canaima, and it was fantastic. If you want to go up to the very high mountains to feel some cold weather and see the snow there's a mountain in Mérida, Pico Bolívar, which is nearly 5,000 metres high. If you like something hotter, we have a small desert – like the Sahara but smaller – which is Los Médanos de Coro. Wherever you go, there's a great selection of places – and they're all great places to be.

How would you feel if there was a grand prix in your home country?

Daniel Jones, UK

Well I'd be excited, for sure! There has been some work to make it happen, but we need to do more. If we can, then why not in the future? We will have it. The sport is getting bigger all the time in Venezuela and we have two TV channels showing Formula 1. It's getting very popular.

You're less wild in the car these days. Have you changed your driving style?

Adam Moulder, UK

I'm more experienced now, so driving is nice and easy and I'm more relaxed. I'm still trying to do my best to get in the points, even with a car that is not at that level. But I'm enjoying it and I try to learn something at every race. Starting from the back and trying to recover some places is never easy, but for sure it's giving me more experience.

Where and when was the best lap of your life? Can you describe how it felt?

Raymond Umbara, Indonesia

I've had many great laps in my life and last year was particularly good. The pole lap in Barcelona was good and I think qualifying in Singapore was one of my best laps ever, when I made it to P2. Actually, I think maybe that was my best lap. It was clean from the beginning and I felt so confident with the car, so confident with the lap and the situation. So I was 100 per cent ready to do my best. We had the chance, but only for one lap. I pushed in Q3 and put everything together. It was great because I was sure the potential was there and I showed that potential.

What has been your best overtaking move of the past two years? Why was it so special and did you look in your mirrors before making the move?

Steve Nunn, UK

In the past three seasons? I've had so many. With Jaime Alguersuari I did a good one at Suzuka in 2011. Last year there was a great one in Hungary when I passed Di Resta, but I got a penalty because of it. In my opinion it was very clean, it was super-good, and it was the only



“We have too much focus on the tyres and not enough on the performance. We are limited by the tyres – what we have is not F1”



time anyone passed there in the race. But I got a penalty. I made the move at Turn 11. This year I've had so many. All the passing manoeuvres I do, I always enjoy them. I always try to be very clean and very aggressive at the same time.

How does a Formula 1 driver establish himself as team leader?

Chris Beaumont, Australia

I live in Oxford, so I'm able to spend a lot of time at the Williams factory nearby. It takes experience to be the leading driver and the team gave me the chance to lead last year, in my second year of Formula 1. I was then able to show I was ready – especially to win. I could also show that I was ready to translate what was happening with the car to the factory. It was very important to be able to do that and it worked quite well and gave us a good car to fight with.

This year is tough as the car is very slow. But our work is getting us closer to the top teams and that's our main objective. We are working very hard to improve at every race and we are trying to get better. I try to do my best, I spend more days in the factory than ever – I don't think any driver in any team has spent as many days in the factory as I have this year. I try to make the team work well together, so we are not only improving the car but we are improving *everything* together. Our driving, the car, mechanics, engineers. We are a team and I am trying to lead that team and help make it work altogether.

What's the best excuse you've given a team boss after crashing a car?

Carina Grusevska, Latvia

I don't have excuses, I'm very honest. When I make a mistake, I'm very serious about it. You need to learn from your mistakes and try to improve for the future. So I'm very honest with the team and I hope they are honest with me as well. There's no point in giving any excuses.

Will your Williams future be affected by the death of Venezuelan president Hugo Chávez and his support for you through PDVSA [Venezuela's state oil company]?

P Agnello, UK

Actually, no. For sure Chávez's death is a big loss for the country – not only for me – and we miss him. But that's life, sadly. We need to carry on and we need to improve everything in the country. There is a new government now and they are still doing what Chávez has started and they need to continue all the social programmes. I have a good relationship with PDVSA, as do all the other sportsmen involved with the company.

Should races be decided by tyre management or tactics and driver skill?

Roman Rynda, Canada

We have too much focus on the tyres and not enough on the performance. We are limited by the tyres – what we have is not F1. We should be working for performance, not to keep the tyres alive. I really don't like this – having to manage tyre wear a lot in the races. If you can't push in qualifying for one lap because you need to look after the tyres, it's not the best for F1. But at the same time I'm happy because it is the same for everyone. It's part of the job.

Will the big Formula 1 regulation change allow you to win in 2014?

Liam Higgs, UK

I don't know. Hopefully. It's going to be very difficult as everything will be new. We need to work very hard.

What do you think it will take to get Williams back to the top of F1?

Seth Williams, USA

We need to organise some departments in the team and try to work more like a proper team, with the departments working more closely together. We need to improve every day.

Have you spoken much with Pat Symonds [Williams' new chief technical officer] yet?

L Smith, UK

Not much because he has only just started. But he seems very open and ready to start to work. He knows very well what to do in the team. He's an experienced winner and we believe in him.

Do you need to move away from Williams for the benefit of your career?

Steve Greensmith, UK

For sure, I would like to experience other teams before I end my career. But before I go, I would

like to win the title here. I think it's possible and we have great potential to fight for the title and I really want to win. When I do, then I will decide.

What would excite you more: driving a turbocharged Williams from the '80s, or next year's car with its extra technology?

John Rushbrooke, UK

The Williams from the '80s! They were amazing – they were the best team then. It's like what we see with Red Bull now. Williams were like that and we are working hard to recover it. It's possible because they have done it in the past.

Which Williams would you most like to drive and why?

David Harper, UK

I drove the FW18, Damon Hill's 1996 car. That was fantastic. It has a great look and great technology. Adrian Newey was with Williams as well as Patrick Head. It was a great car.

Is there any truth in the rumours connecting you to Lotus?

Alex Cooper, UK

Well, our season is not so good and Lotus are a good team. They are very competitive and very consistent. But they already have good drivers and there is no point for them to change. Anyway, I'm happy where I am. We don't have the results we were expecting, but F1 is like that. This year could have been the other way. I believe in my team, and I would like to stay here because it is a great team; it feels like a family.

How relieved were you to have finally scored a 2013 point, in Hungary?

Grace Wilkinson, UK

It was important for us, especially after the car's aero problems. One point is not enough, but for the team it's good to break the barrier. After crossing the barrier into the top ten, maybe with the new tyres we can do better. We must work harder, but there is a chance to recover. There is no point to forget about this car or this season.

If you could play music while you were driving, what would be on your playlist?

Nathan Sharp, UK

I like Latin American music. Gabrielle, my wife, is always listening to music as she's a singer. She always sings along to music in the car.

Have you enjoyed a few beers in any of Williams' local pubs?

Scott Galbraith, UK

Not a beer, but I did go with friends to play pool. I had a coke, while they drank beer. I'm not teetotal, but I don't drink much.

What do you do in your free time?

Lily Fenton, UK

Stay with the family and friends and go to the beach. And go back to Venezuela. 🇻🇪

Who is your all-time Formula 1 hero – and why do you admire them?

Wanchatr Seriniyom, Thailand

Ayrton Senna because he was so aggressive; I really like that. He was a killer when it came to winning, and a legend. I liked Montoya, too. He was a winner for Williams and a great driver.



Pastor's heroes: Ayrton Senna and Juan Pablo Montoya – both of whom raced for Williams



INSETS: STEVE ETHERINGTON/LAT; LAT ARCHIVE

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BACK IN THE RING

Formula 1 fans have long been hankering after a return to the classic circuits – and that wish has now been granted as Austria lines up to take its place on next year's calendar. *F1 Racing* finds out what's been going on at the Red Bull Ring

WORDS STUART CODLING PICTURES ROB WHITROW



The third Sunday of May 2003. President George W Bush has recently announced an end to combat in Iraq. 'Dirty Den' is making a return to *Eastenders*. R Kelly is at number one in the UK singles chart. Michael Schumacher has won the final Austrian Grand Prix by 0.036secs from Kimi Räikkönen. Over the coming months, as Schumacher homes in on the world championship, the now-forgotten A1-Ring begins its slide into dereliction.

Flash forward just over a decade and the Austrian GP is about to make an unlikely – and welcome – return. The A1-Ring has been rescued from ruin and is now the Red Bull Ring, thanks to investment from the manufacturer of the well-known energy drink that is nearby Salzburg's best-known export (with the possible exceptions of *The Sound Of Music* and Mozart). The entrepreneur behind the brand is also dipping into his own pocket to fund the return of the Austrian Grand Prix – something that should send every F1 fan into Julie Andrews mode. Run through the meadows and shout it like you mean it: the hills are alive again.

Why the joy? The current circuit layout may represent only the edited highlights of its former incarnation as the fearsome Österreichring, home of the Austrian GP between 1970 and 1987, but as a destination it was incredibly popular. Leave the circuit at dusk on the evening of a GP weekend and you'd see the surrounding →



The Ring makes money from driving-experience days, using a fleet that includes Formula Renaults, stock cars, Mitsubishi Evos and off-rovers

hills glowing with lanterns and campfires, and hear the throb of music and laughter as the fans enjoyed themselves. Compare that with the often miserable and fan-free commute to some of F1's more recent additions to the calendar.

The mooted return of Austria (Red Bull have announced it, but the 2014 F1 calendar has yet to be confirmed) could signal a major shift in the sport's direction, as familiar and well-liked races from the past displace unloved ones from the present (for more on that, turn to page 64). Its rebirth is significant because it is backed by private rather than public finance, mirroring trends in the wider world in which big businesses are testing their muscle against governments.

But make no mistake, Red Bull magnate Dietrich Mateschitz has had to fight to make this happen. The circuit's woes date back to its birth: the land it stands on was never owned by its operators, but leased from various local farmers. By the 1980s, the Österreichring was dead in the water. Locals to the south west objected vigorously to the noise from race activities, and F1 cars had grown too powerful for the fast, flowing layout, which couldn't be altered because various landowners demanded too high a price.

Enter European rallycross champion Franz Wurz, father of Le Mans winner and Benetton F1 driver Alex Wurz. He was expanding his thriving road-safety training business and on the lookout for new locations. "Back in the early 1990s, my father came home and said, 'We should do something with that track,'" Alex recalls. "So we looked at the plans, and I started to draw a short version that kept away from those who claimed legal action against the operation of the track. With little choice of land – it belonged to many

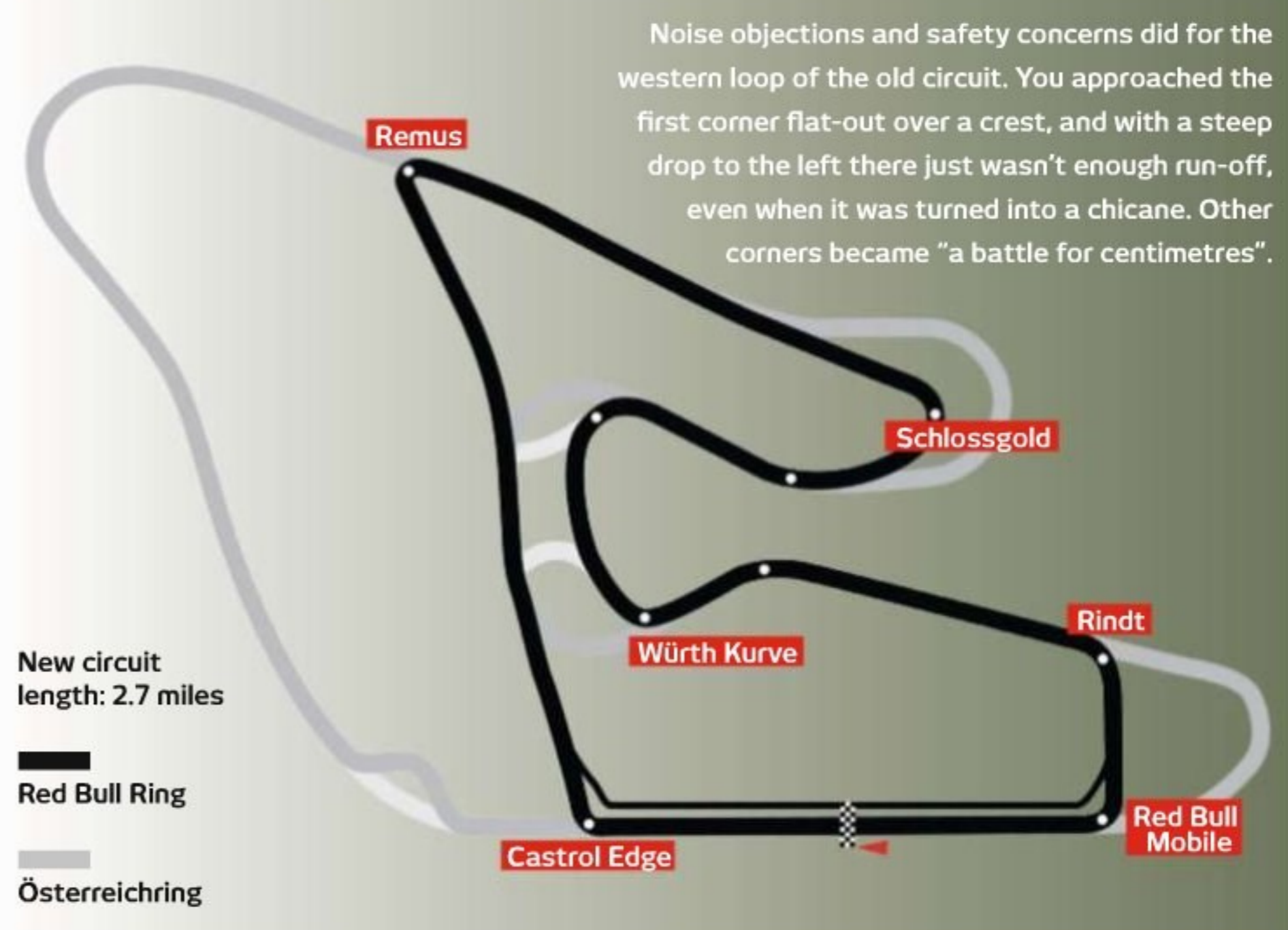
different farmers – the current layout was found. Some corners were a fight for centimetres!"

The early section of the original layout ran around the base of a hill; the new route between Turns 1 and 2 placed that hill between the circuit and its noise-conscious neighbours to the south-west. Hermann Tilke, who had worked on several Wurz training centres, supervised the rebuild, thus securing what would prove to be a lucrative introduction to Bernie Ecclestone...

With title sponsorship coming from the A1 telecoms network, the circuit hosted the

revived Austrian GP from 1997 to 2003, when Red Bull negotiated a deal with the Styrian government and local landowners to buy the site. But Mateschitz's plan, re-using part of the old Österreichring layout to create a modern race, test and entertainment facility, received a double blow. The change in ownership activated an escape clause in the contract, and Ecclestone used it to pursue richer pickings elsewhere. Then, with bulldozers already on site levelling the pit building, environmentalists used the changes to challenge the operating licence.

The Österreichring and Red Bull Ring compared



Furious, Mateschitz made a tetchy public announcement to the effect that he wasn't going to throw good money after bad, and the Red Bull Ring duly lay fallow for another five years.

And yet here we are. The Red Bull Ring opened for business in May 2011, not operated by Red Bull but by a separate Mateschitz-owned company called Projekt Spielberg, managed by former Nürburgring CEO Walter Kafitz. The track itself is unchanged since the 1990s, but the open-topped spectator banking is new (the roof of the old grandstand acted as a noise magnifier) – as is the 28-garage pit complex. The company has bought and renovated a number of local hotels (availability of accommodation used to be a bugbear come grand prix time), some of which overlook the track, and the standard ranges from affordable *gasthof* to gilt-edged luxury.

Beyond the run-off for Turn 1, a kart track occupies what was the Hella-Licht chicane – arrive-and-drive prices start at €13 for ten minutes – and to the north and west there are extensive off-road routes. You can pitch up with

“By the 1980s the Österreichring was dead in the water... F1 cars were too powerful for the layout, which couldn't be altered”

your own trail bike or 4x4, or rent one on-site. In the centre of the track is a skid pan and skills course, overlooked by a 50-ton statue of a bull charging through an arch. This is as on-brand as the blue-and-silver grandstand seats: it's made of steel recycled from old aircraft hangars, and the archway is formed from recycled Red Bull cans. Ah yes, and the horns are covered in gold leaf.

“Mateschitz knew the importance of putting something back into the region he came from,” says a source with connections to Red Bull. “He had to do something to benefit the ordinary folk back home as well as paying people to throw themselves off the rim of space, for example...”

For those not interested in motoring, the hotels can be used as a base for activity holidays – Projekt Spielberg has equine facilities nearby, there are plenty of golf courses, and the hills are ripe for mountain biking, paragliding, hiking and (in winter) cross-country skiing. In fact, track activities occupy just under a quarter of the graphic on the cover of the tourist brochure. It's a calculated appeal to the broader tourist market.

“We call ourselves the most beautiful playground in Austria,” says Walter Kafitz over lunch at the Landhotel Schönberghof, whose terrace overlooks the circuit and plains beyond. →

THE A1-RING'S MOST MEMORABLE MOMENTS

When the Österreichring re-opened for F1 business as the A1-Ring in 1997, critics ho-hummed at the truncated layout. But that didn't stop it from playing host to some pretty remarkable events...



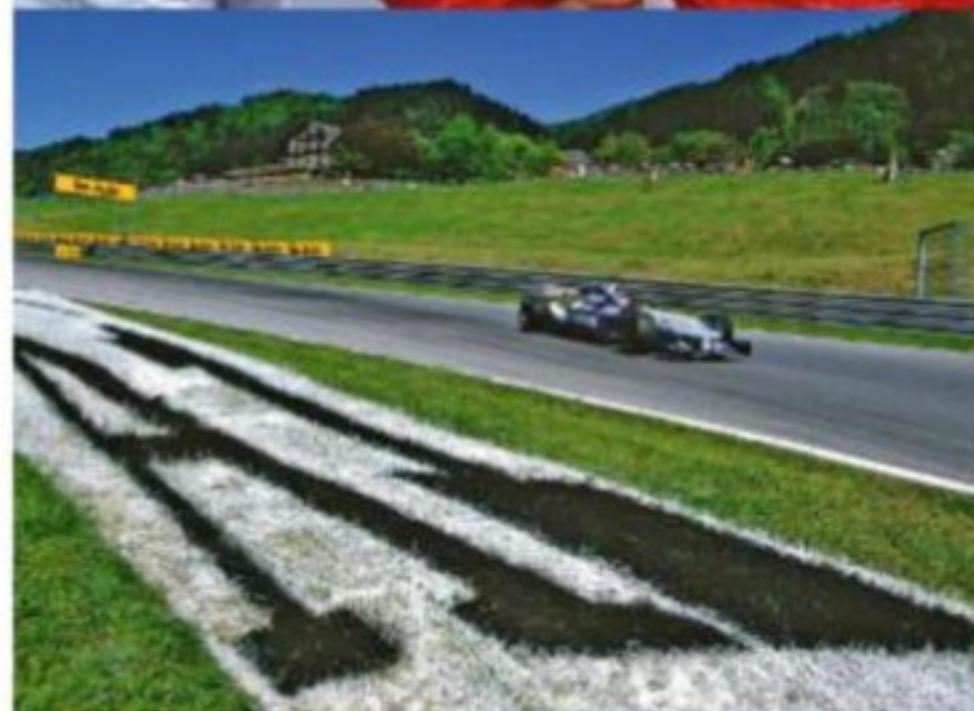
‘PROST-GATE’ 1997

Alain Prost bought the Ligier team at the beginning of 1997, changing the name to Prost GP, and this first season would prove to be their most competitive. Olivier Panis shone brightly until breaking his legs in Canada, and his stand-in, Jarno Trulli, announced his arrival on the world stage by leading the Austrian Grand Prix commandingly until his Mugen engine began to tighten up. It finally blew 12 laps from home while he was running in second place.



‘BIFF-GATE’ 1999

With Michael Schumacher out of the picture – after breaking his leg at Silverstone two weeks earlier – this race was McLaren's to lose. And lose it they did, despite both cars being a second faster than new Ferrari team leader Eddie Irvine in qualifying. At Turn 2, David Coulthard biffed a bemused Mika Häkkinen off the track, leaving the way open for Irvine to claim victory.



‘VENISON-GATE’ 2002

A classic sense of humour failure on the pitwall after Juan Pablo Montoya's engineer radioed him to warn of a deer on track. “Oh deer!” laughed Juan. “A deer,” came the emphatic response. “Er, like a horse with horns.” “I know, I know... Oh deer! Ha ha ha!”



‘BRAKE-GATE’ 2002

The action had only just begun again following a Safety Car intervention when Nick Heidfeld got his braking very wrong for the Remus Kurve, arriving at the corner backwards and at largely unabated speed before slamming into the side of an unsuspecting Takuma Sato's Jordan.



‘BOO-GATE’ 2002

In 2001, Ferrari ordered Rubens Barrichello to hand second place to Michael Schumacher as McLaren's David Coulthard claimed the win. In 2002, Rubens was leading when the call came to swap. Bad move. Rubens dropped back on the last lap, and an enraged crowd booed Schumacher off the top of the podium.

INSETS: LAT ARCHIVE



INSET: LAT ARCHIVE

TURN IT UP!

Mid-'80s turbo cars, running four-bar boost, were the wildest F1 has seen. Austrian ace Gerhard Berger recalls the thrill of driving the Benetton-BMW B186 on home turf

They sat one-two on the grid: the garishly purposeful Benetton-BMWs of Teo Fabi (on pole) and team-mate Gerhard Berger.

With more than 1,000bhp – maybe more than 1,400bhp for a qualifying 'grenade' engine – and one-lap super-sticky Pirelli qualifying tyres, these cars were the fastest way of lapping the high-speed Österreichring.

And boy oh boy, for all the dangers inherent in driving cars *designed* to be OTT, did the drivers ever love them at a circuit so speedsome. "Yeah, it was the best time," Berger recalls, eyes glinting. "It was a time when the driver could make the difference. If you were *really* brave you could be a second ahead of your team-mate in quali... if not, you'd be two seconds off."

Berger explains the extreme performance of cars like the B186 through the conflicting demands of high-boost turbos – turned up to the max for qualifying – combined with qualifying tyres: "You wanted to brake much earlier because you were arriving at the corners so much faster, but you knew the tyres were giving you the grip to brake much later. Yet you only had one lap from tyres and engine to get it right."

"Everything was so squeezed it was mad. The engines would literally melt after one lap of putting out 1,400bhp, and the tyres were completely finished. There's never been anything like it in Formula 1. On full boost it was madness really..."

Interview by Anthony Rowlinson

"We offer many activities – not just motorsport – and the emphasis is on fun. From the start, Mr Mateschitz intended a broad offering. We have the mountains – why not use them?"

"For example, the four-wheel-drive test centre over here [he gestures towards the rising slope of the hills to the north] has many surfaces and gradients, you can do that in the morning... and then after lunch you can go four miles from here where we have 50 hectares of land to explore. It's an adventure!"

Unusually, the Red Bull Ring has no security-guarded front gate. You just drive in, park by the bust of Jochen Rindt, browse through the Red Bull memorabilia in the Driving Centre's shop, enjoy the club-ish vibe of the extensive Bull's Lane café atop the pit complex, or drive up the hill to the hotels and restaurants. The

architecture of the pit building, while thoroughly modern, is functional and unadorned, eschewing the Tilke-esque tendency to throw in a distinctive flourish. The overall impression is of a circuit that's comfortable in its own skin.

On the Monday of *F1 Racing's* visit to the Red Bull Ring, it's incredibly busy.

Police motorcyclists are undergoing training at the Driving Centre, and we join a well-subscribed ten-lap track session in a KTM X-Bow – think XXL kart with a 240bhp turbo engine – superintended by former Minardi F1 pilot Patrick Friesacher. The session uses only the 'Sudschleife', cutting out the second to fourth corners of the grand prix track, but this lets Friesacher rattle through his briefing at speed and send his charges out to enjoy themselves.



A tour around the new-look Ring...



▲ The control room's 42 monitors and 26 cameras give an uninterrupted view of the entire circuit

▼ The flag cupboard does what it says on the tin: flags are stored here for use in podium ceremonies



▲ The podium is at the pit building's centre. It's hosted various ceremonies – but no F1 action yet



It's a long enough lap to get a feel for the character of the full circuit – it's all about braking finesse – without the inherent risks of tackling the fastest section, the run to Turn 2. Get the last corner right and the X-Bow is flat-out in fifth on the pit straight and still gathering speed as the track ramps up ten metres for the first corner. You get a brief insight into what it must have been like in the early 1970s: right foot still planted on the floor as you come over the brow and then – still flat-out – tackle a sweeping right-hander with just Armco and a drop to the left. Then it's suddenly back to



The modern circuit climbs the hill from the pits, turning right where the old layout plunged over the crest



▲ The pit building now consists of 24 pit garages, with a further four for technical inspections



▲ The Bull's Lane café sits on top of the pit building, giving views out across the venue

reality: brake and change down well before the brow and turn sharply to the right.

"We are not a driving school," says Kafitz. "It's safe, and the instructors are professionals. But people want to have fun – we are a playground. The days in school are past. The cream of the

crop, I'd say, is our 'Go With Your Pro' driver lessons with people such as David Coulthard, Matthias Ekström and Carlos Sainz. We also offer cooking lessons and fishing, too."

The Ring's motoring harem also includes Formula Renaults, stock cars and Mitsubishi

▼ The new media station features hi-tech viewing screens and workstations for 150 journalists



▼ The medical centre is also centrally located, and is equipped with the most up-to-date kit




"What's clear is that the facility is going to have to pay its own way, hence the need to offer regular attractions beyond race weekends"

Evos as well as sundry motorbikes and off-roaders. Since opening it's attracted race series as diverse as the DTM and trucks, filling its 20,000 seats with no trouble at all (overall capacity is around 40,000; there's work to be done expanding that before the Austrian GP).

What's clear is that the facility is going to have to pay its own way, hence the need to offer regular attractions beyond race weekends. Mateschitz recently told *Speedweek* that he was paying the grand prix sanctioning fee, but that the Ring would have to cover other costs of the event through ticket sales. Kafitz treads delicately around the matter of Red Bull's involvement.

"Let's say we all belong to a family called Red Bull," he says, "but there are no direct links between us and the title sponsor.

"We're booked out on the circuit from May until September and then in winter we offer other activities such as skating. That's why the company is called Projekt Spielberg. It really is an ongoing project. Year by year we'll have new toys to play with, new hotels and new events. Every year something happens."

At *F1 Racing* we've got our eye on something we hope will happen next year. And we're very much looking forward to it... 

Out with the new, in

Formula 1's era of rampant expansion may be coming to an end as unloved grands prix drop off the calendar, and some familiar territories gear up to make a popular return...



WORDS MARC CUTLER
PICTURES LAT ARCHIVE

with the old

Picture the scene: It's 2025 and veteran racer Sebastian Vettel is all set to eclipse Michael Schumacher's record of seven world championships in this, his final season in Formula 1. He's already taken victories in Mexico, South Africa, California and France, and is now on the final lap of his last grand prix with a career-defining championship in his sights.

Heading to the final bend he gets an extra burst of speed by boosting his turbocharged engine with a shot of reclaimed exhaust energy, flies around Fangio corner and makes history at the new Argentine Grand Prix.

Could it happen? Well – suspension of disbelief about Vettel's longevity aside – some of the most famous destinations in the history of the sport have been earmarked for a comeback. There is no doubt that they would please the largest of crowds in these F1 heartlands. But what are the chances of their return?

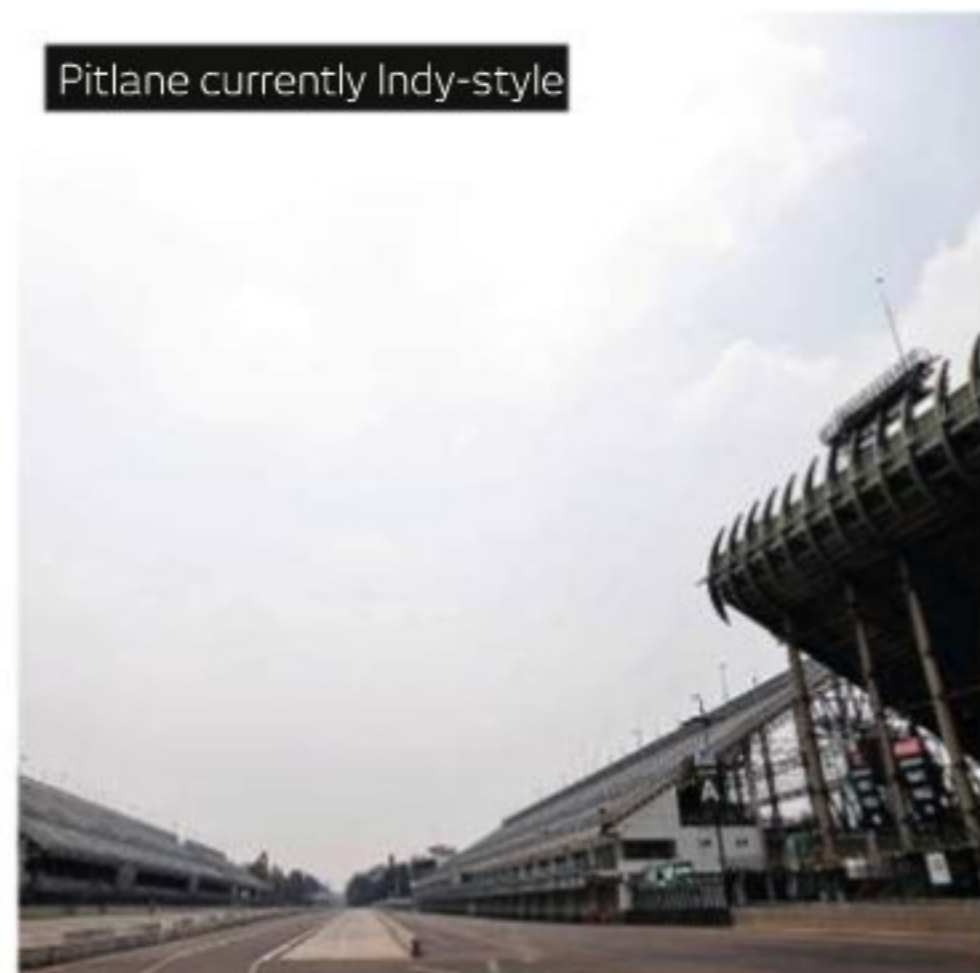
Mexico

Not if, but when

If money talks in F1, then the noise from Mexico is ear-splitting. For the men behind this project are none other than the world's richest father and son, Carlos Slim and Carlos Slim Jr.

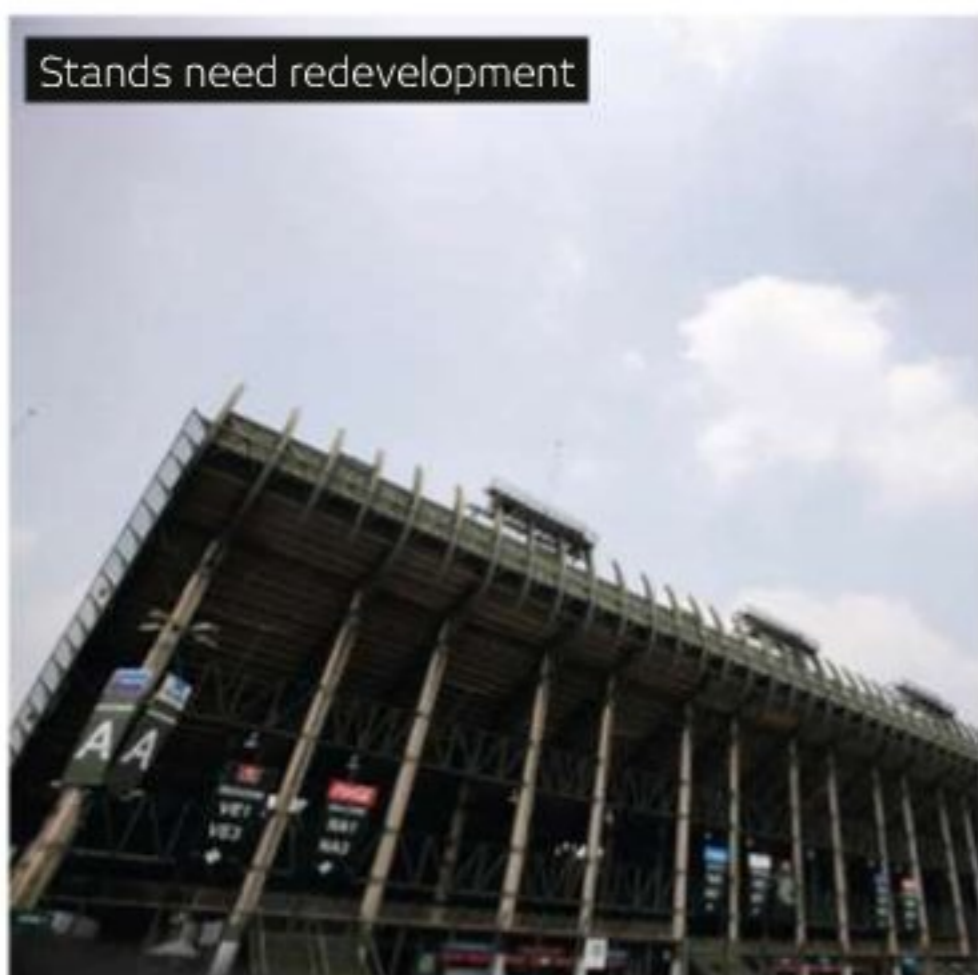
Slim Jr is already a member of the FIA Senate and has been an active promoter of Mexican motorsport for over a decade. He has aided the progress of home drivers Sergio Pérez and Esteban Gutiérrez, and is now seeking to bring F1 back to the country. Recently he said: "I believe there is potential for more races in the Americas and I believe that Mexico is the right

Pitlane currently Indy-style



Baseball stadium built in 1993

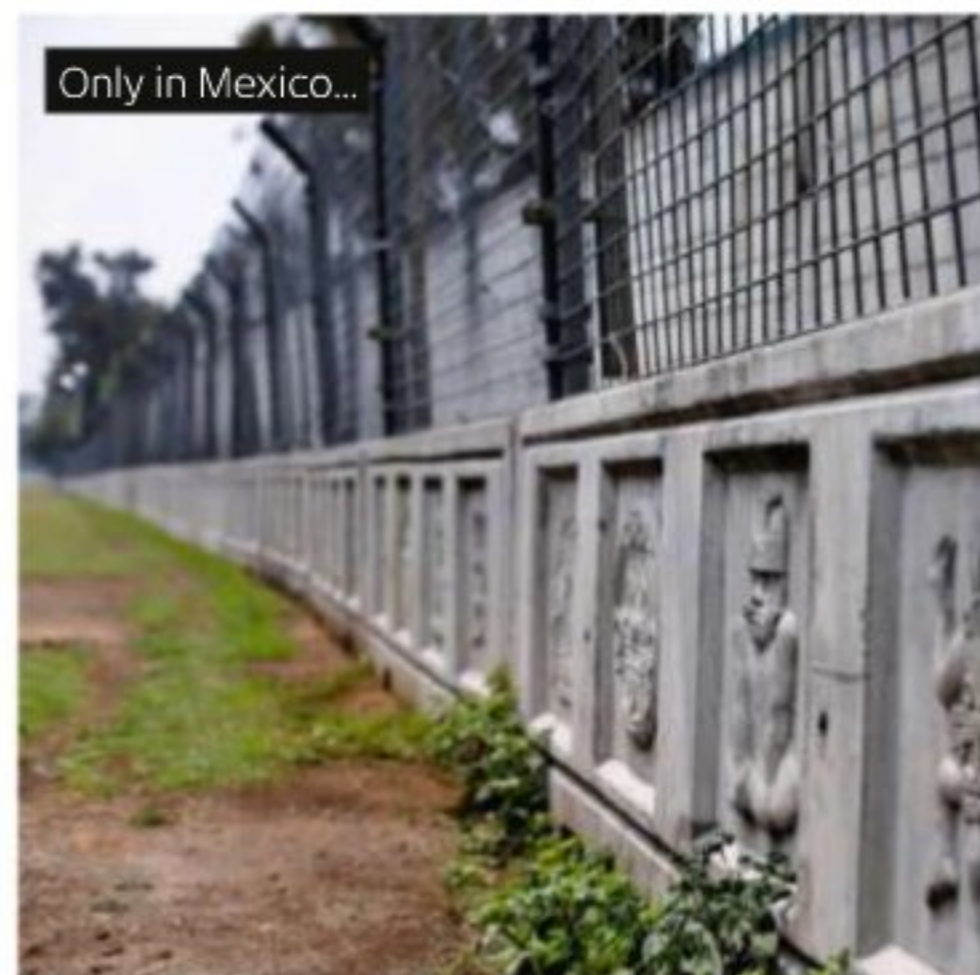
Stands need redevelopment



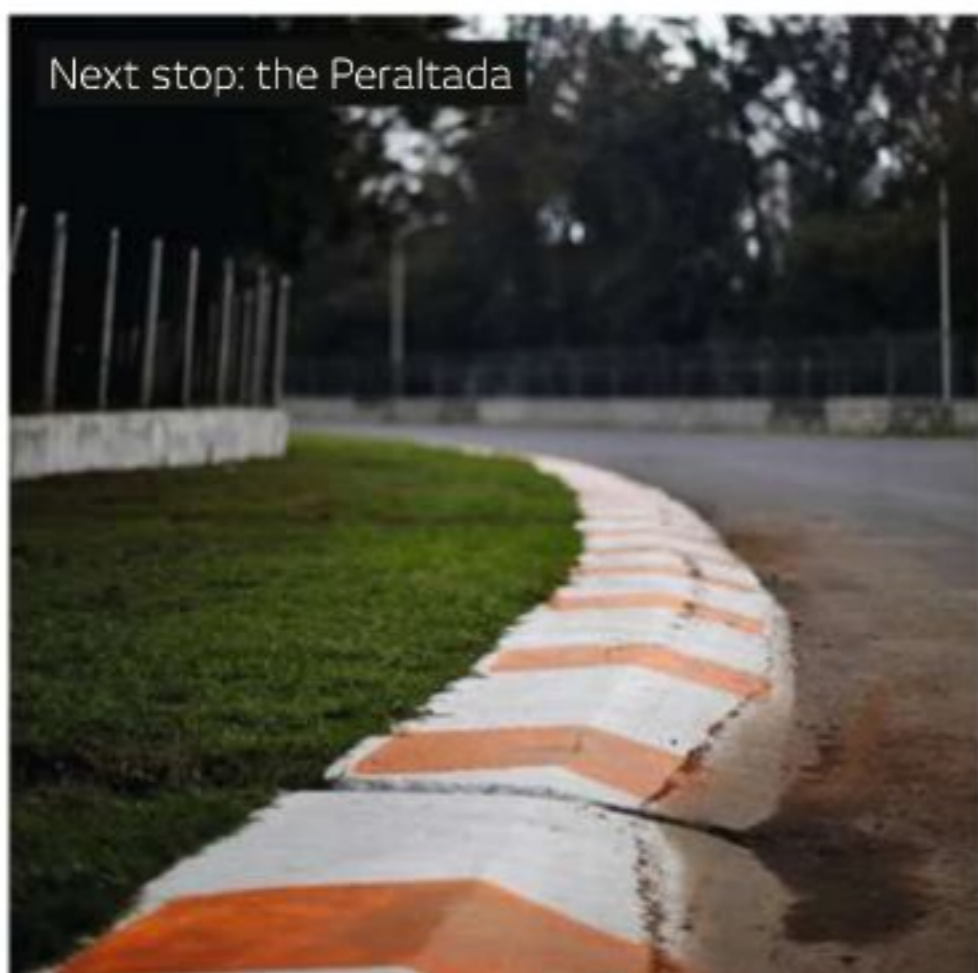
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Only in Mexico...



Next stop: the Peraltada



spot. It's a stable country, our economy is doing well and we have drivers people can identify with. The pieces are coming together."

In terms of heritage, Mexico City's Autódromo Hermanos Rodríguez circuit could hardly have a better claim to be the venue of that return. It hosted its first championship grand prix in 1963, and its winners have included such F1 luminaries as Jim Clark, John Surtees, Graham Hill, Ayrton Senna, Alain Prost and Nigel Mansell. In the late 1980s, the circuit's final corner, the curling, banked, 180° Peraltada, became legendary in the sport both for excitement and danger, particularly after Senna flipped his McLaren on it in 1991. But it was this element of danger that

led ultimately to its downfall, for it was removed from the championship calendar in 1993.

In recent years there has been talk of building a new circuit in Mexico City or even hosting a street race in Cancún. But those in the know believe a redesign of the existing Autódromo is most likely. An official Request For Proposal has already been sent to F1's leading track architects, including the prolific Hermann Tilke, and a final decision is thought to be imminent.

Conversion of the current circuit would take just 12 months, so it would be no surprise to see Mexico return to the calendar in 2015-2016. →

Chances of a return 9/10

Argentina

If you build it, they will come

There's a huge passion for motorsport in Argentina. The 1.5 million spectators who took to the streets to watch this year's Dakar rally pass through the country are testament to that. But a stuttering economy and political problems have combined to hamper Argentina's efforts at playing host to Formula 1 once again.

It began well as Buenos Aires became the original home for the sport in South America. It was the venue for the first Argentine Grand Prix in 1953, a race that local hero Juan Manuel Fangio went on to win four years in a row. But after Fangio's retirement in 1958, it all started to go wrong. Unstable governments, rampant inflation and a series of coups d'état pushed the race off the agenda. It returned for brief spells in the 1970s and early 1990s, but it never regained its early glory.

Yet with the economy improving all the time in Argentina, all eyes are back on the sport. MotoGP is returning to the north of the country next year at the newly built Termas de Río

Hondo circuit, which already hosts a round of the FIA World Touring Car Championship.

There is also a project under way to build a major new circuit within reach of Buenos Aires. The Velocidad SpeedCity circuit is being designed by global sports stadia group Populous, which contributed to London's Olympic Stadium and was responsible for the recent redevelopment of Silverstone. The track will comply with FIA Grade 1 regulations, making it the only Argentine racetrack suitable for hosting a Formula 1 grand prix.

John Rhodes, head of the motorsport division at Populous, says: "There is a real appetite for sport in Argentina. MotoGP is returning and Buenos Aires has just won the rights to host the 2018 Youth Olympics, so there is an aspiration to deliver sporting content to the masses. It just needs government support for a Formula 1 race to happen."

Chances of a return 7/10



Juan Manuel Fangio wins for Merc



Depailler leads Scheckter, '74



Clark leads at Clermont-Ferrand in '65



Victory for Massa, 2008

France

Never say Nevers...

There was a time when the thought of losing the French GP was inconceivable. It was such an entrenched element of the sport that its absence was likened to running F1 without fuel.

France is the birthplace of the sport, the HQ of its governing body and a mainstay on the F1 calendar. There had been an event calling itself the French Grand Prix in the country every year since 1906, going 'on hiatus' only for war and the aftermath of the 1955 Le Mans disaster.

From 1991 to 2008, the grand prix was hosted at the Circuit de Nevers Magny-Cours. But the

grinding predictability of the Schumacher era hit hard. When Schumacher became the first driver ever to win any single F1 grand prix a total of eight times, he did so at Magny-Cours. This lack of excitement was accompanied by dwindling attendances and when the French motorsport association (FFSA) withdrew financing, Bernie Ecclestone began to look elsewhere.

Initially, the French Grand Prix was deferred for a year. But what started as a suspension soon became a long-term sentence with a string of failed attempts to find an alternative venue.

A street race in Paris had been mooted, as had a new circuit at Flins-Les Mureaux in the Seine Valley. Ecclestone even raised the possibility of hosting it at his own Paul Ricard circuit. But none of these plans have come to fruition.

The most likely scenario is a return to Nevers-land. A tender has gone to the sport's leading track designers for Magny-Cours to be remodelled, so ambitions have returned there. The question is: who will pay the licence fee? →

Chances of a return 6/10



Swiss movement, English heart



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Ever since the expulsion of the French GP, it's been clear that no venue on the calendar is safe – with the exception, perhaps, of Monaco. Ecclestone recently admitted that even Monza, the historic home of the Italian GP, could become a victim of F1's continued push into emerging markets and the multi-millions that some governments are willing to pay in the name of tourism.

But the Italians need not start worrying just yet. Some of those recently emerged F1 markets seem to be sinking as quickly as they started to swim. Turkey is gone and forgotten. India is gone for next season but has hopes of a return in 2015. Although, as France discovered, once you're off the schedule it's far from easy to get back on again.

The Korean Grand Prix also looks set to join India in exile. Since the teams are determined to have no more than 20 races on the calendar – and a number of venues are joining the queue – then something's got to give. And those markets that have struggled to attract fans to cover the larger part of their race fee may be the first to go.



Jim Clark, East London 1967



Clay Regazzoni, 1976

California

Long Beach or long faces?

There has been a grand prix at Long Beach for the past 39 years. But for 30 of them, it hasn't been a Formula 1 race. That privilege has gone to IndyCar, which consistently drew 90,000 fans on race days in the 1990s and 2000s.

More recently, the crowds have been shrinking and it just so happens that the hosting contract expires next year. Step in Bernie Ecclestone. If rumours are to be believed, he, along with Long Beach race founder Chris Pook and sponsorship agent Zak Brown, are in negotiations to buy that contract. Ecclestone has confirmed talks have taken place – but no more than that.

It is probably coincidence that both Ecclestone daughters have moved to LA, with Petra recently buying the biggest home in the county for \$85million. But there is certainly a fondness for the west coast within the Ecclestone family.

Unlike some current circuits, Long Beach is well connected, being within an hour's drive of both the international LAX and national Bob Hope airports. And there's clearly room for two or three races in the US, spread across the east, south and west of the country. But would Bernie put his hand in his own pocket to pay for it? Stranger things have happened.

Chances of a return 3/10

South Africa

Minding the gap

"Formula 1 will return to South Africa by 2013." These were the words of Ecclestone less than two years ago. So what has happened since? Not much, it would appear. The rather grand plan was for the race to take place along a street circuit in Cape Town. But the finances do not seem to have matched the ambition.

Another project has been launched for a grand prix on the streets of Durban. This was presented to Ecclestone but his heart is elsewhere. He said recently: "I have been offered Durban but I think we would be better off in Cape Town."



Hunt chases Regazzoni, 1976



Nelson Piquet leads in 1980



Hunt gets a nudge in 1977

What is certain is that there is an Africa-sized gap in the world championship calendar at the moment and Ecclestone is keen to go ahead and fill it. The last occasion Formula 1 raced in Africa was in 1993 at Kyalami, the scene of some memorable on-track battles, particularly during the late 1970s.

But until funding can be found to pay for the race licence fee then those great moments will remain a memory. 🇿🇦

Chances of a return 2/10

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And look at that!
Murray Walker is 90
(and for once he's *not* doing the talking)

On 10 October 1923 a legend was born. Ninety years on, the great and the good of Formula 1 recount their most special memories of the inimitable Murray Walker

PORTRAIT CHARLES BEST

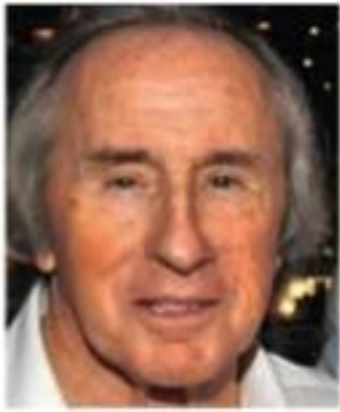




BERNIE ECCLESTONE

F1 supremo

"Murray's been around long enough to know exactly how things happen in the world. He also speaks his mind – most of the time he's completely wrong in whatever he says, but he's loved by everybody."



SIR JACKIE STEWART

Triple world champion

"Murray is one of the greatest commentators we've ever had. Not only that, but he's also such a gentleman with impeccable manners. The only thing with Murray is that he'd come out with 'Jackie Clark' and 'Jimmy Stewart'. He'd get them all wrong, but in such a lovely way... with charm."



EDDIE JORDAN

Former team owner

"When I first arrived from Ireland as a Formula Ford driver, Murray came to see me. He has always kept his knowledge current in terms of up-and-coming drivers, and he'd come to speak to me when Damon Hill and Johnny Herbert were racing with us. At every stage, Murray has been there and has always been the first to put his hand out. If I've needed advice, he's always said I can ring him – and that offer stands to this day."



SIMON TAYLOR

Former BBC radio commentator

"There are some sports commentators who pretend to sound excited when they are not. Murray has never done that. When you hear Murray hysterical it's because he is hysterical."



JAMES ALLEN

BBC radio commentator

"I remember Renault held a press dinner on the Thursday night of the British Grand Prix one year, at Vine House in Paulerspury. Murray drove me up there in his black BMW M3 at enormous speed, and we parked up and went in. There were some racing cars also parked there, and loads of kids from the village hanging around to see if they could spot any famous names. They all pounced on Murray to get autographs, and I'd left something in the car so I went back to fetch it. On my way back I heard one of the kids nudge the other and say: 'That's Murray Walker's driver!'"



ANDREW MARRIOTT

Motor racing commentator

"I've enjoyed many entertaining dinners with Murray over the years, and the best ones are always when he starts talking about his time working in the advertising industry, long before he became a commentator, and how he was the king of the jingle.

"The best of these was for Trill, who had a 95 per cent share of the budgerigar seed market, so the only way they could find to increase profits was to encourage people to own more budgerigars. Murray then came up with the slogan: 'An only budgie is a lonely budgie.'"

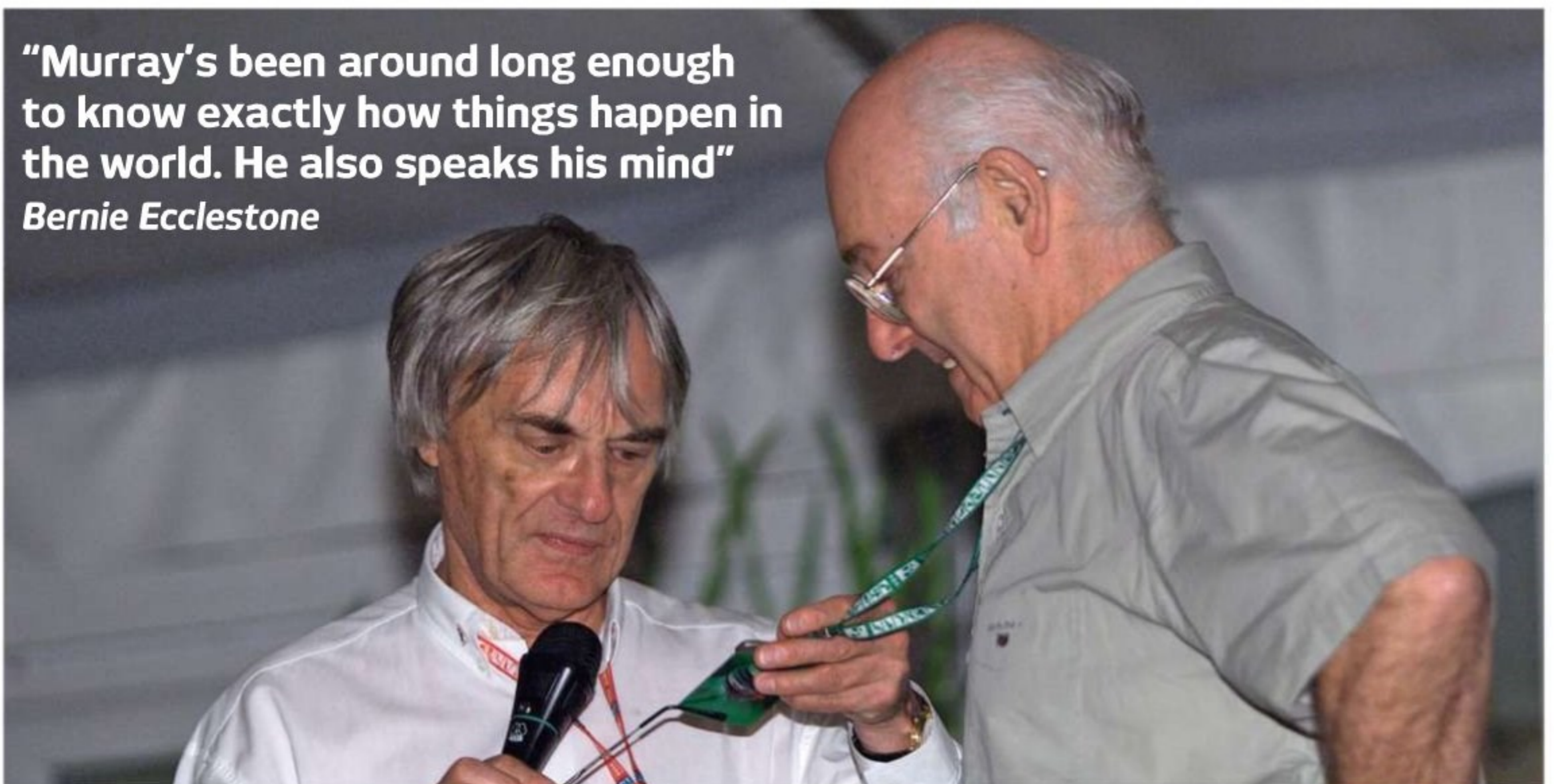


JOHNNY HERBERT

British Grand Prix winner

"I first remember watching Murray on television when I was young and hearing that excitable voice. There was a rallycross race being broadcast from Lydden Hill, and a Mini was leading. It had holes in the windscreen in an attempt to improve the driver's view. As soon as Murray drew attention to it, the driver went off and crashed into the grass bank. Bang!"

"Murray's been around long enough to know exactly how things happen in the world. He also speaks his mind"
Bernie Ecclestone





PHOTOS: CHARLES COATES/LAT; ANDREW FERRARO/LAT; JEFF BLOXHAM/LAT; DANIEL KALISZ/LAT; STEVE ETHERINGTON/LAT; JAKOB EBREY/LAT; SUTTON IMAGES; LAT ARCHIVE



PAUL STODDART

Former F1 team principal

“Monza 2001 was Murray’s final European grand prix commentary and I had something very special planned with one of my planes. At that time I used to fly my team to and from Bournemouth, and as Murray lives

near the New Forest we used to pick him up and take him home.

“That race was less than a week after 9/11, so airport security was crazy. I’d planned a guard of honour with 60 F1 people on the runway greeting Murray as he approached. You can imagine what the Italian authorities thought of that. But we managed it and it was a complete surprise.

“The flight itself was a riot! It was tradition at the last European race for the mechanics to swap clothes with the air stewardesses and Murray joined in as well. It was one hell of a party on board.”



MAURICE HAMILTON

Journalist and broadcaster

“A personal highlight of mine was sharing the commentary box with Murray at the 2007 European GP – it was an absolute treat and he approached it with the same professionalism he brings to everything. He had pages of notes and charts, he wanted to be briefed about what was going on... he took it all incredibly seriously.

“I also remember a press conference in the 1990s when one team was announcing a new sponsor. The PR person asked if we would mind just coming along and showing our faces. It was about clutches or something like that – very boring. So the president of the company gave a long speech about how proud he was to be at the cutting edge of clutch technology. Murray was sitting there taking copious notes, and as we all came out he said: ‘Gosh! That was jolly interesting.’ The thing was, he really meant it!”



DAVID CROFT

Sky Sports commentator

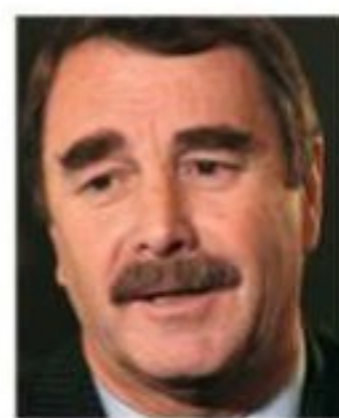
“Murray deputised for me on BBC Radio 5 Live when my son was born, and announced it on air: ‘Welcome to the world Daniel Joseph Marcus Croft!’ That’s brilliant because he’s actually Daniel Joseph *Michael* Croft...”



MIKE DOODSON

Motor racing journalist

“I first worked with Murray in the commentary box in 1979 and carried on until the end of the first year of ITV in 1997. He’d spend the whole weekend gathering information and writing it on bits of paper. He’d then stick notes all around the booth so he could consult them if he needed to. Being Murray, it was inevitable when he was consulting his bits of paper that something exciting and interesting would happen in the race!”



NIGEL MANSELL

1992 world champion

“There have been so many funny moments involving Murray – I’m privileged to be able to call him a friend. Once we did the most fantastic half-hour interview in Rio and, at the end, he said: ‘I think that’s one of the best interviews I’ve done in a long time!’ He was so pleased.

“About an hour later he came back and said: ‘You’re never going to believe me, but we never had the microphone switched on...’

“When I won the championship, we did another great interview, but he introduced me twice as a mass murderer. He just couldn’t get my name right. I said: ‘Murray, what are you doing? It’s *Mansell* not *Manson*!’” →

“Motor racing is Murray’s passion, and that excitement carries over into his broadcasting”

Jenson Button



BEN EDWARDS

BBC commentator

“My own favourite memory of Murray was at last year’s British GP. We had a wet qualifying at Silverstone, which meant a long delay after a red flag. We had this lovely opportunity to bring Murray in and the very first thing he said was: ‘Unless I’m very much mistaken...’ Then he started talking about the season and he was totally on top of what was going on.”



ROSS BRAWN

Mercedes team principal

“What’s most remarkable about Murray is that in spite of working in such a competitive environment, he’s one of the very few people who hasn’t got any enemies in the paddock. And that’s not because he doesn’t say anything – he has always been very honest about what he thinks. He carries his passion on his sleeve and is still a wonderful part of F1.”



MAX CHILTON

Marussia driver

“Even now, watch the race highlights with the sound off and you can still hear Murray’s voice in your head. It didn’t matter when he got drivers’ names mixed up because he made it so exciting. He’s an icon.”



DEREK WARWICK

BRDC chairman and former racer

“Murray is Mr F1 and he’s single-handedly responsible for introducing millions of people to the sport. For me, there’s just one thing missing from his CV. I think he should be knighted: it should be *Sir* Murray.”



JASON SWALES

Radio & TV producer

“When I asked Murray to come into the commentary box a few years ago at Silverstone, Colin Murray was presenting the show. After the race we did a little follow-up chat with Murray, and what he didn’t realise was that Colin was in the commentary box as well.”

“He thought Colin was in London, so he was talking to him while looking straight out of the window. And Colin was still looking at Murray asking him questions. Murray was so focused it was only after he took off his headphones that he realised Colin was actually in the same room...”



JENSON BUTTON

2009 F1 world champion

“Murray isn’t one of those commentators who covers a number of different sports. Motor racing is his passion, and that excitement carries over into his broadcasting. He forms part of my earliest memories of watching Formula 1, when he was commentating on the likes of Alain Prost and Ayrton Senna... and on the rallycross at Lydden Hill when my old man was racing. So for me to have been driving and finishing on the podium in F1 while Murray was on the microphone was very special.”



MARTIN WHITMARSH

McLaren team principal

“Murray was commentating when I was a lad. Looking back, a lot of races weren’t very exciting but he’d sweep you up with his enthusiasm. You’d wonder later: ‘What was I getting excited about?’ The result was a foregone conclusion.’ Yet Murray would still be squawking with excitement. Recent F1 races have been much more exciting than the ones he commentated on; he rescued F1 in an era when we weren’t producing exciting races.”



MARK WILKIN

BBC TV producer

“One Friday morning, stuck in traffic on the way to the circuit, Murray said to us: ‘Isn’t this wonderful?’ It was anything but, yet he was genuinely excited to see so many fans. He’s such a great people person. He loves talking to everyone, from F1 drivers to taxi drivers.

“He also always appreciated that the fans paid his wages. He’d say that if it wasn’t for them letting him into their living room every other fortnight, he wouldn’t be here. He has great humility.”



MARTIN BRUNDLE

Racer turned commentator

“Murray is a great guy, a generous man and a brilliant communicator. I loved working with him and learned so much. I knew him back when I was doing Formula 3 in 1983. He’d come up on his motorbike to see who the up-and-coming drivers were. And I listened to him commentating when I was a kid. He was part of the fabric of life.

“It was hilarious watching him work; he got *so* into it. People at home picked up on that. All he wanted was to increase their enjoyment of F1.”



DAVID COULTHARD

Multiple grand prix winner

“We did a mock *This is Your Life* for my father once and Murray came up to Scotland for it. That’s the sort of guy he is. To have him as part of your life is unquestionably a step towards a fuller life.

“I remember when I was karting, he once came to Rye House to present some trophies and that was as good as it got back then.

“I make mistakes because I get halfway through a sentence and forget what I’m going to say; his ‘Murrayisms’ come through sheer enthusiasm.”



SIR FRANK WILLIAMS

Legendary team boss

“I don’t think I’ve ever heard Murray rubbish any driver, which is a great attribute. He’s a typical Englishman, very charming, and takes his job very seriously – rightly so, because he understands the great responsibility of presenting Formula 1 to the outside world. He is very popular with everyone.”



DAMON HILL

1996 world champion

“Sometimes in F1 we can be esoteric and self-obsessed, but Murray never forgets that the sport would never happen if it wasn’t for millions and millions of people who love to watch it and are fascinated by it.

“After I won the title, I heard Murray’s commentary about having to stop because of a lump in his throat, and that was a lovely, genuine moment which I’ve only been able to experience looking back. Murray would have known my dad and, for him, this was a kind of denouement to a very long story – one that had a happy ending.

“The other thing you need to remember is that he is a man who drove tanks in the Second World War, so whatever noises we make about what heroes we are in Formula 1 – we really are living in a complete dream.”



TONY JARDINE

TV pundit

“I hosted a farewell evening to Murray at Indianapolis 2001, after he hung up the microphone. The highlight was having Michael Schumacher come up and read the ‘Murrayisms’ and everyone laughing. Afterwards

Michael said he didn’t understand – why was everyone being so cruel? Murray replied that he wasn’t offended, it was just British humour.”



PHOTOS: LORENZO BELLANCA/LAT; KEVIN WOOD/LAT; STEVE ETHERINGTON/LAT; STEVEN TEE/LAT; CHARLES COATES/LAT; GLENN DUNBAR/LAT; ANDY HONE/LAT; ALASTAIR STALEY/LAT; MALCOLM GRIFFITHS/LAT; DREW GIBSON/LAT; LAT ARCHIVE

Meet the **GAME**

F1's tech geniuses can command higher salaries than the drivers, although they swap teams less often. As three big names change allegiances, we ask: can one man *really* make a such a difference?

WORDS ANDREW BENSON

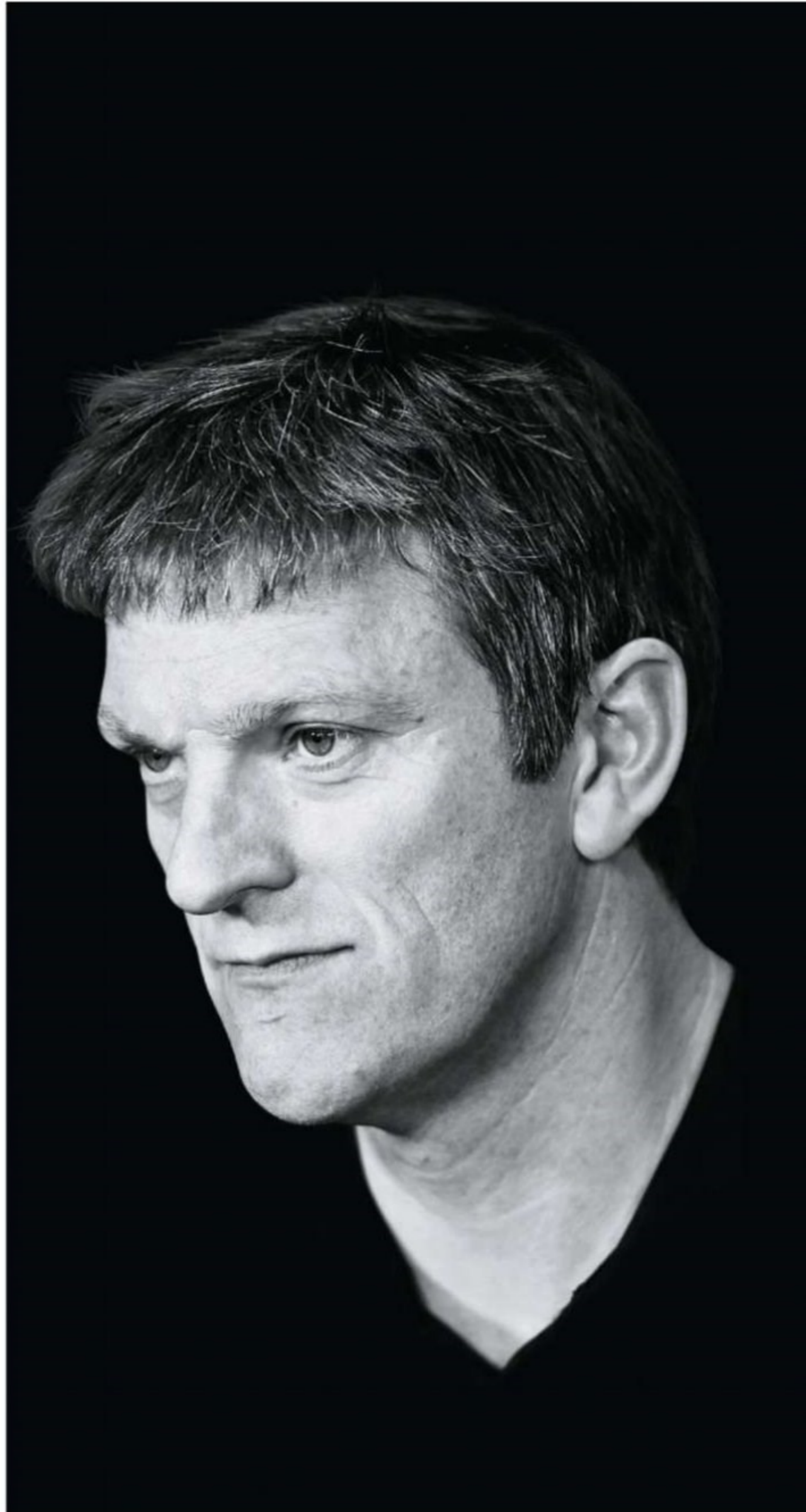
The frustrated ambitions of three of Formula 1's biggest teams have this year led to the biggest shake-up of design talent in quite some time. While the driver market generates the most headlines, the competition for engineers is every bit as important – and often even more so.

After all, the identity of Sebastian Vettel's new team-mate at Red Bull would be nowhere near as interesting if it wasn't a near certainty that he would be in a competitive car. And that guarantee is a slim, balding, 54-year-old, who happens to be a genius when it comes to racing car design: Adrian Newey.

Red Bull's chief technical officer earns more than 90 per cent of current F1 drivers, and a glance at his record over the years shows why. While F1 car design is so complex that it's no longer possible to speak of a car being 'designed' by one person, Newey sketches out the fundamental aerodynamic surfaces of the Red Bull on his drawing board before they are sent off to the team's computer design systems. The right man at the top can and *does* make a difference.

That's why Mercedes poached Paddy Lowe from his role as McLaren technical director earlier this year. It's why James Allison has moved from running Lotus's design department to a similar role at Ferrari. And it's why Pat Symonds has taken charge of a struggling Williams.

So will their recruitment be the magic ingredient their new employers need to make that next step? →



CHANGERS



PHOTOS: CHARLES COATES/LAT; ANDREW FERRARO/LAT

PADDY LOWE — *The quiet man*

When the story broke in January that Mercedes wanted Lowe to join them – initially with a view to replacing team boss Ross Brawn – McLaren team principal Martin Whitmarsh thought it was some kind of joke.

Whitmarsh summoned Lowe to his office and said: “This is nonsense, right?” Only for Lowe to tell him that, no, it wasn’t; he really was going to go to Mercedes.

Whitmarsh had failed to keep his ear to the ground, for the Mercedes job was actually the second similar role Lowe had been offered by a rival – Williams had been courting him throughout 2012, as well. That says a lot about the regard in which this unassuming, quietly spoken man is held within Formula 1.

No one questions Lowe’s ability as a top-level F1 design engineer; everyone thinks he is a lovely guy. Indeed, just about the only ‘negative’ you’ll hear, is people questioning whether he has the guile needed to succeed in running a team in the ‘piranha club’.

That remains to be seen, but his chance to prove it will come sooner rather than later, for he has stepped into a delicate and unresolved situation. He was recruited at the end of 2012, when the Mercedes board had lost faith in Brawn following the team’s abysmal second half of last season.

The initial idea was that Brawn would be jettisoned as soon as Mercedes could negotiate Lowe out of his McLaren contract. Lowe would take on the running of the sporting and technical aspects of the team, with new Mercedes motorsport director Toto Wolff in charge of business and politics.

But then plans changed. Brawn got his elbows out and Wolff decided this was a battle he did not need to fight, just a few weeks into his new role. A new process was agreed, whereby Wolff, Brawn and Lowe would amicably work out a transition process between the three of them.

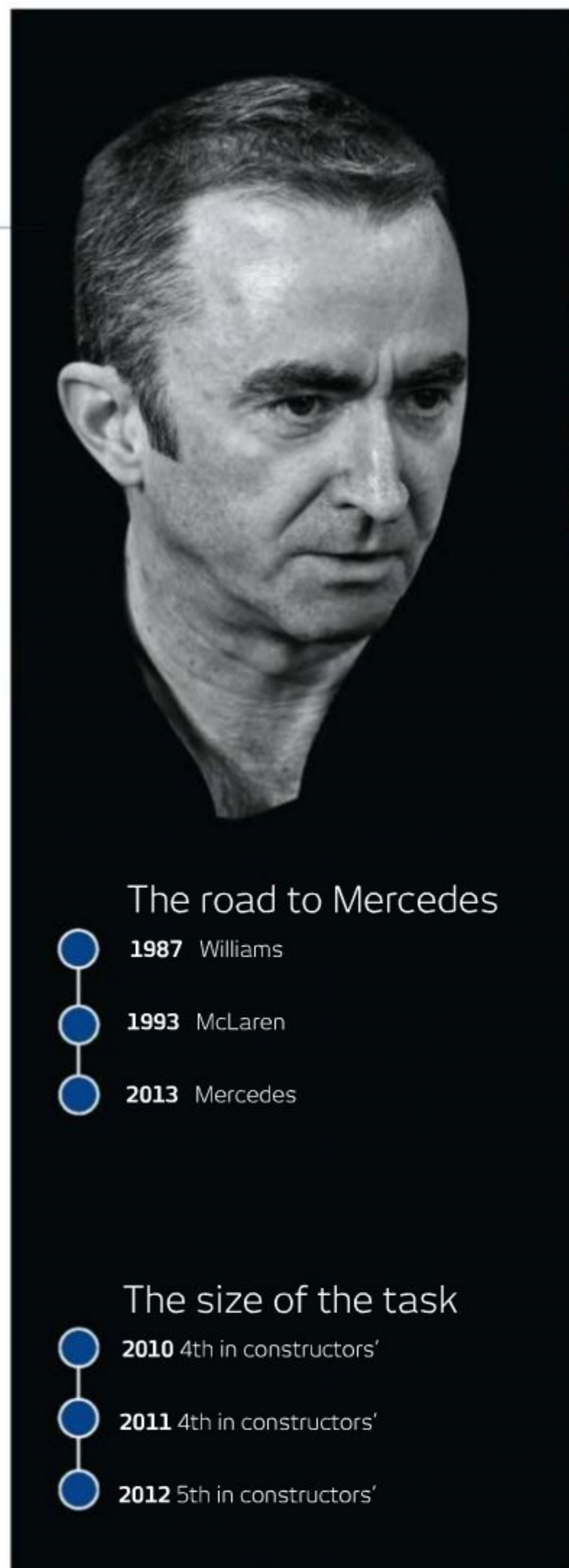
The endgame is obvious from the job titles that have been given to Wolff and Lowe – executive director (business) and executive director (technical). Ultimately, those two will still run the team between them. The question now is when?

Just as importantly, in the intervening period, how will Lowe handle the internal situation at Mercedes, with its large number of big-name engineers?

On that last point, Lowe is clear. He rejects the notion that Mercedes are top-heavy just because the team has Brawn, technical director Bob Bell, technology director Geoff Willis, engineering director Aldo Costa and now himself – all of whom have been technical directors at other teams.

“People might think there are too many technical directors in Mercedes, but it does seem to be working for them because they have made fantastic progress over the past 12 months, so ‘What’s wrong with that?’ would be my first answer,” says Lowe.

“The second is that it’s not as though there are a whole load of cooks trying to do the same job. There is a huge amount of work to do in this business if you want to be successful. Within two days in my job I was already unable to find the hours in my day to



The road to Mercedes

- 1987 Williams
- 1993 McLaren
- 2013 Mercedes

The size of the task

- 2010 4th in constructors'
- 2011 4th in constructors'
- 2012 5th in constructors'

Hamilton’s win in Hungary pulled Mercedes to second in the constructors’ standings. Can Lowe’s technical leadership take them even higher?





do what I could see needed doing. And that's how it should be."

He insists that all the big names are "gainfully employed", adding: "You need that strength in depth. I would almost say other teams may be weak in that respect."

As to how they work together, and whether the egos involved will generate an uncomfortable internal political situation, Lowe has plenty of experience to fall back on. After all, he was in a senior position at McLaren throughout Newey's time there – and Newey has since said it was the "political" environment there that drove him away. By which Newey was referring to Whitmarsh's interference in his job.

And if things get difficult, Lowe can fall back on one fundamental truth. He was recruited by the Mercedes board as *their* man. He is the future. He is the boss.

Mild-mannered he may be, but there appears to be steel in him as well. As Lowe himself puts it: "I think I've got what it takes to take that on."



"James Allison's decision to move back to Italy gives him the chance to attain legendary status"

JAMES ALLISON — *F1's most-wanted*

James Allison's eminence preceded him as he walked into Maranello on 1 September for his first day in his new role as technical director (chassis). He has, over the past few years, built a reputation as probably F1's most respected design engineer after Newey. He also carries with him the explicit approval of Ferrari's number one asset – Fernando Alonso.

"I worked very closely with him and was world champion with him two times," said Alonso back in May, doing nothing to dispel reports at the time that Allison was on his way back to Maranello, following an announcement that he was leaving Lotus.

This is Allison's second spell at Ferrari. He worked under Brawn and the much-lauded Rory Byrne through the glory years of the Michael Schumacher era, and returned to the team then known as Renault – where he had worked in the Benetton days of the 1990s – as deputy technical director through Alonso's two title-winning years in 2005-2006.

Difficult times followed as a result of the switch to a single-tyre formula in 2007, the →



The road to Ferrari

- 1991 Benetton
- 1992 Larrousse
- 1994 Benetton
- 2000 Ferrari
- 2005 Renault
- 2011 Lotus
- 2013 Ferrari

The size of the task

- 2010 5th in constructors'
- 2011 3rd in constructors'
- 2012 2nd in constructors'

Allison comes to Ferrari with the explicit approval of Fernando Alonso. The two had worked together as a title-winning combination at Renault



uncertainty over Renault's commitment to F1 in 2009, and the post-'Crashgate' sacking of technical director Pat Symonds and team boss Flavio Briatore, in the aftermath of which Allison was promoted to technical director.

But since Genii Capital took over the team in 2010, their performance has been increasingly impressive, despite a budget much smaller than that of the other top teams. Lotus under Allison have consistently proved able to innovate and make a little, in terms of resources, go a long way. No wonder, then, that over the past year, Allison has been courted by McLaren, Mercedes and Williams as well as Ferrari.

His decision to move back to Italy gives him the chance to attain legendary status. If the listing behemoth at Maranello can be steered back on course in the next year or so, Allison will get the credit. He has effectively been given free rein to run the technical department as he wishes – although he is at the mercy of how well the engine division adapts to the new 1.6-litre V6 turbo engine rules.

Allison is in charge of all design aspects of the car, including aerodynamic development, while Ferrari have moved former technical director Pat Fry sideways into the new role of director of engineering, responsible for vehicle dynamics, simulations, trackside engineering and strategy. Allison's task is clear. For a number of seasons now it has been clear Ferrari are lagging behind the best, particularly in terms of aerodynamics.

Development has been another problem. Ferrari have struggled with new parts failing to give the on-track boost they promised in

"On-track statistics tell the story in bald terms. Alonso hasn't had a dry-weather pole position since Singapore 2010"

the windtunnel and, as a result, they have been losing the upgrade war – as evidenced both last season and this, when an initial decent development at the first European race has been followed by almost no progress at all afterwards, with the net effect that their relative competitiveness dropped away.

The on-track statistics tell this story in bald terms. Alonso hasn't had a dry-weather pole position since Singapore 2010 and the car's average performance deficit to the fastest over the four years the Spaniard has been at the team is a little over 0.5secs. So beyond raw performance, even Fry has quite a job to do, because Ferrari's engineering management, particularly their strategy calls, has hardly been flawless in recent years.

In 2012, for example, more flexible, quicker thinking in either Monaco or Canada would have turned Alonso's results from third and fifth into a win and a second – either one of which would have made the difference between him winning the title and not. And

this year they inexplicably left him out at the end of the first lap in Malaysia with a broken front wing that clearly was about to collapse.

That's quite a to-do list. But, unable to get Newey, Ferrari have at least employed the right guy, and given him the authority he needs to get the job done.

PAT SYMONDS

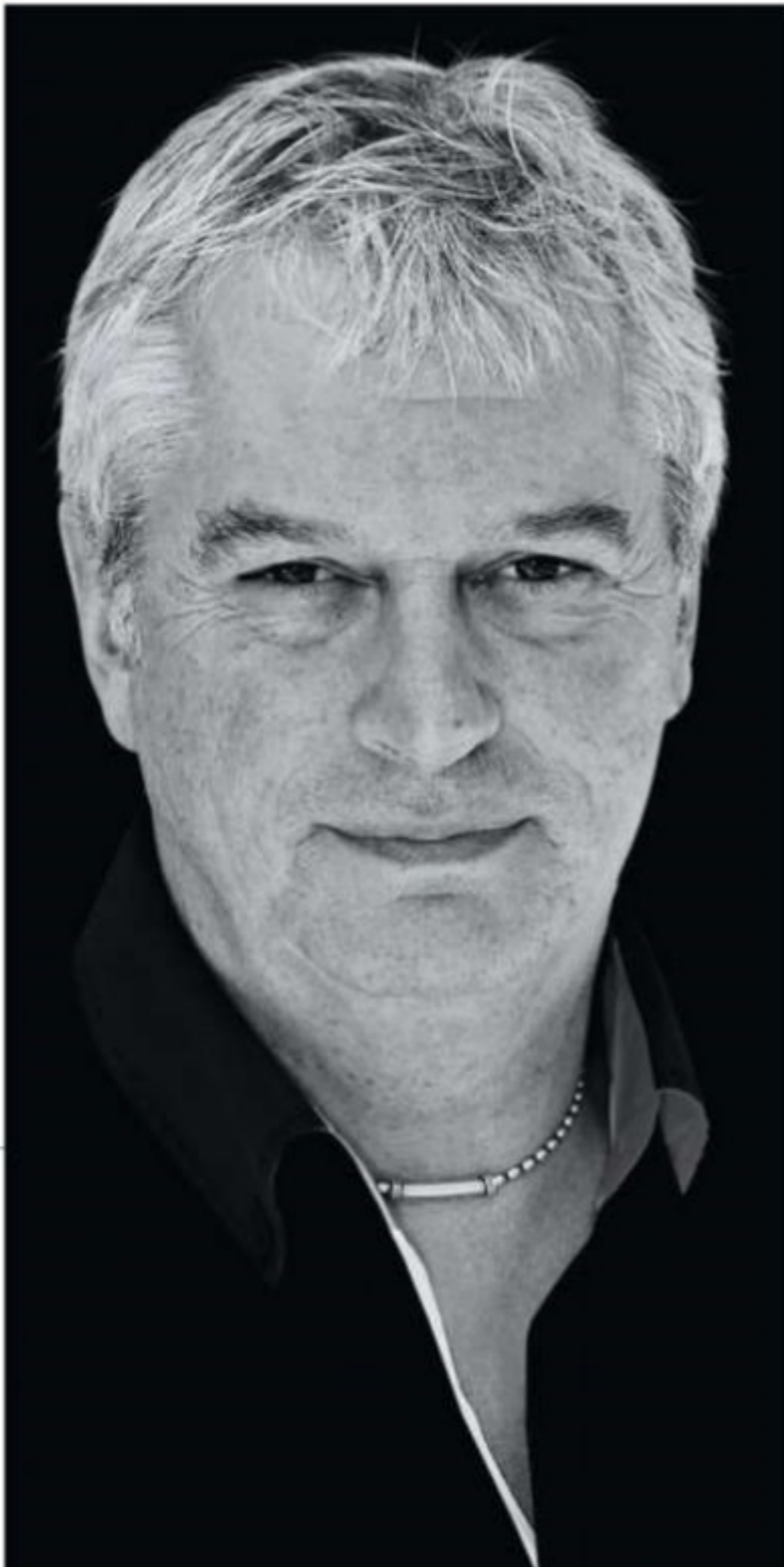
— The prodigal son —

In signing Pat Symonds, Williams have made a particularly savvy decision. He is neither more gifted nor more eminent than either Lowe or Allison, but he is likely to bring Williams some of the things they need: practical engineering nous of the highest order, gravitas, clear thinking and multiple-world-championship-winning pedigree.

Symonds joins as chief technical officer to replace technical director Mike Coughlan, both having been involved in two of the sport's biggest recent scandals (Symonds in 2008's 'Crashgate' and Coughlan in 2007's 'Spygate'). Both incidents are now history, and Symonds, having acted as a senior technical consultant (and *de facto* tech director) for Marussia, has now been drawn back into a full-time role.

Coughlan, meanwhile, has suffered a dramatic reversal of fortune: lauded one year for the part he played in Williams' turnaround from their dismal 2011 to the relative success of 2012 when Pastor Maldonado scored their first win in nearly eight years; sacked the next for going backwards again.

It now seems clearer than ever that Williams' great leap in 2012 was largely due



The road to Williams

- 1982 Toleman
- 1986 Benetton
- 1991 Reynard
- 1992 Benetton
- 2002 Renault
- 2011 Marussia
- 2013 Williams

The size of the task

- 2010 6th in constructors'
- 2011 9th in constructors'
- 2012 8th in constructors'

to swapping a Cosworth engine for a Renault. That was worth somewhere in the region of 0.5secs a lap because of the Renault's lower fuel consumption, better powerband and higher operating temperature, which means less cooling, so better aerodynamic efficiency.

What was not so clear at the time was that fundamental problems remained within the design department. Relative to the rest of the field, Williams had demonstrably gone backwards at the start of this season. From regular top-ten qualifiers in 2012 – and quite often top six – they have been struggling to make it past Q1 in 2013.

Why? Well, firstly, continuing with Renault meant that they did not have that 'free' gain from the engine from one year to the next. Additionally, one of the areas in which they lagged in 2012 was with using exhaust gases to benefit rear aerodynamics. This was simply because they had not been able to do so with the Cosworth, so they had fallen behind in the technology. They expected to make gains into 2013, but their work has not delivered what was expected. This is a big deal, because if a team can get exhaust-blowing working well, it is worth up to 50 points of downforce – well over a second a lap.

Williams have also suffered problems with the anti-lift system in their rear suspension. This raises the ride-height all in one go at the end of the braking phase just as the driver is turning in, which generates instability. And it's made the poor rear end even worse.

A leadership vacuum at the team has only added to their problems. Sir Frank Williams, now 71, is no longer able to function as team principal in the way he did in the past, and he has been taking on an increasingly honorary role. Meanwhile, the departure of Mark Gillan towards the end of 2012 robbed the team of valuable experience at the engineering coalface. Their attempts to land Paddy Lowe show they were aware that top-level technical leadership was badly lacking.

Now, though, they have employed Mike O'Driscoll, formerly a senior executive at Jaguar, to run the whole Williams group. And Symonds should give the F1 team the experienced oversight they badly need. And



Williams seemed to be turning the corner in 2012, but a dismal start to 2013 has seen them go backwards again

“Symonds brings practical engineering nous of the highest order, gravitas, clear thinking and title-winning pedigree”

further new appointments are in the pipeline – notably a figure to lead the design process.

Despite a troubled recent history, Williams's resources are strong and they have sounder finances than all bar Ferrari, Mercedes and Red Bull, so Symonds has plenty to work with.

What's more, he has already proved his worth. Despite having agreed an official start date of 19 August, ahead of the Hungarian Grand Prix Symonds asked for many of the latest upgrades to be taken off the car so he could get a sense of what was and wasn't working on a more fundamental level.

It was almost certainly not a coincidence that the Hungarian Grand Prix proved to be a vital breakthrough, with Maldonado scoring Williams' first point of the season. After a period of uncertainty and uncompetitiveness, Williams believe they now have the structure to re-establish themselves at the front of the midfield. Given the quality of the teams in the top four or five, that alone would count as a significant success. 🏆

In
conversation
with

John Iley

On the hopes
for Caterham
and the
headaches
of 2014

INTERVIEW

JAMES ROBERTS

PORTRAIT

CHARLES COATES/LAT



Given your experiences of working at Ferrari and McLaren, what do you think is a realistic target for Caterham given their resources?

The appeal for me has been building a new team from the ground up. When this team started they said: "We're going to build an F1 car." What do you do after that? You get a phone line and a printer. That's ground zero: to move up from that point is daunting.

Our shareholders want us to be more competitive. If you're a team who have been competing for decades and have a huge infrastructure, you have many more resources. But for us, it's all about efficiency.

Our best result so far [pre-Spa] is Vitaly Petrov's 11th in Brazil last year, so actually a point would be mega. But we don't want it to come via a fluke result, such as rain or a startline accident. We want to progress and we want our work to pay off in the longer term.

What are the benefits of relocating to Leafield?

Norfolk is a nice place, but in motor-racing terms it might as well be in Europe. Now we've moved to Oxfordshire, we're in the Silicon Valley of motor racing. In terms of suppliers and personnel, it opens quite a few doors. And if someone from another team wants to work for us, they won't have to move house.

We have 32 acres, the GP2 team, plus further capacity to expand. We have a new autoclave and the scope to make it a new technology hub, too.

Does F1 do enough to encourage road-car manufacturers into the sport?

An opportunity has been missed with the change in engine regulations next year. I think an inline four-cylinder would have been more relevant to the motor industry worldwide. Yes, a V6 is a very useful structural configuration and there's technology transfer with a smaller engine capacity, hybrid cars, turbo-charging and energy recovery. It ticks a lot of boxes.

But there was talk of a world engine, an inline 1.6 four-cylinder unit for use in F1 and rallying: that would have been sensible. Remember, BMW have won with an inline four-cylinder road engine in F1 in the past.

Will Honda succeed when they return in 2015?

It's a big challenge for them to come back, and a bigger challenge for McLaren to complete a season of a new regulatory period with an engine supplier they are only going to do one season with. I don't think that will be easy in terms of technological exchange, particularly when Mercedes know Honda are replacing them in 2015. How open and transparent can they be?

Also, if all the other manufacturers go through a year of growing pains and then someone comes in the year after and has observed what they should and should not do, then they could benefit. Still, the challenge of producing an engine from scratch is going to be pretty difficult.

What will carry over from 2013 to the 2014 car?

Some things will be 2014-relevant, but the new rules will be massively punitive on aerodynamics. We'll have a shorter span front wing, a lower nose, a smaller rear wing and the exhaust will move to a different part of the car where it will be impossible to harness exhaust gases. And the cooling and packaging of the powerplant and support systems will be a big challenge.

This is one of the first times I've ever heard Adrian Newey speak publicly about car cooling. He doesn't usually acknowledge cooling at any level, but he's now talking about the bigger bodywork needed for 2014. The mechanics are really going to earn their money next year because of the complexity. The cooling, the pipeworks, the electronics – it's a big challenge.

How much of a headache are the 2014 rules?


The problem with such a big rule change is that every team has to choose when to shift resources onto next year's car, thereby sacrificing 2013 development.

In 2008, I was on the unfortunate end of this problem at Ferrari, when we were slugging it out for the title, fully aware a huge rule change was coming in for 2009. Incrementally it was very hard to find any improvement. You could spend a week finding a tiny amount of performance on the current car or a week finding a huge amount on next year's. So what you saw in 2009 was Brawn, who had been working on the '09 car for 18 months, doing well, and the two teams who'd been slugging it out for the title in 2008 having embarrassingly bad cars. When you're in a title fight you don't worry about next year: you just want to win.

Even with Caterham this year, we might have to continue pushing to score a point. Then there's the fact that bigger teams have much more capacity to work on two things at the same time. It's hard.

How will the face of F1 change next year?

There's a likelihood it will become more of an engine category, so whichever powertrain supplier hits the ground running will get the jump on the opposition. The other thing we'll see amplified next year is the level of driver capacity. This year we've seen champions running very careful tyre-management races. They've known when to push, when to back off and when to be patient and wait for the race to pan out.

Next year, teams will have to manage tyres and the power-recovery system on top of that. So I think you'll see drivers who are naturally quick but also have a huge amount of strategy and technical awareness coming to the fore for 2014. It will be a systems-management race, and I don't believe the driver who leads the first ten laps will necessarily be the one who wins the race. You'll see people playing the long game, storing energy and using the potential in their system later on in the race. It will be much more complicated to call the result of a race than it is now. 

Factfile

Date of birth

29 September 1967

Birthplace

Stratford-upon-Avon, UK

Team

Caterham

Role

Performance director

1990 After graduating with a degree in automotive engineering from Lanchester Polytechnic, Iley is hired by Brun Technics to work on their Judd-powered sportscar

to Renault. Iley spends two years at Enstone as head of aerodynamics

1993 Spends five years working on aerodynamics for the Lola and Swift Indycars

2003 Moves to Italy, where he spends the next six years in Maranello as Ferrari's head of aerodynamics

1997 Joins Jordan as senior aerodynamicist

2009 Returns home to the UK as head of aerodynamics at McLaren

2001 Follows Mike Gascoyne from Jordan

2012 Takes on his current role as performance director at Caterham, in Leafield, Oxfordshire



“Nigel had been leading and singing nursery rhymes to me over the radio – as Nigel does. Suddenly, he came screaming on the radio, saying the steering wheel was falling off”

From designing an Indy 500 winner in his father's front room to launching the semi-automatic gearbox on an unsuspecting world, pioneering designer **John Barnard** has had an immense impact on motor racing. Nowadays he's just as happy designing furniture – in carbon fibre, of course...

PORTRAITS DREW GIBSON/LAT

These days, F1 designers are so tightly restricted that innovation is all too often crushed by the need to tick regulatory boxes. John Barnard, it could be said, caused many of those boxes to be created in the first place, mainly because of an unerring ability to think beyond them.

A designer's life in the 1980s was, to use a Barnard expression, all about making a step. Not a tiny shuffle forward with an aero flick or endplate slot worth 0.01secs, but a massive stride, quite often into the unknown.

Barnard introduced F1 to the carbon-fibre chassis with his McLaren MP4/1 in 1981. He started another revolution eight years later by doing away with the manual gearbox and bringing a paddle gearshift to the Ferrari 640. In the space of a decade, the Englishman had significantly changed the face of F1 design on several fronts.

Pioneering work comes with baggage, both political and personal. Barnard's success was created not simply through ingenuity and brilliance but also thanks to a relentless desire



to complete the job with a hitherto unseen dedication to detail. There were no half measures; no making do with file or hammer. If it didn't fit perfectly, the component had no place in Barnard's product. And, quite often, neither did the hapless technician or mechanic. Working for John Barnard was no trip to Paris. But if you went the distance, the rewards and respect were on a thrilling new level.

Barnard's inability to suffer fools gladly found fertile ground within the pages of journals reporting on his work. His relationship with the media could best be described as 'eventful'. A withering look would quickly convey that this

was not the right moment to talk or that the writer had just demonstrated a technical understanding far below the designer's expectations. Equally, choosing the right moment would be rewarded with humorous and honest discussion that lacked the secrecy accompanying so many of today's designers.

Barnard left F1 in 2001 to concentrate on carbon-fibre furniture and collapsible bikes. He's based in Switzerland but, on a rare visit back to the UK, he joined us at the William Bray, Julian Bailey's restaurant and bar in the village of Shere, near the Surrey offices where John used to work for McLaren and Ferrari.

There is a lot of ground to cover. And it's clear that this is a 'right moment' to cover it.

Maurice Hamilton: What on earth got you into carbon furniture?

John Barnard: After the Ferrari thing finished, I took over the company we'd set up, B3 Technologies. We started working for Arrows then Prost. When Prost went bang, it left us in a bit of a hole, so we went commercial. This →





Barnard with Bernie Ecclestone and Niki Lauda in April 1982



monocoque instead of an aluminium one but, of course, that gets too heavy.

Carbon was already around in F1. Gordon Murray may already have used it on one of his Brabhams... just kind of riveted and glued on a panel. Various wings were being reinforced with a bit of carbon, and so on.

I arranged a visit to British Aerospace in Weybridge at a time when they were making the

was interesting because it meant completely changing the structure of the company.

It makes me laugh today when I hear people in F1 bleating about money getting tight and so on. When venturing into what you might call the 'outside world', you soon realise that everybody in F1 gets paid way over the odds – right down to the bloke on the shop floor. You discover you have to change wage structures and all sorts of things in order to carry on commercially.

I started looking around for other things to do. In 1995, I'd been elected as an RDI [Royal Designer for Industry], which covers all disciplines of design.

MH: Do you apply for that?

JB: No. You get elected by your peers. At the time, it was limited to 100 people in total. Patrick Head is also an RDI. It's quite an honour, really. I think we're the only two racing people.

Through the RDI I met a furniture designer called Terence Woodgate. We got talking and he had an idea for a table – a really thin one. Between us, we concocted this carbon table.

MH: He didn't know much about carbon fibre?

JB: Exactly. His was more the aesthetic input; I was the engineering input. We've a number of different tables now, and we did a carbon chair, too. I've worked on lots of projects. I designed a home/office setup – things like that. If you ask me what I do all day, I'd have a job telling you; all I know is that I seem to be busy all the time.

MH: Running your own company is quite a change for you, isn't it? If I go right back to when you joined Project Four Racing with Ron Dennis then started McLaren International with him in 1980, he would look after the business end of things and you would get on with design. I remember you telling me at the time that's what you liked about the partnership.

JB: Absolutely. Running the company was not really what I wanted to do. When I had B3, there

were several problems; one was that some F1 teams were nervous about giving us work because I was there. They thought: "He's going to go off to another team; he's going to know what we're doing" and so on. I needed to be more of a salesman than an engineer, which isn't my bag at all. I don't do networking and I don't do bullshit, and that doesn't work if you're trying to find business. Design is what I'm about.

MH: So what gave you the inspiration to use carbon fibre in a racing car?

JB: Before I started working with Ron, I'd done the Chaparral 2K, which was really quite a step forward for IndyCars. It was the first proper ground-effect IndyCar and it's still my favourite car. It was designed in my dad's front room in Wembley! It just went together and it worked. When people asked where I did the windtunnel work, I said: "At the kitchen table while I was having breakfast." That car put me on the map.

Ron wanted to go into F1 and we agreed a deal at the end of 1979, which meant I didn't have to race in '80. To have a whole year to make a car ready to race was unusual. I thought: 'I've got to make the most of this. How can I make a step?'

Ground effect was in full flow. To optimise that I wanted the best underwing possible, which meant having a narrow chassis. When you narrow the chassis, certainly at the bottom, you start to lose structural stiffness. I needed to get it back and started thinking about a steel-skin

RB211 engine, part of which – the cowling, I think – was a carbon honeycomb structure. That's when the idea of making a carbon fibre chassis began to take shape in my head.

MH: It's one thing to make an engine cowling in carbon fibre, but quite another to have a racing car with all the stresses and safety concerns...

JB: Yes, plus designing in composite as opposed to metal is very different. It's like sticky wallpaper to start off with. You have to make moulds to cure it into the shape you want and try to do away with joints. Instead of having lots of aluminium glued and riveted together, you make that shape in one piece if you can.

I plumped for making the chassis on the outside of a male mould because we didn't have CNC five-axis machines that can machine 3D shapes. We ended up making a chassis that was effectively flat faces all joined together, because it was so hard to do anything else. It was all done on a drawing board, which meant we were designing in 2D. There were no computer models. Those sorts of machines just didn't exist back then, so it was a very different process.

MH: So you were venturing into the unknown, particularly with regard to safety?

JB: Exactly. We had hardly any information on the energy absorption of carbon. In terms of making calculations on crash-worthiness, forget it. We had no idea. When Wattie [John Watson] had the accident at Monza in 1981, I had a

"No one designs a car from scratch now. But I did it with the Chaparral and I did it with the McLaren"

BARNARD'S GROUND-BREAKERS



1 The CART, USAC and Indy 500-winning 1980 Chaparral 2K **2** Niki Lauda in the McLaren MP4/1: F1's first all-carbon-fibre monocoque **3** Nigel Mansell gets to grips with Formula 1's first semi-automatic gearbox in the Ferrari 640 **4** The Benetton B191, which formed the basis for the 1994 title-winning B194

couple of guys from the Civil Aviation Authority phone to ask if they could come and have a look. They wanted to see what would happen to a composite monocoque – and this was a perfect demonstration. [Watson lost it at the exit of Lesmo 2, and the McLaren hit the barrier with such force that the Ford-Cosworth engine was ripped off and ended up, complete with gearbox and transmission, on the opposite side of the track.] The monocoque was fine. Until then, people were saying: “When it hits something, there’ll be a cloud of black dust and nothing left.” In fact the driver’s cell was better protected than if it had been an aluminium monocoque. Wattie had given it a good old thump!

MH: It can’t have been easy, people asking questions all the time before that and you just having to rely on your judgement.

JB: It’s all about your overall gut feeling. I’d been operating on my own for a number of years and I’d been making all the decisions myself; you just get used to it. It’s the job of the designer to make the right call and at the time we didn’t

have logging systems all over the car, telling you this, that and the other.

One thing that gets my goat is that some people – I won’t mention names – say: “Of course, it was obvious to use carbon fibre; that was clearly the way to go.” How many of these people have sat down with a completely blank sheet of paper when somebody’s said: “Design me a car”? Where do you start? All the cars now are developments of a theme, using the same basic chassis. You don’t sit down very often and design a car from scratch now. I did it with the Chaparral and I did it with the McLaren. I did it with the Ferraris, but not to the same extent.

MH: Let me ask about the Ferrari’s semi-automatic gearbox. It seems an obvious thing now, but tell me how it was at the time.

JB: The truth is, I got tired of trying to find a nice run through the chassis, past the engine and down into the gearbox with a shifting rod. And then this awful gear lever getting in the way of everything, making this big bulge on the side of the cockpit. I’m thinking: “How do I get rid of

that lot? Surely all I need is a button on the steering wheel and a little hydraulic cylinder that shifts the gear? You can still have a clutch. The driver just has to get used to pushing a button instead of moving a gear lever. If I do that, all I need is an electrical cable going to the back of the car and not all these rods and things.”

So that was the thinking behind it. Once you start developing the idea, a whole stream of things emerges, such as automatic shifting and a guarantee of no engine over-revving.

MH: The first race for the Ferrari was Brazil in 1989. A lot of things went wrong during practice.

JB: You can say that again. When we went testing there, we could only do a few laps and then it would stop. The newspaper reports kept saying: “Gearbox stopped again. Gearbox stopped again” because the Italian rags love a scandal if they can make one. In fact, it wasn’t the gearbox; we’d lost power. The belt was being thrown off the alternator, which was on the front of the crankshaft. So, it lost power and the →

THE MAURICE
HAMILTON
INTERVIEW

John Barnard

batteries to start the car were so small. The first thing that stopped was the gearbox – not the engine. One more second and it would have been the engine that stopped, not the gearbox.

After many, many months, they found the problem on the dyno when they set up a high-speed camera. The first V12 had a four-bearing crank and the crank started doing a whip at certain revs, which caused the pulley on the front of the crank to start wobbling.

MH: So, despite winning, it was doing that all the way through the race in Rio?

JB: I guess it was. The problem was that we hadn't gone very far during testing. We'd do maybe ten laps and then there'd be problems. We didn't expect to finish that race. Cesare Fiorio was team manager and before the race he suggested we should just have half a tank of fuel and make a show [there was no refuelling in 1989]. It was very tempting, but I said: "No, let's fill it up. You never know. Let's give it a chance."

Then the steering wheel falls off in the middle of the race. There were three bolts holding the wheel in place – and two of the buggers fell out.

MH: Nigel Mansell made a stop, didn't he?

JB: Yeah, Nigel had been leading and singing nursery rhymes to me over the radio – as Nigel does. Suddenly, he came screaming on the radio, saying the steering wheel was falling off. We'd got one loose bolt hanging in there and Nigel had to force the wheel against the cross of the column to steer. He's a strong bloke – which was lucky because the steering wheel had the clutch, the gearshift and all the other stuff as part of it.

We had one spare steering wheel and I'm not even sure it had been tested. Joan Villadelprat, who'd come with me from McLaren, was chief mechanic and he went and found this spare wheel. When Nigel came in, I think I leaned in and pulled off the steering wheel, and Joan then smashed the new one in place. He hammered it so hard, he cut his hand open. He just smashed this thing on and, bugger me, it worked. It had all the gears – everything. I couldn't believe it.

MH: On reflection, what do you think of the setup you had with Ferrari? You were based not far from here in Surrey, but the team operated from Maranello. I suppose it must have been okay because you did two spells with Ferrari...

JB: Well, the first time round I didn't want to go to Ferrari. I had the same shareholding as Ron in McLaren International, once we bought out Teddy Mayer and Tyler Alexander. I later decided I wanted to sell my shares to raise some



"Nigel came in and Joan Villadelprat hammered on the new steering wheel so hard, he cut his hand open"

money. I had a young family, I wanted a bigger house – all of that. Mansour Ojeh bought me out, which meant I was still technical director and working the same way I'd always done. But I was no longer a shareholder in McLaren.

I was contacted by a guy in London; he had something to do with American Express. He went on about working for Ferrari and I kept saying no. They kept raising the salary but I repeatedly said I didn't want to work in Italy; I had my family and they came first. Then I was asked, what if I could set up something in the UK? I said that changed things for me. We got into discussion, and the deal was done.

MH: You reached a compromise, didn't you? The chassis was actually made at your headquarters in Shalford, not far from here.

JB: I had a design office there, but I was so nervous about them making composite stuff, apart from bodywork. We made all the chassis and suspension in England. The '89 car, with its paddle-shift gearbox, won three races so we were

on an upward swing. I designed the 1990 car before I left and it almost won the title, but then they all fell out. By then I was at Benetton.

The second time at Ferrari [1992-1997] never really happened the way it was supposed to. Luca di Montezemolo was now in charge and I remember this meeting in London. Harvey Postlethwaite was back in Maranello and basically they wanted me to do the same thing again. Six months before that, Ferrari sold the first company we'd set up to McLaren because McLaren couldn't find anywhere with a big enough autoclave to make their road car. When Ferrari started talking to me for a second time, it was before they'd actually done the deal with McLaren. I said to Montezemolo: "If you take my advice, you won't sell that to McLaren because it's going to fix all their problems. If you don't, I know they're going to have a problem making that road car. Don't sell it to them because you're just going to make life easy for your opposition." So, what did Ferrari do?

MH: Let me guess – they sold the Shalford facility to McLaren?

JB: They did. And six months later, Ferrari came back and said they wanted to do it again and set up something in the UK. Which we did – next door to the original place.

Montezemolo said to me and Harvey: “Go into that room and talk between yourselves; see what you think; see if you think it can work.” I said to Harvey: “What do you reckon?” He said: “Hmm, don’t know. Money’s good though, isn’t it?” So I said: “Yeah, you’re right. Let’s do it.”

I told Ferrari we couldn’t do what we did last time, which was to put me in charge and run it from the UK. That didn’t work. We needed to set up a design office and windtunnel in the UK and work on next season’s car. Harvey would look after the race team and race cars in Maranello, modifying them for the season in hand. That was how it was supposed to work.

Of course, six months into the deal, Harvey’s gone to Tyrrell and di Montezemolo is on the phone, asking what we’re going to do for the next race; what are we changing? So, I’m saying: “Hang on; I told you this can’t work.” But that’s how it went for the next four-and-a-half years.

MH: That’s a shame, because with Harvey there and you doing your thing in the UK, you’re both speaking the same language. So it doesn’t matter how far apart you are because you both know what you’re talking about. Job done. And you have Harvey, fluent in Italian, at the other end.

JB: Exactly. The big thing then was when to start looking at next year’s car. If you’re having a good season, the moment you start looking at the new car gets closer and closer to the limit. So you have to make decisions without all the proper windtunnel work. This was a chance to avoid that, but it never happened. I thought, what do I do? No point walking away. So that was the second time. It just never worked.

MH: With today’s technology it would be easier to pass information back and forth. Was that a problem? How did you relay drawings and stuff?

JB: We had early cad-cam systems, but did most of the work on the drawing board. We weren’t quite at the point of being able to send designs back and forth at the flick of a switch.

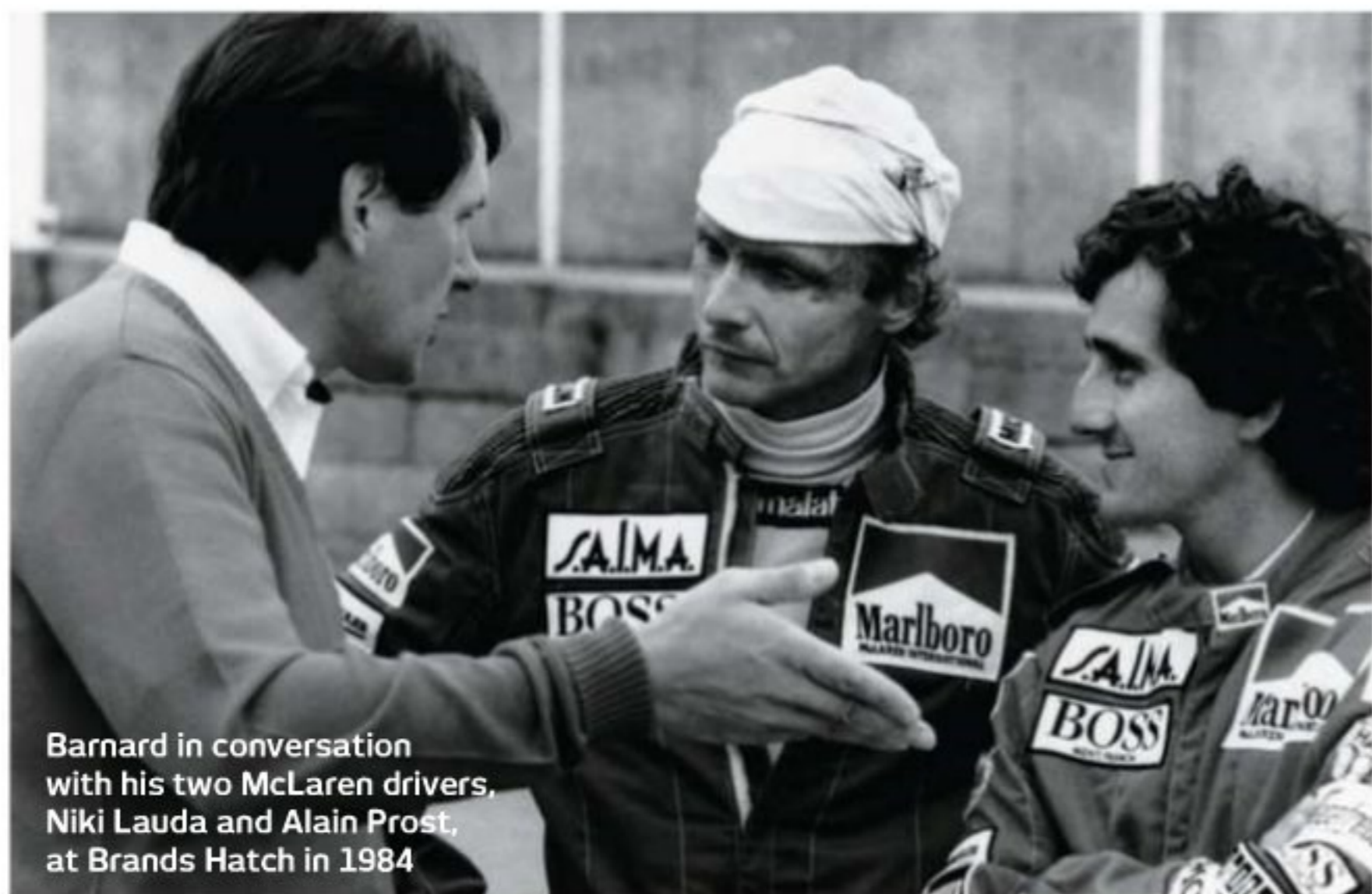
MH: If you were 15 or 20 years younger, would you like to be involved now or is F1 narrow to the point where you just can’t be innovative?

JB: It’s a difficult one to answer. From what I see now, the current teams are so big that if →



Tyres were as big a headache in 1983 as they are now. Barnard’s MP4/1C scored a one-two at Long Beach... yet failed to qualify three races later in Monaco

INSETS: LAT ARCHIVE



Barnard in conversation with his two McLaren drivers, Niki Lauda and Alain Prost, at Brands Hatch in 1984



“Niki Lauda was half a second slower than Alain, and Niki knew it. Alain worked miracles”

you're quite senior or near the top, all you are is a manager. You're just dealing with people and paper shuffling. I don't know what happens at Red Bull, I don't know what Adrian Newey does, but I'm sure it's more than simple hands-on windtunnel work, track tests and so on. Maybe with a setup like that I'd be interested to be involved today. But it seems to me that most people at the top are managers.

Apart from Adrian, the only other designer with the sort of control I would like was James Allison when he was with Lotus. I think I actually brought James into F1 when he worked for me at Benetton in the windtunnel. He came straight from college. He's a very bright boy.

MH: The big story this year is managing tyres. Reading through an interview I did with you in 1983, things don't change because you'd just got back from Imola and you were scratching your head over tyre behaviour that weekend. Pre-race testing had been fine but it all changed from practice to the warm-up on race morning, and from there to the race itself. When I came to see you a few days later, you were still baffled.

JB: That's right. The clouds would come over, then the sun would reappear a lap or two later.

We were moaning about Wattie and saying: “What the hell is he doing? He's a second a lap slower now!” In ten laps the whole thing changed and we had no idea what was going on.

MH: F1 is much the same now, yet people criticise it as if it's something new. But surely it's part of the game – and always has been?

JB: Absolutely. Any kind of engineer, given a problem, wants to find a solution. The problem in those situations is that the answer lies mainly with tyre people and, as you know, '83 was a weird year. We went from finishing one-two at Long Beach to not qualifying in Monaco.

MH: Extraordinary by any standards. I'll never forget Ron's face. Monaco – of all places.

JB: It was all down to tyres. But I think it's good. People say it's not a drivers' test; it's a test for engineers. I don't agree. It's a drivers' test *really*, because if a driver is any good, he'll give you a lot of feedback. Even with telemetry, the driver plays a big part in the direction the team takes. Top drivers still make a difference. That's a fact.

MH: Which driver did you most enjoy working with in terms of analytical feedback?

JB: Alain Prost. In terms of following a direction you're taking with a car setup, he was a master.

Another driver I enjoyed working with was Gerhard Berger because he was a nice guy.


MH: How was he, technically?

JB: He was alright; not bad at all. But Prostie was in a different league. He'd say something about the car, I'd make the change and we'd go forwards. We were on the same wavelength. Niki Lauda was half a second slower than Alain, and Niki knew it. In terms of analysing a car and tyres, Alain worked miracles. He'd cruise around for the first ten laps with a full tank. By race end, he'd be taking the lead from the idiots who'd been blasting round corners because his tyres were ten times better than theirs.

MH: Prost made it look so easy.

JB: That's because he could drive a car with understeer that none of the others could manage. When Keke Rosberg came to McLaren, we were at opposite ends of the scale. It was hard for me to get the car to work. But Alain wanted it like that, because the front end was quite low in aerodynamic downforce; there was a lot of rear-wheel bias, aerodynamically, with him. With more mechanical grip at the front, and the front therefore being softer, a lot of guys would want to charge up to the corner, wrench the wheel around and the car would just roll onto that outside front wheel and they start to lose the back end. Whatever it was that Prostie did, he didn't do that in the corner.

MH: You never got to work with Senna, did you?

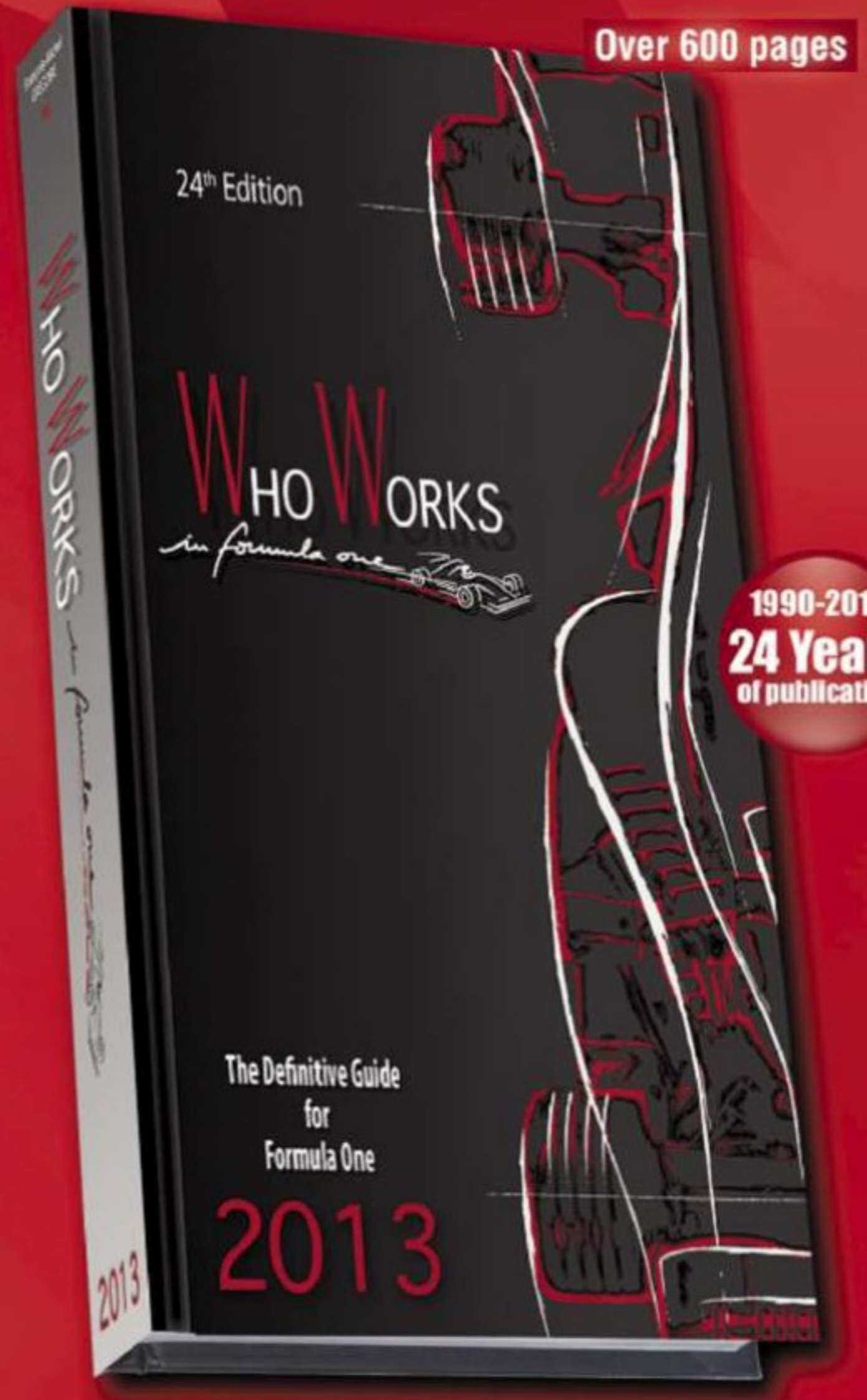
JB: No, I just missed him. He was probably the only guy who could manage the car like Alain because he could drive however he wanted. But I never worked with him. Prost and Senna in the same team? Coo, that must have been tasty. 



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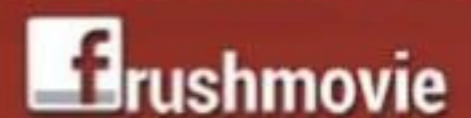


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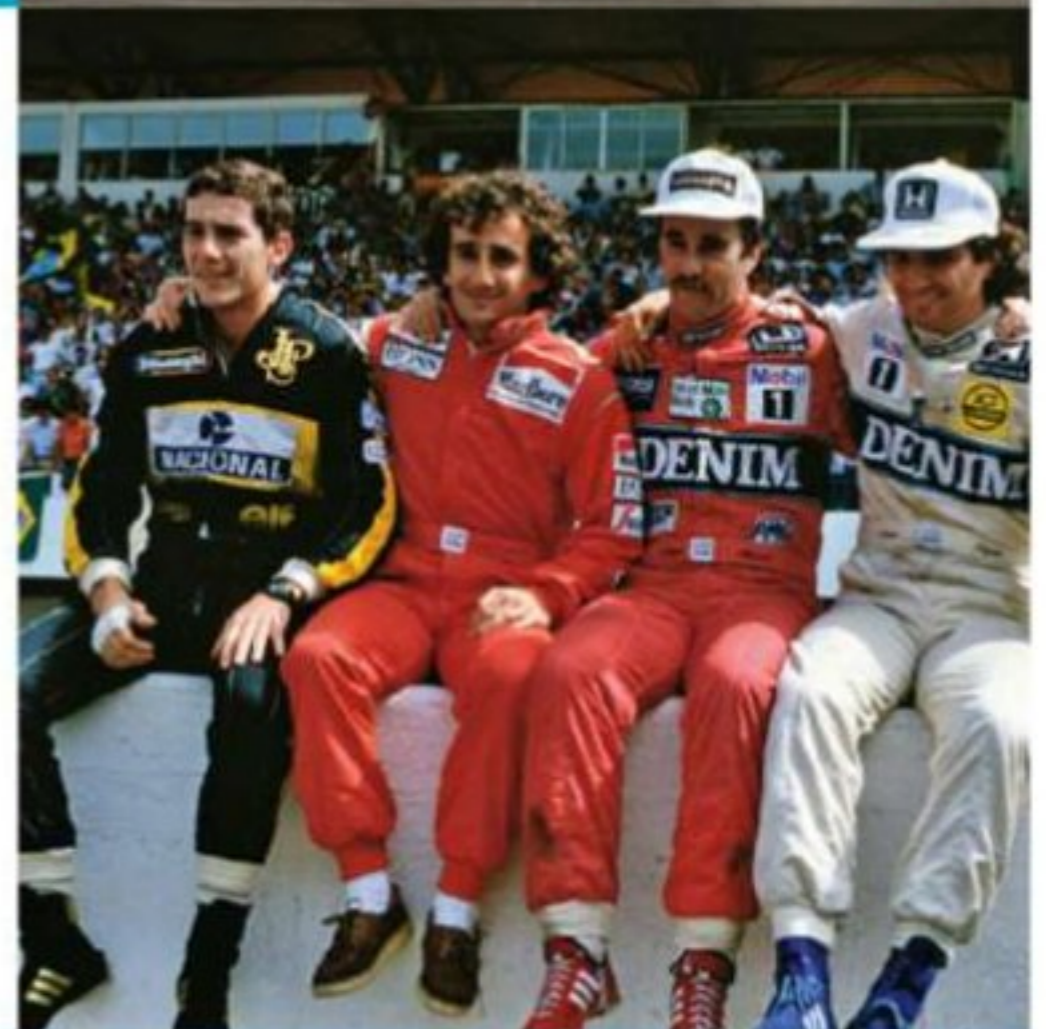
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Life through a lens



Ace lensman Steven Tee will notch up his 500th GP in Singapore – not a single one missed since Imola '84. Enjoy his hand-picked selection of classic F1 images from the '80s to the present day



WORDS & PHOTOS STEVEN TEE/LAT PHOTOGRAPHIC

1980s

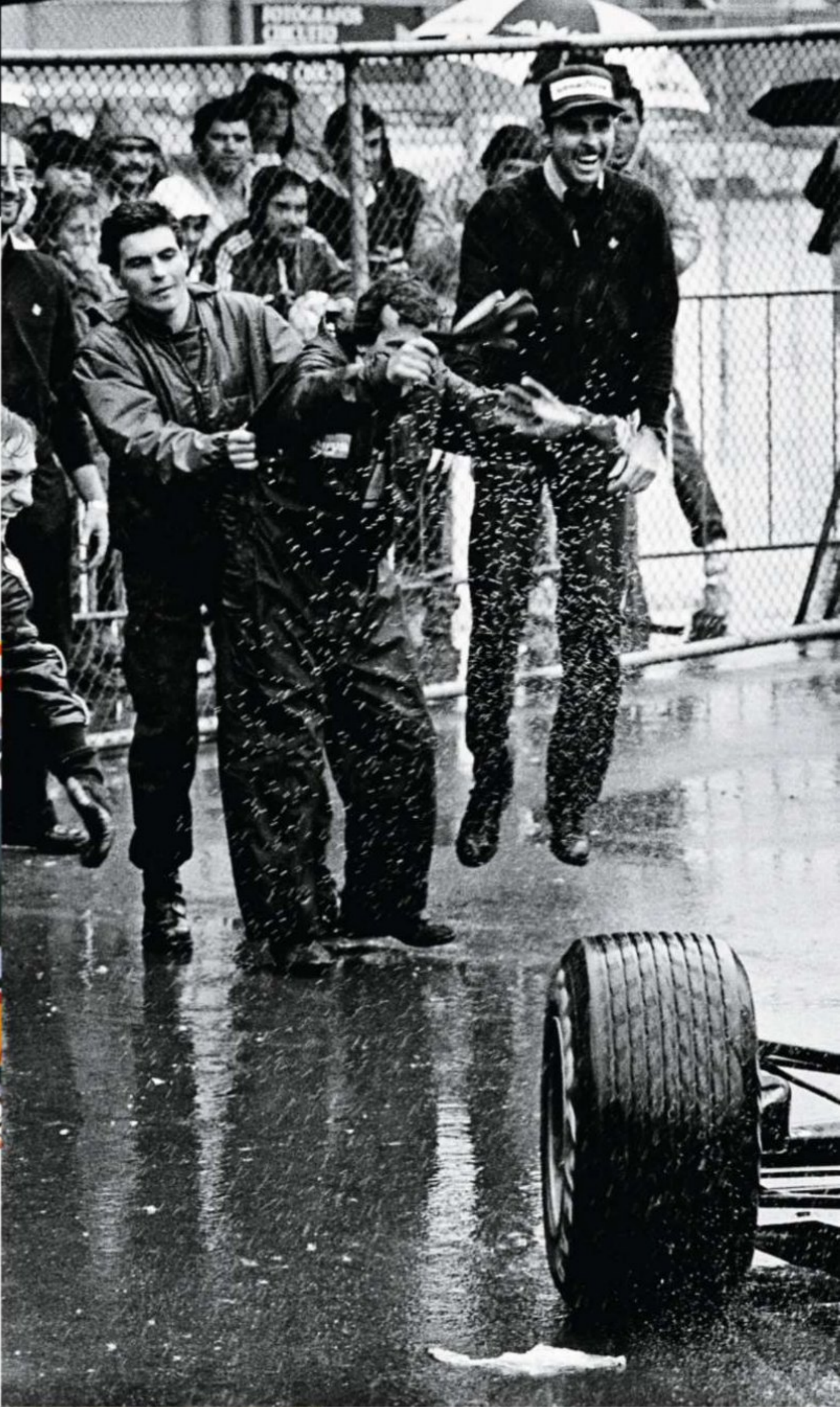
👉 AYRTON SENNA 1985 PORTUGUESE GP

This was Senna's first win, in the rain, and he came into parc fermé very quickly. In the previous frame he's not there and in the next frame he's gone. I was standing on a block of concrete with a 50mm lens and it was very dark – too dark to shoot with colour film. Team boss Peter Warr has just come into frame on the right, and on the left is Kenny Szymanski, jumping in the air. He was an American Airlines steward and he organised his roster so he could do every grand prix and work for Lotus in their tyre department. A great character.



👆 NIGEL MANSELL 1989 BRAZILIAN GP

Rio '89 was Mansell's first race for Ferrari and he wasn't expected to finish because it was the first outing for the semi-automatic gearbox. He picked up a number of blisters in the race, and when he lifted up the trophy it was so sharp it cut open all his blisters. It was all a bit stigmata...



👉 AYRTON SENNA & ALAIN PROST 1989 JAPANESE GP

I chose to stay at the chicane during the race because I thought if Senna was going to make a move anywhere, it would be there. The other photographers had left to shoot the podium, but I decided to wait one more lap. I caught the whole sequence of the collision that decided that year's title. Photographically it's not beautiful – it's in the middle of the frame and quite messy – but it's the significance of the moment.





➔ **AYRTON SENNA**
1985 PORTUGUESE GP

On the morning of his first win, Senna broke down during morning warm-up and the marshals pushed the car off to the side. I was standing on a raised escarpment and he came and watched practice with us. Whenever you bumped into him in a hotel lobby he would always ask where you were standing and how his car looked and how it compared with the others. He was always trying to glean a little bit more information. ➔





🏎️ AYRTON SENNA
1993 BRITISH GP

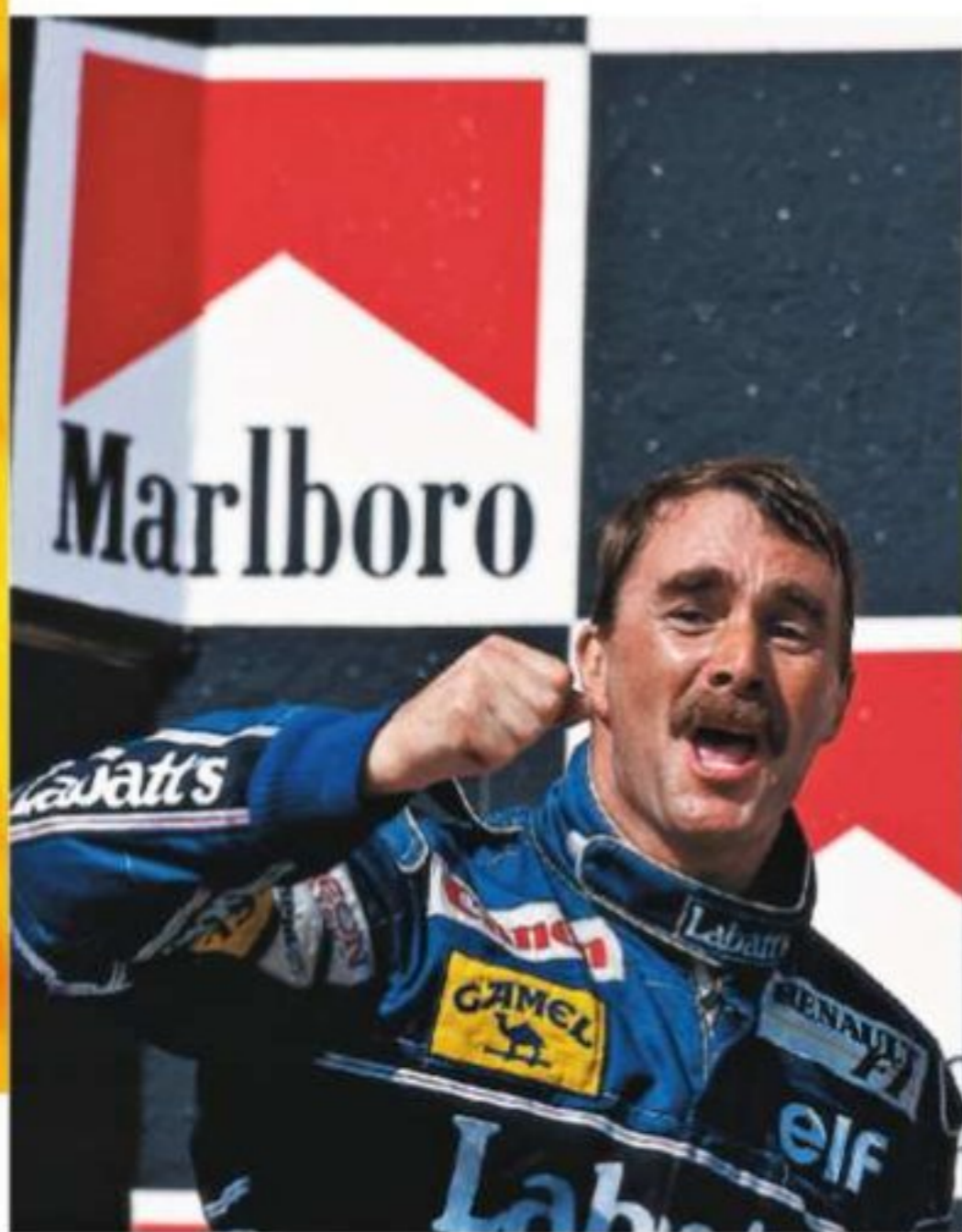
This is taken on the crest approaching the old Bridge corner, and I had to lie flat on the ground to avoid picking up any background detritus. The sun is out but there's a heavy sky as it's about to rain. I was just praying somebody of merit was going to come over the hill – and at that very moment, Senna appeared. It looks like a very simple picture, but remember he's doing almost 170mph.



1990s

👁️ PAUL SEABY 1994 GERMAN GP

I was focusing on the refueller during a Benetton pitstop when the fire erupted. All hell broke loose and I fell backwards trying to get out of the way. I instinctively kept shooting, then stopped to help put out one of the mechanics. In those days we were shooting on film, so I had no idea what I had taken. I dropped the films off to be processed and picked them up on the Monday after the race. Looking along the strip of film, I saw a number of fuzzy images, then saw this one shot. I placed an eye glass to it and the image was so sharp, I could have cut myself on it. And that's the image of Paul Seaby turning away from the car as the fire blazes. A lot of photographers are defined by one picture and I suppose that's the one I'm defined by.



👁️ NIGEL MANSELL 1992 HUNGARIAN GP

Nigel has just won the championship and 20 years of hurt comes out in his expression here. It says everything about what he has gone through. Mansell was the bravest driver I ever saw; he would pick up a car by the scruff of its neck and drag it around the track. You see the utter delight, although he doesn't look like a racing driver – he looks more like your dad's mate.



👁️ MICHAEL SCHUMACHER 1995 MONACO GP

I absolutely love this picture and I always liked that car. It's very Rory Byrne, isn't it? Not the sleekest of the cars. I just love the cross-lit sunshine coming through the trees. It's nearly 20 years since this picture was taken and the trees have now grown over at Mirabeau, so you don't get this effect any more. Schumacher's lifting the right-front and it looks as though he's almost flying through the shot. It has a 3D feel to it.



👁️ ALAIN PROST 1990 SPANISH GP

I used to love Sunday morning warm-up because the light was glorious. Here Prost is running on full tanks, which is causing the titanium skid-plates to bottom out on the bumps. I'd pre-focused the spot he'd hit and was panning on a slow shutter speed to accentuate the sparks. I was trying to keep the car sharp while the sparks get picked up by the film to create this firework effect. →

2000s

➤ JENSON BUTTON 2009 BRAZILIAN GP

I've worked closely with Jenson since he first started in F1 and the whole Brawn year was fantastic. This image was taken during qualifying. It has every element: rain, spray, a beautiful car and the sun's just come out. And the following day he won the world title. Brazil today is very different to the old days. We used to test there in the 1980s and I would ask passengers on the BA flight whether they would mind taking a bag of films back to London for me. You couldn't imagine that happening now!



⬆️ FLAVIO BRIATORE 2002 KENYA

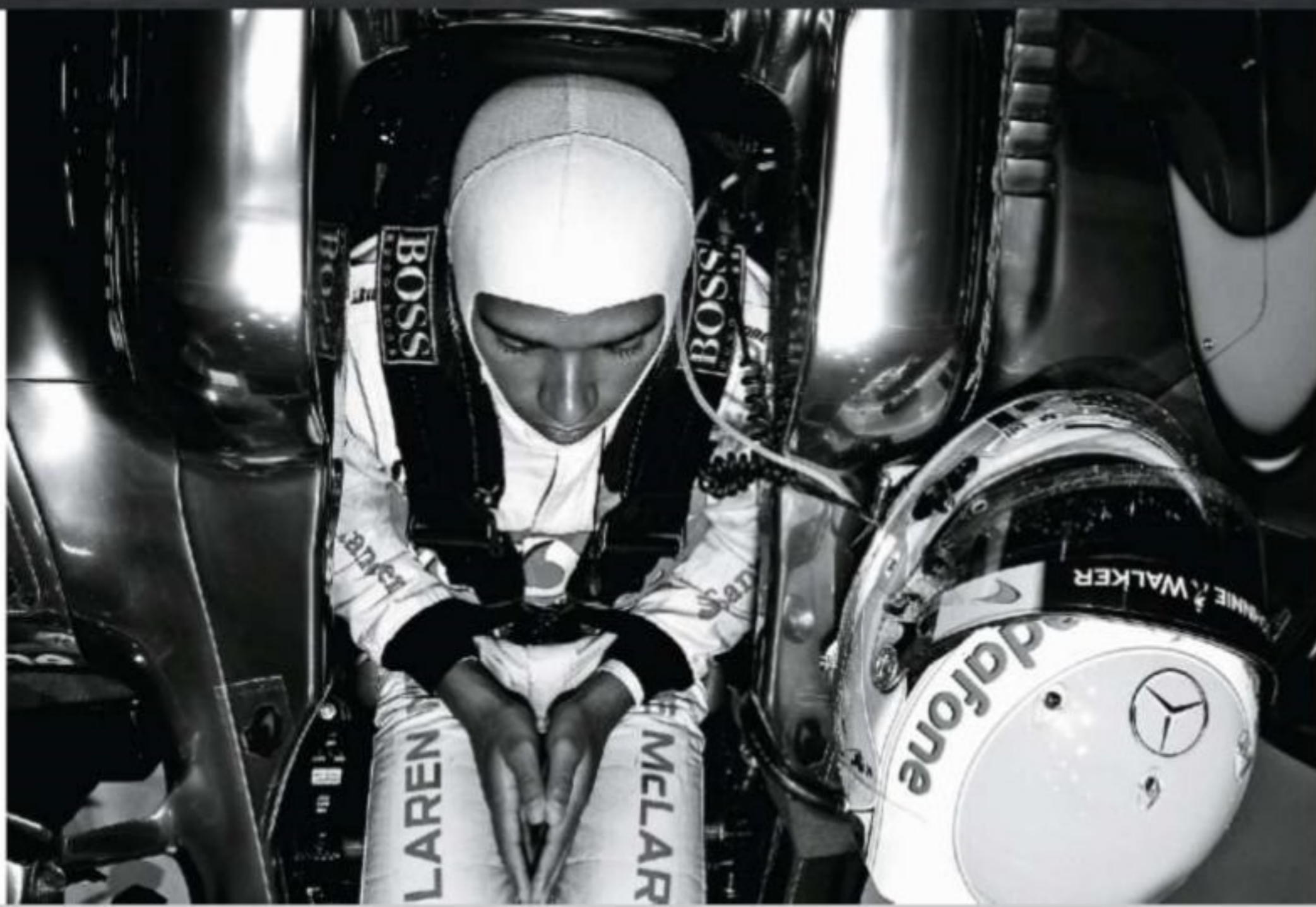
I spent ten days with Flavio in Kenya in the lead-up to Christmas, accompanied by Renault's drivers, including a young Fernando Alonso. This was for F1 Racing and it shows how much the sport has changed. Originally the focus was on the cars and it was all action photography, but when F1 Racing launched in 1996 there was a shift towards personalities and portraiture. I'm shooting Flavio on a long lens along the top of the water from a fair distance away.



⬅️ MIKA HÄKKINEN & MICHAEL SCHUMACHER 2000 BELGIAN GP

These two were the massive stars of their day and here they are in parc fermé, discussing the move Mika pulled to pass Michael and backmarker Ricardo Zonta. I don't think there is any photographic evidence of the move, but this image tells the story in a different way. For me, Mika was a brilliant bloke and a fantastic driver. I remember he once came up to me and enquired whether getting photographers banned from the garage would be a problem for me. I said that yes, it would, and so he took it on board and replied, "Okay, no problem."





◀ **LEWIS HAMILTON**
2010 JAPANESE GP

Qualifying was delayed and ultimately cancelled because it was raining so hard. Everyone was waiting in the garage and this is a shot I took of Lewis in contemplative mood. The great thing about Lewis is that he always carried on with what he was doing, despite me following him everywhere with a camera. It never seemed to faze him. I've been lucky enough to work with many of the top drivers in Formula 1 and I think this picture wouldn't work if it was some also-ran. →



➤ **SEBASTIAN VETTEL**
2013 MONACO GP

This is classic Monte Carlo, taken from the lobby of the Hotel de Paris. The great thing about Monaco is that you can find angles you can't get at any other circuit. This year marked my 30th Monaco GP and I was delighted to get this shot. I really like the three punters peering out of the window as the Red Bull passes at about 120mph. Monaco is an incredible place to photograph F1 cars.



➤ **ROMAIN GROSJEAN**
2012 BELGIAN GP

This is as close to an F1 shunt as I've ever got. Thankfully it wasn't as dangerous as it looks, because the inertia of the accident was throwing everything past me, but at the time you don't know that. Through the lens you just keep shooting. There were a couple of photographers, who will

2010s

📍 FERNANDO ALONSO 2010 BAHRAIN GP

I worked with Fernando a lot when he was at Renault and he's a good character. This is probably the best parc fermé picture I've taken. It was Fernando's Ferrari debut and he's just won the race. The light is perfect, the colours work, the body shape is right and it looks as if he's reaching up or looking somewhere else entirely.



📍 FINISH LINE 2012 SINGAPORE GP

Singapore's Ferris wheel takes half an hour to rotate, so you have to time it perfectly to be at the highest point for the fireworks when the chequered flag falls. Singapore is a great grand prix but, because of the floodlights, to capture the skyscrapers you have to photograph them in daylight – and there's a window of 15 minutes of track action on the Friday in which to achieve that. 🏁



remain nameless, who had scampered 50 yards away when the accident started to happen... safety is very different now. I remember at Imola I used to stand on the grass at the Variante Alta and shoot the cars head on. One year Eddie Cheever's brakes failed and he went off between me and the Armco at about 160mph...

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Red Bull rack 'em up

With wins for Vettel at Spa and Monza, Webber's solid support and a 102-point lead over closest rivals Ferrari, Red Bull seem set for a fourth consecutive title double

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Seb is simply sublime over Formula 1's longest lap



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The McLaren vs Ferrari rivalry, brought to life in Ron Howard's new feature film, *Rush*, still resonates today



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When Gerhard Berger happened to ponder whether Murray still remembered him, the recollections came thick and fast...



RACE DEBRIEF

by Anthony Rowlinson

Belgian Grand Prix

25.08.2013 / Spa-Francorchamps



Just one of those days

An unstoppable Vettel/RBR combo makes the long lap through the forest seem like a walk in the park

Days like this pass into sporting legend as examples of excellence achieved, greatness attained. They can be enjoyed as demonstrations of complexity made simple through the perfect orchestration of disparate elements. Inspiration, control, precision, grace, aggression, all harmonised into a winning whole, beyond the reach of any rival.

Jim Clark won like this, as did Jackie Stewart, Alain Prost, Michael Schumacher, and even Jenson Button at this very circuit last year. They, like Seb Vettel at the 2013 Belgian GP, made winning look easy, delivering masterclasses in metronomic perfection.

After a race performance like the one Seb put in at Spa this year for Red Bull, there is no argument that both he and team now belong among F1's all-time greats, having earned their place through a relentless commitment to excellence (and generous fizzy-pop bounty).

Trouble is, 'days like this' can be a trifle dull – especially when expectation of a thriller has

been palpable throughout the pre-race dress rehearsal. Formula 1 had arrived at its favourite playground barely able to contain its enthusiasm for a venue that has delivered such kicks through the decades. Mark Webber quipped that “even the cars feel it too, a little bit” when waxing lyrical about the joy of scything an RB9 around the 4.6-mile Ardennes loop. Lewis, too, on a Thursday afternoon tour of the old Spa circuit with *F1 Racing*, got a little misty-eyed at the thought of taking his W04 for a 200mph blast “with maximum downforce” through the Masta kink and on to the original, banked Stavelot.

He was more wide-eyed than misty come Saturday afternoon, after setting a stunning ‘last-through-the-gate’ pole lap – his fourth on the trot – in a damp-but-drying Q3. Di Resta, Rosberg, Webber and Vettel took brief turns on pole, but they bumped each other downwards before all being pipped at the death by Hamilton.

Lewis's dazzling performance lit up a typically gloomy afternoon that gave way to late-evening

thunderstorms, with the promise of a soggy Sunday to come. The stage could hardly have been better set, with the likes of Alonso out of position in P9 in a re-mojoad Ferrari, Hamilton up front needing to make a break from the fleetier Red Bulls behind (Seb P2, Webber P3) and a pair of Lotuses (RoGro P7, Kimi P8) looking poised to perform their now-customary, unique-strategy trick and vie for podium positions.

Against all forecasts, however, Sunday dawned dry and stayed that way, allowing teams free choice of starting rubber after Saturday's wet sessions. And with the top ten all going to the grid on mediums (the option tyre), any prospect of mixed strategies being played against each other looked remote. Indeed, the only surprise on the grid was the appearance on the main grandstand roof of Greenpeace protesters, who proceeded to unfurl a giant banner, having evaded the famously ferocious Spa security.

Their best efforts did nothing to disrupt the race start, and at blast-off, Hamilton briefly

made good to lead into La Source – the start thankfully clean after last year’s mega-shunt initiated by Romain Grosjean. Another to gain from the off, as he so often does, was a fired-up Alonso (P9 to P5), whose first lap was later likened by Ferrari team boss Stefano Domenicali to the brilliant opener he crafted at the 2012 European GP (11th to eighth). By lap 6 he was third and clearly on a mission.


But Hamilton’s moment in the sun was to be no more than that. He led from Vettel by a few car-lengths into Eau Rouge, before a mini-moment on exit allowed Vettel a perfect opportunity to slingshot through, line Hamilton up and drag by on the long climb through Kimmel into Les Combes. It was a straightforward pass, but nevertheless impressive as Vettel proved his prowess once again by being ready to seize his moment, even when presented so early. No DRS had been available on lap 1, so this was a straight racing move, pure and simple, from a triple world champion making impatient progress towards a fourth title. He led thereafter.

Ross Brawn noted later that his Mercs had been less-than-brilliant through Eau Rouge all weekend and that Hamilton’s wobble had likely been legacy of pushing harder than his car could manage. Mercedes and Hamilton had been the combo to beat in Hungary three weeks before, but at Spa, Brawn explained, his engineers had been “chasing the setup since we arrived”. The hunt for the sweet spot had been made trickier, he said, by demands from Pirelli and the FIA that tyre pressures be higher than Mercedes’ ideal, and camber angles shallower. So despite the huge advances made by Merc this season, the ghost of excessive rear-tyre use remains in the machine. “We’re still fighting for the title,” Brawn reflected, “but we’re not dictating the terms of the fight, we’re not strong enough to do that yet. Our main rivals are ourselves.”

Words truly spoken, for this year’s championships are unquestionably being fought on Red Bull-Vettel terms. Weekend in, weekend out, they remain the benchmark for others to beat, and while Ferrari-Fernando, Lotus-Kimi and Mercedes-Nico-Lewis have all done so, none can manage the feat consistently enough to emerge – yet – as a true title challenger.

But don’t tell Fernando Alonso, who fumed through the top-three press conference. He’d put in the drive of the day to finish second, battling Hamilton wheel-to-respectful-wheel in vain pursuit of Vettel, yet unable to get any closer than 17 seconds at the chequered flag.

“Things can still turn around,” he said. “Last year I had a lead of 41 points, but I arrived in Texas 15 points behind. We just have to recover the gap.”

Easier said than done. 

The story of the race

V Protesters unfurl an anti-Shell banner on the main grandstand, although it’s not shown on TV

SPA-FRANCORCHAMPS



> On lap 1, Vettel outrags polesitter Hamilton out of Eau Rouge to take the lead of the race



> Pérez is handed a drive-through penalty for forcing Grosjean off the track at Les Combes



< Vettel pits from the lead on lap 14 and Alonso passes Lewis to move into third place at La Source



^ Kimi retires with brake problems on lap 26 after a run of 38 consecutive races finishes

> Vettel takes his fifth win of the year, extending his championship lead to 46 points over Alonso



MAIN PHOTO: STEVEN TEE/LAT; ILLUSTRATION: ALAN ELDREDGE; INSETS: STEVEN TEE/LAT; ANDY HONE/LAT; STEVE ETHERINGTON/LAT; SAMI BLOXHAM/LAT; GLENN DUNBAR/LAT

Belgian Grand Prix stats

The lowdown on everything you need to know from the weekend at Spa-Francorchamps...

THE GRID

	
2. VETTEL RED BULL 2min 01.200secs Q3	1. HAMILTON MERCEDES 2min 01.012secs Q3
	
4. ROSBERG MERCEDES 2min 02.251secs Q3	3. WEBBER RED BULL 2min 01.325secs Q3
	
6. BUTTON McLAREN 2min 03.075secs Q3	5. DI RESTA FORCE INDIA 2min 02.332secs Q3
	
8. RÄIKKÖNEN LOTUS 2min 03.390secs Q3	7. GROSJEAN LOTUS 2min 03.081secs Q3
	
10. MASSA FERRARI 2min 04.059secs Q3	9. ALONSO FERRARI 2min 03.482secs Q3
	
12. SUTIL FORCE INDIA 1min 49.103secs Q2	11. HÜLKENBERG SAUBER 1min 49.088secs Q2
	
14. VAN DER GARDE CATERHAM 1min 52.036secs Q2	13. PÉREZ McLAREN 1min 49.903secs Q2
	
16. CHILTON MARUSSIA 1min 52.762secs Q2	15. BIANCHI MARUSSIA 1min 52.563secs Q2
	
18. VERGNE TORO ROSSO 2min 03.300secs Q1	17. MALDONADO WILLIAMS 2min 03.072secs Q1
	
20. BOTTAS WILLIAMS 2min 03.432secs Q1	19. RICCIARDO TORO ROSSO 2min 03.317secs Q1
	
22. PIC CATERHAM 2min 07.384secs Q1	21. GUTIÉRREZ SAUBER 2min 04.324secs Q1

THE RACE



THE RESULTS (44 LAPS)

1st	Sebastian Vettel	Red Bull	1h23m42.196s
2nd	Fernando Alonso	Ferrari	+16.869s
3rd	Lewis Hamilton	Mercedes	+27.734s
4th	Nico Rosberg	Mercedes	+29.872s
5th	Mark Webber	Red Bull	+33.845s
6th	Jenson Button	McLaren	+40.794s
7th	Felipe Massa	Ferrari	+53.922s
8th	Romain Grosjean	Lotus	+55.846s
9th	Adrian Sutil	Force India	+69.547s
10th	Daniel Ricciardo	Toro Rosso	+73.470s
11th	Sergio Pérez	McLaren	+81.936s
12th	Jean-Eric Vergne	Toro Rosso	+86.740s
13th	Nico Hülkenberg	Sauber	+88.258s
14th	Esteban Gutiérrez	Sauber	+100.436s
15th	Valtteri Bottas	Williams	+107.456s
16th	Giedo van der Garde	Caterham	+1 lap
17th	Pastor Maldonado	Williams	+1 lap
18th	Jules Bianchi	Marussia	+1 lap
19th	Max Chilton	Marussia	+2 laps

Retirements

Paul Di Resta	Force India	26 laps - accident
Kimi Räikkönen	Lotus	25 laps - brakes
Charles Pic	Caterham	8 laps - oil leak

THROUGH SPEED TRAP



Fastest: Felipe Massa, 190.86mph
Slowest: Charles Pic, 181.67mph

TYRE COMPOUNDS USED



CLIMATE

Cloudy 19°C

TRACK TEMP

26°C



FASTEST LAP

Sebastian Vettel, lap 40, 1min 50.756secs



FASTEST PITSTOP

Fernando Alonso, 22.444secs (entry to exit)

DRIVERS' STANDINGS

1st	Sebastian Vettel	Red Bull	197pts
2nd	Fernando Alonso	Ferrari	151pts
3rd	Lewis Hamilton	Mercedes	139pts
4th	Kimi Räikkönen	Lotus	134pts
5th	Mark Webber	Red Bull	115pts
6th	Nico Rosberg	Mercedes	96pts
7th	Felipe Massa	Ferrari	67pts
8th	Romain Grosjean	Lotus	53pts
9th	Jenson Button	McLaren	47pts
10th	Paul Di Resta	Force India	36pts
11th	Adrian Sutil	Force India	25pts
12th	Sergio Pérez	McLaren	18pts
13th	Jean-Eric Vergne	Toro Rosso	13pts
14th	Daniel Ricciardo	Toro Rosso	12pts
15th	Nico Hülkenberg	Sauber	7pts
16th	Pastor Maldonado	Williams	1pt
17th	Valtteri Bottas	Williams	0pts
18th	Esteban Gutiérrez	Sauber	0pts
19th	Jules Bianchi	Marussia	0pts
20th	Charles Pic	Caterham	0pts
21st	Giedo van der Garde	Caterham	0pts
22nd	Max Chilton	Marussia	0pts

CONSTRUCTORS' STANDINGS

1st	Red Bull	312pts	9th	Williams	1pt
2nd	Mercedes	235pts	10th	Marussia	0pts
3rd	Ferrari	218pts	11th	Caterham	0pts
4th	Lotus	187pts			
5th	McLaren	65pts			
6th	Force India	61pts			
7th	Toro Rosso	25pts			
8th	Sauber	7pts			



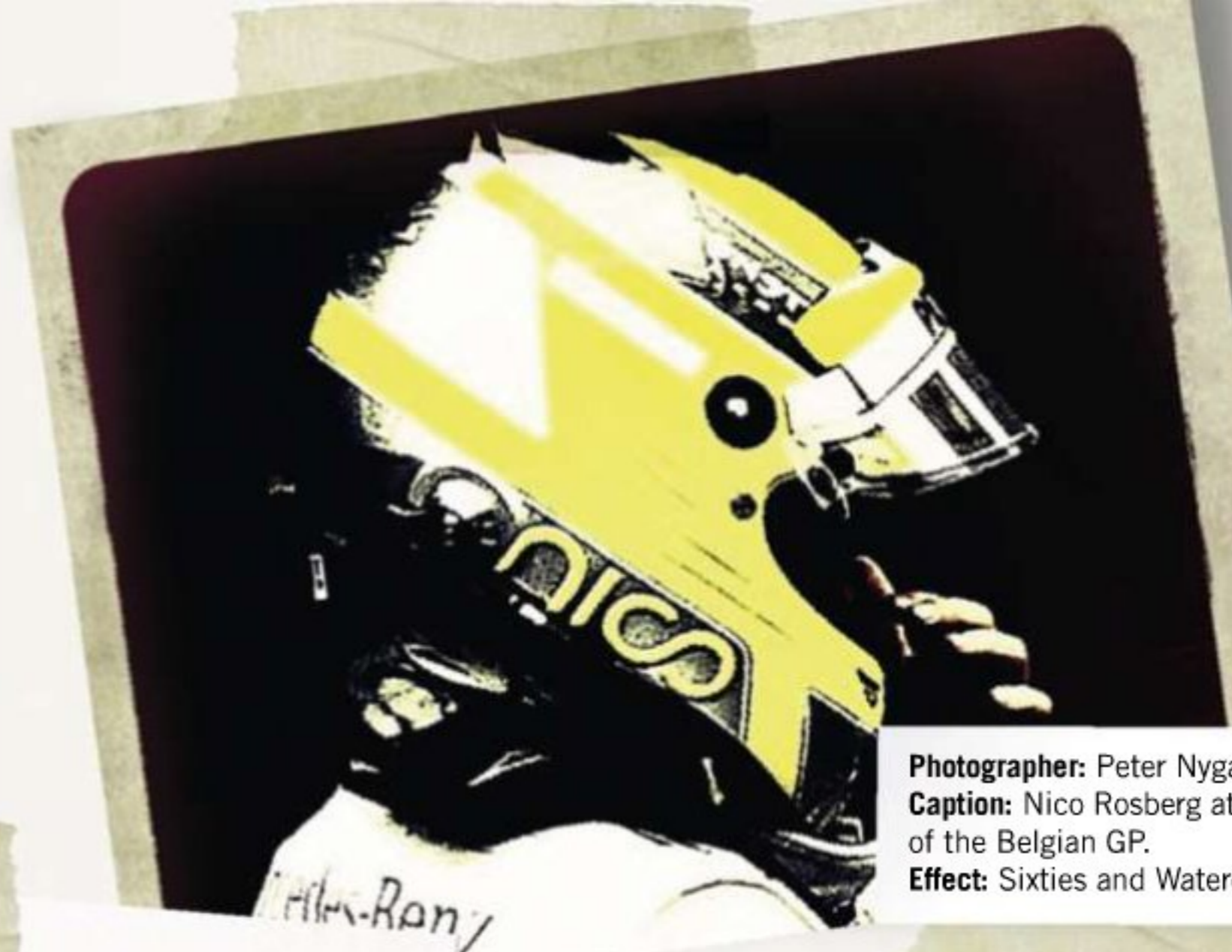
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GRAND PRIX SCRAPBOOK

BlackBerry.

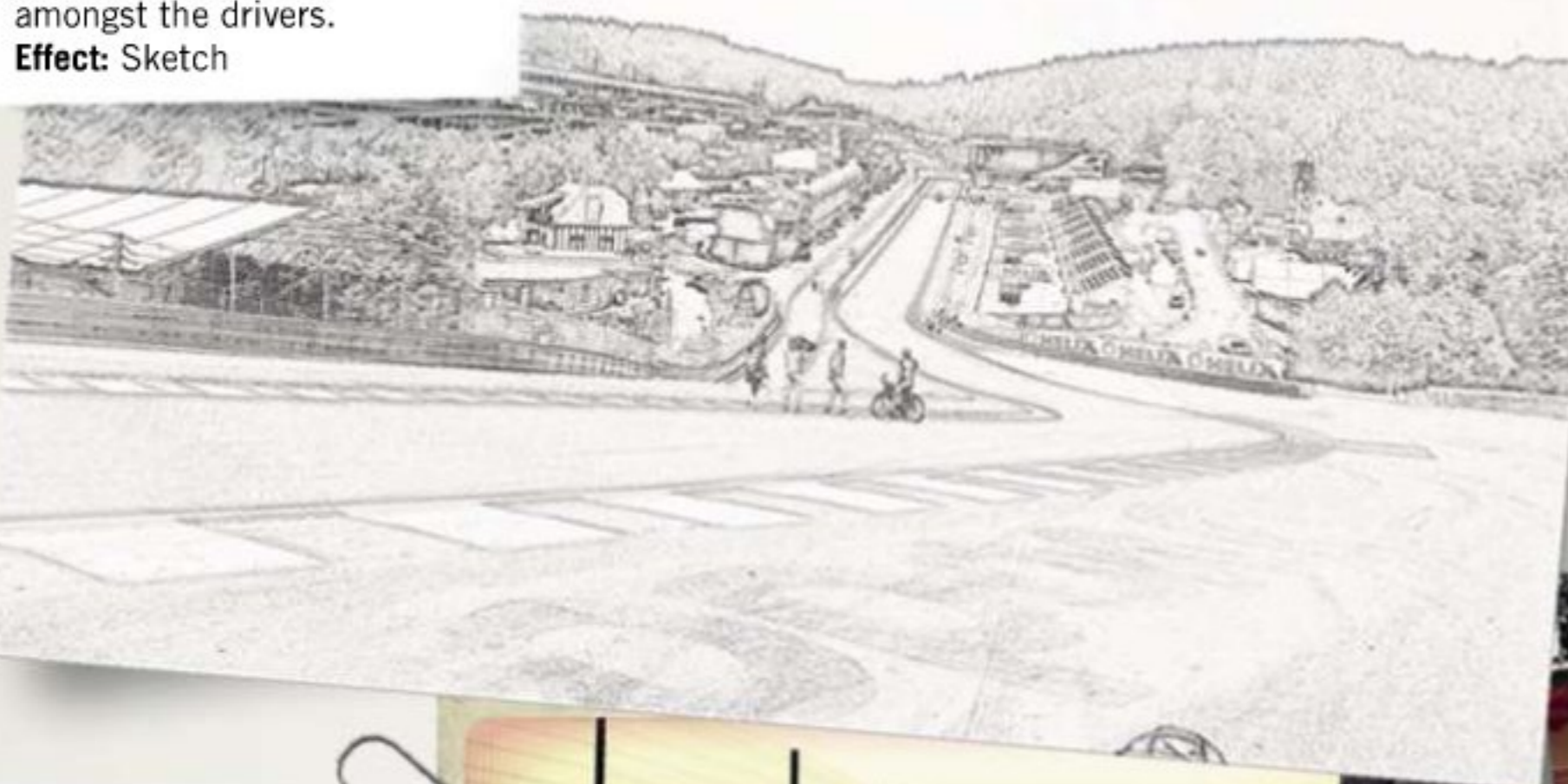
Photography Focus

Where top F1 photographers capture the action on their BlackBerry Z10.
THIS MONTH: BELGIAN GP



Photographer: Peter Nygaard
Caption: Nico Rosberg at the end of the Belgian GP.
Effect: Sixties and Watercolour

Photographer: Lukas Gorys
Caption: The infamous Eau-Rouge corner is a favourite amongst the drivers.
Effect: Sketch



Photographer: Flavio Massi
Caption: Lewis Hamilton negotiates the final chicane at the legendary Spa circuit.
Effect: Sixties



SPECIAL GUEST PHOTO
Photographer: Matt Deane, Chief Mechanic, MERCEDES AMG PETRONAS
Caption: Pit stop practice.
Effect: Film strip



Photographer: Vladimir Rys
Caption: Lewis Hamilton exits the pit lane to take to the 7km circuit.
Effect: Sixties and Watercolour



Photographer: James Moy
Caption: Lewis Hamilton talks to the media after a session on track.
Effect: Grain



Photographer: Jiri Krenek
Caption: The afternoon sun shines through the clouds at Spa-Francorchamps.
Effect: Sixties



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RACE DEBRIEF

by Peter Windsor

Italian Grand Prix

08.09.2013 / Monza



Same result with a twist

Vettel took win six of 2013, but the 'Monza factor' meant this race wasn't quite a Spa-style whitewash

As clinical as these Red Bull/Seb Vettel wins tend to be, there's always the Monza Factor. You feel it on Saturday morning, in free practice, down at the Parabolica, where young *bambini* with gelled hair and Ferrari T-shirts look questioningly at their papas. "Where is Fernando? Why is he not on track?" they ask with their eyes. Papa strains to hear the commentary, but a Red Bull blasts past, drowning the words, inducing the inevitable shrug. Then the red car finally appears, topped with sky-blue helmet. The Parabolica erupts. Air is exhaled. Smart phones are held high, panning in a blur.

The point is that this is passionate stuff. No one in Italy wants a close race at super-fast Monza; instead, they want a walkover. A Ferrari walkover. One-two and then the also-rans. And they want, for good measure, a whole bunch of stuff to hurt the other guys. Still. After all these years. Fickle Fernando or not.

So it isn't easy being blue, even if – like Vettel – you do add some red to your helmet in honour

of Italy's most famous race. You work with your engineers; you balance the car around its new, low-downforce front wing; you eat quietly with family at the Fossati, down in the valley behind the Lesmos; you sign caps and magazines and books and arms and legs as you walk to and from the paddock. But still you feel the difference. The Monza Factor is there. You're racing more than just the other cars.

So it was that Seb Vettel, triple world champion and Monza 2013 polesitter, flat-spotted a right-front Pirelli as he braked for the first corner. Vettel. Mr Perfect. The Red Bull RB9. The Car Unbeatable. Behind him: lots of red. Seb, then, had to win this one. The stats show that he finished first by the usual, conservative margin; the reality was that he had to drive his car on tiptoes in those early laps, when the fuel load was high and the grandstands were clamouring for red. The RB9 jiggled on the approach to the second chicane; nursing the front end, Seb's driving was all about subtle

brake-pedal-pressure release rates and throttle-teases. There were no zippy hand movements, no kerb-slides; there were none of the things usually associated with the Monza Factor. His balancing act was almost imperceptible.

What was clear was that everyone else seemed to be falling over themselves as they tried to break the spell. Mark Webber was quickish off the line (for a change), but swiftly damaged the right-front aero bits of his Neweymobile after a skirmish with Alonso's Ferrari. Fernando, for his part, had been curiously outqualified by his much-maligned team-mate, Felipe Massa. Felipe in Q3 had tried to give Fernando a tow (and his career chances a major boost!) but it hadn't quite worked. Instead, we were left wondering what 2006 had been all about, when Alonso, in the Renault at Monza, had been heavily penalised for 'impeding' Felipe's Ferrari in the closing seconds of qualifying. This time around you were invited to read 'tow' for 'impediment' – a contradiction that should be filed away in

the 'lunacy' box with other subjects like 'grooved tyres' and 'McLaren's \$100m fine'.

The upshot was that it took Alonso seven laps to work his way up to second in 2013 (helped, of course, by the super-compliant Felipe), by which time he was 4.5 seconds behind Vettel and thus out of DRS range. As he accelerated out of Ascari, holding his Ferrari hard to the right as he ran through fifth, sixth and then seventh, he could see the Red Bull ahead, preparing for the Parabolica; for the most part, though, Seb was out of sight. Too much grip. Enough top speed. All that remained was some sort of strategy gamble – a longer first stint, perhaps, on this day of single-stop strategies. Had Pirelli been allowed to develop their 2013 tyres their own way, and not at the behest of Red Bull, Monza would probably have been a two-stop race, as originally prescribed by the "spirit of the rules". Now, there were fewer variables with which to play.

So Fernando stayed out when Seb made his stop on lap 23 and the *bambini* at the Parabolica, not really understanding the situation, began to put down their panini and urge on their car. Fernando, gliding the lower-grip Ferrari with all his natural elegance, gave it everything. One, two, three, four: for four laps he led the Italian GP. Then it was time to stop for the harder Pirelli compound. Then Vettel re-took the lead – this time without a flat-spot to worry him. He was soon in the high- to mid-27secs. Alonso, after his stop, was on the limit in the high 27secs. Seb had him by about half a second a lap.

What of Lewis? What of Kimi? Both were victims of qualifying. Lewis ran carelessly wide out of the Parabolica at the start of Q2 and was too late back on track even to secure a 'banker', let alone a quick time. He found traffic as the track filled – but then that's what happens when you stray beyond the off-stump: Lewis should never have been there in the first place. He drove well on Sunday, passing and re-passing the mid-fielders, but from 12th on the grid he could finish only ninth, the result of a slow puncture early on in the race.

Kimi liked his new long-wheelbase E21 on Friday, but faded strangely on Saturday, when fuel loads were lightened. He, too, chose to start on the prime but was afforded an instant reboot after a first-lap, nose-crunching shunt. Like Lewis, he spent his Sunday mired in the mid-field, despite the tantalisingly quick lap times. Call it the Monza Factor.

In the closing stages, Seb's gearbox began to creak, obliging him to short-shift between fifth and sixth. No matter. The opposition had long since been neutralised. Alonso, on primes, had less grip, so less room to manoeuvre in the latter phase of the race. The gap, after the stop, swelled to ten seconds. Seb won, backing away. 🏁

The story of the race

▼ Despite a huge lock-up at the first corner, Vettel holds onto the lead from pole

MONZA



➤ Räikkönen hits the back of Pérez at the first chicane and has to pit to replace his front wing

➤ Di Resta crashes into the back of Grosjean on the opening lap



➤ Alonso passes Mark Webber to move up into third place



▲ Having survived contact with Räikkönen, Vergne retires on lap 16 with transmission failure

➤ Vettel goes on to take a comfortable win from Alonso, and is booed on the podium by the tifosi



MAIN PHOTO: GLENN DUNBAR/LAT; ILLUSTRATION: ALAN ELDRIDGE; INSETS: CHARLES COATES/LAT; STEVE ETHERINGTON/LAT; GLENN DUNBAR/LAT; ALASTAIR STALEY/LAT

Italian Grand Prix stats

The lowdown on everything you need to know from the weekend at Monza...

THE GRID



1. VETTEL
RED BULL
1min 23.755secs Q3



3. HÜLKENBERG
SAUBER
1min 24.065secs Q3



5. ALONSO
FERRARI
1min 24.142secs Q3



7. RICCIARDO
TORO ROSSO
1min 24.209secs Q3



9. BUTTON
MCLAREN
1min 24.515secs Q3



11. RÄIKKÖNEN
LOTUS
1min 24.610secs Q2



13. GROSJEAN
LOTUS
1min 24.848secs Q2



15. DI RESTA
FORCE INDIA
1min 25.077secs Q2



17. SUTIL*
FORCE INDIA
1min 24.932secs Q2



19. VAN DER GARDE
CATERHAM
1min 26.406secs Q1



21. BIANCHI
MARUSSIA
1min 27.085secs Q1



2. WEBBER
RED BULL
1min 23.968secs Q3



4. MASSA
FERRARI
1min 24.132secs Q3



6. ROSBERG
MERCEDES
1min 24.192secs Q3



8. PÉREZ
MCLAREN
1min 24.502secs Q3



10. VERGNE
TORO ROSSO
1min 28.050secs Q3



12. HAMILTON
MERCEDES
1min 24.803secs Q2



14. MALDONADO
WILLIAMS
1min 25.011secs Q2



16. GUTIÉRREZ
SAUBER
1min 25.266secs Q1



18. BOTTAS
WILLIAMS
1min 25.291secs Q1



20. PIC
CATERHAM
1min 25.563secs Q1



22. CHILTON
MARUSSIA
1min 27.480secs Q1

THE RACE



THE RESULTS (53 LAPS)

1st	Sebastian Vettel	Red Bull	1h18m33.352s
2nd	Fernando Alonso	Ferrari	+5.467s
3rd	Mark Webber	Red Bull	+6.350s
4th	Felipe Massa	Ferrari	+9.361s
5th	Nico Hülkenberg	Sauber	+10.355s
6th	Nico Rosberg	Mercedes	+10.999s
7th	Daniel Ricciardo	Toro Rosso	+32.329s
8th	Romain Grosjean	Lotus	+33.130s
9th	Lewis Hamilton	Mercedes	+33.527s
10th	Jenson Button	McLaren	+38.327s
11th	Kimi Räikkönen	Lotus	+38.695s
12th	Sergio Pérez	McLaren	+39.765s
13th	Esteban Gutiérrez	Sauber	+40.880s
14th	Pastor Maldonado	Williams	+49.085s
15th	Valtteri Bottas	Williams	+56.827s
16th	Adrian Sutil	Force India	+1 lap - brakes
17th	Charles Pic	Caterham	+1 lap
18th	Giedo van der Garde	Caterham	+1 lap
19th	Jules Bianchi	Marussia	+1 lap
20th	Max Chilton	Marussia	+1 lap

Retirements

Jean-Eric Vergne Toro Rosso 14 laps - transmission
Paul Di Resta Force India 0 laps - accident

THROUGH SPEED TRAP



Fastest: Esteban Gutiérrez, 211.92mph



Slowest: Paul Di Resta, 140.97mph

TYRE COMPOUNDS USED



Medium



Hard



Intermediate



Wet

CLIMATE

Cloudy 26°C

TRACK TEMP

31°C



FASTEST LAP

Lewis Hamilton, lap 51, 1min 25.849secs



FASTEST PITSTOP

Nico Rosberg, 22.079secs (entry to exit)

DRIVERS' STANDINGS

1st	Sebastian Vettel	Red Bull	222pts
2nd	Fernando Alonso	Ferrari	169pts
3rd	Lewis Hamilton	Mercedes	141pts
4th	Kimi Räikkönen	Lotus	134pts
5th	Mark Webber	Red Bull	130pts
6th	Nico Rosberg	Mercedes	104pts
7th	Felipe Massa	Ferrari	79pts
8th	Romain Grosjean	Lotus	57pts
9th	Jenson Button	McLaren	48pts
10th	Paul Di Resta	Force India	36pts
11th	Adrian Sutil	Force India	25pts
12th	Sergio Pérez	McLaren	18pts
13th	Daniel Ricciardo	Toro Rosso	18pts
14th	Nico Hülkenberg	Sauber	17pts
15th	Jean-Eric Vergne	Toro Rosso	13pts
16th	Pastor Maldonado	Williams	1pt
17th	Valtteri Bottas	Williams	0pts
18th	Esteban Gutiérrez	Sauber	0pts
19th	Jules Bianchi	Marussia	0pts
20th	Charles Pic	Caterham	0pts
21st	Giedo van der Garde	Caterham	0pts
22nd	Max Chilton	Marussia	0pts

CONSTRUCTORS' STANDINGS

1st	Red Bull	352pts	9th	Williams	1pt
2nd	Ferrari	248pts	10th	Marussia	0pts
3rd	Mercedes	245pts	11th	Caterham	0pts
4th	Lotus	191pts			
5th	McLaren	66pts			
6th	Force India	61pts			
7th	Toro Rosso	31pts			
8th	Sauber	17pts			



For comprehensive F1 statistics visit www.forix.com

* Three-place grid penalty for impeding another driver

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The Singapore GP preview



20-22 September 2013 / Marina Bay Street Circuit, Singapore

F1's only night-time race takes place under floodlights, and combines high humidity with a bumpy track and an epic series of slow, tight corners



THE ENGINEER'S VIEW

Xevi Pujolar,
Williams' chief race engineer

Singapore is a demanding circuit for tyres, brakes and drivers. There are a lot of 90° corners that are difficult to negotiate, and despite improvements and resurfacing of the track, the Singapore streets are still very bumpy.

While the ambient temperature and humidity is high, the track temperatures are not particularly intense because we run later in the

evening. One of the key aspects of the weekend is thermo-management of the tyres, since the high number of corners means the rubber has little chance to cool down. For the drivers, it can be difficult to manage the grip levels due to the changing amount of rubber on the track.

The whole circuit is very similar to Monaco in that there is a lot of track evolution over the weekend. Run-off areas are minimal and drivers have to attack the course by getting very close to the wall. This is especially so in the last sector of the lap, where they need to get into a rhythm through the final sequence of corners.

If you lose your concentration or push too hard, that's when it's easy to have an accident – and it's something we always need to consider

from a strategy perspective. The Safety Car has been deployed at least once in every Singapore Grand Prix since the inaugural race in 2008 and the time lost in the pitlane can be quite high.

From year to year the circuit owners have made tweaks to the track and kerbs so drivers need to understand how much kerb they can take to attack the circuit and how much track they can use, too. This year I believe they've made changes to the notorious Turn 10 'Singapore sling' chicane which should be an improvement.

Overall, the circuit is a good challenge for the drivers and the engineers. In terms of aero, ride height and mechanical setup, the driver must feel confident on this track to extract as much potential as possible from the car.

SINGAPORE STATS AND FACTS

THE FLOODLIGHTS ARE CONNECTED BY
108,423
METRES OF POWER CABLES

The Safety Car has been deployed every year since the first race in 2008



There are **15 different braking zones** in one lap



1,600
light projectors illuminate the circuit, totalling 3,180,000 watts of power



SINGAPORE GP RACE DATA

Circuit Marina Bay
F1 debut 2008
Length 3.152 miles
Distance 192.2 miles
Laps 61
Direction Anticlockwise
Lap record 1min 45.599secs,
 K Räikkönen, 2008
Full throttle 70%
Gear changes per lap 71
Winners from pole 3
Tyre compounds
 Supersoft/medium

LAST YEAR

Winner Sebastian Vettel
Retirements 5
Overtaking moves 24
DRS overtakes 10
Weather Clear, 29°C

TV TIMETABLE (UK TIME)

Friday 20 September
Practice 1 11:00-12:30
Practice 2 14:30-1600
Saturday 21 September
Practice 3 11:00-12:00
Qualifying 14:00
Sunday 22 September
Race 13:00
Live coverage
 Sky Sports F1 (available in HD)
Highlights BBC One (available in HD)



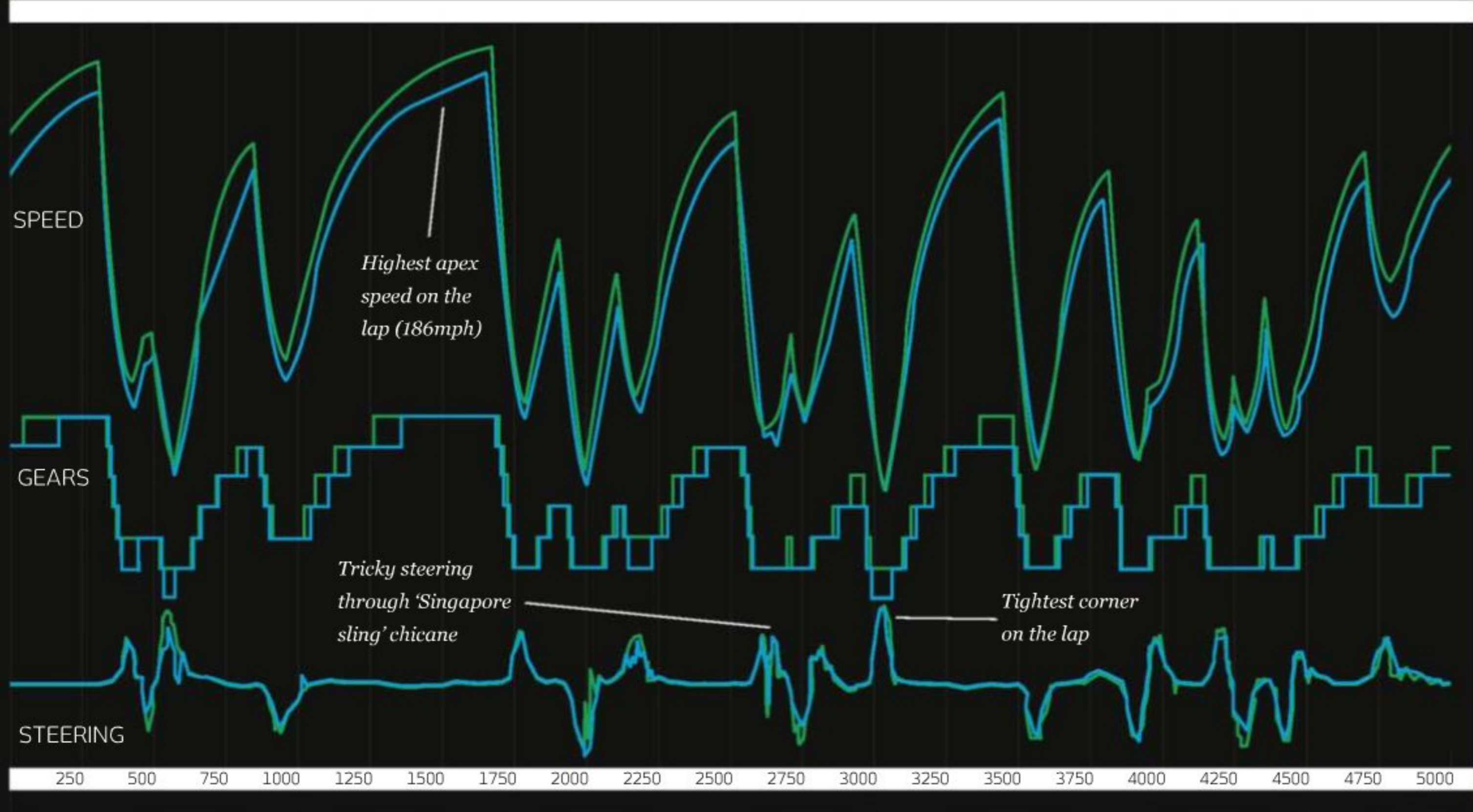
DO YOU REMEMBER...

...when Nelson Piquet Jr lost control here at Turn 17 and crashed on the 14th lap in 2008? The Safety Car was deployed, handing victory to his Renault team-mate Fernando Alonso. It later emerged that Piquet had crashed deliberately, setting off the 'Crashgate' controversy.



SINGAPORE TELEMETRY

QUALIFYING ■ RACE ■



Turns 5 to 7

This is the longest part of the lap spent on full throttle – for 650 metres in total

Turn 13

Slowest apex speed of the lap, taken at 40mph

Turns 22 to 23

The highest G-force on the lap – 2.5G for three seconds

ILLUSTRATION: ALAN ELDRIDGE. PHOTOS: STEVE ETHERINGTON/LAT; ANDREW FERRARO/LAT; CHARLES COATES/LAT

The Korean GP preview



4-6 October 2013 / Yeongam, Korea

Three very different sectors combine to make a circuit that's difficult to get to grips with – especially given how hard it is to get heat into the Pirelli rubber



THE ENGINEER'S VIEW

Xevi Pujolar,
Williams' chief race engineer

The circuit in Korea is formed of three sectors that are all quite different in terms of their character. They combine to make the layout a real challenge for drivers and engineers alike.

The first sector is primarily made up of long straights where engine performance and gearing are critical. Sector 2 is a flowing sequence of medium- and high-speed corners

where the driver needs to have good balance to build up a rhythm through the sequences of turns. The final sector has all the hallmarks of a street circuit, with predominately 90° corners that have no run-off areas at all. Sector 3 is actually the most challenging for the driver because the medium-speed corners are grouped closely together and you need to use as much of the track as possible without hitting the wall. So in all, it's an unusual circuit.

The downforce levels are not at their maximum here and because the track surface is not particularly abrasive, tyre energy is low and tyre wear is therefore lower here than at other circuits. The main drawback of this is that it's quite difficult to get temperature into the rubber

for a qualifying lap. The corners have quite a long radius, which asks a lot of the front tyres.

Yeongam is a front-limited circuit but because of the two different aspects of the lap, with sector 1's long straights and sector 2's combination of fast-flowing corners, you can take different approaches in terms of downforce levels. If you want greater top speed then you can run with less wing, but you will be compromised in cornering speed over the rest of the lap.

Track temperatures often tend to be quite cool here, and if we were still using the 2013-construction Pirelli tyre then I would be a bit worried about graining. But now we are using the 2012 tyre again, I think we'll be okay. I don't foresee that we'll have any problems.

YEONGAM STATS AND FACTS

CARS EXCEED
174mph
FOUR TIMES
EVERY LAP



12 of the circuit's 18 corners are taken at 124mph or slower



The last 2 races here have featured 56 overtaking moves

6

corners are taken at speeds lower than 62mph

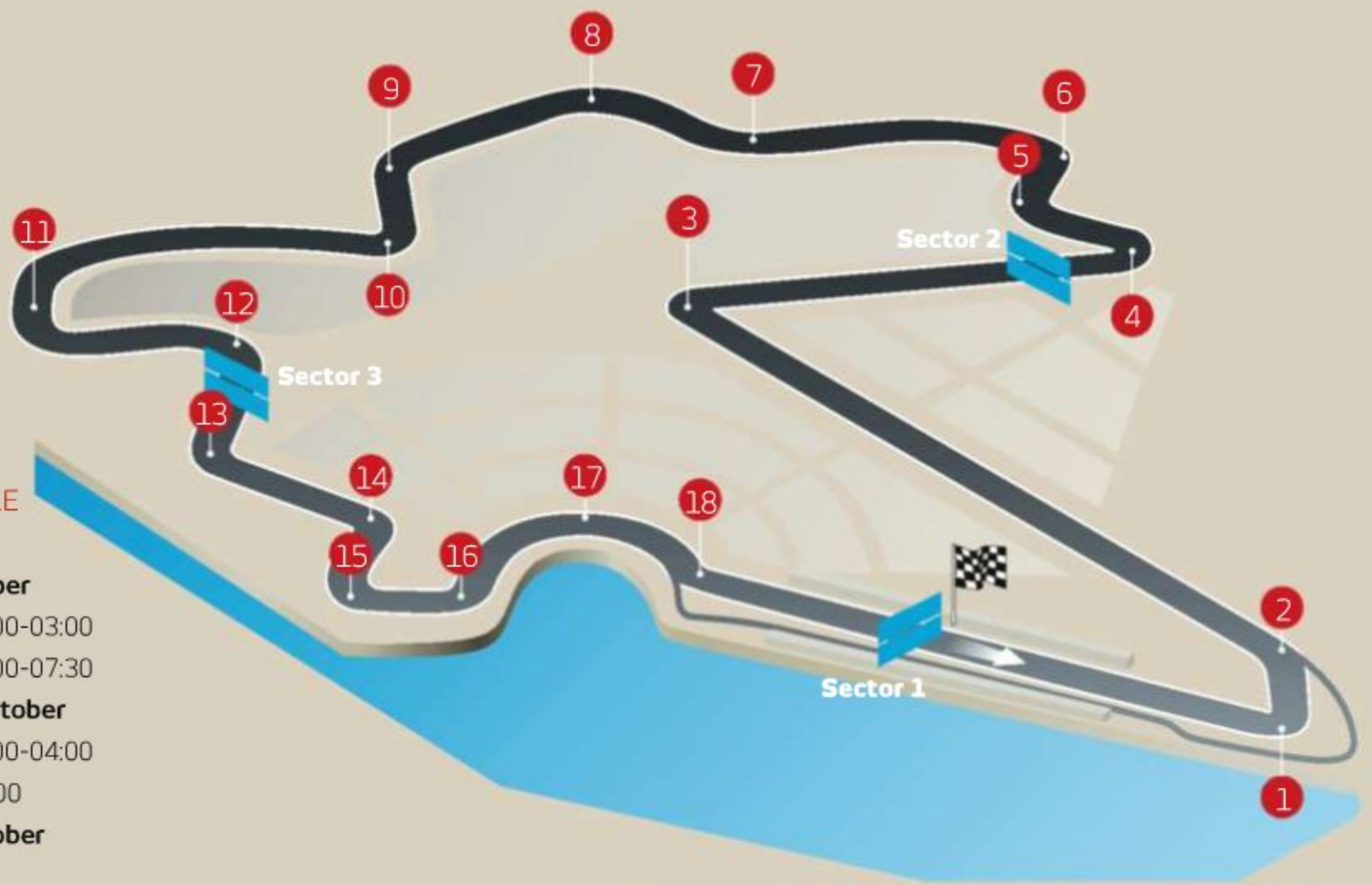


KOREAN GP RACE DATA

Circuit Korea International Circuit
F1 debut 2010
Length 3.489 miles
Distance 191.774 miles
Laps 55
Direction Anticlockwise
Lap record 1min 39.605secs,
 S Vettel, 2011
Full throttle 62%
Gear changes per lap 51
Winners from pole 1
Tyre compounds TBA

TV TIMETABLE (UK TIME)

Friday 4 October
Practice 1 02:00-03:00
Practice 2 06:00-07:30
Saturday 5 October
Practice 3 03:00-04:00
Qualifying 06:00
Sunday 6 October
Race 07:00
Live coverage Sky Sports F1 (available in HD)
Highlights BBC One (available in HD)



LAST YEAR

Winner Sebastian Vettel
Retirements 4
Overtaking moves 27
DRS overtakes 17
Weather Overcast, 21°C

DO YOU REMEMBER...

...Mark Webber crashing out of championship contention? At the inaugural Korean GP in 2010, Webber spun out of second place and lost his championship lead, dropping from points leader to third. His team-mate Sebastian Vettel went onto win the title.



YEONGAM TELEMETRY

QUALIFYING ■ RACE ■

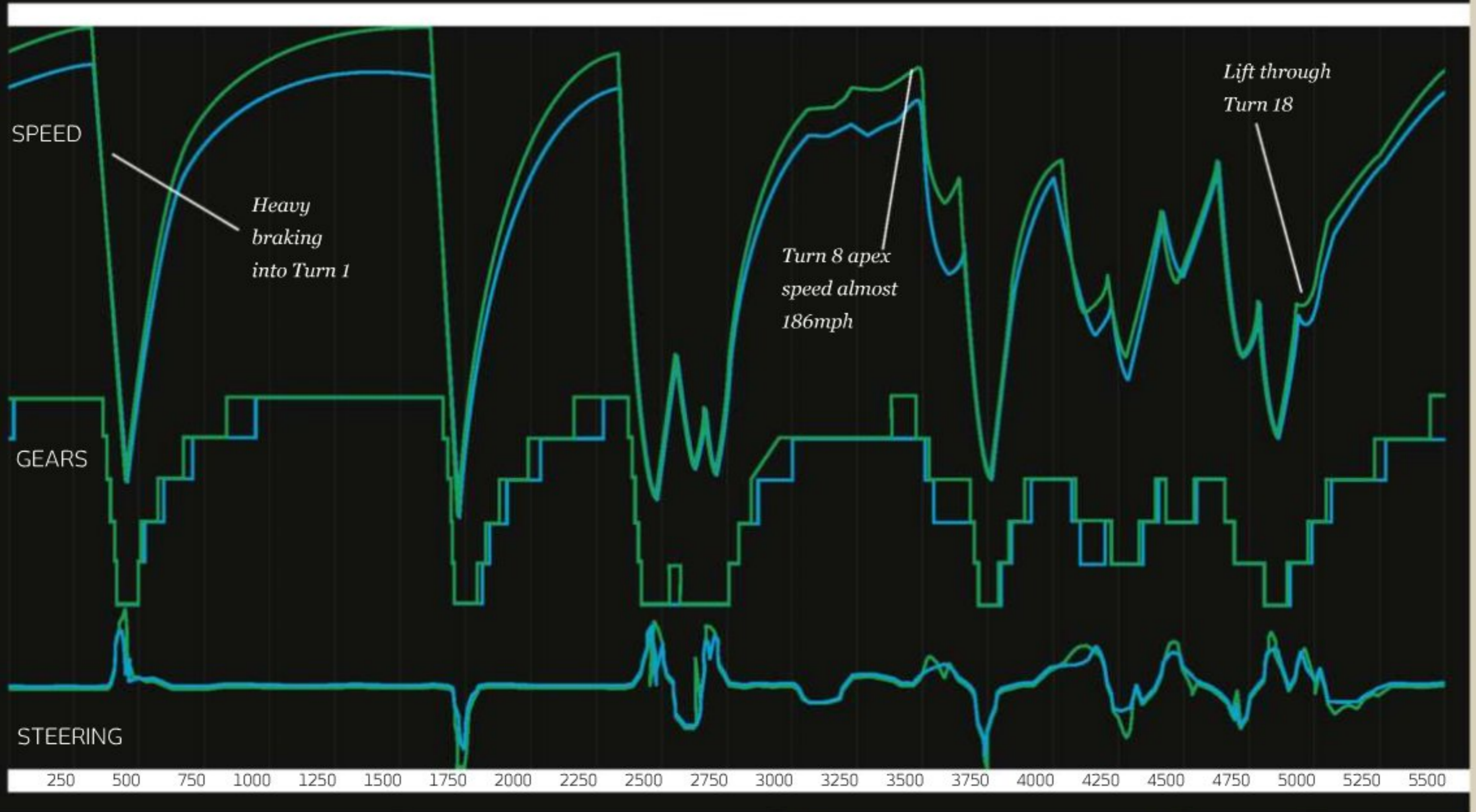


ILLUSTRATION: ALAN ELDRIDGE. PHOTOS: STEVE ETHERINGTON/LAT; ANDREW FERRARO/LAT; ANDY HONE/LAT

Turn 3

Speeds approach nearly 190mph just ahead of the braking zone for Turn 3. Maximum velocity is constrained by drag and gearing

Turns 7 to 13

Long sweeping corners on the lap require high downforce and good balance from the car

Turns 14 to 18

Turn 17 requires a good exit for maximum speed onto the start/finish straight

The Japanese GP preview



11-13 October 2013 / Suzuka, Japan

Running in two directions, this sweeping classic is a favourite with fans, drivers and engineers – but don't make the mistake of thinking it's easy



THE ENGINEER'S VIEW

Xevi Pujolar,
Williams' chief race engineer

Suzuka is a circuit that both drivers and engineers enjoy a lot. It's definitely one of the best on the calendar. There are a significant number of elevations and it's a particularly narrow track. In terms of high-speed corners, it's a real challenge for the drivers, and you really get to see the different approaches teams take in terms of downforce levels here.

In the first sector of the lap it's important to have a lot of wing because of the number of high-speed turns. But by the final sector, top-end speed will have become more important so that's why teams take such radically different approaches to setup here.

As circuits go, Suzuka is very hard on the tyres due to its very high average cornering speed. There is, however, very little brake usage, so in many ways it's similar to Silverstone because it has the same low brake energy and high-speed corners. On balance though, I think Suzuka is the more challenging of the two; it's narrower and has more elevation. In fact I think Suzuka is probably one of the most difficult circuits on the whole calendar.

What I like best about it is that if a driver makes a mistake, he's off the track and into the gravel; the lack of run-off areas make it a great test of a driver's ability. The track surface is also quite bumpy and the roughness of the track is high, so it can be quite aggressive on the tyres.

I think the first sector, taking in Turns 1 and 2 up to Turn 7 is one of the most challenging sequences of corners anywhere in the world. When we walk the track on the Thursday before the race I'm always surprised to see that it really isn't very wide. Between FP1 and qualifying you can see how much more speed a driver takes through this section, and that's down to a combination of their confidence growing and the evolution of the track as it builds up grip.

SUZUKA STATS AND FACTS

545 metres

– THE RUN FROM POLE TO THE FIRST CORNER

The Safety Car has been deployed every year since the Japanese GP returned to Suzuka in 2009



10 of Suzuka's 18 corners are taken between 105mph and 168mph



60% of the lap is spent cornering; the remaining 40 per cent is straights



JAPANESE GP RACE DATA

Circuit Suzuka
F1 debut 1987
Length 3.608 miles
Distance 191.054 miles
Laps 53
Direction Clockwise & anticlockwise
Lap record 1min 31.540secs, K Räikkönen, 2005
Full throttle 71%
Gear changes per lap 45
Winners from pole 12
Tyre compounds TBA

LAST YEAR

Winner Sebastian Vettel
Retirements 5
Overtaking moves 15
DRS overtakes 5
Weather Sunny, 24°C

TV TIMETABLE (UK TIME)

Friday 11 October
Practice 1 02:00-03:30
Practice 2 06:00-07:30
Saturday 12 October
Practice 3 03:00-04:00
Qualifying 06:00
Sunday 13 October
Race 07:00
Live coverage
 On both Sky Sports F1 and BBC One (available in HD)

DO YOU REMEMBER...

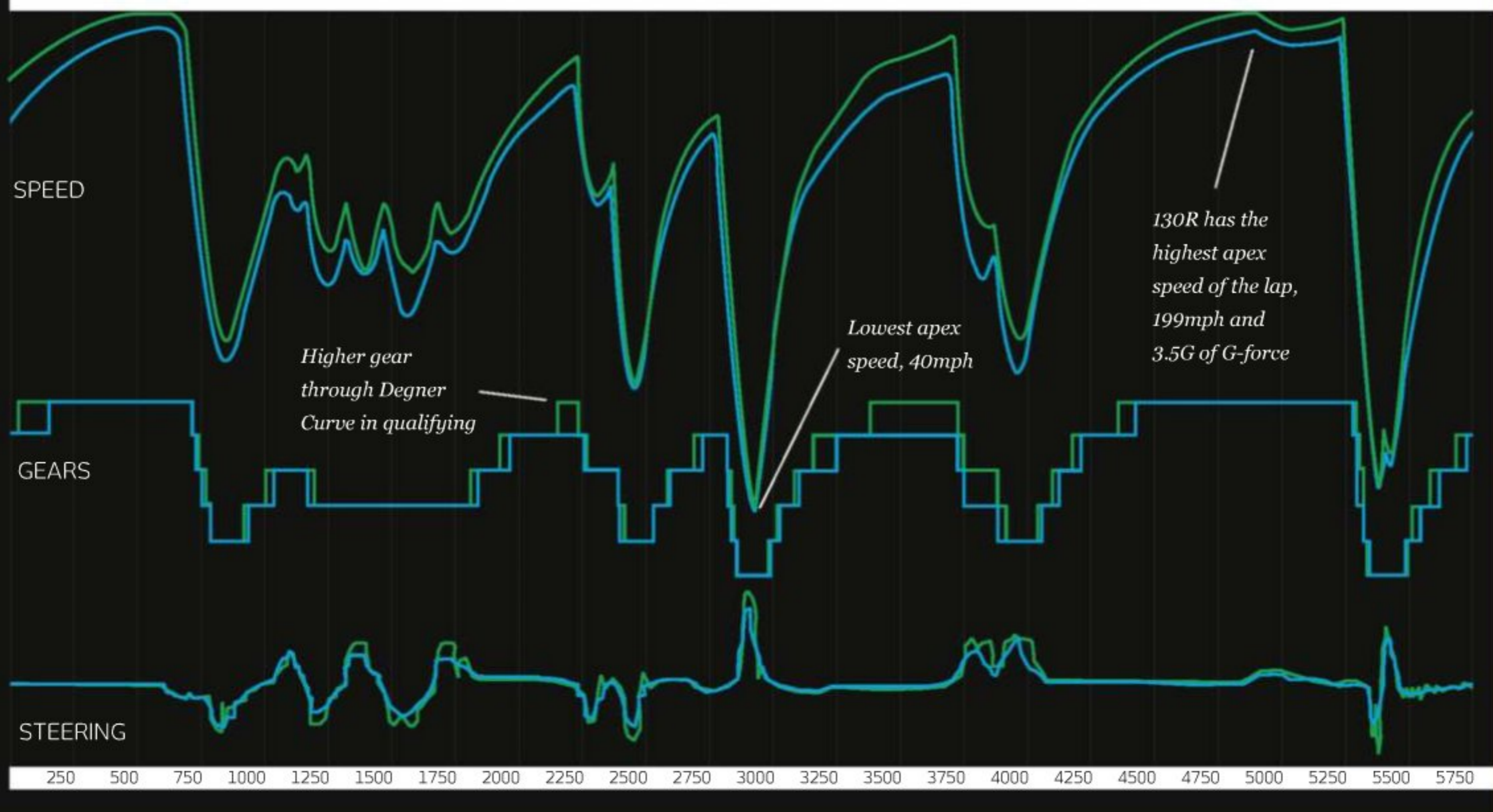
...when Typhoon Ma-on cancelled qualifying? During Friday practice at the 2004 Japanese GP there was a warning that a super typhoon was



heading straight for Suzuka. Everyone stayed away from the circuit on Saturday and qualifying was held on the Sunday morning instead.

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QUALIFYING ■ RACE ■



Turns 2 to 7
 High-speed switchback that builds up grip over the course of the weekend

Turn 11
 Ten per cent of the lap is spent braking, including for the slowest corner

Turns 14 to 16
 The longest time spent on full throttle on the lap – over a distance of 1,200 metres

ILLUSTRATION: ALAN ELDREDGE. PHOTOS: STEVE ETHERINGTON/LAT; CHARLES COATES/LAT; ANDY HONE/LAT; GLENN DUNBAR/LAT

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TOM CLARKSON

Inside the paddock from our man on the road

F1's greatest rivalry

All the excitement surrounding *Rush* reminds me of an interview I did with the film's director, Ron Howard, at the German Grand Prix. All weekend we tried to find time to talk, but the only mutually agreeable slot turned out to be during the GP2 race on Sunday morning.

The noise of the Mecachrome V8s made it impossible to have a conversation while the cars were on the pit straight, so I asked Ron one question per lap. When the cars were at the farthest point of the circuit he would answer as quickly as he could, before his Los Angeles twang was drowned out by engines once again. It made for a rather disjointed interview. "It'll come together fine," he said. "I've directed sex scenes like this. If I want to move a camera, or alter the lighting, I ask the actors to hold their positions while I make the changes. Once I'm satisfied that everything's in order, off we go again."

There's plenty of sex in *Rush*, but there's far more depth and intrigue to the movie than merely recounting James Hunt's carnal exploits. There are the on-track heroics of James and Niki, of course, and it brilliantly captures the spirit of the 1970s when there was still a general naivety towards commercialism. For all the Marlboro girls draped over Hunt, McLaren were still a bit rough and ready: they didn't have a marketing department employing 80 people, as they do today, and you can almost smell the spilled Texaco oil on the pit garage floor.

The sport has changed beyond recognition since '76, as have Ferrari and McLaren, but the rivalry between the two teams remains as intense today as it was then. As recently as 2008, the outcome of the world championship came down to a straight fight between a driver from each of these teams at the final race, as was the case at Fuji 37 years ago.

Ferrari continue to carry the most political clout in Formula 1, but McLaren are the benchmark in terms of presentation – the result of 33 years under the stewardship of Ron Dennis. The McLaren Technology Centre is a manifestation of Ron's fastidiousness and, despite being ten years old, its Norman Foster design still looks cutting edge.

I've visited the MTC on numerous occasions as a journalist, but I'd never been given The Tour until the other day, when I joined SAP's Extreme Sailing team at a sponsor event. This side of McLaren is hugely slick and a far cry from the logo-on-car-should-do-it sponsorship ethos of the '70s. For one day, you're completely absorbed into the team: you're shown the windtunnel, the simulator, mission control and the race bays, and you meet a host of VIPs. Keeping things in perspective, however, you're also told that

"Fans of all ages can relate to the story of Ferrari versus McLaren; it's one of the oldest rivalries in sport. Real box office"

a measurable performance upgrade is brought to the car every 20 minutes. That makes you realise how good the likes of Red Bull (and quite a few others, actually) must be to have given McLaren such a battering this year.

It was with McLaren in mind that I headed to the Belgian Grand Prix at Spa-Francorchamps – a track where the team have enjoyed great success over the years. Bruce scored the team's first F1 victory at the circuit in '68 and many of their greatest drivers have stood atop the Spa podium in the intervening years. It was a fitting venue to gather quotes regarding McLaren's 50th anniversary celebrations, and it was an easy job because there's a lot of love for McLaren in F1 – even from Ferrari.

"Ever since McLaren have raced in grands prix," said the Scuderia's boss Stefano Domenicali, "they have very often been our main rivals. How can one ever forget the rivalry between Niki Lauda and James Hunt?"

Others remarked on McLaren's friendliness, cleanliness and competitive spirit, but no one complimented Ron Dennis for keeping the name 'McLaren' when he took them over in 1980. He could have renamed the team 'Project 4', the title of his F2 team, and F1 would have lost one of its greatest names. For a man with a not-insignificant ego, that was big of Ron.

And it was that decision that gave the modern Formula 1 audience an even greater connection with *Rush* because fans of all ages can relate to the story of Ferrari versus McLaren; it's one of the oldest rivalries in sport.

Real box office.



PHOTO: ANDREW FERRARO/LAT

MURRAY WALKER



UNLESS I'M VERY MUCH MISTAKEN...

"Do I still remember Gerhard Berger? How could I possibly ever forget!"

I've had a bit of a health problem recently and among the many touching and heart-warming letters of support I've received was an absolutely charming note from one of my all-time favourite drivers, Gerhard Berger. "Dear Murray," it begins. "I hope you remember me." Such modesty! How could I forget him, for Gerhard was something that F1 (Kimi excepted) seems to lack these days: a character with a capital C.

The charming and likeable Austrian is far more than an outstanding F1 driver. He's gigantic fun, too – although not everyone appreciated being the butt of his practical jokes. "Ah yes, that will be the fish," said Gerhard in response to my friend Eric Silbermann noting the stench in the car as they drove to their São Paulo hotel in searing heat. On arrival, Gerhard removed a large box of rotting fish carcasses

from the boot, blagged his way into team-mate Ayrton Senna's room and scattered the stinking remains under the bed, in the wardrobe... everywhere. Ayrton was not impressed.

After the F3 Macau Grand Prix in 1983 I was invited by wild Irishman Gary Gibson to join a select party, cruising Hong Kong harbour in the built-regardless-of-cost Mandarin Hotel Junk. I eagerly accepted. Halfway through, Gerhard and the even wilder Tommy Byrne bore down on me to throw me overboard. "No!" shouted Gary "He's old!" I was saved by my age – but the Chinese captain wasn't. Over he went and, in doing so, he lost face, furiously climbed back, opened the throttles of the diesel engines and beached the Mandarin Hotel's pride and joy.

Then, when Gerhard was with Benetton, there was the 'lung test' – a blow-in-a-tube device

that, if you put your tongue in the right place, rotated a little propellor. If you didn't, it blew foul, black, carbon-fibre dust backwards into your face. Much to Flavio Briatore's surprise.

But there's more to Gerhard than practical jokes – although they were never far from the scene. He has a razor-sharp business brain, always doing his own deals as a driver, including allegedly negotiating a £9million retainer with Ferrari as long ago as 1987. Much like fellow japester and businessman, the charismatic motorcycle racing legend Barry Sheene – who was unsurprisingly a great mate of Gerhard's. You don't get many like them in F1 nowadays.

Gerhard is also a talented manager. He became BMW's head of motorsport during their early 2000s partnership with Williams; he ran a successful trucking company; and he was a fifty per cent owner of Toro Rosso. Now, as the FIA's single seater commission president, he's putting something back by trying to mastermind a sensible progression in place of the current jumble of single-seater categories on the way to F1. A man of many parts beyond his brilliant 13-year career as an F1 driver.

I could go on, but space is short. So here are five snapshots from my Berger memory bank. Monza 1988 when, in a season in which McLaren won every race but this, Gerhard and Michele Alboreto finished first and second for Ferrari just weeks after the death of the great Enzo. Mexico '86 where Gerhard won his and Benetton's first grand prix, and Germany '97 where he took his tenth – and his and Benetton's last – victory as he grieved the very recent death of his father and recovered from a three-race lay-off due to sinus problems. Then that crash at Imola in 1989 where he was unconscious in the blazing inferno of his Ferrari for 23 seconds at the notorious Tamburello bend where, five years later, his friend Ayrton Senna would perish. And finally, his superb victory for McLaren, beating Michael Schumacher at Adelaide in 1992.

Unlike his countrymen Jochen Rindt and Niki Lauda, Berger, racing against Nelson Piquet, Alain Prost, Nigel Mansell, Ayrton Senna, Mika Häkkinen and Michael Schumacher, never won the title. Yet he left an indelible mark on F1. A great and very human man, whom I feel very privileged to know. 🏁



"One snapshot from my Berger memory bank is Mexico 1986, where Gerhard won his and Benetton's first grand prix"



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