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PORSCHE



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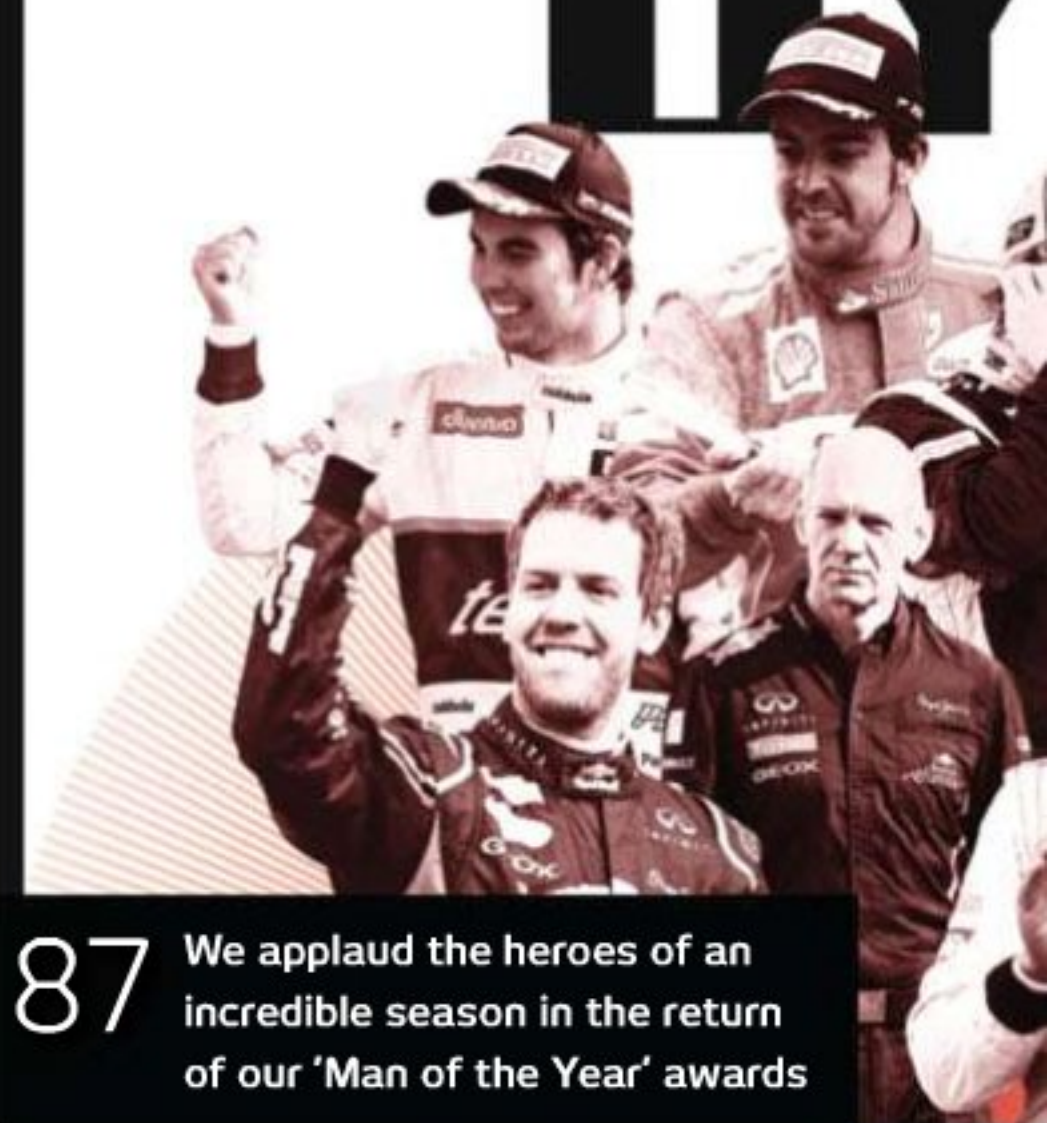
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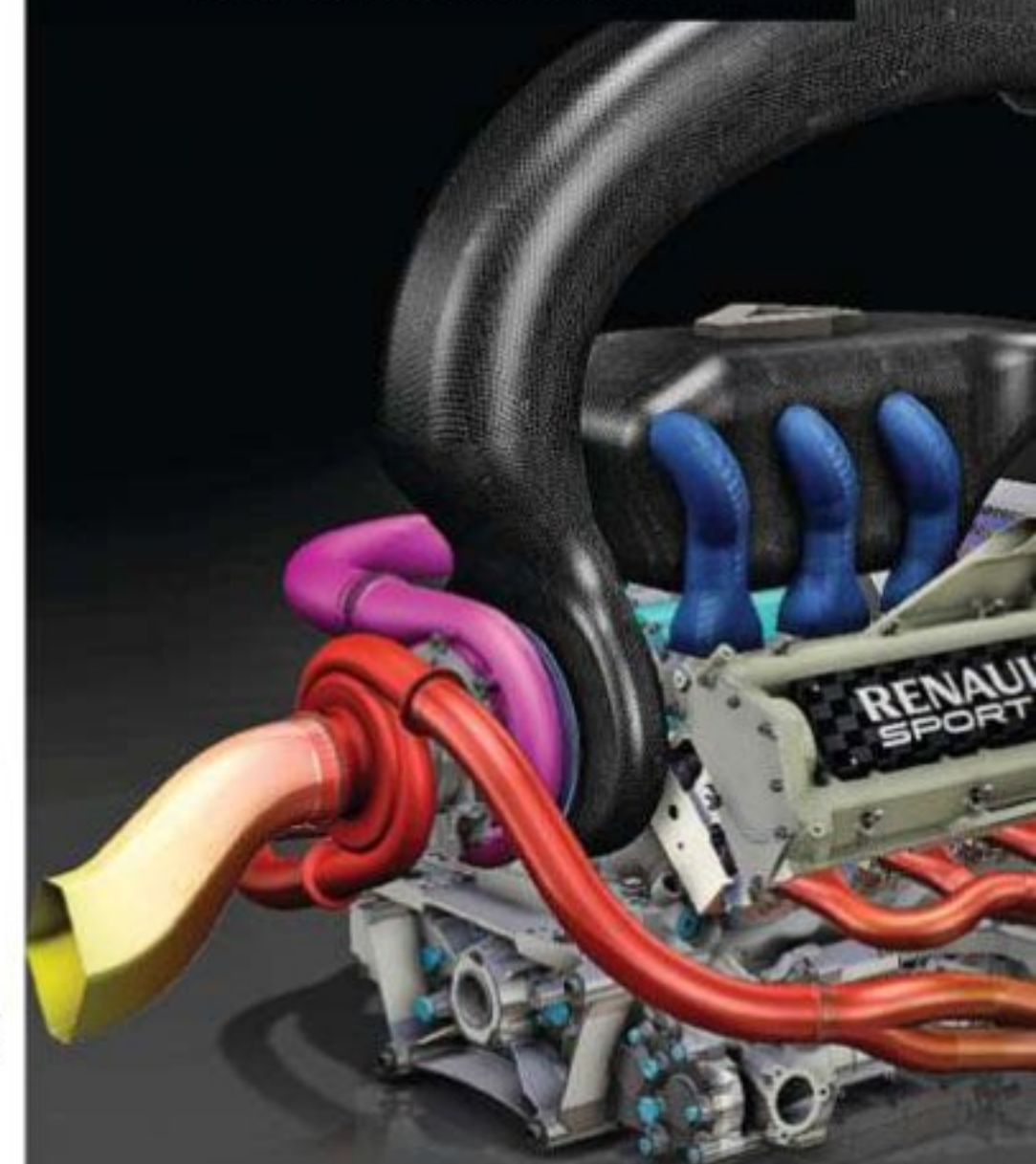


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50 Third in the drivers' championship after two years out of F1, Kimi's comeback has stunned the sport



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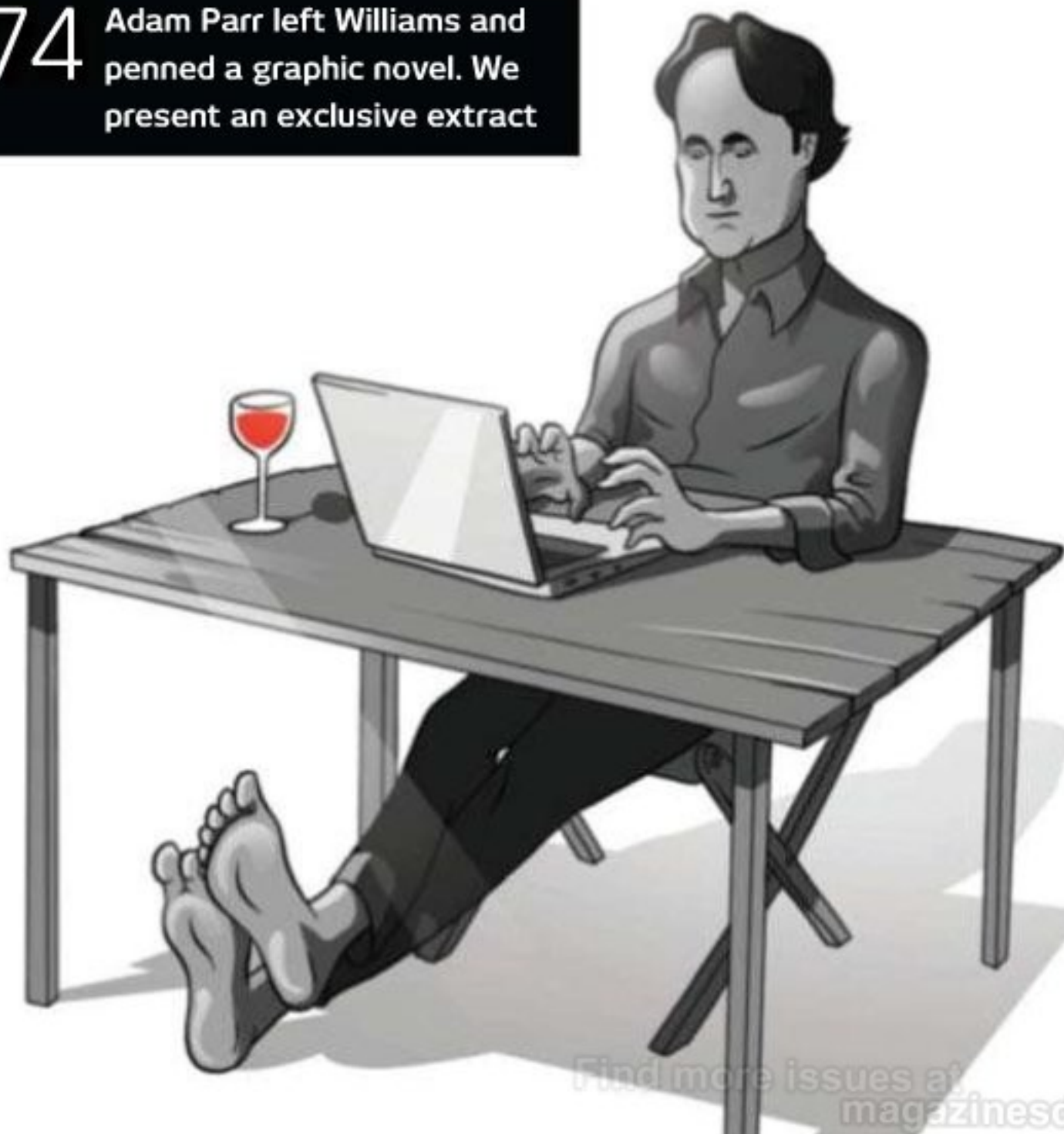


58 After eight years in the doldrums, Williams are ready to prove themselves as winners once again



78 Alonso lost out to Vettel in 2012 by just three points. Was that result always inevitable?

74 Adam Parr left Williams and penned a graphic novel. We present an exclusive extract



44 HRT's future might look shaky, but Pedro de la Rosa's not ready for retirement just yet...





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Ignition / Anthony Rowlinson / 01.2013

Short of a tenner, but Vettel gave us our money's worth

Of all the questions Sebastian Vettel could have asked when I bumped into him, looking lost, at the reception of London's Grosvenor House Hotel, "Can you lend me a tenner?" wasn't one I'd have predicted. Seb had just turned up at the annual Autosport Awards bash, where he would later be honoured as International Racing Driver of the Year, and hot foot from Brazil, Austria, Heathrow and *yet another* hotel, he may not have known quite where he was, let alone which currency he needed to pay his cabbie, who was waiting impatiently, meter running, outside.

Safe in the knowledge that a newly crowned hat-trick champ – now in the illustrious company of only Juan Manuel Fangio and Michael Schumacher – was almost certainly good for a few quid, I was untroubled at the prospect of handing over the folding. Reflecting later on this light-hearted moment, it occurred that it was the only time in his dazzling career that Seb Vet has left me, or anyone else for that matter, feeling remotely short-changed. For what a season he has just put together to close out a third title. What a dauntless drive at the death. What skill, speed and sheer entertainment value he has given us throughout 2012 (that Abu Dhabi podium charge, anyone?) A worthy world champion, no question. A history-maker, too, and one we're delighted to single out in this month's *F1 Racing* as our Driver of the Year (page 93).

But our Man of the Year? That's where Sebastian misses out. That prestigious honour goes to his season-long foe Fernando Alonso, and never in this magazine's history has any recipient deserved the accolade more.

If F1 world titles were awarded for sheer racing spirit, and an unbreakable will to win, then it would have been Alonso, not Seb, who captured the 2012 prize. As it was, he still comprehensively captured the imaginations of our MOTY voting panel, who plumped for him almost unanimously. One who won't argue with that verdict is our technical consultant Pat Symonds, who, of course, formed a formidable, title-winning alliance with Alonso at Renault in the mid-'00s. You can read his verdict on just what it is that makes Fernando so special on page 88. He lends insight, also, into the brilliance of Car of the Year, the Red Bull RB8, on page 90. Never let it be said we're not even-handed in praising those most notable in the quest for F1 excellence!

At a moment when we reflect on who won and who didn't quite cut it in 2012, spare a thought for those working furiously in brightly lit factories from Brixworth to Faenza, via Banbury, Brackley, Enstone, Grove, Hinwil, Leaffield, Maranello, Milan, Milton Keynes, Northampton, Silverstone, Viry and Woking to find an edge for 2013. Ladies and gentlemen, after such an unforgettable year, we salute you. Here's to another. *Anthony Rowlinson, editor*

Contributors



Adam Parr

Team boss turned graphic novelist.

Ever wondered what became of Adam Parr after he left Williams early in 2012? He tells *F1 Racing* exclusively what he's been up to



Alister Thorpe

The master of making go-fast stand still

You'll already have seen our stunning Williams cover shoot. Now turn to page 58 to feast your eyes on more F1 eye candy



Tom Clarkson

Our man on the ground – and up in the air

TC's never been afraid to step out for *F1R*, but never from a plane! Thankfully he landed safe and filed a cracking tale. See p100



The MOTY panel

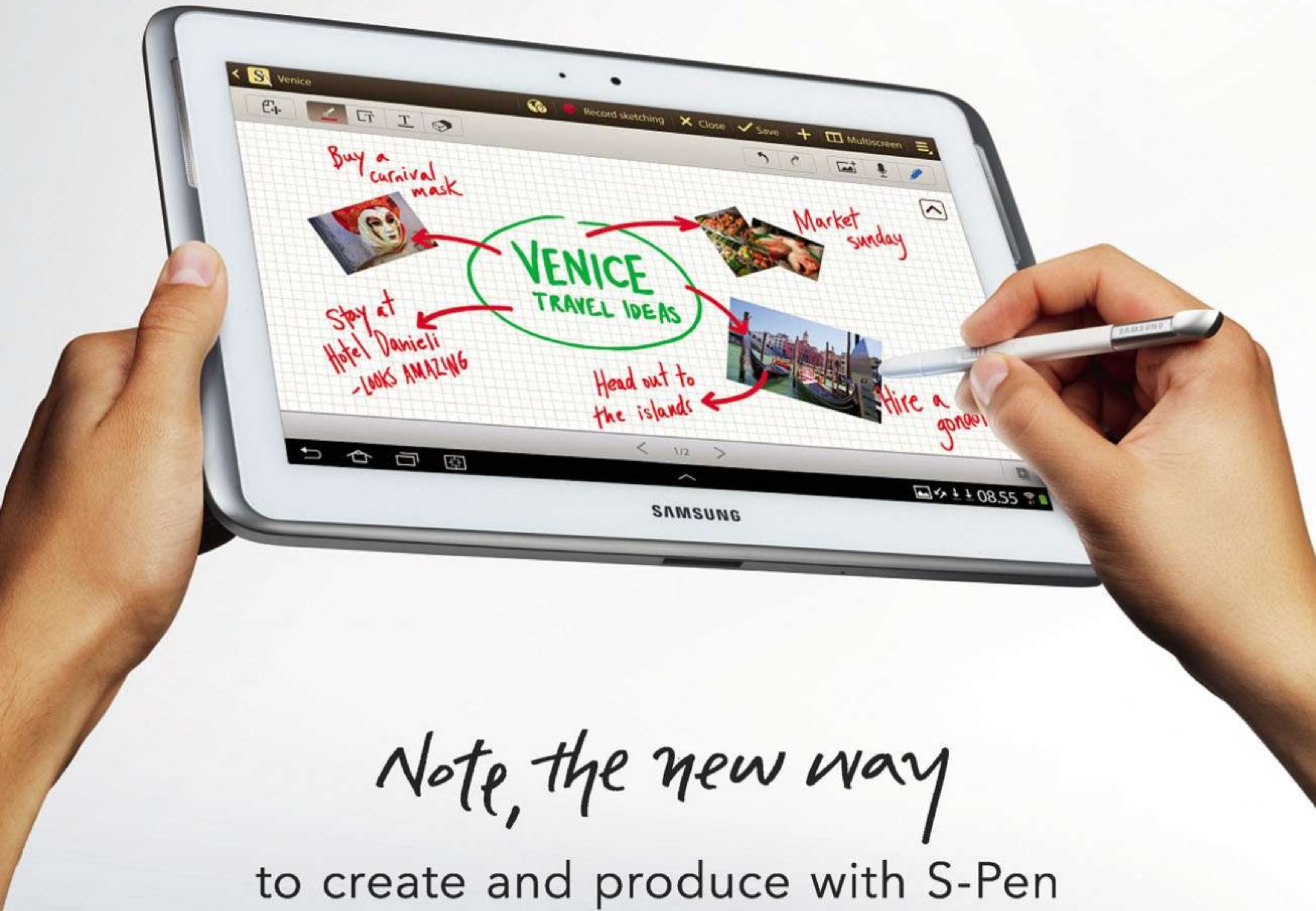
(Some of) the great and the good in Formula 1

We gathered a panel of rare lustre for the return of Man Of The Year. Turn to page 87 to see if you agree with their opinions



Thanks to Cory Ashton, Nicole Carling, Dan Clark, Mike Coughlan, Bob Davis, Russell Day, Sophie Eden, Alan Eldridge, Jennifer Garrad, Lucy Genon, Anna Goodrum, Chris Goodwin, Ross Gregory, Jed Leicester, Bradley Lord, Mervyn Masterman, Arturo Mora, Lady Susie Moss, Tim Newton, Isobel Postins, Maria Serrat, Andy Stobart, Ashley Streeton, Lynden Swainston, Colin Watts, Matthew Whyte, Claire Williams, Jonathan Williams, Mark Woolford

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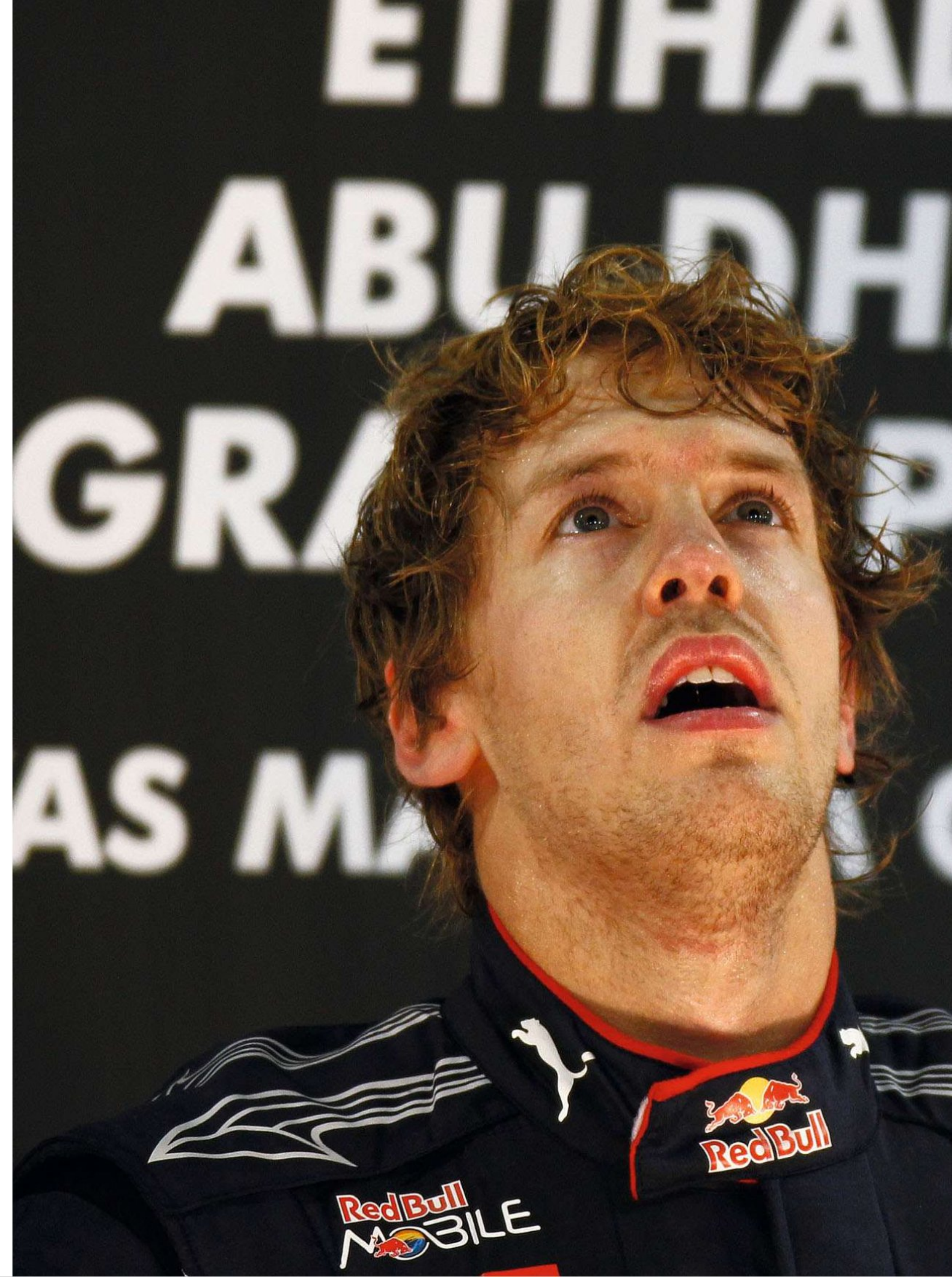
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CIRCUIT 2010



Parade

Living the dream On 14 November 2010, in the arc-lit swelter of a Middle East evening, Sebastian Vettel struggles to comprehend the scale of his achievement. Aged just 23 years and 133 days, he has become F1's youngest ever world champion, with a flawless win from pole. "Thank you boys" he'd blubbed into his helmet mic. And he'd only just begun...

Where Yas Marina, Abu Dhabi **When** 7.53pm, Sunday 14 November 2010

Photographer Glenn Dunbar/LAT

Details Canon EOS-1D MkIV, 600mm lens, 1/400th at F4





TOTAL

Red Bull

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outing



Parade

Light fantastic Despite starting from pole at Suzuka in the usually dominant RB7, Vettel could manage only a third-place finish. No matter: in a 2011 season of 11 wins and five P2s, the bottom step of the podium was enough for Seb to secure a second straight title with four races still to go. Vettel and the RB7 will be remembered as one of F1's great combos

Where Suzuka, Japan **When** 3.06pm, Sunday 9 October 2011

Photographer Clive Rose/Getty Images

Details Canon EOS-1D MkIV, 200mm lens, 1/250th at F11



Parade

Gives you wins It was harder this time. In an RB8 that was wilful before a late-season bringing-to-heel; up against an Alonso who may never drive a finer campaign; through a field that until mid-season had never been more closely matched... against all these odds, Sebastian Vettel triumphed for a third straight season. Who can stop him now?

Where Interlagos, Brazil **When** 3.52pm, Sunday 25 November 2012

Photographer Clive Mason/Getty Images

Details Canon EOS-1DX, 300mm lens, 1/800th at F2.8





ANALYSIS

The 2013 DRS change that boosts Ferrari

It's been yet another close-but-no-cigar season for Ferrari. But a tweak to the 2013 DRS rules could play right into the Scuderia's hands...





TURKISH DELIGHT

The cancellation of the Grand Prix of the Americas has left a slot free in 2013, which is now set to be filled by Istanbul Park. Last held in 2011, the Turkish GP was dropped when the circuit refused to pay Bernie Ecclestone's fee. A compromise must have been reached...



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Sebastian Vettel's sixth-place finish in the Brazilian Grand Prix meant that for the second time in three years, Ferrari driver Fernando Alonso has lost the championship at the final race of the season.

The circumstances in 2010 and 2012 were very different: in 2010 Alonso was leading going into the race only to be undone by a catastrophic strategic error; in 2012 the odds were always against him as he struggled to make up a points deficit on a driver in a faster car. However, the fundamentals of the two seasons were remarkably similar.

In both instances, Alonso was battling a faster car and was only ranked so high in the standings



"We pay a big price in qualifying that hurts performance in the race"

Stefano Domenicali

due to his greater consistency over a season. Both times, he nearly pulled it off and his achievement in 2012 was all the more remarkable since Ferrari never had the fastest car in dry conditions. On average over the season, the F2012 was around the fourth-fastest in qualifying and the third-fastest in a race, and it was only Alonso's formidable skills that put him in title contention at all.

Ferrari know a better car is essential if Alonso is to win the title he and the team both crave but, on the face of it, the signs are not encouraging.

The Scuderia had problems with windtunnel development in 2012 and while Red Bull transformed their RB8 for the final races of the season with a huge aerodynamic upgrade at the rear, Ferrari made relatively little progress as the team fiddled about with front-wing endplates and rear wing designs.

"We didn't have the fastest car at the start of the season and maybe in the second half of the season we were not able to improve the car," team boss Stefano Domenicali admitted. "This is something we need to work hard on in order to improve. We have ideas because we know the lack of performance and we know unfortunately

we are paying a big price in qualifying that hurts our performance in the race."

So, stable regulations with only minor tweaks, in addition to Ferrari's problems with aerodynamic development, would not seem to be the right recipe for scarlet success in 2013.

However, a tweak to the rules governing DRS overtaking could help Ferrari enormously. Throughout 2012 the team remained vexed as to why their car was so much more competitive in races than it was in qualifying. The answer lies in the rear aerodynamics.

Ferrari have a highly effective DRS in terms of the amount of drag it reduces when it is deployed. But it created a fundamental problem. The DRS interacts with the whole of the rear aerodynamics, including the diffuser, and on the Ferrari the diffuser airflow did not re-attach quickly enough when the DRS was shut. This meant the car was unstable at the rear on corner entry – which limits the extent to which drivers can attack on a qualifying lap. As DRS use was free in qualifying, this was a problem at every corner and therefore a major issue. In the race, DRS could only be used in specified zones, and only when close behind another car. So the problem was vastly reduced.

For 2013, DRS rules are being tweaked and instead of free use in practice and qualifying, drivers will be able to use it only in the specific DRS zones on the track. So one fundamental problem of the F2012 – arguably its biggest – will immediately disappear. The disparity between its qualifying and race performance should be drastically reduced and the car should therefore be easier to qualify close to the front of the grid. And from there, Alonso should be able to do serious damage, as he proved in 2012.

As Domenicali explained: "We try to correct the points that were not the best in terms of the pure performance of the car. We need to improve qualifying pace. The situation with DRS should theoretically help. That's why I'm confident we should be in a different position in terms of performance at the start of next year."

Add that to traditional Ferrari reliability and Alonso's supreme consistency, and it should mean a better year ahead for the Scuderia. But whether that's enough to beat a Newey-designed Red Bull in the hands of Sebastian Vettel is, of course, another matter...

PHOTOS: DANIEL KALISZ/LAT; CHARLES COATES/LAT; ANDREW FERRARO/LAT

NEW TALENT



Bottas must score

He hasn't even started a grand prix yet, but the pressure is already piling up on Williams' hot new talent, Valtteri Bottas

Valtteri Bottas will begin his debut Formula 1 season with Williams in 2013, replacing Bruno Senna, and there are high expectations of him from the outset.

Formula 1 insiders are already describing 23-year-old Bottas as the natural successor to Finland's previous three world champions, Keke Rosberg, Mika Häkkinen and Kimi Räikkönen. That's quite a big billing to live up to, but Bottas seems to be a level-headed sort of driver, and Williams believe they've found a diamond.

Williams chief operations engineer Mark Gillan is effusive, and described Bottas as "an exceptional talent". Continuing on the subject of Valtteri's outings for the team during first practice sessions in 2012, Gillan said:

"He hasn't put a foot wrong, which is very impressive indeed. He's very quick, he's very professional, he's very diligent and he's got a good brain on him. His feedback is such that he doesn't say too much, but what he does say is succinct and is directed specifically at areas where, when you look at it, you say, 'yeah, that's right.'"

"The thing I like about Valtteri is that you put him in the car and he delivers without any fuss. He debriefs, and that's it. He's still learning. We shouldn't forget that he's progressing and we see him improving. If he makes a mistake, he puts his hand up and we don't see it happen again."

To sign Bottas meant that Williams had to forgo the reputed \$16million that Bruno

Senna was bringing in Brazilian sponsorship. While Bottas does have Finnish backing, the total contribution is thought to be nowhere near that sort of figure.

Toto Wolff, shareholder and executive director of Williams, has made it clear he expects Bottas to deliver next season – and to push team-mate Maldonado from the outset.

"We believe he's going to do well. He is going to learn a lot from Pastor at the beginning and, for us, it is important to score regular points, and this is what we are expecting from him," Wolff said.

"In Formula 1 you have to cope with pressure. I think Valtteri is capable of that. It's not the case that it is a rookie season and everything is allowed. He knows that, but he is a relaxed driver and always has been.

"The aim is to be annoying the midfield and maybe even to be annoying some of the big boys as well. This is what we had planned for 2012 but, in the end, it did not pan out to materialise that way. We are pretty clear about that. It must materialise next year."

RESHUFFLINGS

One seat up for grabs at Force India

As Nico Hülkenberg departs for Sauber, Vijay's team debate a new team-mate for Di Resta

The most desirable seat still available on the F1 grid for 2013 is at Force India. Paul Di Resta will remain for a third season, but Nico Hülkenberg's departure for Sauber, where he will be joined by Mexican rookie Esteban Gutiérrez, frees up a seat in a car that was a regular top-ten qualifier at the end of 2012.

Force India's focus on success was demonstrated by November's announcement that their shareholders were investing a further £50million in the team.

And it seems that money is not a prerequisite. Both Hülkenberg and Di Resta were paid salaries and the team want someone who, like Nico, will push Di Resta.

THE CONTENDERS



JAIME ALGUERSUARI

Former Toro Rosso driver Jaime Alguersuari spent 2012 as Pirelli's test driver. He lacks financial backing, but is believed to have been in close contact with Force India all year.

CHANCE ●●●●●●●●●●●●●●●●



ADRIAN SUTIL

Despite Sutil's reputed €10million backing, he was dropped by Force India for Hülkenberg for 2012 - and not, the team said, due to his conviction on assault charges. Even so, a criminal record means he will find it hard to obtain visas to enter the host countries of several of next year's races.

CHANCE ●●●●●●●●●●●●●●●●



BRUNO SENNA

Brings backing from Brazil and is free after being dropped by Williams in favour of Valtteri Bottas, but his unconvincing qualifying form has not done him any favours.

CHANCE ●●●●●●●●●●●●●●●●



KAMUI KOBAYASHI

The fans' favourite has been dropped by Sauber and is trying to raise money in Japan. He's been asking for donations from his Twitter followers, who have chipped in more than £1million

CHANCE ●●●●●●●●●●●●●●●●



HEIKKI KOVALAINEN

Almost certainly not going to be retained by Caterham, who need money. But he's a winner from his days at McLaren, and his experience might appeal to Force India

CHANCE ●●●●●●●●●●●●●●●●

WINNERS + SPINNERS

UPS AND DOWNS ON THE F1 ROLLER COASTER

GOOD MONTH FOR

Milton Keynes postmen According to Christian Horner, every member of the Red Bull team, "from the postman to the technical director" was given a bonus for their first place finish in the constructors' championship. If the figure of £10,000 is to be believed, Horner was right when he joked: "It would have been cheaper to have finished second..."

Fizzy drinks firms Now that Red Bull have scooped everything going in F1, it appears they'll have competition next season as Coca-Cola enter the sport with Lotus. But like other Formula 1 brands Monster and TNT, it will be another energy drink, Coca-Cola's Burn, that will be advertised on the team's cars.

Mexican F1 fans There will be growing calls to hold a grand prix in Mexico (Cancun anyone?) now that a second young Mexican racer has joined the 2013 grid. Sauber have confirmed that Esteban Gutiérrez will take over Sergio Pérez's vacated seat.



BAD MONTH FOR

Marussia's bank balance When Vitaly Petrov took 11th place at the Brazilian GP, he eclipsed Timo Glock's 12th-place finish in Singapore, thereby securing Caterham's tenth place overall in the constructors' standings, demoting Marussia to 11th and depriving the team of an estimated £10million in prize money.

Red Bull's bank balance As well as paying a bonus to their employees, Red Bull also had to fork out \$3.26million for their Formula 1 2013 entrance fee - new rules state the fees are linked to points scored, so Red Bull must pay half a million plus \$6,000 for each one of their 460 points.

HRT employees No buyer could be found for HRT before the deadline for 2013 team entries. After three years and no points, they were set to fold as F1 Racing went to press



PHOTOS: MALCOLM GRIFFITHS/LAT; CHARLES COATES/LAT; GLENN DUNBAR/LAT; ANDY HONE/LAT; ANDREW FERRARO/LAT

F1 Mastermind

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1 Before Tiago Montiero, who was the last Portuguese driver to start a Formula 1 grand prix?

2 How many GP winners have won with Pirelli tyres?

3 At which race did Mark Blundell take the first of his three podiums?

4 How many years separated Mario Andretti's first and last poles?

5 What was Niki Lauda's first grand prix victory?

6 McLaren have won the Malaysian GP just once. Who won and when?

7 At Monza '08, Sebastian Vettel won his first GP in a Toro Rosso (below, right). Who came second?

8 In 1981, washing machine maker Candy switched from sponsoring Tyrrell to which other team?

9 Who broke the run of 18 consecutive race victories by British drivers Jim Clark, Graham Hill and John Surtees, by winning the 1964 French GP?

10 Who has more pole positions: Emerson Fittipaldi or Felipe Massa?



THIS BOY CAN DRIVE

Keeping an eye out for the superstars of tomorrow



Luiz Razia Who is he?

The latest in a long line of talented Brazilians, 23-year-old Razia was runner-up in GP2 this year, following a season-long battle with Davide Valsecchi.

How good is he?

A slow starter in GP2, he came good in his fourth full year in the series with four victories, driving for Arden International. In the process, he beat Sauber's Esteban Gutiérrez into third. He was also the Brazilian Karting Champion in 2004 and the 2006 South American F3 champion.

Anything else we need to know about him?

As per the current racing driver trend, he enjoys competing in triathlons. He's also a huge fan of Brazilian rock band Jota Quest.











F1 chances

High. He drove for Virgin at the 2010 end-of-year Young Driver Test; in two FP1s and at the Young Driver test for Caterham in 2011; and at the Young Driver test at Magny-Cours for Force India and the Abu Dhabi test for Toro Rosso in 2012. He is reported to be in discussion with a number of teams about a 2013 race seat.

STATS

Winning is the name of the game

Sebastian Vettel has claimed his third title in a row, but his victory percentages need some work compared to those above him:

1		Juan Manuel Fangio 24 wins 51 starts win percentage: 47.06%
2		Jim Clark 25 wins 75 starts win percentage: 33.33%
3		Michael Schumacher 91 wins 306 starts win percentage: 29.74%
4		Jackie Stewart 27 wins 99 starts win percentage: 27.27%
5		Sebastian Vettel 26 wins 101 starts win percentage: 25.74%
6		Alain Prost 51 wins 199 starts win percentage: 25.63%
7		Ayrton Senna 41 wins 161 starts win percentage: 25.47%
8		Nigel Mansell 31 wins 187 starts win percentage: 16.58%
9		Fernando Alonso 30 wins 196 starts win percentage: 15.31%
10		Niki Lauda 25 wins 171 starts win percentage: 14.62%

Answers: **1** Pedro Lamty **2** 83 **3** 1993 South African GP **4** 14 (from USA 1968 to Italy 1982) **5** 1974 Spanish GP **6** Kimi Räikkönen, 2003 **7** Heikki Kovalainen **8** Toleman **9** Dan Gurney **10** Felipe Massa (15-6)

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TECH

Pirelli up the ante for 2013

Softer tyres are planned to help increase pitstops

Pirelli motorsport boss Paul Hembery has pledged to “really create some challenges” for the Formula 1 teams in 2013. His aim is to satisfy the sport’s desire for multi-pitstop races, following a spate of one-stop races towards the end of 2012.

Hembery claimed that had it not been for Safety Cars in Abu Dhabi there would have been three races in a row, including Korea and India, that fans would have dismissed as: “extremely boring”.

“The cars are staying similar,” he said, “so anything we do has to be pretty different. But I doubt it will be as challenging as this year because the car basis is staying so similar.”

Pirelli’s plan is to make the tyres even softer, which they see as the only way to



Pirelli rubber will be even harder to manage in 2013

guarantee more pitstops given how adept the teams became at managing degradation in 2012. The 2012 tyres were already a step softer than those used in 2011.

Teams had their first taste of the 2013 tyre when they were allowed to try the new ‘hard’ compound in Friday practice at the Brazilian Grand Prix. They immediately proved to be about 0.25secs per lap faster than the 2012 hard tyre, but the teams believed they would have gone even quicker had they been given a second run.

The 2013 tyres will be developed so that they have softer sidewalls. This will prevent

teams running the low tyre pressures that predominated in 2012 (which Pirelli felt were too low) as well as providing a more consistent contact patch. The general plan is to improve the rear of the car in the combined phase, namely braking and turning simultaneously, which the Pirellis so far have not really tolerated.

Pirelli will also change the colour of the sidewall markings on the hard tyre from silver. “It doesn’t look very good,” Hembery admitted. “While you can tell what it is because you can’t see it, it looks like we forgot to put the branding on.”

THIRD WAY

If HRT leave F1, who will plug the gap?

Times are tough at the back of the grid, and if the entry falls below 20, third cars could be allowed

Concerns have been raised about the ability of the lower-ranking teams to survive in F1. This comes in the light of HRT’s recent financial struggles. Bottom of the standings in 2012, their future is uncertain after their owners put them up for sale and they failed to appear on the official F1 2013 entry list.

The global economic crisis has made it difficult for all teams to raise sponsorship, and several of them are known to be struggling to make ends meet. HRT’s difficulties have been exacerbated by Bernie Ecclestone’s decision not to negotiate commercial terms with them for 2013, which means they face losing a significant proportion of their income.

Unless HRT find a buyer – and there have been rumours of interest from both China and



the Middle East – it now looks as if Formula 1 will have only 11 teams and 22 cars on the grid for the 2013 season.

The 2013 Concorde Agreement, still under negotiation as *F1 Racing* went to press, will contain a clause, as per the previous 2009 Agreement, stating that if the grid drops below a certain number, teams can run third

cars. In the 2009 Concorde Agreement, that number was 16; in the new one it is believed to be 20. So it would take only two more teams to drop out to bring that into play.

On the face of it, that seems some distance away. But Marussia are inevitably struggling and Caterham’s presence still depends on owner Tony Fernandes remaining interested. He may have stepped down as team principal, but there’s no reason to believe right now that the AirAsia boss has any desire to end his participation in Formula 1. But the recession continues and for many of the teams at the bottom half of the grid – and even some of those higher up – nothing is guaranteed.

So a third Ferrari, for example, might not be as far away as it at first appears.



Austin proves to be an overwhelming success

According to you, the inaugural US GP at the Circuit of The Americas in Austin, Texas, couldn't have been any better

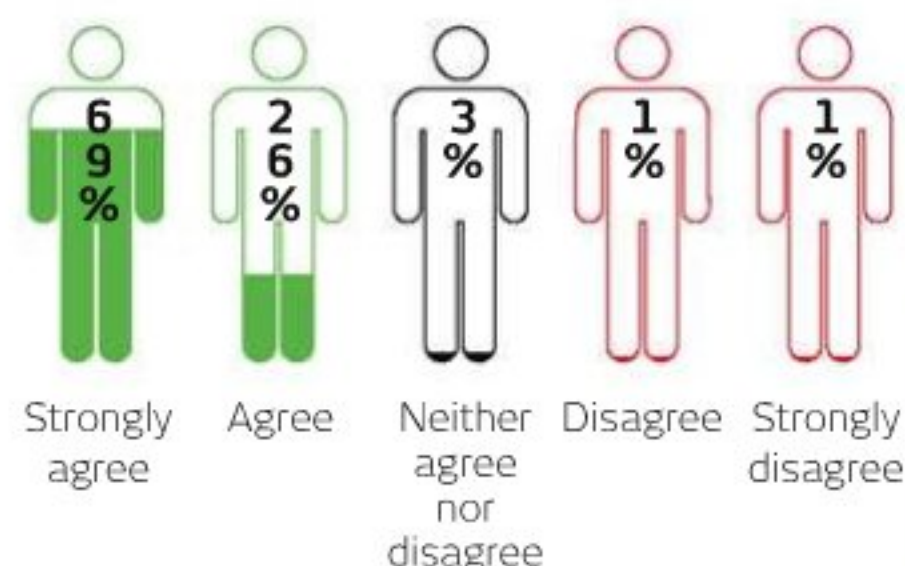
Perhaps it was that fantastic run up to the first corner, or maybe it was the feeling that this was the best F1 track Hermann Tilke has ever produced but, whatever the reason, the Circuit of The Americas in Austin has proved immensely popular with *F1 Racing* readers.

We asked whether the circuit constituted a good addition to the Formula 1 calendar. Some 6,385 of you responded and 95 per cent of you agreed that it does, which is a ringing endorsement of the track.

Not only that, you would also be more than happy to see the US GP making a permanent home at COTA, the first and only purpose-built Formula 1 facility ever to be constructed in the US. Maybe those cool Pirelli cowboy hats the drivers wore on the

podium helped tip the balance, but 80 per cent of you think that COTA is the perfect home for this race, with only 16 per cent of you having no strong views, and a mere four per cent of you against the idea altogether.

Is the Circuit of The Americas a good addition to the F1 calendar?



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No shock for Vettel in Brazil

He had been your title favourite ever since Suzuka, and you were proved right when Seb fought back at Interlagos to pip Alonso to the title

FINAL CHAMPIONSHIP POSITION



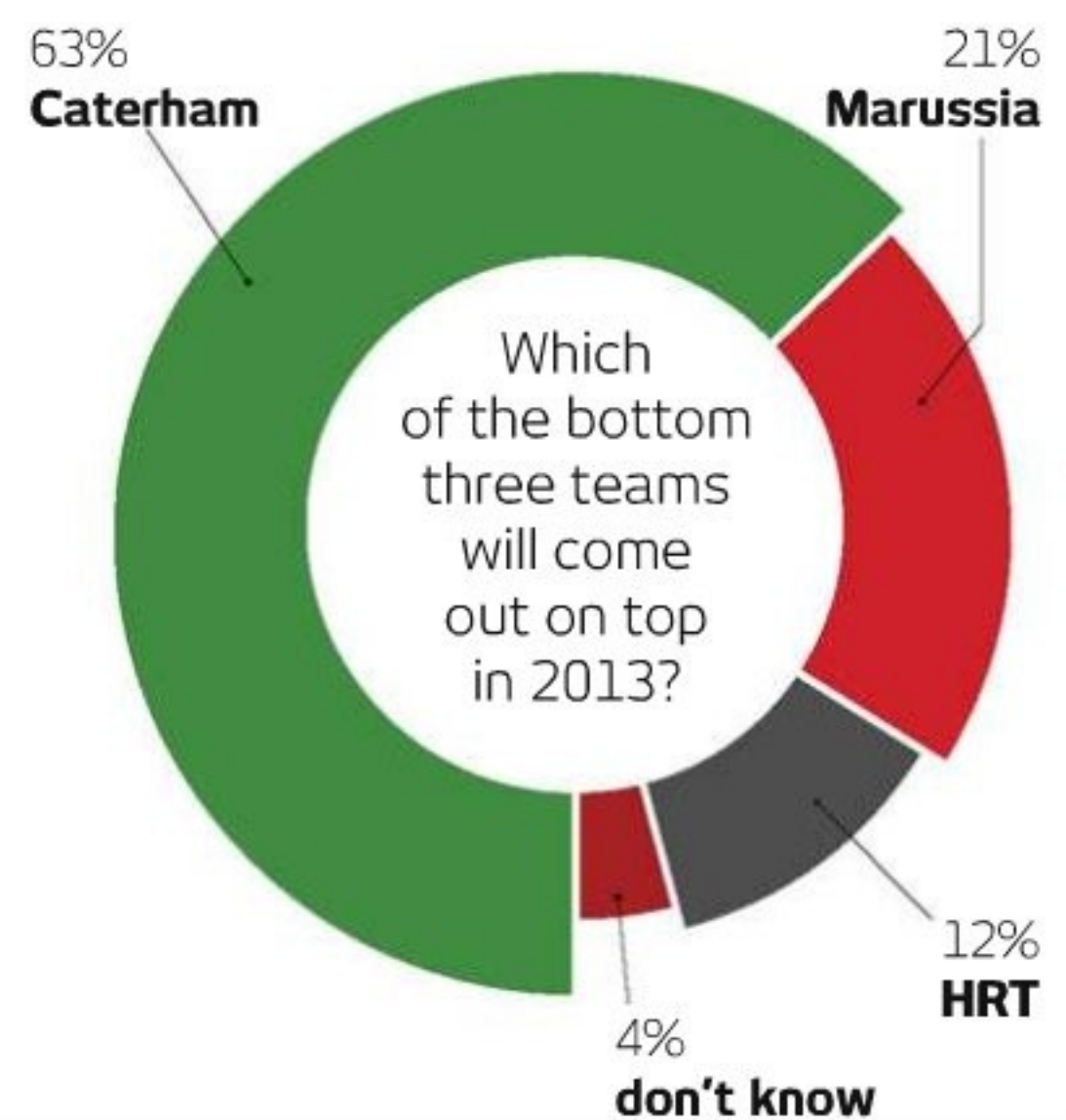
What hope for the 'new' teams?

With HRT now seemingly doomed, you rate the chances of the other two 'new' teams, Caterham and Marussia, of coming good in 2013

Three years in and the 'new' teams, who were first accepted into Formula 1 for the 2010 season, have yet to score a point between them. And they've finished tenth, 11th and 12th in the constructors' championship for the past three seasons.

There has been an improvement in terms of time and positions, with Petrov's 11th in Brazil for Caterham in 2012 being the closest any of them have come to scoring a point. Now, with HRT having failed to submit their entry for 2013, the coming season marks the best chance the two remaining teams, Caterham and Marussia, have of propelling themselves up the grid, into the points and, most crucially, into the reaches of ninth.

If one of the new teams were to break out of their current position and make it into the top nine of the constructors' standings, some 63 per cent of you think Caterham would be the ones to do it, with 21 per cent plumping for Marussia. Just 12 per cent of you opted for HRT (before their demise was made public) with four per cent of you unsure.



FLAG FURORE

Seeing red over green

Feathers are ruffled in the dispute over Seb's title win

It took only 48 hours or so after Sebastian Vettel won his third world championship at a dramatic Brazilian Grand Prix, for Formula 1 to throw up its latest controversy.

This one developed out of footage that had emerged on YouTube, which appeared to show Vettel completing an illegal overtake under yellow-flag conditions during his climb back up through the field following his first-lap collision with Bruno Senna's Williams.

The controversy began with fans on social networking sites questioning what had gone on, but events snowballed when on the Tuesday evening after the race, Ferrari announced that they were "examining the video" of the incident.

On Wednesday 28 November, Ferrari made an official request to the sport's governing body, the FIA, for clarification. This was of utmost importance because if Vettel had been

found to have broken the rules, the usual penalty would have been 20 seconds added to his race time – which would have demoted him to eighth place, making Ferrari's Fernando Alonso the 2012 world champion.

The FIA replied, saying the incident had not been investigated during the race because Vettel had passed a marshal waving a green flag before he started his move. This marshal was not clearly visible on the full-speed, in-car footage, which was the only available film of the incident. But once the graphic of the car's data was removed and the film slowed down it was possible to see a marshal waving a flag, which was almost certainly green. Ferrari accepted the FIA's explanation and said they considered the matter "closed".

But there could be consequences. F1 boss Bernie Ecclestone intervened before the FIA had responded to Ferrari, saying the Scuderia's actions were "a complete joke".

The following weekend, Ferrari president Luca di Montezemolo issued a barbed response. "You have to show respect for your elders," he said, "especially when they get to that stage in which they are no longer in control of what they say. Old age is clearly incompatible with certain roles and responsibilities." This could rumble on...

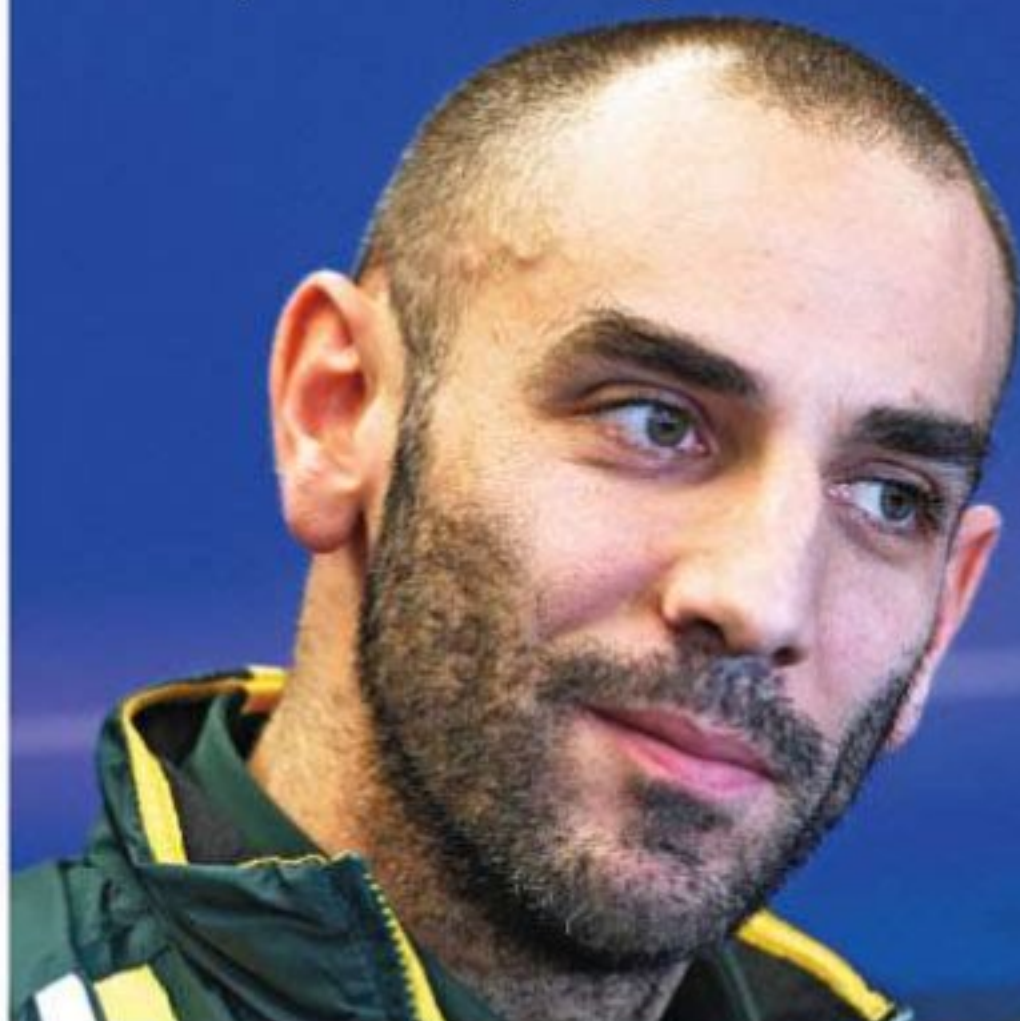


Had Vettel been made to serve a 20-second penalty, Alonso would be 2012 champion

NEWS

Cyril who?

Caterham's new team principal comes with an impressive pedigree



Those not quite in the know, were suitably bewildered when Caterham announced that Frenchman Cyril Abiteboul was to become their new team principal. But Abiteboul, who, at 35, is younger than four of the drivers on the 2012 grid, has been around Formula 1 for some time.

Abiteboul had a first-class French education and was spotted early by Renault as a potential high-flier and placed on their fast-track programme. An expert in management techniques, his first contact with Formula 1 came when he was parachuted into Renault F1's Enstone base as the team's leadership began to unravel around the time of the 'Crashgate' scandal. He may be young, but he is regarded as intelligent, hard-nosed and not intimidated by Formula 1's bigger characters.

In 2010, Abiteboul was appointed executive director of Renault Sport F1, effectively becoming number two under managing director Jean-François Caubet, who retired at the end of 2012. That was how he came to the attention of Caterham boss Tony Fernandes, who became aware of Abiteboul's credentials as a result of the Renault/Caterham engine-supply deal. Fernandes is stepping down from his role as Caterham team principal to focus more on developing his road car business.

It's unclear, however, if Abiteboul will remain in Formula 1 for the long haul. A likely route would be for him to head back to Renault after spending four or five years at Caterham. There, it seems, he could be in line to become chairman and chief executive in the not-too-distant future.

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Pat Symonds

PITPASS TECH

Explaining the hidden brilliance that drives Formula 1 forward

THE SCIENCE BEHIND...

Fuels and Lubricants

What's the difference between the fuel used in F1 and road fuel?

These days, the answer is: very little. Fuel regulations are very tight and are designed to reflect the next generation of fuels that will be available on garage forecourts. For example, a few years ago, the percentage of bio-derived content in the fuel was increased to 5.75 per cent in anticipation of future EU regulations that will require a ten per cent content by 2020.

Initially, the bio-components are restricted to oxygenates. Hydrocarbons are also allowed, however, providing there is evidence indicating the supplier is genuinely developing these compounds for use in commercial fuels. The focus of the fuel companies is to use 'second-generation' biofuels that use non-food feedstock such as agricultural and forestry waste.

Nearly 100 per cent of the actual chemistry of race fuel is identical to that of road fuel. But that chemistry is extremely complex, with around 200 different components making up the fuel. Exactly how they are blended can make a substantial difference to power and consumption.

How do the FIA go about checking the legality of the fuel used?

Before a team is allowed to use a particular fuel blend, the fuel manufacturer must submit two samples to the FIA for checking. The FIA will analyse the fuel using gas chromatography, a technique that effectively produces a chemical signature for the fuel in much the same way that a DNA sample will provide a biological signature during a crime investigation.

At various times during a race weekend, the FIA will take samples of fuel from the competing cars and recheck the chemical signature using the same equipment. A small tolerance is allowed but, essentially, the trackside analysis must be the same as the original analysis.

What about lubricants – are they the same as road-car oils?

The lubricants are actually more complex. Many people think that the sole purpose of engine oil is to lubricate, but in fact it is also necessary to carry heat away from critical components. The pistons, for example, can reach temperatures of up to 350°C and, to control this temperature, jets of oil are sprayed onto the underside of the piston. The oil therefore needs not only to have good lubricating properties, but also a high heat capacity and the ability to handle these temperatures without burning.

When the engine is at full throttle and turning at 18,000rpm, the oil needs to be able to keep the bearing surfaces apart without breaking down. The oil film between the bearings is around 50 times thinner than the thickness of a human hair, but this extremely thin film is vital to engine life. If it fails, the engine will destroy itself within fractions of a second and spread many of its 3,000 very expensive parts across the track!

The oil therefore has five main tasks. These are to lubricate, clean, absorb heat, minimise friction and combat engine wear.

What makes a good F1 fuel?

While F1 fuel is not very different to the fuel we use in our road cars, it does have the ability to be finely tuned within the constraints of the regulations. In many parts of the world, the petrol sold in the summer is different to that sold in the winter. The summer fuel is actually slightly cleaner, but the point is that the fuel you buy is variable. An F1 engine would not appreciate this variability, so the fuels are made under laboratory conditions to ensure their consistency. Bearing in mind that each team has around 2,000 litres of fuel available over a race weekend, it is quite a laboratory.

By making fuels under these conditions, it is possible to make small changes to suit both the engine design and the specific needs of the circuit. One of the biggest challenges is to ensure fuel operates at high temperatures. These days, no specific fuel cooling is allowed and the fuels will get hotter and hotter during a race. By the end of a race, the small amount of fuel left in



the tank will often reach 55°C. At this sort of temperature, there are two problems. Firstly, the high-pressure fuel pump will cause bubbles in the fuel, but also the volatile components of the fuel will tend to boil off. This could lead to the chemical signature changing, thereby making the fuel illegal, so this remains one of the challenges that the fuel supplier has to meet.

What is required of the engine oil?

The engine oil is unfettered by regulation, but its duty is extremely arduous. Typically the oil will enter the engine at more than 110°C, which is much hotter than the temperatures seen on a



HOW MUCH ENGINE OIL DOES AN F1 CAR NEED?

Formula 1 cars don't store oil in the engine sump like road cars, as this would contribute to power loss. Instead they have two oil tanks.

Mounted on the front of the engine, the main tank holds around five litres of oil. An

auxiliary tank holding a further litre is normally positioned as low as possible and can be used to top up the main tank if the level drops. The engine will use 0.5-1 litre of oil per 100km and therefore up to three litres could be used during a race.

When drivers race at Spa-Francorchamps, the main oil tank level has to be kept higher than at other circuits because the crest at the top of Eau Rouge tends to throw the oil upwards in the tank away from the oil pump.



Felipe Massa pays a visit to the Shell track laboratory at the 2012 Brazilian GP. All the fuel and oil is tested here for legality

which are generated by engine or gearbox wear. The diagnosis based on these concentrations helps the engineers to decide whether an engine or gearbox needs replacing.

There were some pretty exotic fuels used in Formula 1 in the 1980s, weren't there?


There were, and some of them bore no relation to petrol. When turbocharged engines ran with unlimited boost (up until 1987) we used fuels that were a mixture of toluene, xylene and benzene – all highly dangerous chemicals. These fuels traced their history back to World War II when they were first mixed to provide a fuel for the highly boosted engines of the fighter aircraft of the time.

Why do you need a litre of fuel left in the tank at the end of qualifying?

This is a regulation that has existed for a long time and means that the FIA can take a sample of fuel to ensure it matches that signature that we discussed earlier. If the rule were not there, an unscrupulous team could run an illegal fuel and deliberately run the car dry so that no evidence of their misdemeanour existed.

How much does Formula 1 fuel weigh, and how big an effect does its weight tend to have on performance?

Race fuel weighs the same as road-car fuel, in other words just under 0.75kg per litre. Race teams always express their fuel loads in kilograms (as do aircraft) because the density of the fuel changes with temperature and it is actually the mass of fuel injected into the engine rather than the volume that matters.

Every 10kg of fuel that the car carries will add around 0.4 seconds to its lap time, so the teams try hard to get the fuel load spot-on in order to finish the race with about a kilogram left in the car. This can be quite hard to do especially in a race that has changing conditions. The driver is also able to change the mixture, under instructions from the engineers, to attempt to optimise fuel use. 

road car. Conversely, it doesn't have to handle the low temperatures seen in road use as an F1 engine is warmed until the oil has reached 50°C before the engine is started. It also doesn't have to last as long as the oil in your road car because it is changed every time the engine is removed from the chassis – typically, after a maximum of 350 miles. This does not mean it has an easy life, however, since the thinner the oil can be, the more power the engine will give. Unfortunately, thin oils are harder to make with the ability to withstand the high loads seen in an F1 engine.

It is also important that the oil does not have a tendency to foam. Normally, if the oil is shaken

up, it will foam and carry air along in a current, which can be disastrous for the engine. The oil flows through the engine at around 70 litres per minute, which means that in some of the small galleries it is travelling at more than 100mph. It is important that this does not lead to the oil becoming too aerated.

Are the oils tested in the same way as the fuels?

Not quite. There is no requirement to test them for regulatory compliance, but similar analysis equipment called spectrometers are used to measure the metallic concentrations in the oil,

Turn to pages 116 and 122 for Pat's analysis of the US and Brazilian Grands Prix >>

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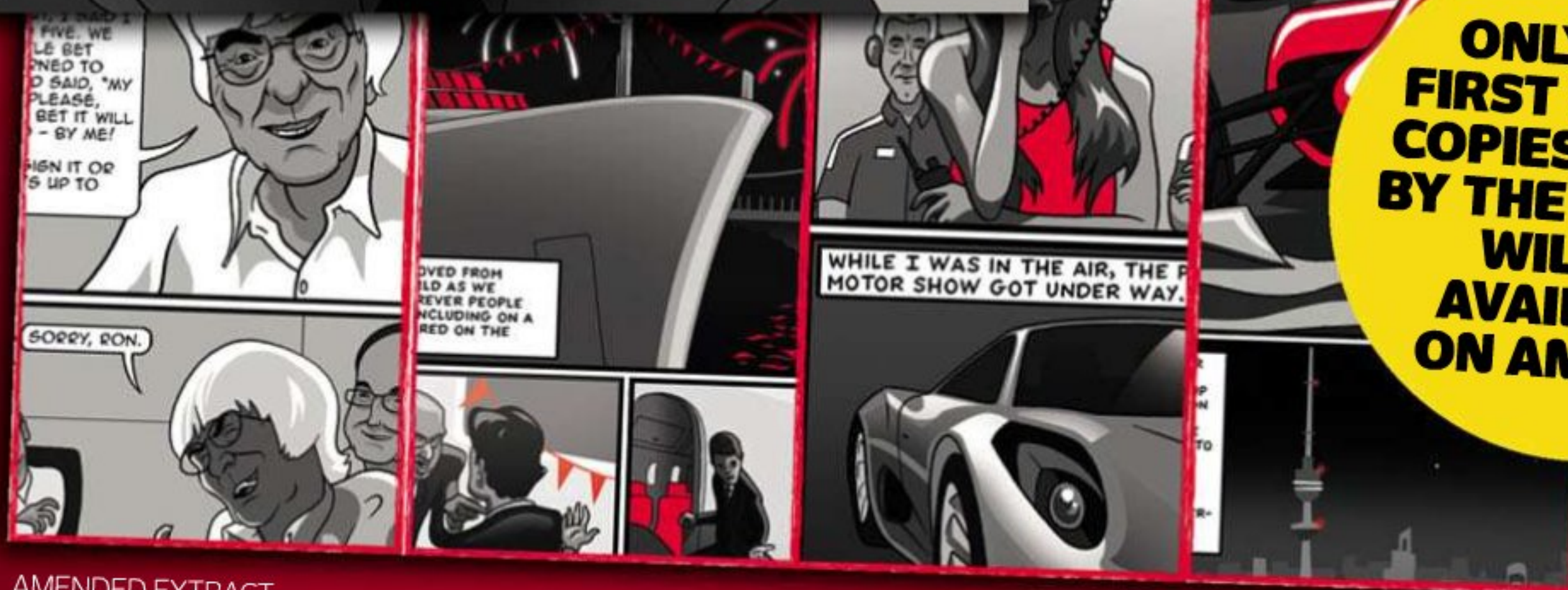
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the Williams team from 2006-2012, and is not afraid to share his honest opinions about the colourful characters he met along the way. First edition hardback copies, signed by the author and individually numbered, are currently limited to 2,000 and are available on Amazon. Price £25. Don't miss out!



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Casio's Red Bull Racing watches



SEBASTIAN VETTEL

“Having the fastest, most reliable kit is how we stay ahead”

Sebastian Vettel is the youngest triple world champion in the history of Formula One. He was 25 years and 145 days old when he crossed the finish line in Brazil, six years younger than the previous record holder Michael Schumacher.

“The moment when I crossed the line at Interlagos was fantastic,” says Sebastian. “So many emotions ran through my head, at the end of a long, intense season in which me and the team pushed hard all the way.”

The combination of Sebastian’s ability and Red Bull Racing’s technology gained increasing momentum as the season progressed. They showed their true colours in Asia, when Seb won four consecutive races (Singapore, Japan, Korea, India), and finished on the podium after starting from the pitlane in Abu Dhabi.

“Being able to call upon the fastest, most reliable equipment is vital to consistently winning races. At Red Bull Racing we have the best of everything on and off track – that’s how we stay ahead of the field.”

This year’s drivers’ title is the third that Seb has clinched in partnership with Casio. It has been a case of perfect timing; since Casio and Red Bull Racing came together, the F1 team has won 34 out of 75 grand prix races, with Sebastian claiming 25!



14

Number of Red Bull Racing podiums during the season

2,293

Laps completed by Red Bull Racing cars in 2012



05

Races won by Vettel on his way to a third drivers' championship. He led for a total of 368 laps in 2012



CHRISTIAN HORNER

"Success like this requires speed and intelligence"



Only four teams in the history of F1 have won the constructors' championship for three consecutive seasons, and Red Bull Racing is one of them following their success this season. "Formula 1 is the biggest team sport in the world," says Team Principal Christian Horner, "and Red Bull Racing is the best team in the world. The driving force behind our success is the passion and determination of all our team members in every department."

After such a long, tough season, is it hard to pick a standout moment? "Winning in Monaco

and Silverstone with Mark was great and Sebastian's performances in Japan and India were incredible," he says, "but the biggest moment for me was Seb driving from the back of the grid to the podium in Abu Dhabi. Achieving success like that requires speed and intelligence and it's incredibly satisfying."

"Casio have played a big supporting role in our success," Horner adds. "Their passion for pushing the boundaries of watch technology is inspiring, and they have been unwavering in their commitment as an official team partner."

Red Bull Racing points in 2012

460





MARK WEBBER

"I love being with a team that knows how to win"

Mark's speed and intelligence proved instrumental during Red Bull Racing's successful 2012 campaign. He scored 179 points en route to sixth place in the drivers' standings and his experience helped to drive forward the development of the title-winning RB8.

"The car has changed more over the course of this season than ever before," says Mark, who has been a vital part of the team since 2007. "We ended up with the fastest car and it's a

credit to everyone in the team that we managed to improve it to the extent that we did. It feels great to be part of a team that knows how to win – constantly evolving as we go after more and more success."

Winning two classic F1 races, Monaco and Silverstone, turned 2012 into a season to celebrate for the Australian. But it was the British Grand Prix that stands out in his mind. "That was a great race for me," he says. "Every driver wants to win



ADRIAN NEWEY

“We have been pushed to the limit this season”

Another season, another world title for Red Bull Racing’s Chief Technical Officer Adrian Newey. This year’s RB8 is the ninth world championship-winning car created by the Englishman, but he refuses to take all the credit.

“As a team we’ve been tenacious and never given up,” says Newey, “even though the ban on side-exit exhausts meant we were on a re-learning curve about the characteristics of the car.”

The continuous evolution of the RB8 at Red Bull Racing’s Milton Keynes HQ was the cornerstone of their 2012 title successes. “The engineering, manufacturing and racing teams have all been pushed to the limit in terms of researching, designing, making and then operating our numerous upgrades,” Newey adds. “And they have responded brilliantly.”

Such determined dedication to constant advancement is a character trait shared between Red Bull Racing and Casio, two like-minded partners who combine new technologies with innovative thinking.

It’s a winning mix, as two more championship trophies in 2012 testify. “I think the constructors’ and drivers’ titles are equally important, but for Sebastian to win in a rollercoaster final race was extremely satisfying.”



the British Grand Prix; it’s the oldest race on the calendar. To hunt down Fernando’s Ferrari and overtake him was the culmination of a lot of work.”

During the ebb and flow of the longest season in F1 history, Mark has been able to rely on his Casio Edifice to ensure he gets to the right place at the right time. “No matter where I am in the world,” he says, “whether it’s Japan or the US, I know I can rely on my Edifice to figure out what time zone I’m in!”

F1 titles during Casio’s four years as team partner

06

07

Red Bull Racing wins, and fastest laps, in the 2012 season



2012:
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This stainless steel timepiece is powered by Casio's Tough Solar technology, and features a wealth of electronic innovations, all accessible using the new Smart Access system. The EQS-A500DB is next-generation watch technology at its most exciting.

CASIO EDIFICE
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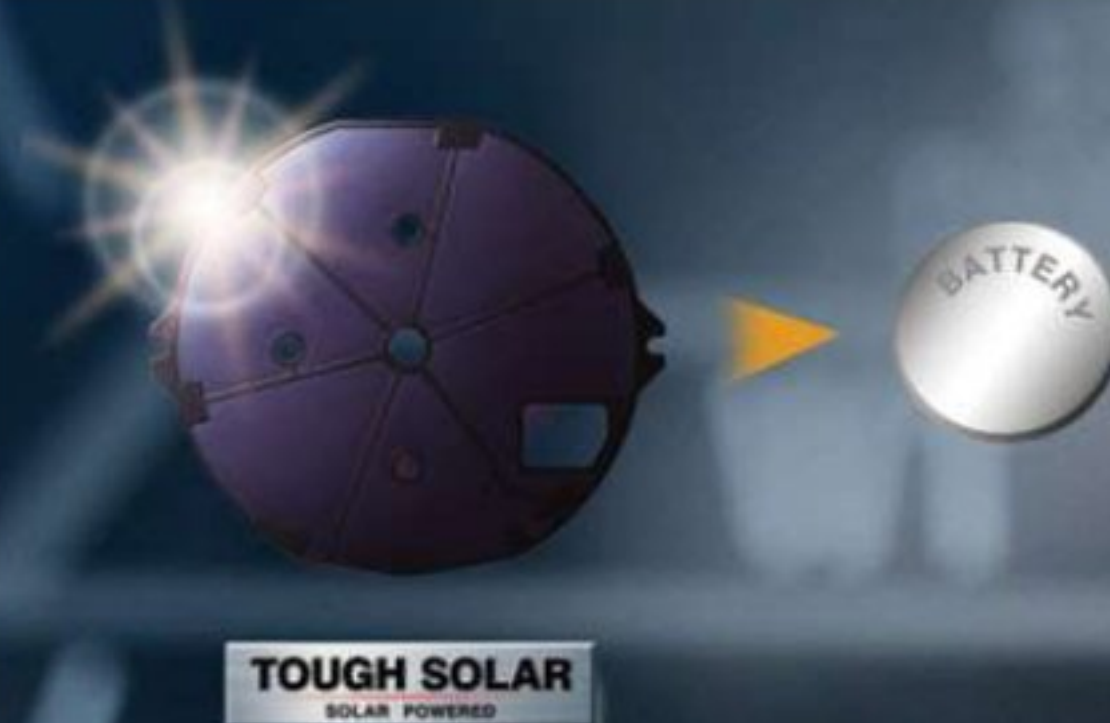


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★ STAR LETTER



Just what does Vettel have to do...?

What has Sebastian Vettel got to do to be hailed as an F1 legend? Since Juan Pablo Montoya left, I haven't had a particular allegiance to any driver but I've found myself cheering louder and louder for Vettel every year. Why isn't everyone else doing the same, instead of focusing on his flaws?

People say he only wins because of Adrian Newey, but this is the same driver who scored a point on his F1 debut for BMW then took Toro Rosso's first and only win. His pole record is phenomenal and because of this they say he can't overtake. But look at his move on Alonso at Monza last year – and what about when he overtook almost the whole field in Abu Dhabi in 2012? I'd say 24th to third isn't bad for someone who can't overtake.

I read recently that Vettel isn't classified as a true legend because he won all his world titles with the same team. So does this mean Senna is less of a legend because he only won championships with McLaren?

We all have our favourites, but give this kid a break. Why not enjoy him rewriting history? It'll be something to tell your grandkids about one day.

Matt Lloyd
 By email



STAR PRIZE

Matt Lloyd wins a pair of three-day admission tickets to the 2013 British GP at Silverstone. For more details call the hotline number: 0844 372 8300 or visit www.silverstone.co.uk

Call that a penalty?

After watching what has to be described as a remarkable recovery drive by Sebastian Vettel at the Abu Dhabi GP, it does beg the question: what was the point of the penalty after qualifying when he was demoted to the back of the grid for failing to bring his car back to pits under its own power?

If the team are then allowed to elect him to start from the pitlane, that means they can adjust the gear ratios and downforce settings to make it easier for him to overtake. Surely a penalty for a wrongdoing should actually be a penalty and not an opportunity to gain from your misdemeanours?

Steve Lilly
 North Yorkshire, UK

Schumi: the full picture

I read with interest Pat Symonds' article about Michael Schumacher (*F1 Racing*, December 2012) and must say it is one of the best I have read. I am a Schumi admirer and have followed his career with interest. He has had his fair share of support and antagonism, but this article captures the true greatness of the man and his achievements in such an amazing way.

It should disarm anyone who still tries to belittle the man and it also paints a picture for those who are new to the sport of one of F1's greatest drivers. It carries more weight since it is written from personal experience, and it portrays Michael as what he really is, both in terms of his genius and his shortcomings. His mistakes are not excused but treated with deserved respect and understanding (who is perfect?). He has been the most complete driver F1 has ever seen.

Gary Schulz
 West Sussex, UK

NEXT MONTH...



Kubica: the comeback

On the cusp of the big time, Robert Kubica's career was shattered by a rally accident. But he ain't finished yet...

Plus • First look at the '13 cars
 • Lewis at McLaren in pics
 • Lunch with Alain Prost

FEBRUARY ISSUE ON SALE 24.01.13

PHOTO: ANDY HONE/LAT; LEO WILLIAMS



Peter Windsor RACER'S EDGE

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

AS 'MAN OF THE YEAR' MAKES A RETURN TO THESE PAGES, OUR MAN STICKS HIS NECK OUT TO NOMINATE HIS MEN

You'll see the results of our famous 'Man of the Year' poll in this issue of *F1 Racing* on page 87. I was lucky enough to be asked to vote but – as could be expected – my views weren't always 100 per cent in accord with those of the majority. Here are some categories in which my views proved very different...

PIT CREW OF THE YEAR

Williams

For me, this award needs a disclaimer, as in: 'teams that do it the old way and teams that don't'. Sub-2.5-second stops are almost beyond comprehension and must be treated with the respect they deserve. Spare a thought, though, for the traditionalists – those who still need to insert the wheel nut manually. More can go wrong; more thumbs can be blackened. And still they shave off the tenths. Sub-four used to be the benchmark for the old guard. Now it's sub-three. I chose Williams for this category because of their consistency, but it could have been any of the lower-tier teams. A 2.7 isn't a 2.4, granted; a 2.7 with a free nut, though, is still a world wonder.

TEAM PRINCIPAL OF THE YEAR

Vijay Mallya

I know it's very fashionable in F1 to rip people apart when the obvious opportunity arises (just as it's standard F1 procedure to stand with upturned palms when money seemingly falls from the sky). This year, then, Vijay Mallya of Sahara Force India has been easy prey: Mr Bling's airline is in trouble. Big trouble. Thus they gravitated, in motorhome alley, to different comfort zones – to Tony Fernandes, or to the mystery men at Genii Capital. Me? I was never a Vijay man;

Vijay Mallya delivered by hiring Di Resta and Hülkenberg instead of chasing the cash



I'm not into big boats or big, gold bracelets. I do, however, like to see talented racing drivers doing what they do well and, in this respect, I'd like to thank Mr Mallya for giving us exactly that in 2012. With all his stuff going on in the background, none of us would have been surprised to see Vijay hiring a mediocre rent-a-driver or two. Instead, the big man gave us another year of Paul Di Resta and Nico Hülkenberg (a driver Williams discarded due to his lack of financial support). Say what you like about Vijay: for my part, he delivered – and I think the team benefitted hugely as a result.

QUALIFYING LAP OF THE YEAR

Mark Webber, Monaco

Post-Abu Dhabi, I might have given this to Kimi. It's one thing for Kimi to put together another of his golden races; it's quite another for him to tee up his Sunday with a qualifying lap reminiscent of the McLaren days. To be honest, I didn't think Kimi had it in him any more. In Abu Dhabi he proved me wrong. When you see Romain Grosjean rocking backwards in awe as he studies Kimi's telemetry, you know that the lap has indeed been special. But for all

"When you see Grosjean rocking back in awe at Kimi's telemetry, you know a lap has been special"

that, I thought Mark's lap at Monaco was beautiful to watch. Michael Schumacher took the glory that day, but for my money it was Webber at Monaco who touched perfection. Beyond that, I have a liking for drivers who excel on circuits surrounded by walls and barriers – and who struggle when there are acres of run-off areas in which to play. Mark is one of those.

START OF THE YEAR

The Belgian Grand Prix

This was a confusing choice because you could focus on one driver and one start – or the start in general. There's no doubt that Spa's first corner changed the face of the 2012 world championship. One La Source-created moment put Fernando Alonso on the back foot and Seb Vettel on a roll. Yes, Fernando could have avoided it had he qualified higher – but then Fernando was always going to be a serious point-

Webber came close to perfection in Monaco this year, especially with his qualifying performance



Grosjean launching over Alonso's head at Spa was the race start of the year – for all the wrong reasons

scorer at Spa come race day. Except that in 2012 it didn't work out that way.

Lewis Hamilton and Seb Vettel converted several great grid positions into instant race leads but, these days, I find it hard to disassociate perfect start performance from 'correct button pressing'. What we can see are *bad* starts – and poor old Mark Webber is the king of those, sadly.

MOST IMPROVED DRIVER OF THE YEAR

Pastor Maldonado

It's one thing to be quick and aggressive; it's another to remain cool when everything is closing in around you. Pastor did exactly that in Spain, beating Fernando Alonso when everyone thought he would fail. Sergio Pérez was, to some extent, 2012's 'Man of the Moment' but he dropped it in Malaysia with certain (DRS-gifted) victory in sight. Pastor had to win the hard way – from the front, knowing that Fernando was going to be able to flatten his wing, knowing that Barcelona was his to lose. Pastor improved dramatically as a driver in 2011 – as a 'manipulator of dynamic weight' (as distinct from a 'brave reactor to things that have just happened'); and he took that new technique to a higher level in 2012 – ie, he complemented it with a tough and hard ability to win. Yes, he still has faults, although towards the year's end, even his track-craft glitches seemed to be behind him. As 2012 race drivers go, Pastor is among the best. He can deliver both on and off the track; and he stays quiet and low-profile. That is rare. Very rare.

MAN OF THE YEAR

Matteo Bonciani for his reaction to the fire in the Williams garage at the Spanish Grand Prix

There were many heroes that day. Lee Hart and the McLaren mechanics spring to mind, along with everyone at Williams. You kind of expect that from F1 pitlaners, though. Reacting to crises is what they do. Less predictable were the actions of people like Matteo Bonciani, the FIA media delegate. For there was no hesitation. They were down there. Matteo wasn't alone but he led a group who gave their all. And so this award, from where I sit, is for all of them.



The entire pitlane rushed to the assistance of Williams, when their garage caught fire in Barcelona

PHOTOS: ANDREW FERRARO/LAT; STEVE ETHERINGTON/LAT; CHARLES COATES/LAT; PAUL GILHAM/GETTY IMAGES; VLADIMIR RYS/GETTY IMAGES

Read Peter Windsor's views on the Vettel vs Alonso showdown on p78 →



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Dieter Rencken POWERPLAY

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

WOULD A RELAXATION OF F1'S CUSTOMER CAR RULES SAVE ITS MINNOW TEAMS... OR DESTROY ONE OF THE SPORT'S MOST CHERISHED QUALITIES?

"Would the cheers have been as loud had Nico Hülkenberg taken the lead in Brazil in a customer car rather than a Force India?"



One of F1's defining characteristics, its USP if you like, lies in the regulatory stipulation that the FIA Formula 1 World Championship is open only to constructors, as defined in Schedule 3 of the current (2010-2012) Concorde Agreement, the document that governs the sport by outlining the obligations of governing body (FIA), commercial rights holder (FOM) and teams collectively.

Proprietary chassis, those built for race teams by an outside constructor such as Dallara can, and do, win the Indianapolis 500. They can, and have, won Le Mans. But every F1 entrant is required to own, in its entirety, the intellectual property to the car entered by it in the world championship. This crucial aspect provides one of the fascinations of the sport, for it creates competition within competition within competition by pitting not only driver against driver and team against team, but engineer against engineer.

Would Red Bull be as dominant were they to buy off-the-shelf cars identical to those run by Ferrari? Would the cheers have been as loud had Hülkenberg taken the lead in Brazil in a customer car rather than a Force India? Is it not incredibly uplifting to see plain cars, constructed in dingy former warehouses by tiny, overworked teams, pull themselves up by their battery straps, as did Frank Williams years ago, and mix it with the red, blue or silver armadas?

Therefore Schedule 3, for all its relative brevity (just two pages of more than 150) holds one of three keys to the championship by listing components that define a constructor, including such as the monocoque chassis and safety cell, front/rear suspension, heat exchangers, front/side impact structures, wings and even brake/throttle pedals. (Keys two and three are schedules 9 and 10, which outline governance procedures and distribution of the sport's annual billion-dollar revenues respectively.)

Over the Brazilian GP weekend, the 12 team bosses agreed a list for inclusion in the still-under-negotiation 2013-2020 Concorde Agreement. Sources advise the list has been abbreviated by excluding pedals and paddles, plus side impact structures, on the basis that these are not performance enhancing and nor do they endow unique characteristics, yet they remain hugely costly to produce, particularly for back-gridders.

That said, various teams, not least McLaren/Force India, Red Bull/Caterham and Williams/HRT, have worked within Schedule 3 to forge alliances,

with the larger supplying the smaller with non-listed componentry – and to good effect, too, witness Force India's recent surge in performance, and Caterham's tenth in the constructors' championship.

There is a move behind the scenes to restructure the sport into two divisions, with six 'A Division' teams permitted to each supply a team in the 'B Division' with 'customer cars', on grounds of cost and 'show'. The logic is that it's cheaper to produce four of one rather than two of two, and that viewers would rather see, say, four Ferraris – be they two pairs of F2013s run respectively by the Scuderia and a customer operation, or a brace of 2013 cars and two older chassis – than a pair of red cars and two tatty HRTs.

This concept is not to be confused with the so-called 'Additional Car Clause' contained in Concorde, which calls for certain teams to enter third cars should the entry, for some reason, fall below 16 at any stage for whatever reason. In typical F1 fashion, even this clause is vaguely worded, by not stipulating which teams could be called upon, nor on what basis...

While 75 per cent of teams, including Ferrari, are vociferously opposed to customer cars, not least because it would destroy F1's USP, while simultaneously rendering some teams' multi-million dollar facilities idle overnight, there is still a faction pushing for it. The concept would permit, for example, Red Bull to supply sister team Toro Rosso with off-the-shelf technology as was once the case, or possibly permit HRT to survive its current crash crisis.

The concept is attractive to the commercial rights holding entity, CVC Capital Partners, because reductions in team budget reduce team demands for more cash from the commercial rights holder (CRH), while in the short term maintaining fuller grids.

At present, real fears exist that at least three teams are in financial danger, besides HRT, which issued blanket redundancy notices to its personnel ahead of the final races. Little wonder, either, for the CRH insists on retaining around 40 per cent of the sport's revenues – enough to keep HRT and three others afloat for the next three years at least.

Thus, as ever, since the FIA's previous regime sold its crown jewels for a pittance, it's a question of short-term interests versus long-term stability. Do the money men, who plan to float F1 at the earliest opportunity, really give a damn about the latter when their investment cycles typically run to five years?

PHOTO: CHARLES COATES/LAT. READ DIETER RENCKEN'S WEEKLY GRAPEVINE COLUMN ON AUTOSPORT.COM.

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Bruno Senna

VISOR DOWN

From cockpit to page, Senna writes exclusively for *F1 Racing*

THAT'S ANOTHER SEASON DONE AND DUSTED

I can't quite believe another year is over and we are gearing up for the 2013 season already. January is usually a quiet month in F1 when drivers are training for what lies ahead and teams are putting the finishing touches to their new cars ahead of testing.

As I look back over the past 12 months with Williams, I think of the number of good races that we had. In particular, I think of the tough GPs in Malaysia and Monaco when it looked as if we were going to come away with nothing. In fact, in Malaysia, I was pretty much last at one point in the race and came through to take sixth, which was my best result of the year. So, in all, there were a number of races, like Spa where I set the fastest lap, which I have good memories of and I'm proud of our performance, too.

But, for sure, the biggest disappointments over the past 12 months were the technical issues with the car that really prevented us from capitalising on our race form. A number of times I'd be having a good race, but we'd be held back by things beyond my control, which was very frustrating. You want to show the promise that you have, you want to score good results – but for whatever reason you

can't do anything about it. Despite that, the end of the season was really good for us: we scored points in India, Abu

Dhabi and Austin and that was because, by that stage, I had a greater knowledge of the tyres – which, for me, has been the biggest challenge of the year – and it's taken a while to understand them. But once we did that led to more consistent results.

"Looking back, it's been extremely satisfying to be the team's most regular point-scorer. I've learnt a lot and improved considerably over the season"

"The end of the season was really good for us: we scored points in India, Abu Dhabi and Austin"

As we move into 2013, that's the time to get into training again. We all get back into the fitness routine and push harder and harder just before the season starts with cardio and gym sessions to build up muscle tone and fitness. I will also do sensory training with Nike Strobe Goggles. They flicker opaque or clear at intervals. You can control the frequency with a speed dial between one and eight. The principle is that they help increase your reaction time, anticipation and sensory perception, as your brain simulates what you can't see when the glasses flicker opaque.

I'd been aware of Williams' long-term plans for some time before they announced their 2013 driver line-up. So the other important aspect for me over the winter is to continue the progress I have been making in my still very short career. I have a lot of support from Brazil, commercially and personally, and I'm busy putting together the best deal to be in the best possible place. But it's always been like that every year, from F3 and GP2 through to F1. It's always difficult to finalise things, but what's the alternative? I could sell coconuts on the beach! I know a lot of

people who would like to join me doing that, but I don't think I'll be ready for it for quite a while yet...

Looking back, it's been extremely satisfying to be the team's most regular point-scorer. I've learnt a lot and improved considerably over the season. I would like to thank the whole team and particularly Frank for giving me the chance of completing my first full season in F1. Working with a competitive and supportive engineering team like Williams has left me well prepared for the next step in my career.

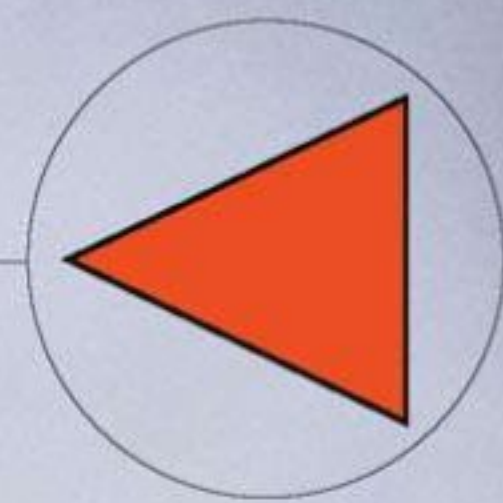
Over the Christmas period in Brazil we go to the beach and relax. In my family we have our big dinner on Christmas Eve at around 7.30pm, because my grandfather is a hungry man and can't wait until Christmas Day! My mother's side of the family is reunited too, but we're also impatient, so we open all our presents on Christmas Eve as well. Our Christmas lasts for three hours and that's about it.

And on my wish list? The only thing I'm wishing for is a competitive race seat for 2013.



PHOTO: STEVE ETHERINGTON/LAT

Now *that* was a car



No11: The Lotus 21

We celebrate the machine that gave Team Lotus their maiden F1 victory

WORDS JONATHAN REYNOLDS PICTURES CHARLIE MAGEE & LAT ARCHIVE

There's no doubt that Ferrari were major beneficiaries of F1's change to 1.5-litre engines in 1961. After all, they already had a tried and tested – and extremely powerful – V6 engine that had been used in F2. But of all the constructors starting from a standstill, none did a better job than Lotus.


The Type 21, produced by Lotus's visionary founder Colin Chapman, featured many concepts that would become hallmarks of the next generation of dominant Lotus cars. Compared to the upright shark-nosed Ferrari 156 or the chunky Cooper T55, the 21 was aerodynamically sleek, comfortably mid-engined and – importantly – very low. This was key to Chapman's design philosophy, which focused on keeping down drag and minimising weight. To this end, the driver was seated in a low – and for that time unusual – reclined position; the four-cylinder Coventry Climax engine was inclined 18° to allow for a lower body; and front springs and dampers were attached to wishbones within the chassis to remove them from the airstream.

The 21's debut at Monaco in May was both promising and troubling. Rising star Jim Clark proved the car's speed by qualifying third, but only after crashing at Ste Devote in practice. Team-mate Innes Ireland wasn't so lucky. Unfamiliar with the car's new German-designed ZF gearbox, he selected the wrong gear coming out of the tunnel and hit the wall, destroying his car and breaking his leg in the process.

A fuel-pump problem prevented Clark from challenging in the race but, Lotus still managed to claim their first championship win with Stirling Moss in Rob Walker's privately entered Lotus 18. The Brit would go on to win another five races that year in a Type 18, running a T21 body.

The second round of the championship proved more fruitful for the works team. Starting from 11th, Clark got up to third behind the two leading Ferraris, enjoying a wheel-to-wheel battle with eventual world champion Phil Hill's Ferrari. The scarlet car was more powerful on the straights but was no match for the green car around the corners. Hill eventually pipped the Scot for second, but Clark proved the 21's pace with fastest lap.

Clark and Ireland were on the pace again in France, where they came third and fourth, but it seemed unlikely they'd ever beat the Ferraris in a straight fight. Fortunately they didn't have to. Ireland delivered the 21's first wins in non-championship GPs at Solitude and Zeltweg, neither of which were attended by the Scuderia. Then, at the US GP, Ireland finally secured a maiden world championship victory for Chapman's works team (in the very car pictured here) as Ferrari, who had won the world championship in Italy but also tragically lost lead driver Wolfgang von Trips, stayed away.

The win was a just reward for the 21 which, while not the cream of the crop, laid the foundations for one of the finest F1 cars of all time – the Lotus 25. 

The smaller roll-hoop is the original, used by drivers simply to help them climb in and out of the car. The larger one was added in more recent years, in the interests of safety





LOTUS 21 TECH SPEC

Engine	1.5-litre Coventry Climax FPF S4
Power	150bhp
Transmission	5-speed ZF
Suspension	Coil springs / wishbones all round
Weight	425kg
Wheelbase	228.6cm
Notable drivers	Jim Clark, Innes Ireland



Pedro de la Rosa

Pearls of wisdom from one of F1's evergreens, from the health-preserving properties of salt and lemon when doing tequila shots, to why 'Spygate' shouldn't have been such a shock...

WORDS JONATHAN REYNOLDS PORTRAITS LORENZO BELLANCA/LAT

Pedro de la Rosa may have been the second-oldest driver on the grid in 2012, but you wouldn't guess it from his appearance. Still fit and lean at 41, de la Rosa seems not to have aged since his first start for Arrows, way back in 1999.

In 2012, after a second stint as test driver for McLaren, he was offered the chance of a race seat with perennial stragglers HRT. Having previously stated he'd rather be a tester than drive for a back-of-the-grid team, Pedro found the allure of racing too much to resist and, away from the public gaze, put in a season of hugely competitive drives that belied his age.

Retirement is one of several topics *F1 Racing* readers wanted to put to Pedro, especially now HRT's future in F1 seems so uncertain. You also wanted to know about his role in 'Spygate', where he keeps his F1 trophy and why Sebastian Vettel called his HRT team-mate Narain Karthikeyan a 'cucumber'. Over to you Pedro...

Do you still get the same buzz being in F1 as a backmarker as you did being in a more competitive car?

Gary Price, UK

Absolutely. Nothing changes – it's competition at the end of the day. Whether you're fighting for a podium or fighting not to be last, you're still fighting against other teams and other drivers. So I still have the same buzz; the same rush. It gives me the same quantity of adrenaline. In Suzuka, for example, I could hardly sleep on the Friday and Saturday night because of the amount of adrenaline Suzuka gives me.

Why is it that drivers like Räikkönen, Hamilton, Alonso and Senna all wanted to leave McLaren?

John Betancourt, Spain

I think all drivers want to experience new teams – it's not that they want to leave McLaren. It

happens in all the top teams: if a driver has been in one team for a long time, at some point in his career he will want to see what it's like in another competitive team. It's always been the same, it's not a McLaren thing – drivers will always want to experience something new. Having said that, I think all these drivers who have left McLaren do miss McLaren.

Pedro, you've been a race driver or test driver for Jordan, Arrows, Prost, Jaguar, McLaren, Sauber and HRT. What are your favourite and least favourite teams?

Anton Altmann, UK

My favourite team so far has been McLaren, that's for sure. They were the most competitive and the ones I learnt most from. I'm having an extremely interesting and exciting time at HRT and I hope that next year I can say the same thing about them as I have about McLaren, but →



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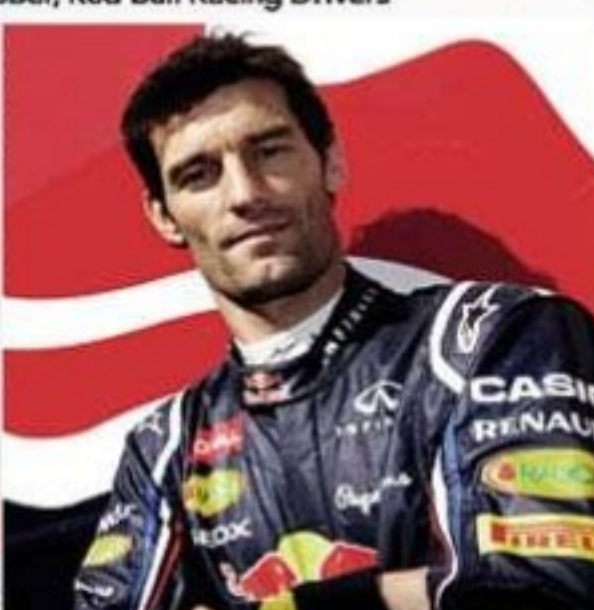


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Sebastian Vettel and Mark Webber, Red Bull Racing Drivers



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"Standing on the podium in Hungary 2006 was the best feeling ever. I'd been fighting all my life to get there and suddenly I was on the F1 podium. It was a very special moment – it felt like a win"



at the moment McLaren are in first position by far. My least favourite? Sauber. I didn't enjoy my year there. I didn't like the fact that the driver was always the problem and not the car. We just had a slow car. It was unrealistic to think that the car was always capable of podium finishes. I didn't like that.

What is the point of exposing yourself to risk while driving a hopeless car with an underfunded team?

Joe Machado, USA

Well, risk is always a part of racing. It doesn't matter if you have a quick car or a slow car – you always have to live with risk and I have no problem with that. As long as I know the team are doing their maximum to make the car safe, this is just part of life. F1 is the safest category I've raced in and that makes a difference. I've raced in other categories – like Formula Ford and Formula Renault – where the cars were not carbon fibre and the circuits were a lot more dangerous. I have no problem with taking risks in F1 because that's what we've always done.

What is the greatest sacrifice you have made to be an F1 driver?

David Leon Adams, New Zealand

Only one: the fact that I'm never at home. It's quite tiring to never be at home. For me, it's okay because my family is supporting me and are happy with it. So far I've had massive support. I find it's been a sacrifice that I have had to make, not spending as much time as I want with my family. Before I had kids, my wife would come along with me to races. But it becomes complicated with kids because they have to go to school and they need to have either their mother or their father there with them.

Pedro, aren't you a bit old for F1?

Carlos Jalife, Mexico

I don't feel old. I might be, but I don't feel it. If I still feel I'm enjoying it and I'm competitive and HRT are happy with my performances, I don't see why I should retire. I think I'm driving very well and we're extracting the most from the car that we can. So I'm sorry but I won't retire! The day I wake up and don't have those extra few tenths, then I will retire. But I'd need to feel slow and my team-mate would have to prove that.

Tell us the role you played in 'Spygate' along with Fernando Alonso?

William Stuart, UK

Very limited. Actually, we were all very surprised about how big everything got. We didn't do anything abnormal or anything any other team wouldn't do. All the information Fernando and

I had was just talking to some engineers like any other driver would do. It was nothing I have not done in other teams, absolutely nothing. That was why it was a bit surprising when we were accused of spying because it's been done by every other team in F1 for the past 20 years. Each team has a photographer dedicated to taking as many pictures as they can of parts of other cars. It's part of the business and everyone does it.

Do you still race radio-controlled cars? Which would you say are more difficult to drive: RC cars or F1 cars?

David Killens, Canada

No, I stopped doing that a long time ago. When I finished second in the world championship in 1986 I stopped and switched to radio-controlled helicopters. I did that with my father, but then I lost interest. Flying RC helicopters is by far the most difficult thing I have ever done. They require an extreme amount of concentration and the moment you lose track of the position the helicopter is in, you crash. It's very difficult and if you make a mistake the helicopter just disintegrates! It's harder than driving an F1 car – it requires more concentration.

What is it like to race alongside a cucumber for a team-mate?

Simon Brooks, UK

I really didn't understand the cucumber story [Sebastian Vettel referred to HRT's Narain Karthikeyan as 'a cucumber' after they clashed at the Malaysian Grand Prix earlier this year]. I think we lost the funny part of it in the translation. Our car is not even green! Before the end of the year, I'd like to ask Sebastian what he really meant. →



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YOU ASK THE QUESTIONS

Would you like to see Hamilton, Alonso, Vettel or Button try your HRT car to see if they could achieve any better results?

Julie Turkington, UK

I would *absolutely love* to see any of them driving the car. It would be really nice for more people to understand just how difficult it is to drive a car with limited downforce. The power level of our car is similar to a Red Bull, a Ferrari or a McLaren, but the grip level is very different.

What has been your best race – Australia 1999, Bahrain 2005 or Hungary 2006?

P. Pawel, Poland

I think that Hungary 2006 was my best race overall because it was my first and only podium. It started wet and finished dry, which meant it was quite a difficult race to adapt to because you had to go through wet, intermediate and dry tyres. But standing up on the podium was the best feeling ever. I'd been fighting all my life to get there and suddenly I was up there on the Formula 1 podium. It was a very special moment – it felt like a win.

Was your qualifying lap at Suzuka in 2012 one of the best laps of your career?

Gemma Craigan, UK

It was a good lap, yes. I think my best lap of the season was at Monaco; that was very special – absolutely perfect. I didn't think I could break the 1min 19sec mark and I got past the 1min 18sec mark, whereas at Suzuka I know there's still one tenth there. Every year you do two or three qualifying laps where you think: 'That was special, I was flirting with perfection there.'

Where do you keep your trophy from your second-place finish in Hungary?

Elizabeth Emery, UK

I had a replica made because McLaren kept the original. I keep it at home and move it from place to place. For a few years I kept it on top of the fridge. I wanted to remind everyone that because of that, we eat. I wanted to show my kids that daddy has to work, it's not just fun. The plan now is to bring the trophy to HRT and have it in a little museum.

Did Juan Pablo Montoya really injure himself playing tennis in 2006 when you stood in for him at McLaren? What did Ron Dennis have to say about it?

Matthew Gleeson, UK

Well, that's a funny question. I think he really did injure himself playing tennis because he swears to god it was because of that. The funny thing was that in the week that he injured his shoulder, Ron called me and told me there was a strong possibility that I'd have to stand in for

Out of all of the tracks you have driven on in your career, which has been your favourite?

Darren Kirkpatrick, UK

Suzuka by far. It's not the most difficult one – that's Monaco – but it's the most challenging because of the high-speed corners and the fact that one corner leads you to the next one. You have to be very precise or you get the whole combination wrong. Also some of the corners are blind, so it's a fantastic feeling when you get it right.




PHOTO: LORENZO BELLANCA/LAT

Juan Pablo in the next race. But he said they were still checking his shoulder and he might be okay for Bahrain. As soon as Ron hung up, I called Juan Pablo and said: "How is your shoulder? Ron says it might be alright..." He started laughing and said: "I am completely fucked!" So although Ron kept saying he might be okay, I knew the whole story!

What is your favourite sangria recipe?

Mark Hutchison, USA

I don't honestly like sangria much. I don't like to drink much, but if I do drink I like tequila. I don't like wine or beer. I like tequila with salt and lemon – they are very important ingredients, otherwise you'll have stomach problems. 

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"I let my driving do the talking"

A man of rare verbal restraint, **Kimi Räikkönen** has this year answered critics of his F1 return with the classiest of on-track ripostes. And after that sensational Abu Dhabi win, *F1 Racing* convinced Kimi and race engineer Mark Slade to open up

WORDS JAMES ROBERTS

PORTRAITS LORENZO BELLANCA/LAT

There are no guarantees that a driver returning to F1 after time away will demonstrate the level of performance he'd shown previously. There are always questions marks over speed and commitment and these were all raised when Kimi climbed back into the seat of an F1 car at the start of 2012, after two years away.

But soon we were witnessing familiar flashes of the Iceman's brilliance: the fastest lap towards the end of a race, the charges through the field, another podium and

then another. Over the year, he has rarely made a mistake; his speed has been stellar, his consistency metronomic.

Typical Kimi, he's a man of few words, who doesn't boast or effuse about his strong season, but we thought some pictorial reminders might get him talking about what a great year he's had. And it worked. We spoke to Kimi alongside his engineer Mark Slade, to reflect on a fantastic comeback, which has quite rightly been rewarded with a confirmed second season at Lotus for 2013. →



FLYING START

Malaysian GP
Grid: 10th Race: 5th

Kimi Räikkönen: That day was the first time I'd ever driven the car in the wet and that was right at the start of the race, on full tanks, which wasn't the easiest thing to do. There was a high rate of attrition and we were able to keep it together for a good result and score some points. I managed to set the fastest lap towards the end of the race when the track was drying, so that was an important result because in the first few races we had some issues, then we started to build up performances after that.

Mark Slade: Looking back, this was at the time of the year when we were tending to come on quite strong late in the race, and this result was a sign of how competitive we could be despite a five-place gearbox penalty that had hampered our starting position. To be fair, the fastest lap was a bit of a surprise at the time, but for the whole team it had been a huge step forward from where we had been the previous year. At the same time, we knew there was still a bit we needed to do to get the car into a winning position.

We've found that the E20 has been quite easy on its tyres and that's why we performed well at hot tracks. Plus Kimi's driving style is also quite light on tyres and I found when we worked together in 2005, when tyre changes were not allowed, that it paid massive dividends in those circumstances. But in a situation where you need to get a lot of temperature in the tyres, that sometimes puts Kimi at a little bit of a disadvantage as his natural way of driving the car isn't so aggressive.



INCHES FROM VICTORY

Bahrain GP
Grid: 11th
Race: 2nd

Kimi Räikkönen: Yeah, thinking back I should probably have stayed on the inside and tried to overtake Vettel for the win. But even if I had passed him I don't know if I would have been able to keep him behind. It was a good race but, looking back, I had one chance to overtake and didn't use it, so it's disappointing. But that's how it goes. I got a run, he defended, so I went to the other side of the track. I might have done it differently if it was now, but that's what happened then and we still got a good result for the team. And no one expected us to do that well after such a difficult qualifying.

Mark Slade: I was actually a little bit disappointed because going into that event I thought that we had a really good chance of winning the race, but there was just that fraction that wasn't quite there. We didn't push to get into Q3 on the Saturday because we didn't want to waste an extra set of



tyres and, as it happened, the advantage of new tyres was very significant come the race. We actually had the legs of everyone on new rubber but, unfortunately, when it came to the last stint, Vettel had also saved a set and that just gave him enough extra grip. It was so close, but our tyres just couldn't maintain that edge of performance. Despite that, to finish second and third in this race was fantastic. It was so good for the team as it was our first really decent result in a long time and there was a great feeling in the garage after the race. It was a real boost for everyone.

JUST LIKE OLD TIMES

European GP
Grid: 5th
Race: 2nd



French GP (2005)
Grid: 13th
Race: 2nd

Kimi Räikkönen: Ah, that's from Valencia and that other one is from somewhere else... Magny-Cours 2005, right? That feels like quite a few years ago now. We all look similar apart from all the colours that have switched around. Life goes on. Michael doesn't look that much older, but he's leaving now. That's his choice, but it has to end at some point for everybody. When you stand on



the podium, it really doesn't matter to me if there are world champions or any other drivers standing alongside me. But the funny thing about this race was that Fernando Alonso's engineer Andrea Stella came up to the podium on behalf of the winning team and he's engineered all three of us over the years, so it was something we all celebrated with him on that day.

Mark Slade: That was a good race for us and I have to point out that I've engineered all three of them as well. Looking back at the Magny-Cours photo, you can tell from Kimi's face he's a bit disappointed as he probably felt this was a race he should have won. It was one of those races where the engine failed in practice, so we had a ten-place grid penalty and then he came through to second. I remember the satisfaction when he passed Montoya, as relations with his team-mate weren't at their best at that time.

In many ways, Valencia this year was a better result as we were still on the up, whereas at McLaren there was an expectation of a good result. The only downside to Valencia this year is that Romain Grosjean had been incredibly fast and then we had an alternator failure. We felt Romain could have won that race and while we were pleased Kimi was on the podium, there was a regret that a good team result had not quite materialised.



Kimi: "One win is the same as any other win. To be honest, I don't care what people think"

TWO INTO ONE DOESN'T GO

Hungarian GP
Grid: 5th
Race: 2nd



Kimi Räikkönen: Hungary was one of those races where I thought I drove really well. I made some mistakes in qualifying and the car was better after we made some set-up changes. Again I was out of position and, knowing Hungary, it is very difficult to overtake, but I managed to preserve my tyres for a long run. Then when everyone came into the pits I pushed and I was able to make up a lot of time. I caught Hamilton for second, but unfortunately I wasn't as quick and wasn't able to pass him.

As I came out of the pits I knew my team-mate was close because the team told me on the radio. Then we were side by side and I saw that as I braked he was coming closer towards me. But it was a normal move, it's racing and we didn't touch. Going around Turn 1, I locked the inside wheel. I probably pushed a bit too hard at that corner, but it was a good move and it would have been exactly the same if it was the other way around.

Mark Slade: We found ourselves in the happy position where other people had stopped first ahead of us and they had got themselves stuck in traffic and we were still going quickly, so we just kept going. Romain was being held up and he wasn't able to use his pace, but Kimi was because he hadn't stopped, and when he came out there was a clear track ahead of him. And then he ultimately came out of his second stop ahead of Romain.

You're thinking in the team: 'Please don't hit each other!' From Kimi's point of view it was a very assertive move, but then as Kimi said, Romain would do the same. F1 is a strange sport in the way the team works together but, within that team, two drivers are rivals. Your biggest threat is your team-mate because everyone knows you have the same equipment, or assume you have. Inevitably you are judged heavily against your team-mate and most drivers know it, which creates interesting tensions. →



EAU MY WORD!

Belgian GP

Grid: 3rd

Race: 3rd



Kimi Räikkönen: At this stage of the year it was frustrating at races like Germany when we wanted to put new bits on the car and test them but we were unlucky with the weather. At other times when it rained in qualifying, we were able to get the best out of the car, but were still out of position for the race. Here I passed Michael before the last chicane on this lap and then on the next lap – where this photograph is taken, at the top of Les Combes – he re-passed me on the straight using his DRS. I found that even when I had the DRS I couldn't pass him on this straight. So the plan was to pass him and then use the DRS to hold him off. And I think he lifted enough in Eau Rouge, which slowed him down. I was fast enough in the corner so that I had nothing really to lose and I thought that he's old enough to back off. Also I think drivers give each other more respect in faster corners because if something goes wrong there is a bigger chance of someone getting hurt.

Mark Slade: That was just brilliant through Eau Rouge. But it was the lead up to it as well. He knew he was quicker than Michael and he tried several different ways to try to get ahead of him, which didn't work. Like he said, the only way he could get the DRS was by being behind him at the DRS activation point and then overtaking him before he deployed it.

It was a clean move and completely under control; it was superbly clinical – but we all held our breath at that moment. For me, it reminded me of the Häkkinen move on Michael around Zonta a few years ago. Whatever you say about Michael's form this year, that day he was driving the car extremely well and, as always, he's a difficult man to pass. The way Kimi went about it, trying one approach, then another, was just fantastic.

TOP LOTUS POSITION

Abu Dhabi GP

Grid: 4th

Race: 1st



Kimi Räikkönen: It's been a hard season, but this win is what we needed for the whole team and for myself. We hadn't had the easiest time over the past few races, but this result gives everyone more belief. We made a good start and made sure we weren't stuck behind cars that weren't as fast as us. I managed to get past Webber and Maldonado before I changed into second gear. Of course, a win is the same as any other win, but I'm glad now that people will stop asking me if we can win or not. To be honest I don't really care what people think, I just do my thing and if I'm happy with what I'm doing and if it's in the best interests of the team then that's that.



Mark: "We wanted to get the monkey off our back, so Kimi's win was massively satisfying"

Mark Slade: We wanted to get the monkey off our back and we've had so many ups and downs, on and off the track this year that Kimi's win is massively satisfying. Plus I think the performance proves that Kimi is his old self again. There was no doubt that Lewis had the car out there and was going to win the race, but who knows – perhaps he was going to struggle with tyre degradation later in the race?

For me, the moment that Kimi was at his strongest was after the second Safety Car. That was when he put in the two fastest laps of the race and pulled a second gap on Fernando – that was absolutely sensational. As for all the radio comments, it was Simon Rennie who speaks to him on Sundays, and... well... he's always been like that, ever since I've worked with him in 2002. His focus is on doing what he's doing and everything else is irrelevant to him. We would do exactly the same again, and there isn't any particular issue about it at all.

The closing stages were tense. Alonso closed half a second on us on one lap and our hearts stopped beating. It was terrifying: we were in suspended animation. I'd been there with him before and I knew he was going to do it, but it was tense. Then in the last two laps he'd just saved enough in his tyres and started to pull out the gap to Alonso again. He'd judged it to perfection. It was our first win since Fuji 2008, so we had a beer with Kimi afterwards. It's important to celebrate those moments together. 🏁





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Williams reloaded

The rebuilding of a legend

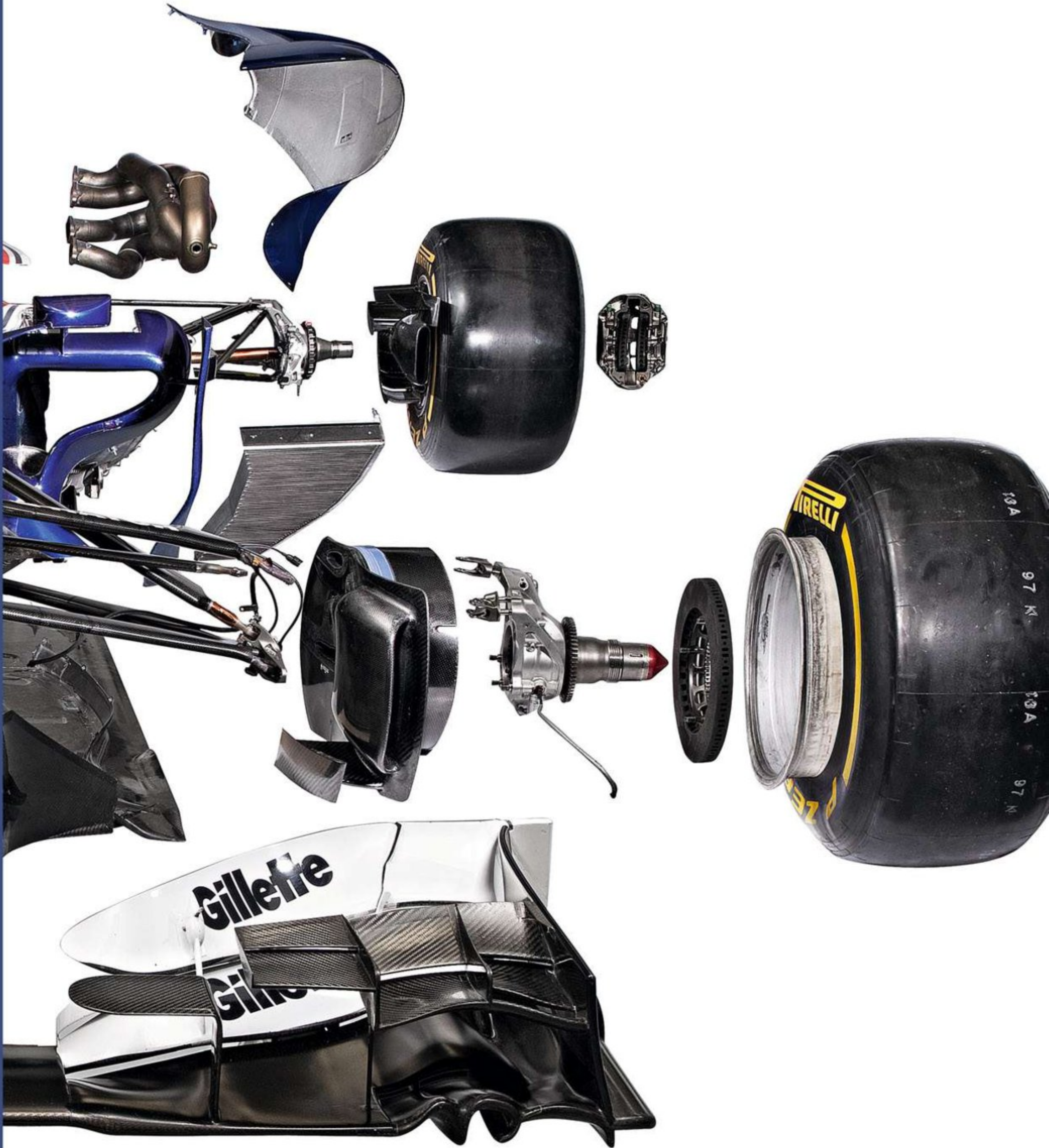
An illustrious team battered by recent trials, Williams have endured a desperate run of form for several seasons. But 2012 brought new leadership, new technical direction and a breakthrough win. And with a smokin' 2013 driver line-up, things look even better



WORDS
MATT YOUSON
PICTURES ALISTER THORPE



WILLIAMS RELOADED



Jubilation as Maldonado bags win number 114 for his team... eight years after Juan Pablo Montoya scooped win number 113 in Brazil



Whoever coined the phrase 'everyone loves a winner' obviously didn't work in F1. Winners are applauded, fêted even, but love tends to be conditional: some winners are loved more than others. At the Circuit de Catalunya on 13 May, when Pastor Maldonado scampered over the line ahead of Fernando Alonso, he did so to a collective sigh of despond from the largely partisan crowd. But on the other side of the catch fence it was a different story. You wouldn't call it love, but certainly there was an outbreak of the feel-good factor in the paddock. It's always nice when a driver takes that maiden victory, but the spontaneous outburst of contentment seemed more to do with Williams getting back to winning ways. Suddenly, Formula 1 was the right way up again.

At least that's how it felt to people of a certain age. Perhaps to a younger generation, the Williams name no longer resonates quite so loud. This was win number 114; it comes eight seasons after win 113. That's a long time to wait.

Williams have never stopped talking a good game but, in recent years, they had begun to take on the air of a team living on past glories, like Tyrrell, Brabham and Lotus before

them. And 2011 was undoubtedly their nadir: five championship points and ninth in the constructors' standings was Williams' worst performance in their 34 years of competition. The rot needed to stop – and thankfully it did.

CRISIS? WHAT CRISIS?

In mid-2011, Williams went into the sort of crisis management mode associated more with a bottom-of-the-league football team than a venerable icon of motorsport. New signings walked in the front door while others quietly left by the back. Technical director Sam Michael and chief aerodynamicist Jon Tomlinson announced their departures, replaced in those roles respectively by former McLaren man Mike Coughlan, and Jason Somerville, who was returning to Grove after spells with Toyota and Renault. Another Toyota alumnus, Mark Gillan, was recruited as chief operations engineer, a nebulous job title that saw the aerodynamicist becoming the *de facto* technical leader at the track. Change on this scale was a big deal for the sort of team where people can remain for an entire career. Williams had started the season with a settled and long-standing technical leadership: shortly after the summer break, they

had an entirely new team in charge. Priorities changed, philosophies changed: there was revolution in the air.

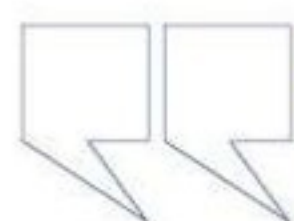
"I think it's clear to everybody that last year was tough," says Gillan. "We had a lot of problems with the car. The performance wasn't there, and evolving the car was difficult. Myself, Mike Coughlan and Jason came in as the new technical team. We took a very pragmatic approach and decided to use the remainder of the 2011 season as an extended test session.

"It wasn't a case of throwing everything out and starting again. Our 2012 car, the FW34, has quite a lot of DNA from the FW33 but we've overhauled the areas in which we were weak, and kept what was strong. That definitely paid dividends at the beginning of this year when the new car debuted with many of the issues from 2011 ironed out."

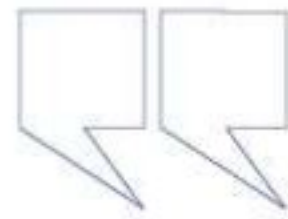
The obvious bad points with the FW33 were its propensity to chew tyres and the inability of the Williams-Cosworth partnership to make an off-throttle blown diffuser work with anything like the efficiency of teams higher up the grid. There were other problems but, as with all the good points on the car, these were less easy to spot.

"FW33 was good from the point of view of the overall car integration," says Gillan. The KERS →

INSET: LORENZO BELLANCA/LAT



Shortly after the 2011 summer break, Williams had an entirely new technical team in charge. Priorities changed, philosophies changed: there was revolution in the air.



The general layout of the FW33 was decent, but when you put two cars out on track and they're very different when they should be identical, that's not where you want to be

worked well and the general layout of the car was decent. In contrast, an area where we struggled was in terms of part quality. When you put two cars out on the track and they're very different when they should be identical, that's definitely not where you want to be. This year we've got that under control. It perhaps isn't an obvious improvement, but it's an area where we've pushed hard to improve within the team."

That last point is quite an admission. Good teams do, from time to time, build cars they simply can't make work – but they're still expected to be well-built cars. To Williams' credit, they never really threw in the towel with the FW33. Development parts arrived at a furious pace throughout the entire season and, under those circumstances, part quality has a tendency to suffer – but it isn't something to be expected from Williams, who prospered in the days of the sport's largesse and built up a factory and workforce whose size and scope are beyond that of their latter-day midfield rivals.

"That actually was a pleasant discovery," says Gillan. "The amount of infrastructure and the tools that we've got – we certainly don't lack anything. We're very fortunate to have very good facilities and very good strength in depth

in terms of personnel. There are lots of people here who've seen the good times and the not-so-good times and understand F1 to be a cyclical business. So when things are not so good, heads don't drop. One of the biggest advantages we had at the end of last season was that the people here kept pushing because they understood a small redirect could make a big impact."

PLUS ÇA CHANGE...

Gillan, Coughlan and Somerville aside, Williams made another signing in the summer of 2011 – arguably their most important acquisition: Renault engines.

The relationship between Williams and Renault reads like the plot synopsis of a lurid ITV costume drama: the great dynastic marriage torn apart, the years of being stuck with the wrong partners, occasionally catching one another's eye over the dinner table and, finally, the much-anticipated reunion.

When the parties invited their friends and relatives to Grove for the announcement of the worst-kept secret in the paddock, both Sir Frank Williams and the president of Renault Sport F1, Bernard Rey, insisted this would be something

new and that the partners would not dwell on the past. Those statements would have been more believable had it not been for the starry presence of Williams-Renault champions Nigel Mansell, Damon Hill and Jacques Villeneuve up on stage, Alain Prost live via video link on the screen behind them, and the appropriate Williams-Renaults wheeled over from the museum and lined up in front. The Williams-Renault partnership had returned, and they weren't in it simply to make up the numbers.

The difference the new motor (and partnership) has made is still difficult to quantify, for even after five years under the engine freeze there isn't any information in the public domain regarding the relative performance of the four engines used in F1. Informed opinion, however, would suggest that in moving from Cosworth to Renault, Williams gained an engine that was lighter, could run hotter, had better fuel economy and suffered less performance deterioration over its lifetime.

In the normal course of events, much of that gain might have been cancelled out by the challenges of getting to know a new technical partner, but the Williams-Renault partnership hit the ground running thanks to two factors: →



Williams and Renault re-ignited their relationship after a 13-year hiatus, reaping rewards such as this solid fifth in Abu Dhabi

THE BACKSTAGE BOFFIN

MIKE COUGHLAN

Williams' technical director Mike Coughlan is F1's most elusive senior manager. Rarely seen at race tracks since his return to Formula 1, the former McLaren chief designer works from the comparative seclusion of Williams' HQ and doesn't do interviews.

Coughlan began his career straight out of university, designing cars for junior formulae. He progressed to Lotus and worked on the gearboxes of Ayrton Senna's cars before moving on to work with John Barnard, having a hand in designs for Benetton, Tyrrell, Ferrari and, latterly, Arrows, first as Barnard's deputy and then as technical director. He held that position from 1998 until his departure for McLaren in 2002, when he took up the position of chief designer.

Following his sacking by McLaren in the wake of the 2007 'Spygate' imbroglio, Coughlan served his penance outside the paddock. He worked briefly for the abortive Stefan Grand Prix outfit, which attempted to muscle its way onto the 2010 grid; after that he worked on an armoured vehicle project and then joined NASCAR team Michael Waltrip Racing as director of vehicle design.

Williams' decision to bring Coughlan in from the cold was expedient. When the FW33 failed, Coughlan had the experience and track record to make an impact without Williams needing to poach from the closed market of their

peers. He was initially given the title of chief engineer before slotting into the technical director's role vacated by the departing Sam Michael.

"When I joined the team, I felt that the team had everything it needed in terms of equipment and resource to be successful," Coughlan was quoted as saying in Williams' in-house journal. "I felt that the engineering side lacked general focus and direction, and that it wouldn't need much to make the team competitive again."

Coughlan's experience makes him particularly well-suited to that challenge, as he just about fits into the generation when cars were designed by individuals. The art of being able to consider the entire car as a coherent entity has slipped out of fashion in recent years as younger designers tend to specialise. The dearth of designers capable of seeing the bigger picture is frequently lamented by team principals – or at least the ones who don't have Adrian Newey at their disposal.

PHOTOS: GLENN DUNBAR/LAT;
ANDREW FERRARO/LAT



A FAMILY AFFAIR

CLAIRE WILLIAMS

Frank Williams' daughter Claire smiles when I ask if working for her father's F1 team was always in her career plans. "Frank did not want me working at Williams," she says. "Never. And I had no aspiration to work here either. When the former commercial director, Jim Wright, persuaded him to give me a go, I got a six month trial... Frank didn't want his kids running around, which I can understand."

Her first memory of going to a grand prix was a race at Zandvoort in the mid-1980s, when Nigel Mansell was given the job of looking after Claire and her brother Jonathan. In later years she was appointed tasks such as making sandwiches and cups of tea for the mechanics.

Earlier this year, Claire, 36, joined the board of directors at Williams and now plays a key role in the governance of the team, from sponsorship acquisition to commercial relations, working with drivers, marketing and overseeing communications. The role carries a lot of responsibility, but ensures that, to a degree, Williams remain a family-run team.

"Everyone here understands that at our heart is a family – and that pervades the company," she adds. "It even comes down to the cutlery in the motorhome that was chosen by my mother."

James Roberts

they did their deal very early and both sides had a good idea of what they were getting.

"The first thing to say is that I think the deal was done at exactly the right time," says Renault Sport F1's deputy managing director Rob White. "This is probably the first time in all my years in F1 that we had a customer deal agreed with the right timing in order to get the organisation right. We knew in May 2011 that we would be working with Williams this year. And that meant there was sufficient time for both engineering groups to get to know one another. It meant that the drawing office at Williams was able to take account of the requirements of the Renault engine right from the get-go.

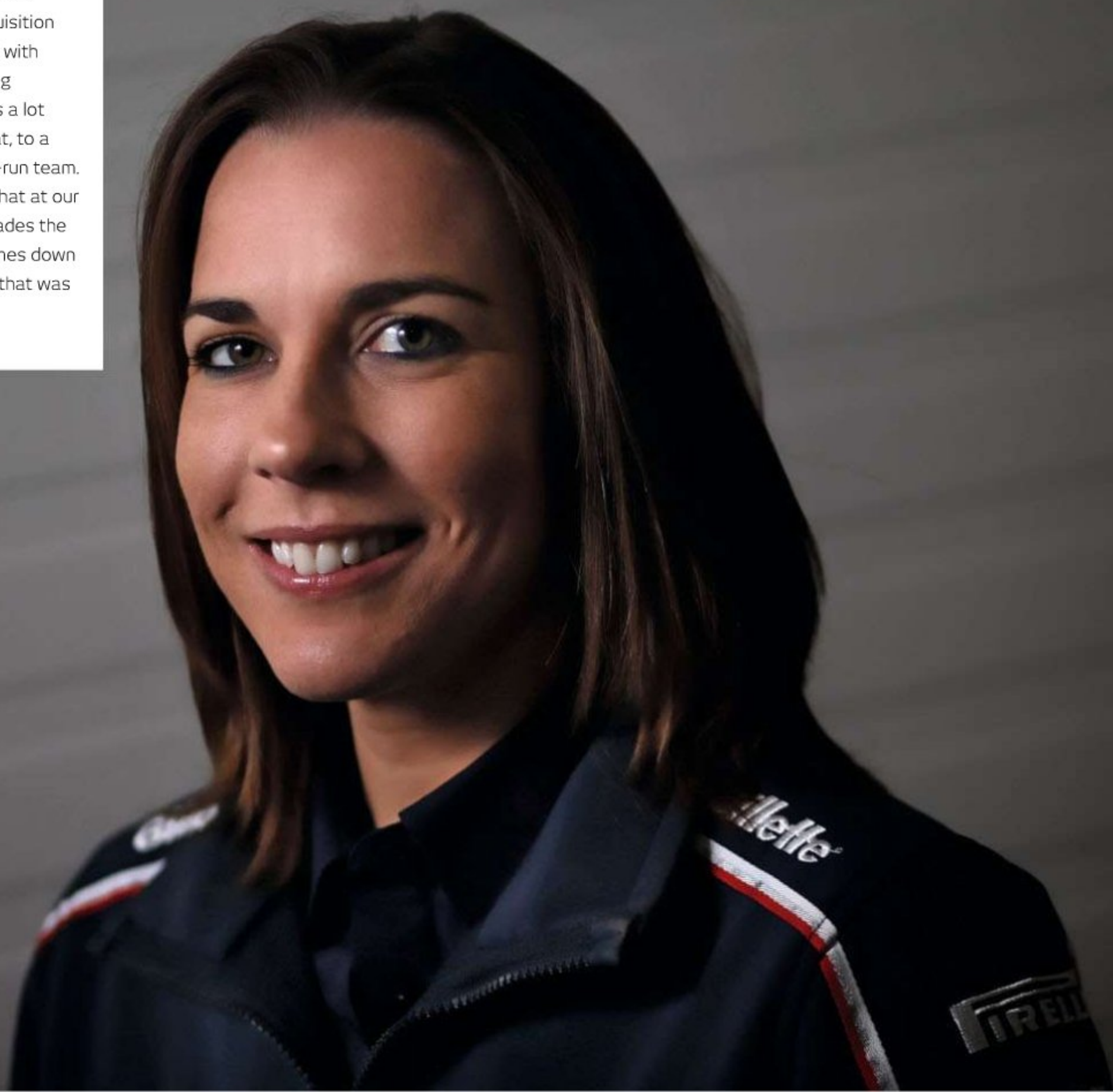
"There was no lost motion, which is always a good thing. We were able to get straight down to brass tacks and talk about how we would install the engine in the car, the way the track activities would be organised, and so on and so forth."

Advance notice is only half the story – the other is that Renault had been prepared to push the button on a Williams deal for years. Rumours

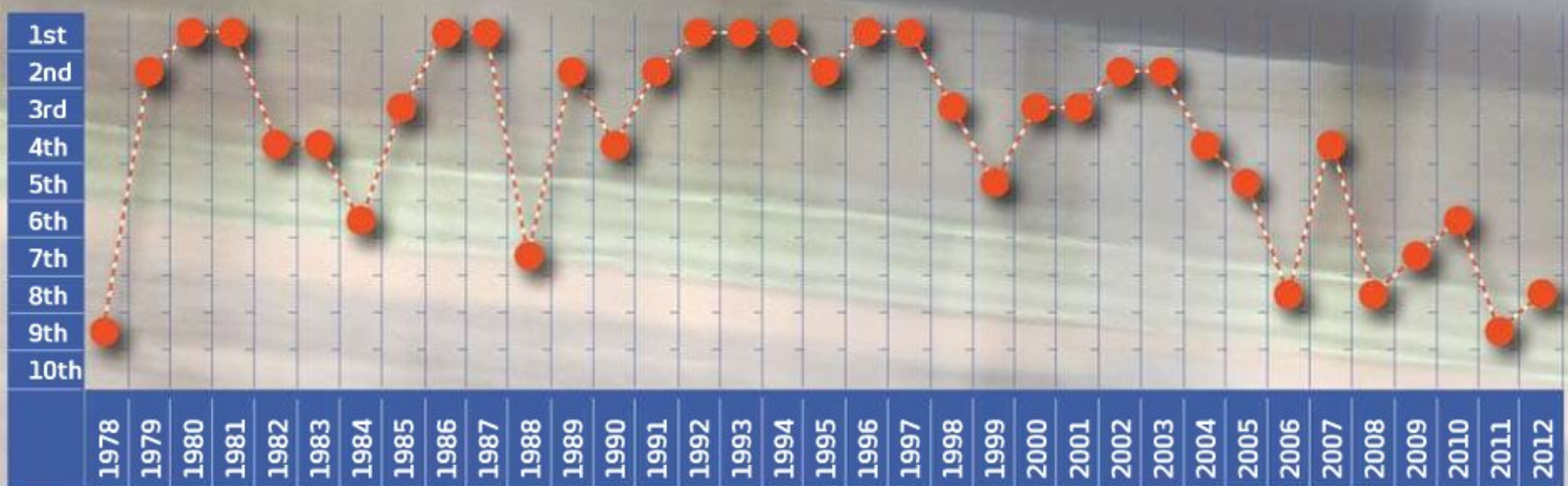
of a Williams-Renault tie-up began circulating almost as soon as Williams and BMW went their separate ways. They were not without substance.

"It's widely known that we'd been approached in previous years to supply engines to Williams, but that for one reason or another it didn't come to pass," says White. "An odd detail is that one reason we had a 'care package' ready to go for the installation of the engine is because it has now been put into a number of different F1 cars – but the format for the presentation of that information was actually worked out in one of our previous encounters with Williams. So we knew what to expect in order to furnish Williams with the necessary information to put the engine in the car. It meant we had a straightforward relationship right from the start."

"The Renault partnership has been one of the highlights of this year," adds Gillan. "The integration of Renault onto the car has been seamless. We have a very good working relationship from the top technical team all the way down to the garage. It couldn't have gone



WILLIAMS' RISE AND FALL IN THE CONSTRUCTORS' CHAMPIONSHIP



The 2011 FW33 managed to scrape just five points on its way to ninth in the standings: an all-time low

any more smoothly." Thierry Boutsen gave the original Williams-Renault partnership a first victory at the 1989 Canadian Grand Prix, their sixth race in tandem. This time round, the partnership went one better, with Pastor Maldonado's win coming at the fifth race. For Renault, that was a validation of a decision that had not been taken totally without risk.

"For us, it was a big commitment to take on a fourth team [in addition to Red Bull, Lotus and Caterham]," says White. "We were uncertain about whether or not the Williams organisation we would find would be the Williams organisation that we were expecting. We were clearly conscious – and so were they – that their on-track performance in 2011 had been far from satisfying. We were optimistic that we would be able to help them turn the corner – although I do think that came sooner than anyone would have predicted or dared hope."

THE ACID TEST(ING)

The Williams-Renault FW34 didn't set the timing screens alight at the start of winter testing – but it did run, and run, and run, piling on the kilometres without any of the gremlins that you might expect to afflict the only car in the field with a new engine on board.

"Right from the off, Pastor and Valtteri Bottas – who had driven the previous car – could feel the difference," says Gillan. "The new car was much more benign in terms of its characteristics; much easier on the tyres. It wasn't going to push us into a corner with strategy... it was going to allow us to be much more flexible."

For six days, the FW34 skulked around at the bottom of the timing screens; only on the third day of the first test in Barcelona did it rise to the top, when Maldonado did a short run on supersoft tyres just before lunch. It looked like a glory run at the time, but once F1 returned to the

circuit for the Spanish Grand Prix, Maldonado proved how genuine the pace was. Since Spain though, Williams have failed to kick on. Bruno Senna has driven gritty races in the second half of the year but has struggled to be effective from poor qualifying positions. Maldonado, on the other hand, has shown himself to be superbly capable over one lap – but has too often been involved in situations that see him either fail to finish the race or incur the displeasure of the stewards. Overall, it's been a frustrating season for Williams. But having gone from hapless ninth in the championship last year to a race-winning, front-row-threatening outfit this time around, the team's dissatisfaction with points paid for performance shown is a sure sign of progress. The ultimate ambition, of course, is to get back to a situation where a Williams victory is greeted with widespread apathy. Back, you might suggest, to where they belong. 

WILLIAMS RELOADED

In
conversation
with

Torger
'Toto'
Wolff

Williams' new executive
director tells us about
his role with the
resurgent team

INTERVIEW ANTHONY ROWLINSON
PORTRAIT GLENN DUNBAR/LAT





So what is your new role at Williams and how is it developing?

It's not so new. I did it on an informal basis for a few months after Adam Parr [former chairman] left, and it's just Frank and I trying to share responsibility for the team. I'm a shareholder of the team and I'm on the board. It hasn't changed much from my previous role, which was overlooking what is happening in the company in all of the different business entities, but I am more involved in the racing part now.

I'm trying to assist Frank and help out wherever needed. Frank covers a certain angle of the business: he has a fantastic pedigree and he is Williams, and I am covering the daily business. For him, it is more representing the team to the very senior partners.

You come from a financial background, but you used to be a racer...

Yes, I still own an investment company, but I'm not involved in the daily running of it any more and I've retired from racing now. I raced in junior categories, stopped because of a lack of sponsorship, and returned as an amateur driver in GT classes and rallying.

What's your vision for Williams in the future?

I have short-term, medium-term and long-term visions. F1 is... how can I say this... you can't turn a team around and change a structure within a year. You have to hire the best people in every department, with the best drivers and the best backing – and that takes time. And I think the team, over the past few years, were fading for many reasons. Now we are starting to reap the rewards of our restructuring. The win came early in Barcelona, which put pressure on the team, which is a good thing.

So the short-term vision is to be consistently in the points and have highlights that keep everybody motivated and attract sponsors and partners. The mid-term vision, a two- to four-year view, is to become, or to be seen as, a front-running team: to be able to win races; to get on the podium more regularly; and to improve in all areas of the team, not just the racing side.

The long-term view is to get back to where the team deserve to be – fighting for a world championship.

You entered Williams virtually unknown. Is that a fair comment?

Absolutely, as I wasn't involved in F1 at all. But aside from my own racing background, I co-own a rally team in Austria called BRR and we run the Red Bull Juniors. I also co-own a company called HWA, which basically runs DTM for Mercedes. It's very well-known in the motorsport community and a couple of years ago we were actually offered a look at Toro Rosso.

And then the door opened to F1. I got to meet Frank and Patrick Head and Adam Parr, and decided to invest in the team and be an active non-executive director. It's been almost three years now and, over the past 18 months, I slipped into a role where I was speaking to Adam or Frank every day. So this is why the next logical

step was a more executive role. It wasn't foreseeable for me a year or two ago because I was still involved in my investment business, but it's what I want to do now.

Do you feel a special sense of responsibility because Williams have such a proud history?

I feel responsibility for almost 600 people and their families. There is a lot of responsibility in doing deals and securing funding for the team's long-term survival. What I am trying to do is to build a solid team. The past is yesterday's news: in 2013, nobody will be interested in what happened in 2011. My aim is for us to achieve the goals we set and ensure everybody pushes hard. We have fantastic new people on board and the right spirit.

Williams have made extensive technical changes that have been effective: last year you scored only five points, but this year you won a race.

Teams are always judged by their racing performance, not by their communication or marketing departments or by the management discussions they have. And you are right, we have reshuffled the whole technical side. I think the reshuffle was necessary to bring in completely new people who had nothing to do with the past. That proved to be the right decision. I don't think we are making miracles; we are just solid.

Managing change is hard. How did you do it?

The team were in a situation many companies are in where you have iconic founders who have built the structure, like Frank and Patrick, who then reach an age where you have to be able to bring younger people on board and let them properly execute what they think is right. I think Patrick was almost a god-like being here, overseeing everything. This is why it was good for the company to take a radical step on the technical side.

Who initiated this: you or Adam Parr?

From the moment I joined it was clear, although it was late on, that we must reshuffle the whole organisation – and this is what happened. The board initiated it and it was Adam who executed it and hired the new guys.

Do you see a team principal role for yourself?

No, the team principal of Williams will always be Frank. I would not dare and would not want to take over this position because it would be stupid. He is the iconic founder and embodiment of Williams. This is why he should be team principal and I am happy about that.

You have dropped Senna for Valtteri Bottas, what can he achieve in his rookie season?

We have Valtteri and Pastor on multi-year deals which provides us with a long-term stability for the team. Valtteri has been with us a couple of years and everyone knows him well, but of course there is a commercial reality and we've been successful in securing backing that is not unsubstantial. He's going to learn a lot from Pastor and for us it's important to be scoring regular points, so that's what we're expecting from him.

Factfile

Date of birth

12 January 1972

Birthplace

Vienna, Austria

Team

Williams

Role

Executive director

1992 Competes in Austrian Seat Ibiza Cup before switching to Formula Ford

2002 Founds a driver management company with Mika Häkkinen

1993 Works as an instructor at the Walter Lechner Racing School and becomes a professional racing driver

2003-4 Races in the FIA GT/GT1 Series

2004 Sets up Marchsixteen Investments

1994 Wins class at the Nürburgring 24 Hours

2006 Winner of Dubai 24 Hour race and runner-up in Austrian Rally Championship

1998 After working for an Austrian bank in Poland and a steel firm in Vienna, founds private equity firm Marchfifteen

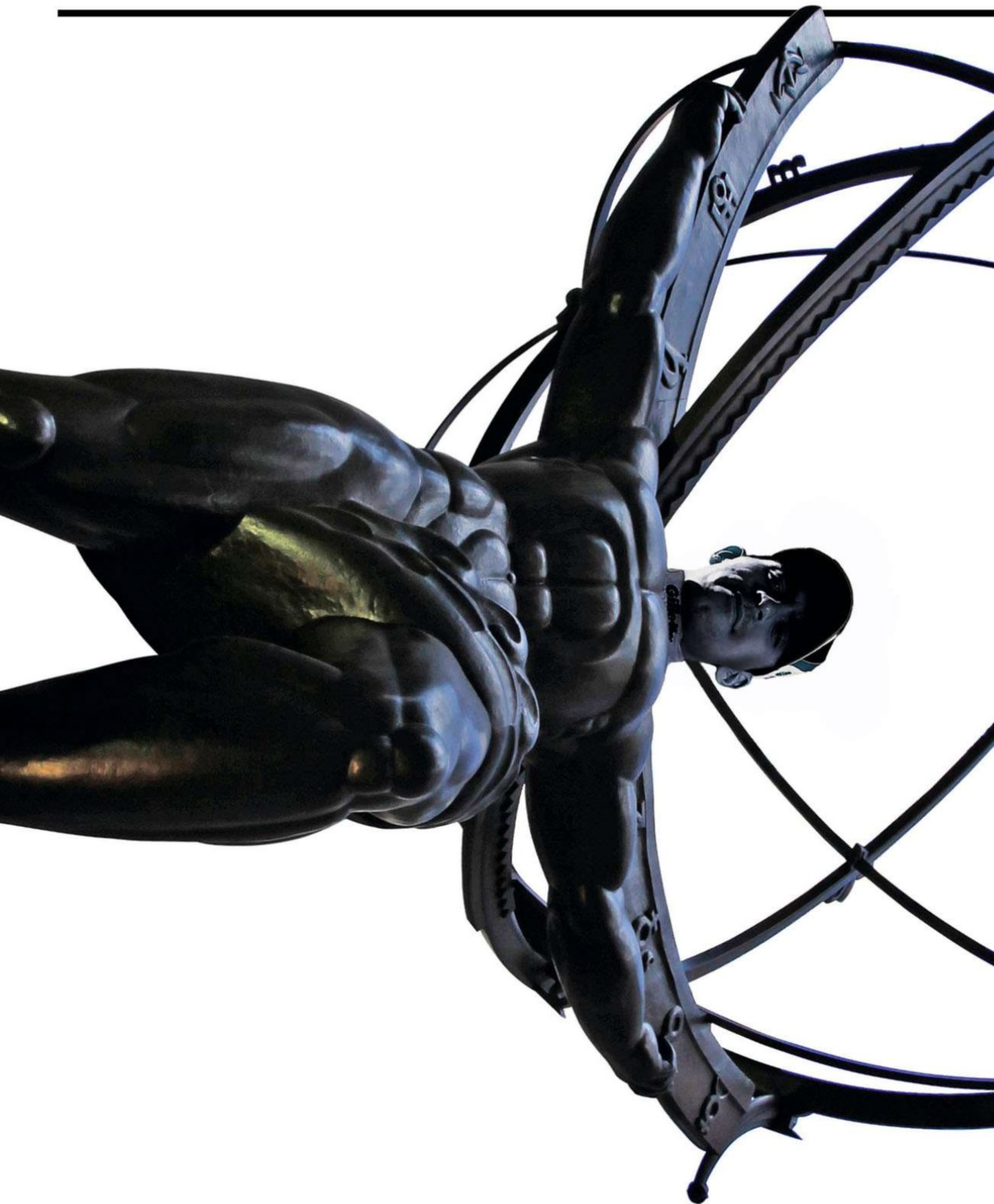
2009 Sets a new GT lap record at the Nürburgring Nordschleife in a Porsche 997 RSR

2001 Comes second in Euro Endurance Touring Car Series

2009 Invests in Williams F1 and becomes non-executive director

2002 Comes sixth overall in FIA NGT world championship, with one win

2012 Is appointed executive director of Williams Grand Prix Holdings plc



P A S T O R M A L D O N A D O

The weight of the world

Reckon Pastor Maldonado's a little too hot for his own good? Well, consider that he's F1's only state-backed driver and races with a nation's expectations on his shoulders

WORDS ANTHONY ROWLINSON

BACK in the day, two Venezuelan brothers headed for the hills around Caracas, trailing their soapbox karts high into the footslopes of the El Ávila mountains.

Johnny and Pastor were daring young guns, as fast and fearless in their gravity-powered downhill racers as any other thrill-seeking hot-shoe. They were good, too – even a little bit famous in their circle for being *the* guys to beat on the local soapbox derby scene. The Brothers Maldonado: quick as you like, brave, ambitious, uncowed by the reputation of others...

If that sounds a little bit familiar, then well it might, because one of the brothers, Pastor Senior, would go on to father Venezuela's first F1 winner; the other, Johnny, was the guy who would switch his genetically pre-programmed nephew on to racing and guide the impressionable youth towards a life of speed.

That was then – maybe 40 years ago and long before Pastor Rafael Maldonado Motta was born. And this is now, in the lobby of the InterContinental Tamanaco Caracas, where Pastor Junior has flopped languidly into an armchair to be interviewed by *F1 Racing*. The inextinguishable grin is present and correct as is the characteristically easy, unaffected manner that has done so much to endear him to his team and his burgeoning fanbase. Dressed in race-driver-spec sneakers and combats (plus an ever-so-slightly gangsterish black bandana) he wears the look of the modern F1 racing driver with aplomb. Here, on home turf, Pastor is supremely relaxed and unfazed by the swirl of media and sponsor demands that occupy pretty much his every waking minute whenever he ventures home. →

PICTURE: PAUL BROWN/REX/FEATURES; GLENN DUNBAR/LAT

"I AM ALWAYS LOOKING TO DO THE MAXIMUM. SOMETIMES YOU CAN DO MISTAKES WHEN YOU PUSH VERY HARD... BUT SOMETIMES YOU CAN WIN"



Pastor, you see, became rather more than a racing driver during his breakthrough F1 season in 2012. That first win at the Spanish GP was even more significant for him than it was for a reconfigured Williams, since it validated the state-run PDVSA sport funding project that has projected and protected him for almost a decade. At a stroke it made him a national sporting ambassador, bearing duties not only to himself, his family and his team, but also, in a very explicit way, to his country and government.

It is, he concedes, a unique-in-F1 situation, and one that might burden a less resilient, less light-hearted soul: "Is a big responsibility to have all the country behind, sure," he says. "Everyone is pushing so hard and Formula 1 is actually a new sport here, so everyone is looking for wins, more victories and maybe even the championship. A single win? Ha! Not enough."

Not enough now, not now he's a proven winner with a fast race car. And don't his backers know it. While PDVSA is a relatively unfamiliar conglomerate to those whose interests are not focused on Venezuelan politics, or its oil industry, it is a business with global expectations that is driven by results, as Williams insiders have discovered. The year 2011 – Williams' *annus horribilis* – was not a great experience for either side. But 2012 was immeasurably sweeter – although with a concomitant increase in expectation. A Pastor win, therefore, was PDVSA payback, as would be any future success: "The PDVSA project started in 2004 and that helped me a lot," he reflects. "We made a big project: Venezuela Formula 1 with Pastor Maldonado. We were a group of four or five Venezuelan drivers racing around the world, but I was the most successful one. At the same time, PDVSA saw in me the potential and I am always grateful for that."

While it seems natural, now, that a Venezuelan powered by petro-dollars is one of the drivers we expect to see jousting for top times each F1 weekend, committing to Pastor was a huge leap of faith for PDVSA. Venezuela is a baseball-obsessed country ("We have only baseball, baseball and baseball," is Maldonado's laconic observation) and

tuning the country in to a rather different, and vastly more sophisticated, sport would not be the work of a moment. "We did not have the culture of F1," says Maldonado, "and it was so difficult to make the people accept that one Venezuelan had the possibility to go for F1. As you know, when you are in the junior classes nobody sees the TV, nobody sees the races and nobody follows you. But at the same time you need that support to become an F1 driver. I was lucky because we had GP2 on live here every race, so when I won the championship in 2010, it helped a lot for the sponsor and a lot for the support of the people to create a culture of: 'Okay, there is a chance. We have a good driver, we have a good sponsor and together we have a good formula to increase tourist incomes for Venezuela.'"

There it is, writ large and well-understood: the link between success for Maldonado on track and increased global profile for Venezuela. The surprise is that Pastor is so cool about carrying a nation's expectations.

Appearances, though, are deceptive. Beneath that patriotically liveried lid, the fires constantly rage, he admits – no great revelation given his feisty

CV

Name
Pastor Rafael Maldonado Motta
Age 27
Born Maracay, Venezuela



CAREER HIGHLIGHTS

2012	Pole and victory for Williams In Barcelona
2011	Scores his first F1 point for Williams
2010	Wins GP2 Series with six victories, for Rapax
2009	Sixth in GP2 with ART
2007	One win in GP2 with Trident
2006	Third in Renault World Series with Draco
2004	Formula Renault 2.0 Italy champion

on-track performances throughout 2012: "Relaxed? Yeah, but not in the car! Ha ha ha!" he chuckles. "Sure I can be very relaxed, especially when I am here, away from the races, with my people, with my family and friends. And, to be honest, I am calm in the car as well, but I am always looking to do the maximum. Sometimes that's good and

sometimes not. Sometimes you can do mistakes when you push very hard... but sometimes *you can win*." He states these last words with a spine-tinglingly intense conviction, his normally soft Latin tones taking on a suddenly hard edge. "In F1 you have to find a compromise between →

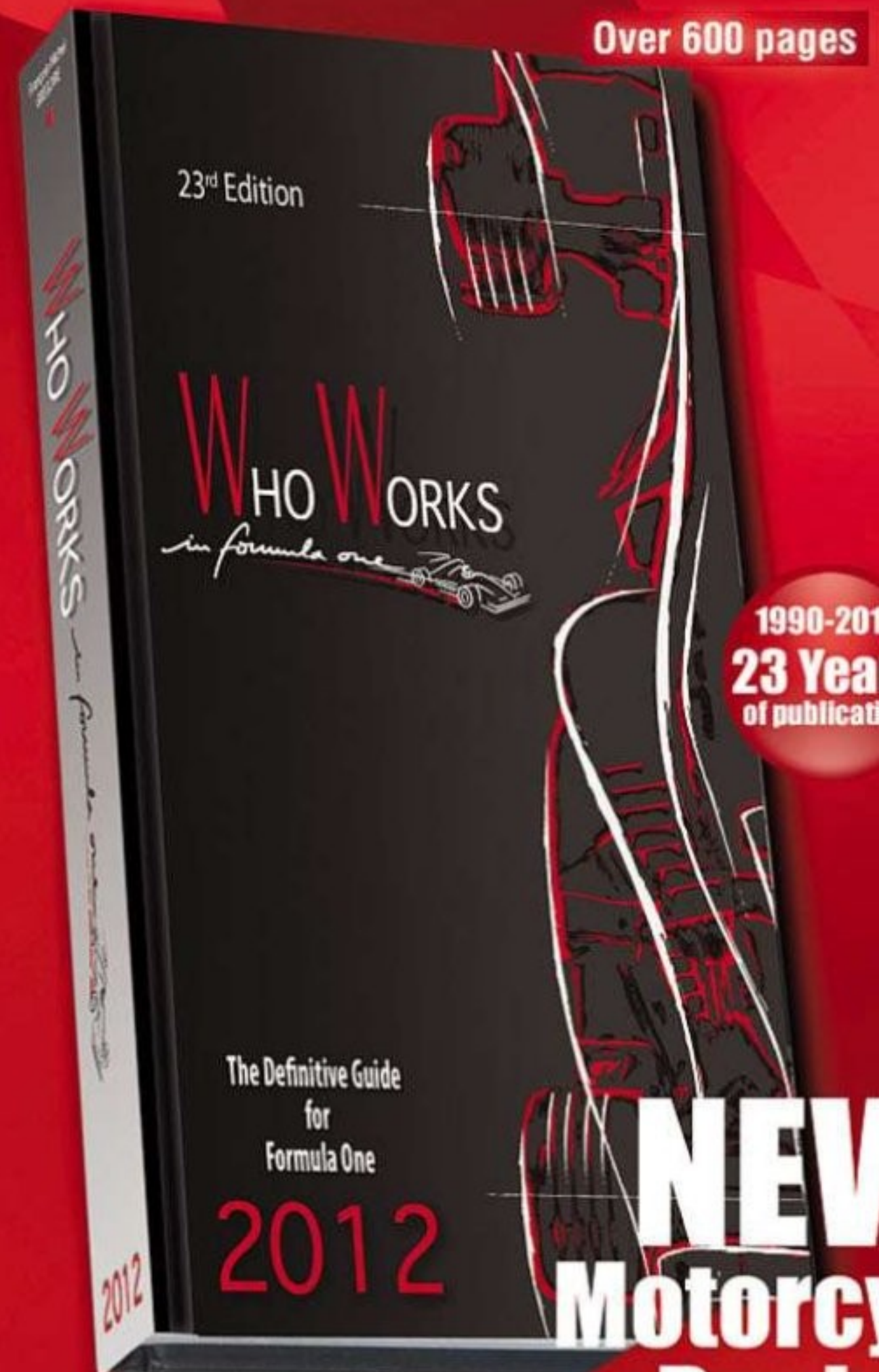
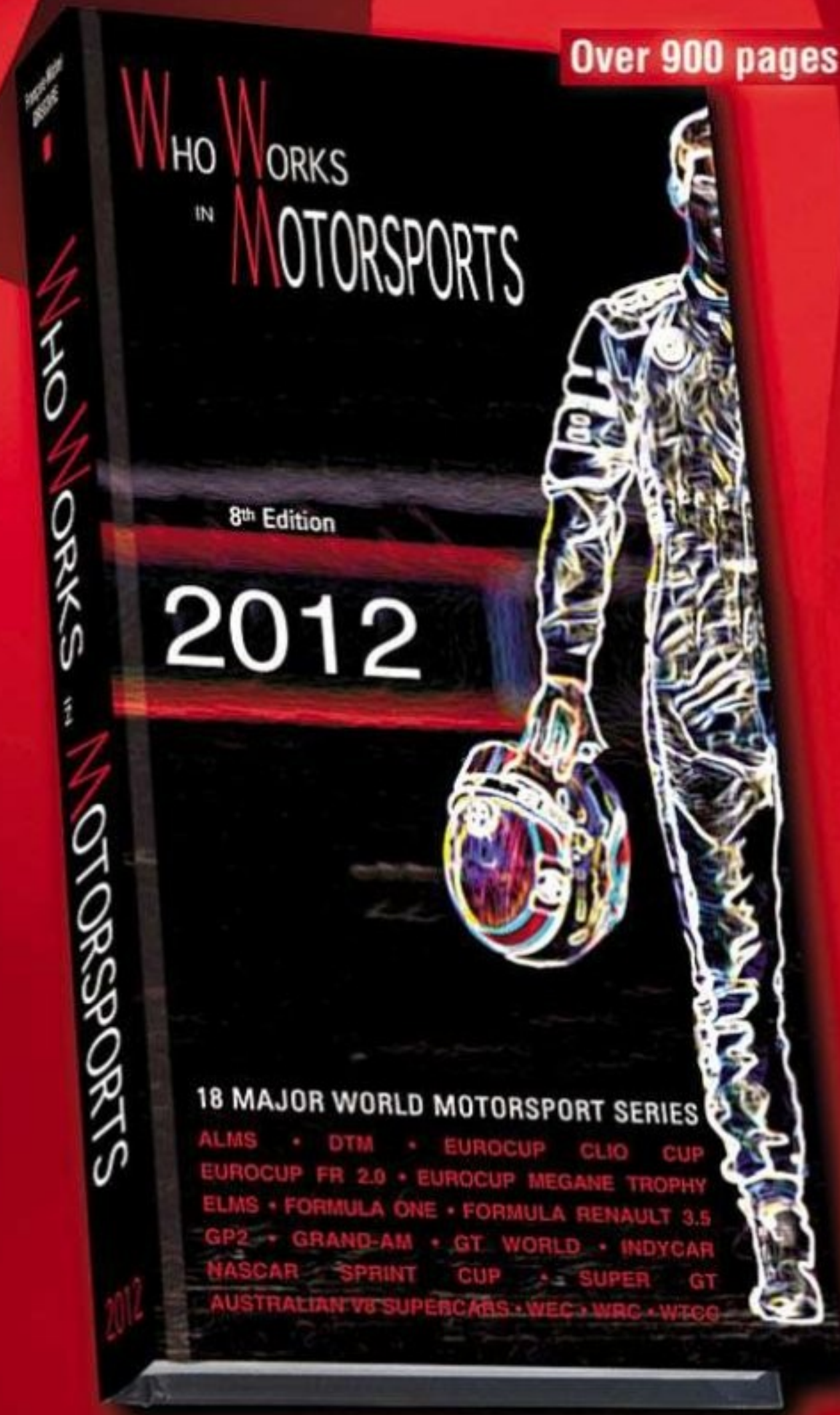
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pushing and sometimes slowing down," he continues, "and yes, it's very difficult to find this compromise, especially when I need to show my potential and to show the potential of my country – to give them back what they invest."

It's an unusual kind of pressure for a Formula 1 driver, akin to that experienced by any sportsman pulling on national strip and suddenly becoming a focal point for their homeland's pride, hopes and fears. Many drivers carry their country's colours on their helmets (Coulthard's classic saltire; Ronnie Peterson's Swedish two-tone), but none wear their country's heart on their sleeves, so to speak.

Maybe this goes some way to explaining the intensity and, critics would argue, lack of racing judgment Maldonado exhibited at times over the course of 2012. There was the late-race tangle for P3 with Lewis Hamilton at Valencia, for example, and the clash with Sergio Pérez at Silverstone that led to an outburst from Pérez that Pastor was "stupid and dangerous". Such Latin passion!

Tellingly, Pastor's not unaware that sometimes he's guilty of overcooking it; it's not done unwittingly: "I love to get the limit," he enthuses, "and sometimes to go over the limit because it's my style and I've been always good with that."

The constant push, he reckons, comes not only from within, but also from the zealous family support that has always driven him to go faster.

Garnish this mixture with a generous helping of national fervour and it's little wonder the result is somewhat volatile.

"There is definitely a combination that drives me," he says. "My family are very competitive and they always used to come to the track to push for me and they were looking only for the victories. I think maybe I have taken that attitude and always focused on the maximum. If I see my name on the screen in P10 or P8, I cannot accept that. I need to go for more, *always*. Even the gaps... if I'm at the top I need to make a bigger gap. It's a mentality. It's psychological. I'm very strong on that. I always want more and more." Sometimes, he concedes, his lust for the limit leads to mistakes, but Pastor believes he is learning self-control in pursuit of maximum performance. Never could Mario Andretti's droll gem "you can tidy

HERE COME THE VENEZUELANAS...

So far, three Venezuelans have made it into F1 and started grands prix. What chance a fourth?

When 23-year-old Johnny Cecotto Jr drove a Toro Rosso at the recent Abu Dhabi Young Driver test, it was almost three decades since his father, Johnny Cecotto Sr, had last raced in F1 for Toleman. In the intervening years, Pastor Maldonado has been the only other Venezuelan to have started a GP, although Cecotto Jr is the latest in a wave of young talent emerging from the South American republic.

A few years ago there was another youngster who, during his time in British F3, went by the name of Ernesto José Viso. He competed in Friday practice for Midland at the 2006 Brazilian GP, and is now known as 'EJ Viso' for his outings in Indycars. Cecotto Jr had two compatriots racing with him in GP2 in 2012: Rodolfo González and Giancarlo Serenelli. But there's no guarantee that either will get to join Maldonado and Cecotto Sr and become the fourth Venezuelan to start an F1 GP.

Fourth? Yes, there was one other: Ettore Chimeri, who made just one GP start – the 1960 Argentine GP – in a Maserati. That outing came a fortnight before he was killed in a sportscar race in Cuba.

James Roberts

up speed, but you sure as hell can't speed up tidiness" be more appropriately applied.

Someone who has worked closely with Maldonado behind the scenes reckons his pace and skill are up there with the best, but confirms that the occasional red mist is not yet a thing of the past. On that fine edge between fight and fury, however, balanced between on-the-limit and OTT, lies a fast and composed racing driver capable of immaculate performances.

Barcelona was the one for the family album, but how about Singapore, where Pastor again qualified on the front row and looked set for a podium before retirement with a hydraulics failure? Or Abu Dhabi, where a grid P3 that achieved "very close to the maximum of the car's potential," according to Williams chief operations engineer Mark Gillan, became an untroubled fifth place, despite the loss of KERS?

Rock ape? No way. Hot head? Well, sometimes, but a driver, too, who's only just completed his second season of F1 and who achieved victory on his 24th attempt (not even Fernando Alonso managed that – it took him 30 starts till he won). A driver who's also still improving: "Every time you can improve," he says. "You can improve your approach to the race, and your speed and everything improves only with experience. Yeah, sometimes I am pushing too much... but I love it!"

Chatting with Pastor as he kicks back in one of Caracas's swisher hotels, warbling Latin trumpets wafting by on the mid-morning breeze, the sense of a young man at ease with himself, in this moment, with girlfriend Gabriella Tarkany close to hand and trusted team aides running his schedule, is palpable. He is in his element.


So, too, when he is pushing an FW34 *hard* in Q3, scratching for a lap time that will satisfy his own, and his country's, ambitions. He takes a moment to reflect on where he has come from to arrive at this place: "When I started racing in Europe I was 12 and it was so difficult. I didn't speak any Italian and there was different food, different weather... everything. And

"I NEED TO SHOW MY POTENTIAL AND TO SHOW THE POTENTIAL OF MY COUNTRY – TO GIVE THEM BACK WHAT THEY INVEST"

Maldonado (left) goes wheel-to-wheel with team-mate Bruno Senna at the 2012 US GP – and makes the move stick



I was so shy, so small. It was so difficult, but I was enjoying my experience because the thing that maintained me in a calm condition was the racing and the objective to get to F1.

"I remember in one interview at my first international race, in Colombia... I was eight or nine years old. Montoya was there in a bigger category, and the journalist asked me 'What is your dream in the sport?' and I said 'To get to F1.' Even then, you know, I was so focused on my objective and I feel now really happy as a man, as a person, to get to my dream. For sure it's a big responsibility to be the only one in F1 from Venezuela, but every time, in every moment, I will try to get 100 per cent. Always." 



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What Adam

High on the south bank of the idle Loire, in a postcard-perfect small French town, a former F1 team boss, recently departed from the fray, leans back on a chair in his study. It's a simple space, open to the garden via a French door, on the threshold of which, a chicken is using its pea-sized brain to assess the risk-reward ratio of hopping inside. The ex-boss is briefly amused by the indecision of his poultry, but not distracted from a line of thought prompted by a question about the shelves of historical military literature that line the walls. There's a tome on Stalin, Chris Bellamy's *Absolute War*, *Matterhorn* by Karl Marlantes and dozens more, amid volumes on business management (*Competitive Advantage* by Michael E Porter) and a Greek-English lexicon. "Have they informed my business strategy?" he reflects. "Yes. The mistake people make in war is that they do not know what the strategy is – that and underestimating the political implications of their actions."

Until March 2012, Adam Parr was running Williams as chairman, having overseen the kind of restructuring politicians are fond of referring to as 'root and branch'. An all-new technical team were in place, new sponsors had been sourced – notably Venezuela's state-run oil conglomerate PDVSA – and the team's financial footing was more stable than it had been for a number of seasons. The FW34 had shown pre- and early-season competitiveness, and after 2011, Williams' worst season on record in which they scored just five points, things were looking up.

Then Pastor Maldonado won the Spanish GP, taking Williams' first victory since Brazil 2004. But not before Parr had resigned his post, despite the widespread assumption that he was



did next

Adam Parr's departure as Williams chairman was as abrupt as it was surprising. Speaking publicly for the first time since he left, he reveals some of the machinations behind his exit and also the novel means he's found of filling his time...

INTERVIEW

ANTHONY ROWLINSON

PORTRAIT

TOM BUTLER

BOOK ILLUSTRATIONS

PAUL TINKER

Sir Frank's natural heir. Not only did he resign, he disappeared – dropping off the radar of F1-watchers and resisting any temptation to tell his tale of five turbulent years at Williams' helm and shed light on his departure.

His chosen escape, the Parr family's second home in France, is a retreat of the imagination and could hardly have been better designed as a refuge from the pell-mell onslaught of F1. And, after a period of reflection during which he has begun a PhD (on a collection of military literature donated to Jesus College, Cambridge) and penned *The Art of War*, a remarkable graphic novel about his time in F1 (see an extract over the page), he is prepared to talk, for the first time, about his stint on the Formula 1 frontline. Over a rich *café au lait*, he starts to explain some of what he found when he arrived at Williams, late in 2006, from the Anglo-Australian mining behemoth, Rio Tinto.

"My initial brief concerned business aspects," he explains. "Frank was responsible for money and politics, Patrick was responsible for the technical side. But then we also had Sam Michael as technical director and Alex Burns as COO and my feeling was that it was very unclear who reported to whom." The team's direction was set by the Williams Senior Management Group, the SMG, which Parr "got rid of as quickly as possible". With a twinkle, he recounts how Frank and Patrick were, he believes, mischievous with regards to the SMG, letting themselves remain as the team's iconic founders, while the SMG got on with the daily business of 'messaging things up'. A more conventional board of directors was established and, as Parr tells it, the graft of fixing a team that year by year was slipping down the constructors' table, truly began.

Two or three things are obvious when talking to Adam Parr. First and most obvious

is his bright and business-hardened mind, a product of Eton, Cambridge, the Bar, his years in investment banking, two senior spells at Rio Tinto, then F1. Second, he's approachable, engaging and – like many of the post-owner-entrepreneur generation of F1 boss – lighter on ego than might be expected. Third, he likes things done his way. This last is no surprise in an individual charged with running the show and some, though by no means all, of his Williams colleagues found him difficult.

Questioned on this, he reflects: "During the first four or five years at Williams, the challenge for me was that everyone in the team adores Frank. Some were asking if I was kicking him out. And that's not going to make you popular. But we were also failing as a team, not achieving on track and, as part of the leadership, that's a difficult position to be in."

A brief recap: having challenged hard for the 2003 constructors' title, Williams won only a single race in 2004, that year's season-closing Brazilian GP, then slid to fifth in 2005 (66 points) and eighth in 2006 (11 points). Dire though things were on track, cash-wise they were even more parlous. Parr describes Williams as being "on its knees" financially after 2006. "Certainly," he says, "we could not have done another year like that. We'd gone from having free BMW engines, to buying our engines and from having Hewlett-Packard sponsorship to not. That's an enormous swing and it was very tense. We could not carry on the way we were."

Back, then, to strategy. As a historian might, Parr searched the archives, identifying 1997 as the root of the troubles that have plagued Williams in recent years. "That year," he says, "marked a massive strategic failure and began a 15-year spiral of decline, despite some success in the early 2000s. Adrian Newey left the team

in 1996, Renault departed in 1997 and there were other changes that meant a formula that had been successful for Williams since the early 1990s was no longer there.

"Outside Williams, the auto makers started piling in and the 1998 Concorde Agreement was massively favourable to Ferrari. And I think because Frank and Patrick had been so successful in the '90s, they just did not see what was happening towards the end of the decade."

This is offered without a shred of malice or score-settling. Indeed, Parr's affection for the team and its senior figures is apparent in conversation and throughout *The Art of War*. "The beautiful thing Frank does," he says, "is that he is as ruthless as anyone about bringing in revenue, but because he is so passionate about the sport, fans don't see that. But with me, they just saw the pursuit of financial stability."

That, of course, was Parr's job and the tireless chasing of sponsorship, along with the incessant deal-making surrounding negotiations for the new Concorde Agreement, are as central to the narrative of his book as they were to his role. His searches took him, most fruitfully, to Venezuela, scenting the PDVSA state petro-dollars that would come with a Maldonado signature attached to a driver contract.

This deal, one that attracted a flurry of 'pay driver' jibes at the time, thanks to the circa £30million backing Maldonado brought with him, is arguably the single most important contribution made by Parr during his Williams tenure. He was robust in its defence at the time and remains utterly convinced of Maldonado's merits: "I'm not saying he is the perfect driver, but I hated the expression 'pay driver'. [He described it as "monstrous" to *F1 Racing* back in January 2011.] "There are drivers out there who you would put in an F1 car regardless of →



The Art of Parr

"I did not mean to write this book," declares Adam Parr, somewhat disarmingly. *The Art of War*, his arrestingly creative F1 graphic novel relating five tumultuous years in the sport, began life "as a more generic book about business and strategy, using F1 to illustrate it."

An infinitely more fascinating work has resulted from the original idea – a noir-infused F1

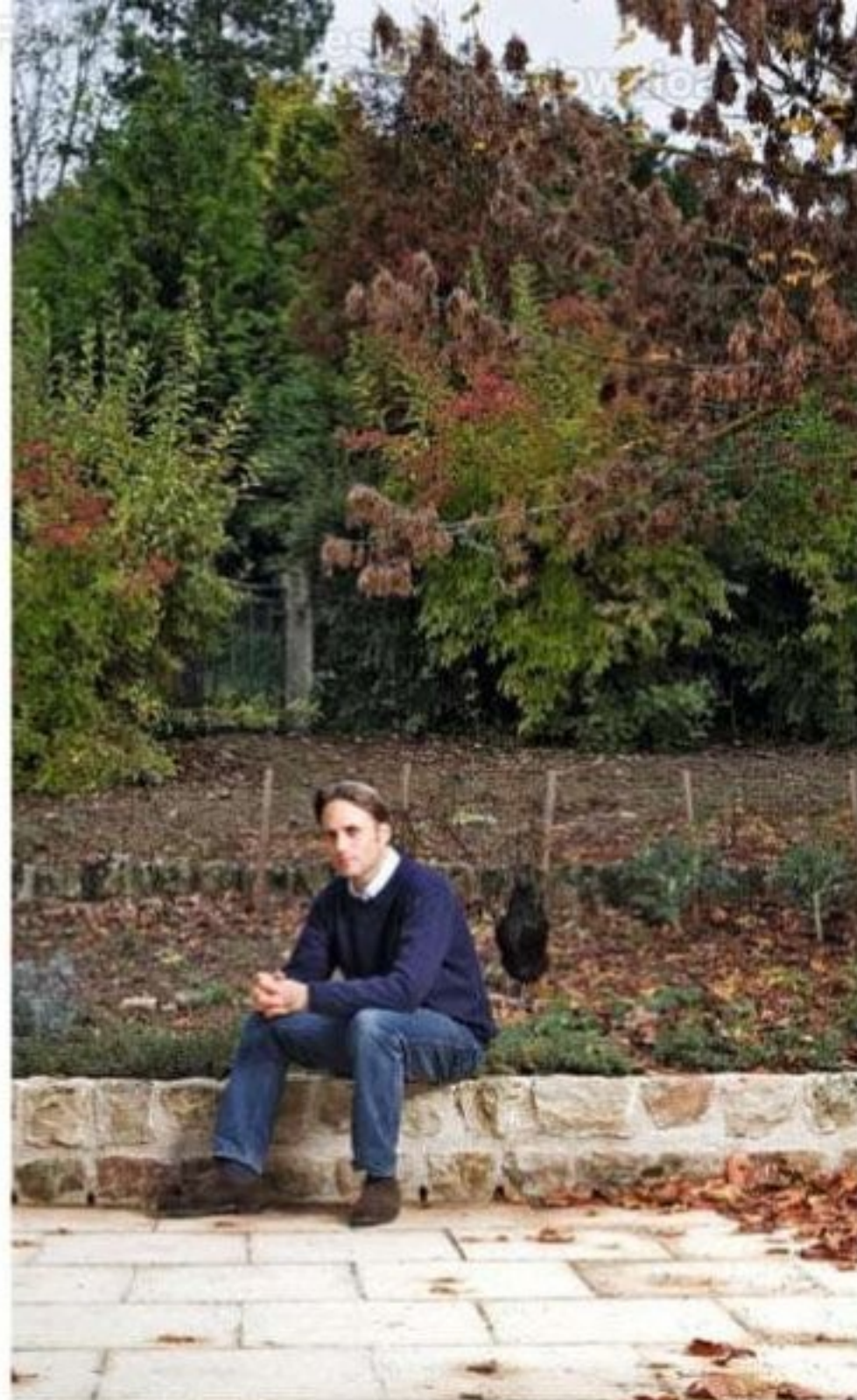
page-turner that draws on some of the dark vision of Frank Miller's illustrations (Paul Tinker provided the artwork). Yet Parr's book is far less dystopian than any Miller production. Indeed, it's affectionate and often funny (is it any coincidence that Bernie Ecclestone is a Mekon lookalike?) It's also unique and through 17,000 words crafted by Parr over the summer of 2012,

it delivers a rare insight into the politics that exist at F1's senior levels. It's neither vindictive nor polemic, although Parr's views about F1's future direction come through strongly.

Above all it's highly entertaining and possibly the most unlikely thing any F1 team principal has done since quitting the sport. No F1 library will be complete without it.

• Find out how to order your copy of *The Art of War* on page 34





From the F1 frontline to the quiet life in France, Parr is working towards a PhD and has penned his first book *The Art of War*

what money they bring in. But there are drivers who have attracted sponsorship throughout their careers and that's fantastic. Pastor was always quick and he proved himself as a winner in GP2. And when you start winning, in whatever circumstances, that says something. It says you can qualify well and stay at the front. Or it says you can fight your way through the field."

Who can forget that at the 2012 Spanish GP, Maldonado slam-dunked his critics with that spell-binding victory, Williams' first since Brazil 2004? The poignancy of Parr already, then, having quit the team isn't lost on him and he becomes misty-eyed as he recalls the memory of hearing about the win. He'd started watching the race in a hotel with Damien Scott (who runs the Williams Technology Centre Qatar) and Williams CEO Alex Burns.

"Pastor was in the lead and I couldn't watch," he recalls. "So I went to the gym and set myself a ferocious goal on the rowing machine, thinking: 'If I don't fail, Pastor won't fail.' Eventually, I went back to the hotel and my wife, Emmanuelle, called me in tears to say Pastor had won. I was so happy for the team." The victory wasn't only about Maldonado, immaculate though he was that day. It was also about the technical team, led by chief engineer Mike Coughlan and hired by Parr, who'd built a race-winner.

Coughlan's appointment in May 2011 was another of Parr's bold strokes, one that attracted not only raised eyebrows, given Coughlan's four-year F1 ban for his involvement in the 2007 'Spygate' affair, but also a lawsuit (later settled) from his NASCAR employers Michael Waltrip Racing, alleging induced breach of contract. Coughlan and Parr "hit it off immediately", and Coughlan was soon to form a formidable technical triumvirate with head of aero Jason Somerville and chief operations engineer Mark

Gillan. Their recruitment came in the wake of Sam Michael's May 2011 resignation from the role of technical director, and engineering director Patrick Head's departure from the Williams board in December 2011.

It's clear that Michael's exit troubles Parr and he speaks with great respect of Sam's appetite for work, his personal qualities and his drive. "I assumed for a long time that he and I were the future of the team," says Parr. "But I think we both underestimated the scale of the challenge. It would have been good if we had provided more support for Sam... but that didn't happen."


Despite the behind-the-scenes turbulence, the Williams balance sheet looked far healthier by the end of 2011. A telling passage in his book records: "*As the year drew to a close we finished the world championship with just five points. We had, however, recorded a decent profit and repaid all debt through rigorous cost control and the relentless pursuit of sponsorship and other revenues. We had retained the support of most sponsors and secured a decent budget for 2012. Back at the factory, the mood had been transformed by the new technical leadership. In spite of everything, heads were held high. We held our first Christmas party in four years to celebrate the end of a long and tough year*

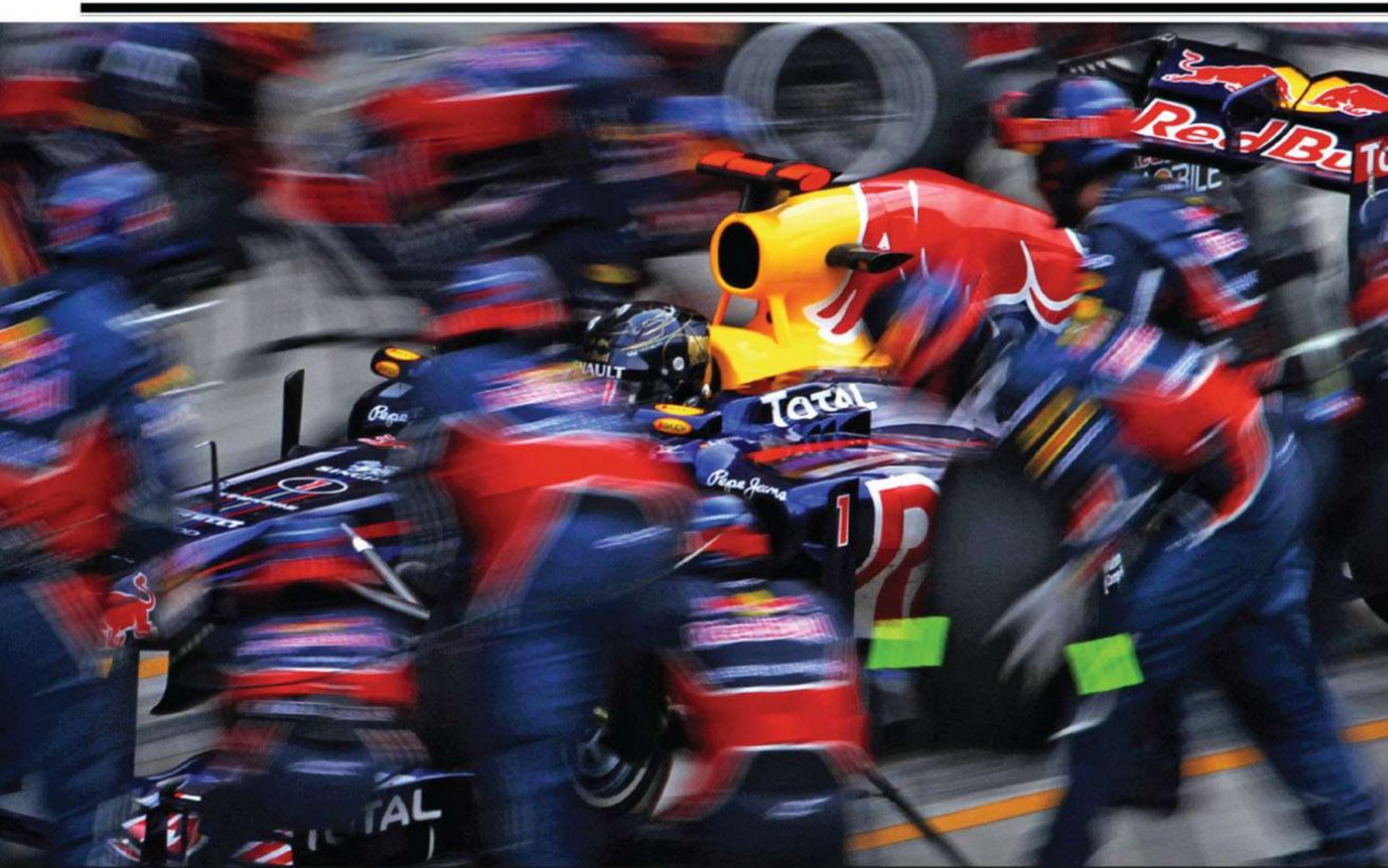
"I assumed Sam Michael and I were the future of the team. But we both underestimated the challenge" Adam Parr

and also to send off Patrick Head. We looked forward to a year on stronger ground."

There was even the added spice of contract negotiations with Kimi Räikkönen that nearly resulted in the Iceman's F1 comeback being with Williams, not Lotus. Räikkönen visited the factory in Grove late in 2011 and the Williams board entered heated discussions as to whether he should be offered a drive. "One member said 'we just have to do it'," says Parr. "Another said 'it would be the worst mistake we have ever made.' I was on the side of taking him, but in the end I concluded it was too high a risk. I'd been impressed by his passion and determination, but he was still an unknown quantity and we didn't know the quality of the kit we'd be giving him."

So why ever did Parr offer his resignation, just as he might have enjoyed an hour in the sun as 'the man who helped fix Williams'? The answer can be found by following the money. Williams, according to Parr, had reached deadlock with Bernie Ecclestone in negotiations over the Concorde Agreement. Among the points of contention were Ecclestone's insistence that some teams have more influence over the rules than others; his determination to re-introduce customer cars into F1; and preferable financial terms for certain teams. He had also started briefing against Parr in a semi-public way, placing Sir Frank in an invidious position. There seemed little alternative but to quit. "If I'd said I'd stay," says Parr, "I don't see how negotiations could have moved on. A sport must offer every competitor a fair chance, with no entrant or team given any nominal advantage."

He tendered his resignation six weeks before Maldonado's win in Spain, thus concluding the story of Adam Parr and Williams. But as he has shown with *The Art of War*, the story of Adam Parr and F1 may yet have chapters unwritten. 



Vettel v

PHOTOS: LORENZO BELLANCA/LAT; STEVEN TEE/LAT





SEB VS ALONSO

Did the best man win?

F1 2012 distilled into a classic last-race shoot-out: Seb vs Fernando for triple-title glory. But was it really a head-to-head? Or the final victory for an overwhelming force? **Peter Windsor** looks back over a remarkable year in F1

Everyone has his story to tell. Had the alternator on Sebastian Vettel's Red Bull not failed in Valencia and Italy, he would have clinched the 2012 championship before Texas. Had Lewis Hamilton not suffered gearbox and fuel-pressure failures on his McLaren in Singapore and Abu Dhabi, or been punted out of the Belgian and Brazilian Grands Prix, he too could have won

the championship. And had Romain Grosjean not thumped Fernando Alonso out of the start at Spa, or Kimi Räikkönen not spun lamely in qualifying at Suzuka, putting Alonso in the accident zone on the start line there, Fernando would today be celebrating his third world title.

As it was, it all came down to another semi-wet and sticky afternoon in Brazil, to

a showdown between Sebastian Vettel and Fernando Alonso, to Red Bull versus Ferrari. It was Fernando who won the battle on the track; Vettel and Red Bull won the war.

Adrian Newey-driven though they are (and here we should pay tribute to the good Christian Horner, provider of the platform in Milton Keynes that allows Adrian to get on with his →

work exactly as he likes to), Red Bull's 2012 was relatively linear, although the F1 rule-makers did their best in the closing months of 2011 to limit the scope of Newey's genius.

For a while, the strangulation tactic seemed to work. Until Valencia, the RB8 was just another fast F1 car, given to the vagaries of the 2012 tyre phenomena, to the small windows of optimum Pirelli operation and to the year's ongoing technical rule 'clarifications'. It was a fast but temperamental car, thanks to a chronic spate of Renault/Magneti Marelli alternator problems first seen in Valencia, where Sebastian's day of certain victory ended with zero points. Like Mercedes and Williams, early in the year Red Bull found a sweet spot; they couldn't repeat it in the short-term, though: the RB8's downforce levels were only the equal of its peers; there was nothing distinctively 'Adrian Newey' about the car. It looked like just another title contender.

This first phase of the championship was thus a strange one for Sebastian. When the car was irascible, he was outqualified and then outraced by Mark Webber, a tough Aussie who is much more experienced at wringing the max from difficult cars. What I really mean is that Mark consistently dug deeper than Seb when times were tough. He found ways of nursing the squidgy turn-in, the spindly traction. He went for it on Pirelli options at Monaco and produced what was one of the qualifying laps of the year. Seb backed away from the scuffle, choosing primes for Q3 on the basis that he was "thinking of the race". (Yeah, right. Since when has Monaco ever been about anything other than qualifying as high up the grid as possible?) And then there was Silverstone, where Mark won a titanic race against Fernando. It was imperfect in the sense that the RB8 lost grip on the slow corners in the closing phase of the race with victory in sight, but it was still a big win – big

enough, a few days later, for Mark to say "no" to a Ferrari offer for 2013. Mark had several reasons to stay at Red Bull, not least of which was that he was lying second in the title hunt to Fernando, 16 points ahead of Seb. Signing for Ferrari, he assumed, would be tantamount to saying goodbye to any chance he had in the 2012 championship. Little did he know.

Still, these RB8 wins spoke of 'normal' racing days full of 'normal' racing variables. McLaren and Ferrari were serious threats on any given day – as could be Lotus, Williams, Mercedes and perhaps a couple of others.

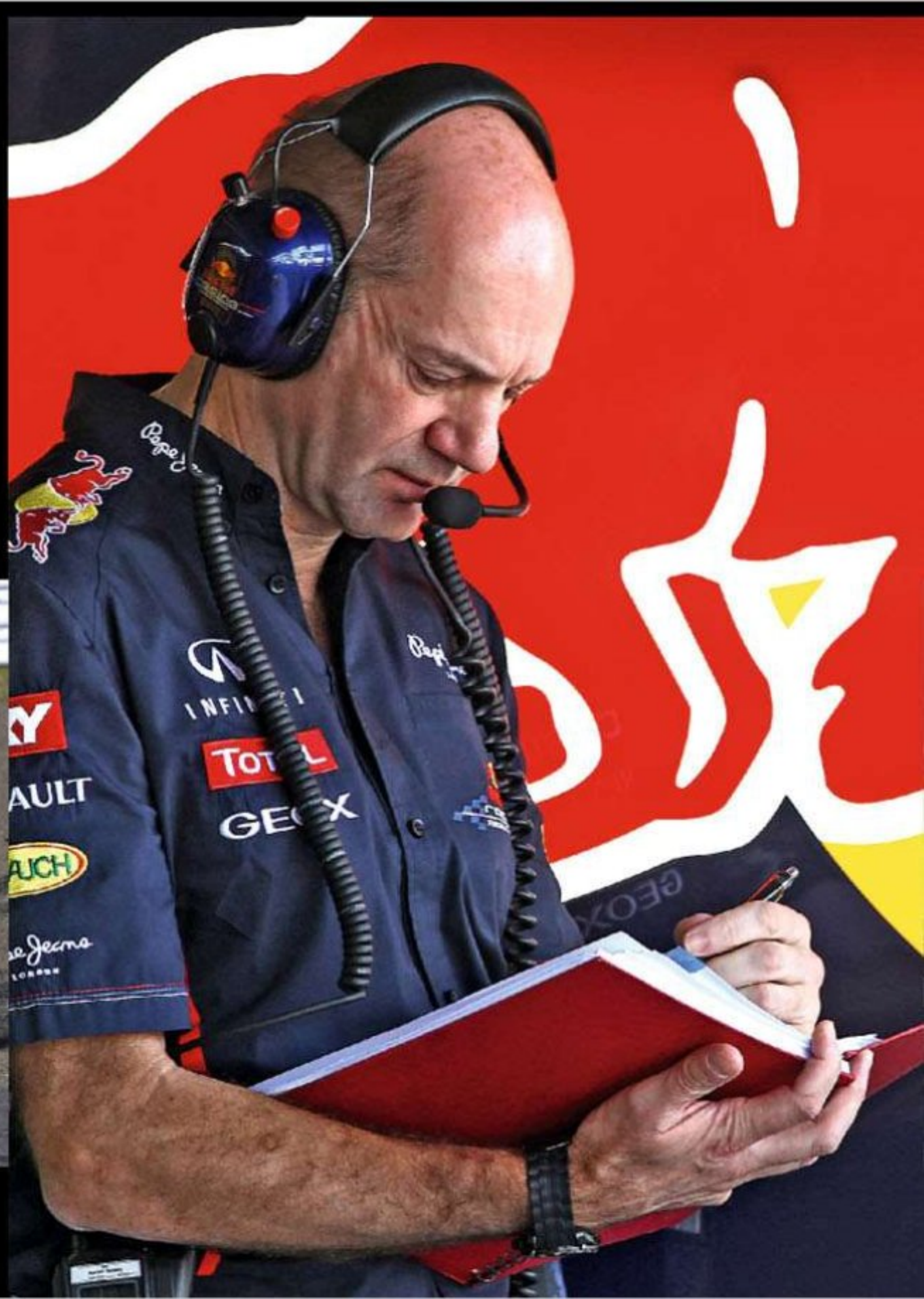
Then, in Germany, Adrian received a further setback when engine mapping rules were re-clarified away from Red Bull's comfort zone. With Fernando winning a gorgeous victory at Hockenheim, the momentum seemed definitely to be swinging away from Newey. How would he react? Could Adrian turn it around in the second half? These were fundamental, Newey-watcher questions, to which no one knew the answer – they were questions that ran to F1's heart as we know it in the modern era – to the core of the man who has dominated F1's technology since

1991. All we could see from the outside, post-Hockenheim, was that Fernando now led the championship with a total of 154 points. Mark lay second on 120 and Seb was third on 110.

It is too easy to glibly refer to Adrian as a 'genius', for how does that fully embrace the ultra-competitive, still-passionate, historically detailed racer who craves his days with his ex-Skip Scott GT40 at Goodwood just as much as he wants not ten or 11 world championships, but plenty more as well? Every year. Season in, season out. The motivation never wanes. Long ago he stopped thinking about money or fame. What drives Adrian the F1 genius is his love of racing. Of cars. Of technology. Of doing it right.

Adrian is also unique among today's F1 technical directors in that he still *draws* the car. He draws it on the same board, and with the same type of pencil that he's used since his Leyton House days in the early 1990s. It's not only that his peers use CAD; the other technical bosses these days do very little drawing at all, computer-aided or otherwise. They discuss, they analyse, they manage, they take recommendations... and then they delegate the

For Fernando, after 3,781.195 miles of racing, the difference between winning and losing the championship came down to two first-corner retirements and a certain Adrian Newey in the opposing corner



PHOTOS: ANDY HONE/LAT; STEVE ETHERINGTON/LAT



drawing to the relevant departments. Front suspension. Rear suspension. KERS. Radiators and plumbing. Chassis. Front wing. Rear wing. Floor. That's how Ferrari work. That's how McLaren work. At Red Bull, though, it's personal. It's Adrian Newey, doing it the way he's always done it. In total charge of the car with a smallish, well-honed team to support him.

So Adrian sat down to the most pressurised months he's known since 2009, when he was tearing out his hair and wondering why the FIA had sanctioned Brawn's double diffuser but rejected Red Bull's. He would re-sculpt the exhaust flow. He would introduce his version of double DRS (as pioneered by Merc's Bob Bell and, to some extent, by Renault-Lotus). He would not compromise on the packaging that continued to squeeze the life out of the alternators. He would again sacrifice top speed for overall downforce and grip. Red Bull slowest through the speed trap? Beware the race on Sunday...

Ferrari's line-up was complicated and steeped in the usual politics. The key players were Fernando Alonso, Luca Montezemolo (directly responsible to Fiat), Stefano Domenicali (directly responsible to Montezemolo) and Pat Fry (technical director). The genesis of the combination was Fernando's year at McLaren in 2007. Back then, Pat Fry was one of four chief engineers within McLaren's complex matrix organogram (alongside Tim Goss, Paddy Lowe and Mark Williams). Each project or car, was overseen by two engineers. Once that car was completed, it was then leapfrogged by the two engineers working on the next year's project. This system is still in place today, albeit with one chief engineer per car instead of two.

Adrian Newey worked with Pat during his time at McLaren (1998-2005 in terms of car design) and so, from Ferrari's perspective, here was a big plus-point on Pat's CV. He knows how Adrian

works. Perhaps they thought they could recreate the Newey system – the best of both worlds. It was also Fry's car that Fernando raced in 2007, so Fernando knew how good the combination could be when the elements came together.

Fernando's preference for Hitco brakes (rather than McLaren's traditional Carbone Industrie/Akebono combination) that year caused a ripple in the engineering department, but Pat supported Fernando all the way. A brilliant win at Monza was one of four for Fernando that year and he believed he could have won the title had McLaren shown him the respect he felt he deserved. Excluded from that emotion was Fry, an engineer who is surprisingly Italian in his demeanour... as well as methodically British.

It is therefore inaccurate to dismiss Fry as merely a McLaren race track engineer (as many Italian journalists portray him). He was, and is, much more than that. Fry's next car at McLaren was the 2009 MP4-24. Featuring a relatively high cockpit seating position (as an example of the sorts of design elements over which Fry had control) the car won two races in a season dominated by Ross Brawn's double-diffusers.

Hence Fernando kept Fry in mind when he signed for Ferrari in late 2009. Chris Dyer had been promoted to chief race track engineer for 2010, but left after the disastrous Abu Dhabi GP of that year. Aldo Costa would continue to be technical director for 2011, but Fry would now head up race track engineering. Then, in May 2011, Costa moved sideways and then outwards – to work for his mate Ross Brawn at Mercedes.

"After the engine mapping rules were re-clarified post-Hockenheim, Adrian sat down to the most pressurised months he's known since 2009, when he was tearing out his hair and wondering why the FIA had sanctioned Brawn's double diffuser but rejected Red Bull's"

Fry, who had slipped easily into his new life in Maranello, was promoted to technical director (chassis). Bearing in mind that today's F1 engines are basically identical, so all-embracing are their templates, this effectively meant Pat was now Ferrari's Adrian Newey equivalent. The man who didn't get this job – but who had been at Ferrari longer than Fry, and was in many ways even more of the Newey ethos than Fry, bearing in mind that he, too, worked alongside Newey at McLaren – was the team's chief aerodynamicist, Nikolas Tombazis. Members of the Italian media initially asked why it was Fry who had been promoted and not Tombazis. These questions, post-Brazil, are likely to be asked again but, at the time, I suspect the answer lay with Fernando: he knew Pat, but he didn't know Nikolas. And both Montezemolo and Domenicali listened and, presumably, will still listen, to Fernando.

Fry, as I say, adapted well to difficult conditions, to perhaps the most stressful job in F1. He did so by staying out of range. To this day, he remains a bit of a mystery to the Italian media. He is learning Italian but speaks in English to his key engineers and to the drivers. He is low-profile; he doesn't, of course, design a complete car the way Adrian Newey does; he stays out of the papers and isn't given to quotes. That's how it needs to be to survive at Ferrari. You also need to produce a good car – and the F2012, as we now know, was not a good car.

So how will Pat fare from here on in? If Adrian Newey changed his philosophy of life tomorrow and said he'd like to work for Ferrari, I'm sure →





"Alonso never had a great Ferrari, but Vettel had a great RB8 for most of the back half of 2012 – and therein lies the difference"



he would be asked to name his price. Exit Pat. If you're Ferrari, though, and you've finished second in both championships, beaten only by the Grosjean shunt at Spa and the Räikkönen nonsense in Japan – you might say: "Pat Fry put together a great year despite a difficult car. With more work, we may produce a winner in 2013."

How bad was the F2012? For some of the year it was at least as good as a Red Bull and better than a McLaren. Even in Korea and India it was at least a McLaren-beater. And – strange days indeed – it was demonstrably better than the McLarens mid-season in semi-wet conditions. Back in July, when Jenson Button was way off the qualifying pace at Silverstone, the events of the Brazilian finale would have been in no one's imagination. Of course the F2012 was maximised by Fernando in every dimension and the slickness of the Ferrari race team, of Francesco 'Ugo' Uguzzoni and the boys, complemented him

beautifully. Hamilton fans, Vettel fans, Jenson fans, Kimi fans... they all stood back in awe as Fernando stitched together his first half-season. A more mature Fernando (compared with the knife-edge turn-in Fernando we knew in the Renault days) magically produced results about which most decent racing drivers can only dream.

But come the second half of the year, by which time Adrian Newey had taken note of other people's approaches to the suffocatingly tight aero regulations and had formulated a plan of his own, Ferrari were left pretty much at the start line. Then it became a question of 'this circuit doesn't favour us' or 'that circuit is less challenging for our opposition' – of obsequiously worded quotes that told only a tenth of the story but at least kept the media and, to some extent, the sponsors, more or less under control. Fernando, still working miracles, began to look increasingly single-minded. Felipe would slope around the Ferrari team area, chatting and trying to look as if he was enjoying himself; Fernando would walk quickly to his private room, telling anyone who asked that he was happy with Felipe's role, thank you very much.

Ferrari, in short, went into partly controlled panic. Team insiders spoke of a verbal fight between Alonso and the management on the eve of the Indian GP. After Abu

Dhabi, Montezemolo tore into the race team in the debrief. It was as if Stefano and the lads lacked motivation and shouting and waving arms were going to make the car quick.

Much was made of issues with Ferrari's windtunnel, a reason that lost plausibility years ago because it's been going on for so long. Like McLaren, Ferrari have moved their aero department to Cologne, to the twin Toyota tunnels. McLaren moved forwards in a more consistent and larger-scale boundary layer, while Ferrari stagnated.

We look back now at a season dominated by the excellence of Fernando Alonso, a driver who is at his best when the odds are against him. Some of his greatest

Renault drives were in cars that had lost a front-wing endplate or a rear roll bar and so, at Ferrari in 2012, he felt, I guess, pretty much at home. The contrast between Alonso's work in a difficult car and Vettel's work in a similarly difficult car (in the first half of 2012) is so stark as to make a nonsense of the point-scoring system. The system it is, though, and that was what Adrian Newey worked within:

Alonso never had a great Ferrari, but Vettel had a great RB8 for most of the latter half of 2012 – and therein lies the difference. With more grip than the opposition (but less top speed, other than at Abu Dhabi, where he ran race ratios on Sunday), Vettel was near enough to perfection to make Mark Webber, famed winner at Monaco and Silverstone (the drivers' circuits) look like an awkward number two. Twice Seb started from the back of the Abu Dhabi GP and still he finished third. He was down and out in Brazil, spinning helplessly into the head-on, full force of the field and then sitting out an uncharacteristically chaotic pitstop. But still he struggled back to score the requisite points.

Seb is his own man. He trails no manager, he spends time with the FIA and with FOM people who matter (when the yellow-flag talk gets silly) and with Christian Horner and Helmut Marko, chief mechanic Kenny Handkammer and front-end mechanic Ole Schack and the lads – and he knows that Adrian Newey is his breadwinner.

He's got his priorities straight. If you'd arrived from Mars on 25 November, however, and watched Brazil from afar, and if you'd known anything about aero efficiency and downforce, you would have crowned Fernando champion. He drove a racer's race at Interlagos in a dog of a car in ever-changing, treacherous conditions. It wasn't enough, though. And, for him, as well as for Ferrari, losing by three points was the same as losing by 300.

Fernando drove up into the pitlane after that race in Interlagos, headed for the number-two

spot in parc fermé, unclipped his belts, climbed onto the scuttle of the chassis and waved to his team. He embraced them by the fence. He clapped as Sebastian walked past. And then, Schubert off, he stared piercingly into space, oblivious to the noise and the bluster. There was not even the trace of a smile.

All this: the win in the wet/dry in Malaysia; the P2 in Barcelona; third place in Monaco; the win in Valencia; the battle with Mark at Silverstone; Hockenheim; podiums at Monza, Singapore, Korea, India, Abu Dhabi, Austin and now Brazil. All this... and for what? **F1**

Finishing 2012 just three points shy of a third championship will hurt as much as losing by 300 points. But there's no doubt that Alonso will be back in 2013 even hungrier



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Facing the extreme physical challenge of a race every two weeks, drivers have to work hard to keep themselves in peak shape, week in, week out, says Red Bull Racing’s **Sebastian Vettel**

Double world champion Sebastian Vettel is constantly on the move. When he’s not racing at 300kph, he’s usually travelling to a racetrack, to a media function or to Red Bull Racing’s factory in the UK.

“It’s quite a tough schedule,” says Sebastian. “We have a long season and there’s a lot of travel involved. You have to work hard to keep yourself in peak condition, physically and mentally, over the whole season and there’s no way you can learn something like that; it comes with experience.”

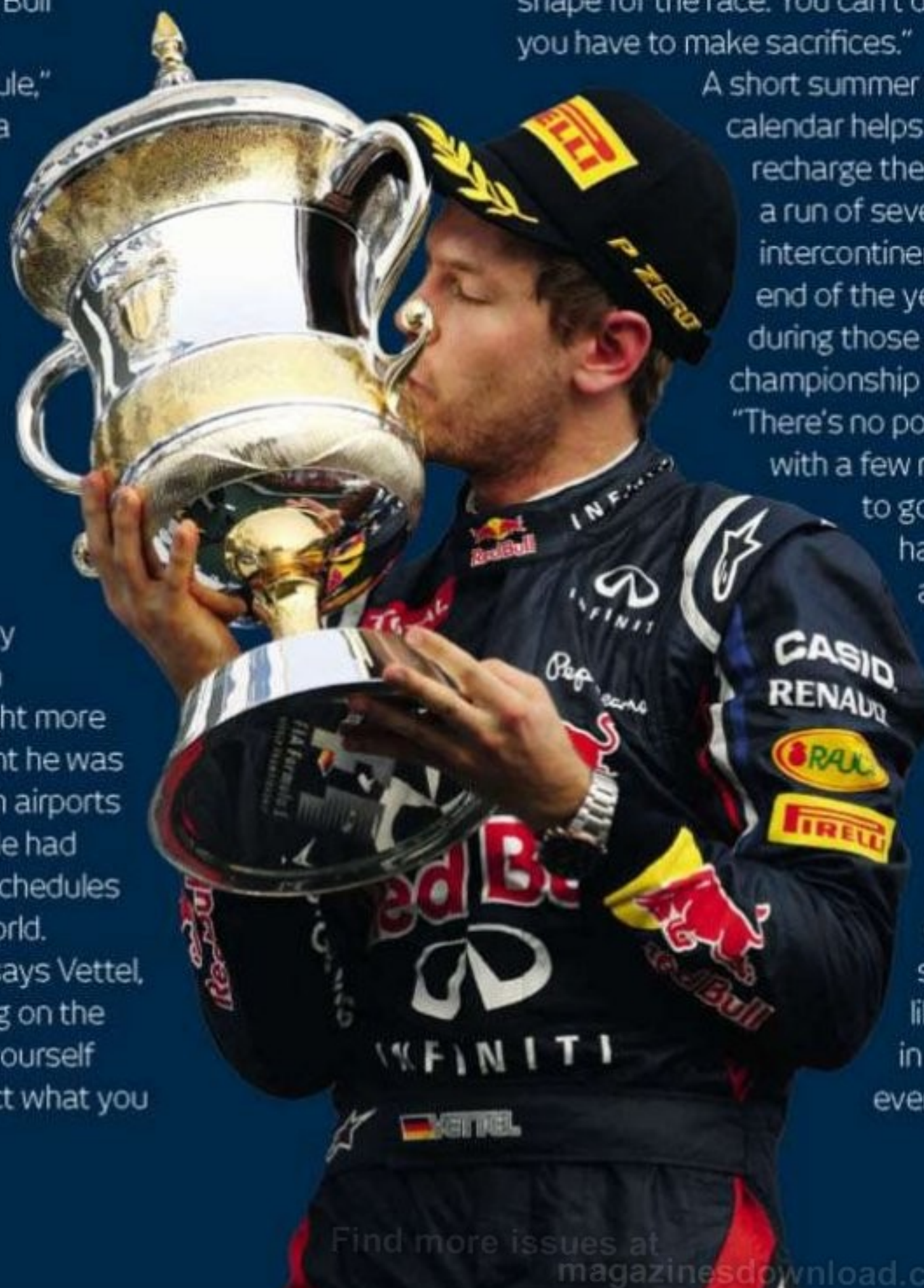
Rarely does a week go by when Sebastian isn’t on an aeroplane. In 2011 he caught more than 80 flights, which meant he was constantly passing through airports and crossing time zones. He had one of the most gruelling schedules of any sportsman in the world.

“At the end of the day,” says Vettel, “my job is about performing on the racetrack. If you overload yourself outside the car, it can affect what you

do in the car and no-one wants that. You can’t stay up late night after night doing events if you want to nail that qualifying lap or be in the best possible shape for the race. You can’t do both, which means you have to make sacrifices.”

A short summer break in the calendar helps all of the drivers recharge their batteries prior to a run of seven sleep-depriving intercontinental races at the end of the year. And it’s usually during those latter races that the championship heats up.

“There’s no point being exhausted with a few races of the season to go,” he says. “You have to pace yourself and learn how to get the maximum out of yourself at every race, from March to November. We face a tough challenge as our focus is not on one race or event; sometimes it feels like we’re competing in a World Cup final every two weeks.”



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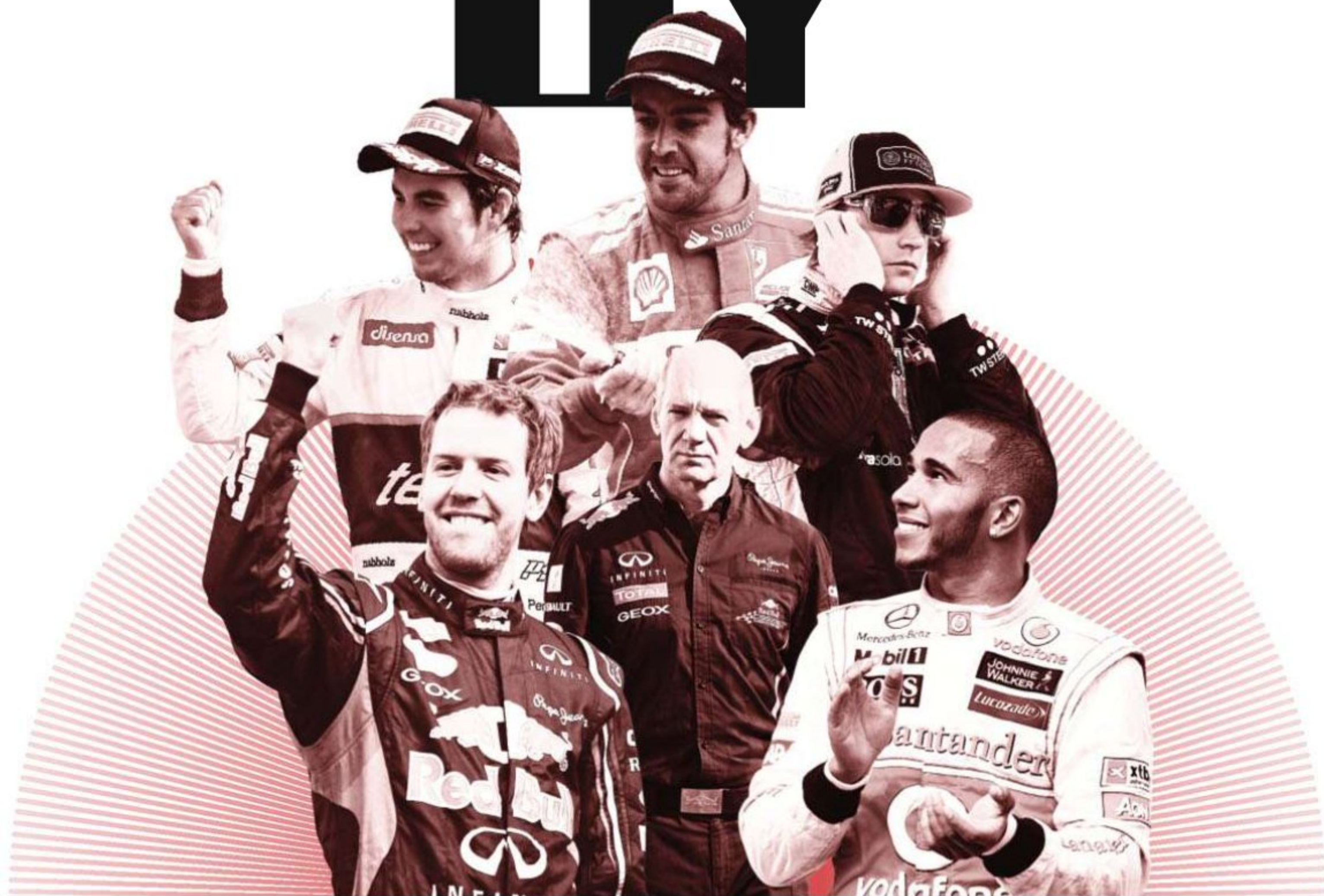
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MO TIV



MAN OF THE YEAR 2012

Our expert panel vote for their mega moments of the season

THE PANEL



Gary Anderson
BBC technical analyst



Tom Clarkson
F1 Racing special contributor



Maurice Hamilton
F1 writer and broadcaster



Alan Henry
F1 author



Johnny Herbert
1995 British GP winner



Damon Hill
1996 F1 world champion



Dieter Rencken
F1 Racing columnist



Jonathan Reynolds
F1 Racing news editor



James Roberts
F1 Racing features editor



Anthony Rowlinson
F1 Racing editor



Bruno Senna
Former Williams F1 driver



Pat Symonds
F1 Racing technical consultant



Murray Walker
Legendary broadcaster



Stewart Williams
F1 Racing managing editor



Peter Windsor
F1 Racing columnist



The winners
Turn over to find out who they are...

**MO
TY**

Man of the year

Fernando
Alonso



When Fernando Alonso joined Minardi in 2001 at the tender age of 19, few were paying attention. His Formula 3000 career had done little to demonstrate his potential, although his 1999 season in Formula Nissan had been impressive and had led to an F1 test at which he really proved his capability.

With a history of success in karting, Fernando's career echoed that of many other greats. It is not uncommon for those who dominate in karting to experience lean times in the junior formulae before regaining success in more powerful cars. Lewis Hamilton, although successful in Formula Renault and Formula 3, needed learning years in both.

Fernando won the Nissan championship in his debut year albeit by a narrow margin. This caught the attention of both Minardi and Benetton boss Flavio Briatore, who helped him on his path into F1 with Minardi. It must have left Briatore with mixed emotions when in only his fourth race, at Imola, Fernando outqualified both Benettons.

Having witnessed his ability during 2001 I was keen for him to join Renault for 2002, but it was deemed that a year of testing would be more advantageous. Over the course of 2002 we got to know each other well. His testing was always impressive. If we were doing a qualifying simulation he was always on it straight away, and if we were doing tyre testing his consistency was uncanny. It wasn't long before I was setting more store by his opinions than I was on the race drivers'.

His promotion to the race team in 2003 was natural and, as with all people who excel at their job, we soon forgot how young and inexperienced he was. His first win in Hungary had an air of inevitability about it, even though it was on a circuit he had never driven before. The 2003 Renault was not a great car, hampered as it was by the wide-angle engine's lack of torque, but Fernando was able to make it sing. Although the Hungarian GP win is widely recorded as the high point of Fernando's year I personally

remember Spain earlier in the season as a marker for things to come. Michael Schumacher won that day in the brand-new Ferrari, but Fernando made him work every inch of the way. Having qualified third, he was able to get behind Schumacher at the first stop. Traffic didn't favour Fernando that day, but he worked through it, not allowing Michael any relaxation and eventually following him to the line just a few seconds behind in a clearly inferior car.

It was typical of the driver I got to know so well over the following years. His ability is so natural it took me some time to appreciate his working methods. Having worked with Schumacher in the past, it was some time before I realised that Fernando's extremely laid-back way of working was deceptive. It did not mean that he was not completely and utterly on the ball. Many a time I would look at him in a briefing and wonder if he was taking everything in, only to be floored by him asking a question that showed he was not only paying attention, but was actually thinking one step ahead of the rest of us.

As with all champions, that mental capacity was in evidence everywhere. On the track, he could control his pace, cope with the unexpected and think his way through the race strategy. I could always rely on him to have the same mental map of the race as me and to respond to what was needed. If it went wrong he could be very hard on the team, but tolerance is not an attribute shared by competitive people.

Perhaps though, what sets him apart from his peers is the very characteristic we saw in abundance over 2012 and which makes him the only worthy winner of this category. That is, simply, his ability to find that little bit more when it seemed everything was already at a maximum.

It is hard to say how good or bad the Ferrari F2012 really was. Pre-season testing revealed varying performance, but very downbeat statements came from both Fernando and technical director Pat Fry. The record shows that by the end of testing they were within 0.25secs of the best times and while the first race in Australia seemed to confirm their pessimism, Alonso qualified in the top ten one week later in Sepang and took the least-anticipated victory of the year. That win put him in a short-lived lead of the championship and, although the next few races were less successful, by the time the teams were back in Europe he was a real contender for the big prize. For a car that was spoken of so unflatteringly, three [pre-Austin] victories in a very open season was no mean feat.

It is this that makes Fernando so deserving a recipient of this award. It may be difficult to separate man from machine but there is no doubt in my mind, and that of the panel, that this was a case of the man dominating the machine. He finished the season a whopping 156 points in front of his team-mate, Felipe Massa, who was himself challenging for championship honours just four years ago and who is still of sufficient value to be signed by the Scuderia for 2013. He found victory when victory should not have been there, and he was the epitome of consistency when this was the better card to play. Singling out an event in 2012 that summed up his achievements would be incredibly difficult. Resisting the attack of Pérez in a superior Sauber in Malaysia, or climbing from 11th on the grid in Valencia to take a slightly fortuitous win, would both be contenders. For me, though, the highlight was his pole position on a particularly difficult wet track during the delayed qualifying session at Silverstone, having executed the save of the year during a high-speed spin in Q2.

Fernando Alonso is a worthy winner of this category and it will surprise no one if he continues to be so for many years to come.

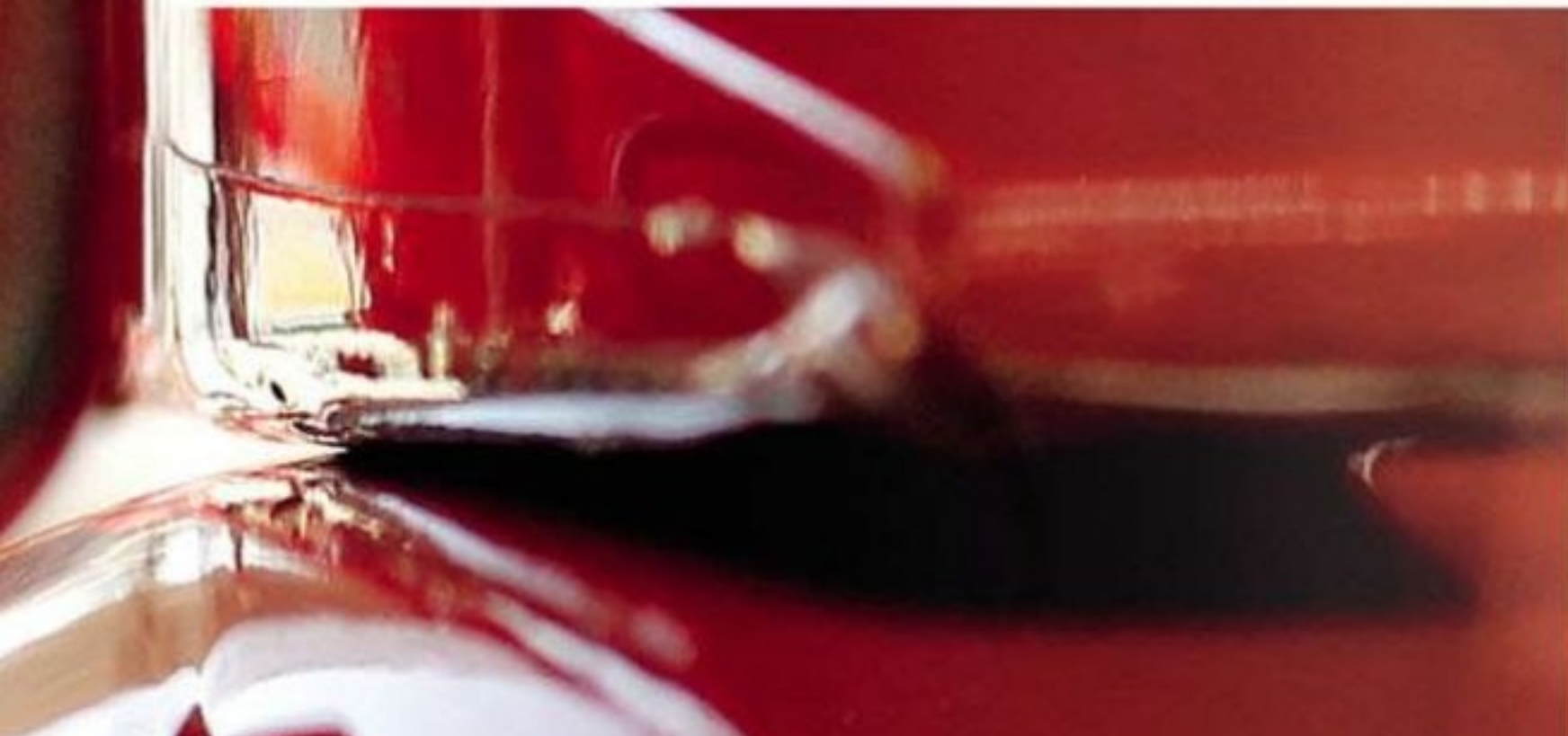
Pat Symonds

Honourable mentions

• To Sebastian Vettel for a spectacular smash 'n' grab • To

Kimi the comeback king • To Adrian Newey for seeing the wood among

the trees • And to Lewis for keeping his head when before he might have lost it →



"This was a case of the man dominating the machine"



“The secret of the RB8’s success lies not in any one single design aspect”

Car of the year

Red Bull

RB8

There are no 'silver bullets' in racing-car design. Any experienced eye looking over the RB8 would see myriad design details that impress and a number of concepts that are thought-provoking. The secret of success does not lie within any one single design aspect, but rather in the marriage of concept and detail to form a cohesive design that fully exploits the laws of physics and thereby brings performance to the car.

Like so many new cars these days, little about the RB8 was revealed when it was launched. Even when testing begins, the car will change by the day and the final specification is rarely seen until the last few days of testing. Although before the start of the season most technical talk centred around the stepped noses of the 2012 cars, to the designers this was a mere consequence of a set of regulations. In their minds, it was relatively inconsequential as they focused on matters far more important.

Chief among these was the desire to win back as much as possible of the aerodynamic gain that had been lost through the much more prescriptive regulations introduced to limit the position of exhaust tailpipes and hence reduce their ability to enhance downforce.

The RB8 ran for most of winter testing with a conventional exhaust that was positioned to blow over the rear-beam wing. The aim was to make it work harder, which, in turn, would enhance the diffuser flow. On the final day of testing, Red Bull used the system that would be in place for Australia, which resembled that seen on the McLaren, Ferrari and Sauber. That system involved running the exhaust into a 'gutter' in the bodywork, which was positioned as far outboard as the new regulations would allow, and became popularly known as a 'Coandă Exhaust'. The treatment they applied to the flow underneath the exhaust exit was somewhat novel. The flow was physically ducted towards the hole in the diffuser, which is permitted for the purpose of fitting the starter. This loophole was exploited by many teams but no one managed to do it as neatly as Red Bull did with the RB8. How successful it was is debatable, however, since by Bahrain, the tunnel duct had been removed only to be re-introduced later in 2012.

By their own standards, Red Bull had a disappointing start to the season and it soon became obvious that the latest generation of Pirelli tyres had such a narrow window of operating temperature that this needed to become the team's main focus of development. As a consequence, even more attention to the highly complex brake ducts was needed. Now it was no longer sufficient just to design devices that cooled the brakes with minimum aerodynamic loss; it was necessary to consider them as part of a total thermal-management problem. The heat generated by the brakes is enormous and this energy, through careful control, could be used to heat the tyres on circuits where they were performing below their optimum operating temperature.

As is so often the case with front-running teams, they did not escape the attention of the rule makers. Twice they were forced to make changes to their car. The first time was when a system that ducted air through the axle and wheel was deemed to contravene the intention of the rules. While brake ducts themselves were exempt from restriction pertaining to moveable aerodynamic devices, the axle was not. The second legality question was much more clear-cut. A number of teams had been experimenting with slots cut in from the edge of the floor, just in front of the rear wheel. Red Bull simply cut a fully enclosed hole that was clearly illegal and, as such, they were forced to change it.

Later in the season, their interpretation of the double DRS was seen: it used a duct exposed by the operation of the DRS to channel air under the beam wing, stalling it and reducing drag. This attracted a lot of attention as it coincided with a lift in fortunes for the team. This was something of a red herring, however, as from Singapore onwards the car was dominant even while leading – when of course DRS cannot be deployed. Far more noteworthy was the significantly revised front wing that was introduced at the same time.

What was most appealing about the design of the RB8 was its integration – and nowhere was this more obvious than on the rear-suspension layout that was introduced in Valencia. This cleverly located the lower wishbone and toe-link in such a way that they were aligned with the driveshaft. A composite fairing then covered the whole assembly, providing an aerodynamic surface that worked in conjunction with the beam wing and diffuser to provide a whole that was undoubtedly greater than the sum of the parts. This is the true embodiment of concept and detail that set the RB8 apart from the rest.

Pat Symonds

Honourable mentions *Ferrari F2012, for its ability to take an* *for being fastest • And to the Williams FW34*
• To Sauber's C31, Alonso pasting • To for that tear-jerking
a model of Swiss efficiency • To the McLaren MP4-27, Barcelona win →



Start of the year

Felipe Massa, Italian Grand Prix

Remember when Felipe Massa *wasn't* an also-ran in a red suit? Until the lights went out at the starting grid at Monza on Sunday 9 September 2012, you'd have been forgiven for forgetting that Felipe was once one of F1's most exciting drivers. Feisty. Unpredictable. A little bit crazy.

He'd beaten his team-mate in qualifying, but now he had to deliver. From third on the grid he had Lewis Hamilton immediately

ahead and Jenson Button to the right. Lights out. Instant, perfect reactions. The lead McLaren and the Ferrari surged forward as one.

Now it was just Lewis and Felipe, Jenson a blur in the mirror. Lewis covered the inside and as they stood on the brakes the Ferrari's nose was just ahead, but Lewis had command of the ideal line. Would Felipe flunk it and take them both out in a lunge for glory? No? No!

Stuart Codling

Honourable mentions

• To Fernando Alonso in Austin (although he got a helping hand)

• To Jenson Button at Suzuka (eighth to third) • To Kimi Räikkönen for that

electric start in Abu Dhabi • And to Romain Grosjean – seventh to fourth in Bahrain

Technical director of the year

James Allison

In the first half of 2012, when the teams were yo-yoing in performance from one race to the next, one car was routinely on the pace: Lotus's E20. It was rarely the fastest car on the grid, but all credit to technical director James Allison and his team for making it so consistent. Allison has never been averse to taking a risk when it comes to improving the car using new technology. Last year he gambled on the innovative, but ultimately flawed, forward-sidepod-

exiting exhausts, and this year he took punts on other tech solutions.

Reactive ride height, for example, balanced out front-end dip, but was banned before we could see its full potential. Lotus's double DRS was also inventive, but proved tricky to get right. Nevertheless, Lotus kept plugging away at the E20 and got their reward with victory in Abu Dhabi. We salute Allison and his team for having big ideas *and* the conviction to carry them out.

Jonathan Reynolds

Honourable mentions

• To Adrian Newey (Red Bull), obviously • To Matt

Morris (Sauber) for the 'should've won' C31 • To Paddy Lowe

(McLaren) for 2012's fastest • And to Mike Coughlan (Williams)

Qualifying lap of the year

Michael Schumacher Monaco Grand Prix

Only the greats are able to consistently tame that unique, twisting ribbon of Tarmac that is perched alongside the shimmering Côte d'Azur. How many have fallen by the wayside or embarrassingly crunched into Monte Carlo's unyielding Armco barriers? Alain Prost won around the streets of the Principality four times; Graham Hill was a winner here five times; Senna, five times consecutively, six in all. And then there's Schumacher. Also a five-time winner. And how close to six?

On that Saturday afternoon in late May last year, after two-and-a-half years of hearing that 'he's past it', and that 'the speed and delicate touch has gone' – he only went and put his unwieldy Mercedes F1W03 top of the timing screens in the dying minutes of the session. Bang. No one had an answer for that. The 43-year-old stunned the youngsters with a lap of supreme quality.

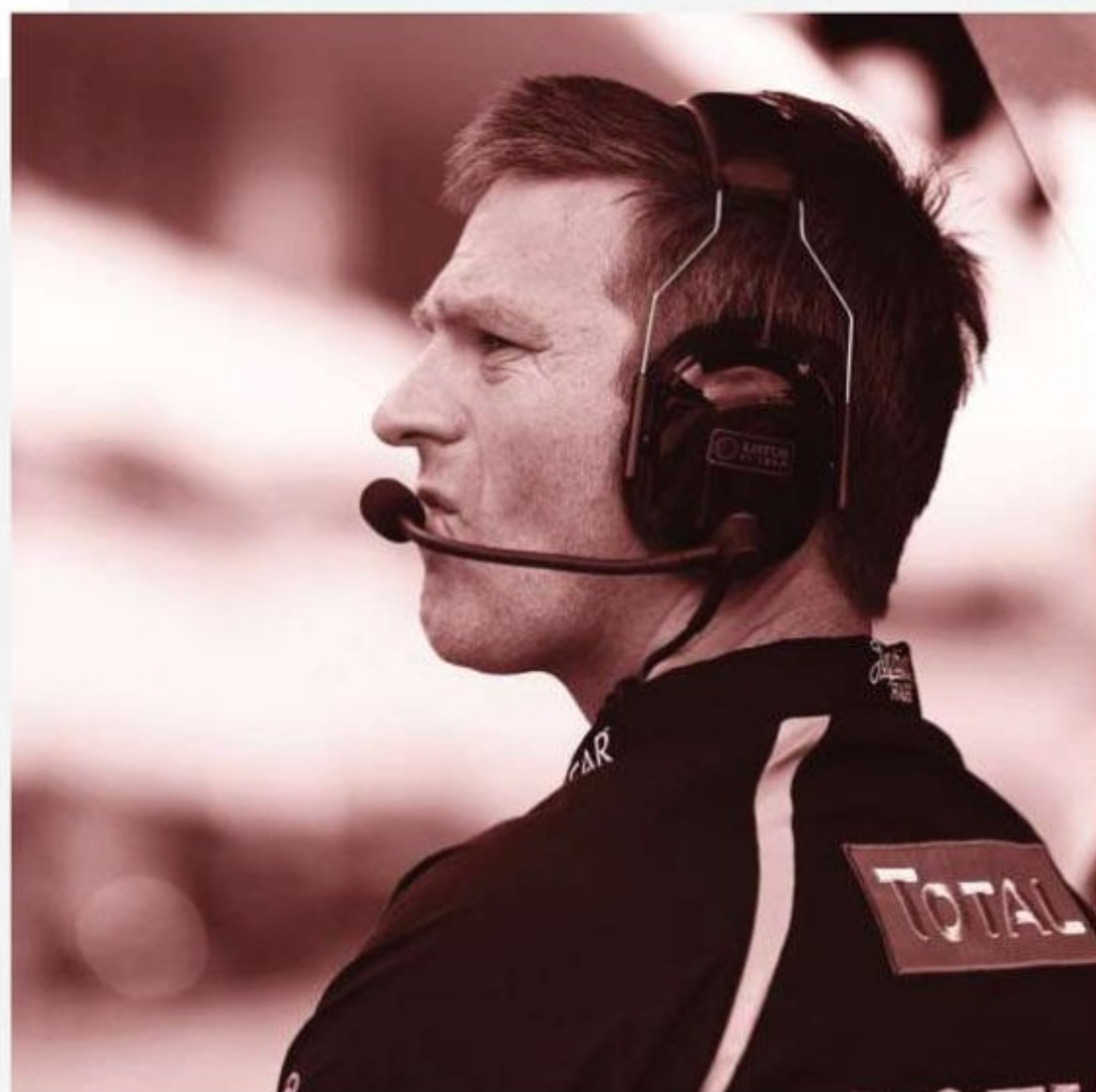
But then the reality sank in. At the previous race, Barcelona, he had misjudged his braking and slammed into Bruno Senna – taking the pair of them off and earning himself a five-place grid penalty for Monaco. And so Schumacher started fifth. That moment sums up his F1 comeback in a nutshell. So close and yet, ultimately, not good enough.

James Roberts

Honourable mentions

• To Kamui Kobayashi for front row at Spa • To Mark Webber for

an immaculate Monaco pole • To Daniel Ricciardo, P6 in Bahrain • And to Pedro DLR, P20 Suzuka





Team principal of the year

Monisha Kaltenborn

If it seems premature to anoint a person just two months into the job as ‘team principal of the year’, think again. The timing of the announcement that Indian-born, Austrian-educated Monisha Kaltenborn would take over as team principal of Sauber is unimportant – because this was a planned succession at the head of a team she has been fighting for since its troubled rebirth amid the chaos of 2009.

If having an orderly exit strategy is an essential of good management, Peter Sauber must have felt he had left the team he founded in good hands when he sold it to BMW in 2005. Passion for the sport, and loyalty to his former staff, compelled him to act when BMW came within days of selling the team to a consortium led by convicted fraudster Russell King. Kaltenborn, a lawyer who has been on Sauber’s management board since 2001, was a key ally in the rescue.

The Sauber team’s renewed competitiveness in 2012 owed much to Kaltenborn’s astuteness and sheer drive over the preceding years. Changing the title on her business card was a mere formality, which was, if anything, too long in coming.

Stuart Codling



Honourable mentions

- To Stefano Domenicali, for grace under pressure
- To Martin Whitmarsh for

- keeping it real • To Ross Brawn for bagging Lewis
- And to Christian Horner, a rare-in-F1 hat-trick hero

Overtaking move of the year

Fernando Alonso on Romain Grosjean, European Grand Prix

In Valencia, Fernando Alonso delivered one of the drives of his career to win from 11th. It was a formidable performance, but one moment really stood out. When the Safety Car came in on lap 33, Alonso was up to third place, but as he crossed the start line behind Sebastian Vettel and Romain Grosjean, he showed no sign of settling for position. Instead, he jumped on the back of Grosjean’s Lotus around the quick right-handed Turn 1 and, as the Frenchman defended the inside line on the way down to Turn 2, he took the racing line and pulled his Ferrari

alongside. The two turned in side-by-side with less than a cigarette paper between them but, despite being on the slippery outside line, Alonso refused to yield, knowing that he’d have the inside line – and the position – by Turn 3. It was a gutsy, uncompromising move, which was made all the more impressive by the fact that his tyre and brake temperatures would have been far from optimal after a stint behind the Safety Car. It takes a true great to make such a risky around-the-outside pass look routine. Absolutely brilliant stuff.

Jonathan Reynolds

Honourable mentions

- To Kimi Räikkönen (on Schumacher in Spain) • To Kimi (on team-mate Romain Grosjean in Hungary) • To Mark Webber (on Fernando Alonso at Silverstone) • And to Grosjean (on Lewis Hamilton at the European GP) →





Most improved team of the year

Williams

Things, as the song goes, can only get better. Trouble is, between 2004 and 2012, they seldom did. Over successive seasons, Williams kept promising a return to form, only to sink ever deeper into a competitive slump.

Nico Hülkenberg's pole position at Interlagos in 2010 aside, the folk at Grove haven't had much to cheer about since Juan Pablo Montoya won there at the tail end of 2004. In 2011, the team finished with just five points. Some context: even in 1988, the team's Judd-engined *annus horribilis*, the haul amounted to 20 – and that was under a considerably less generous points regime.

If the controversial hiring of ex-McLaren designer Mike Coughlan seemed scandalous at the time, it has proved singularly effective for, along with chief operations engineer Mark Gillan and head of aerodynamics Jason Somerville, he can be rightly proud of the FW34. It was the first Williams in years that didn't look like an assortment of other teams' best bits, chosen at random.

On this form, things may just get even better...

Stuart Codling

Honourable mentions

• To Lotus, 2012's dark horses • To Ferrari, in the

fight to the last • To Sauber... oh, so close • And to Marussia for earning paddock respect



Pit crew of the year

McLaren

It's fair to say that in recent years, pitstops have been a bit of an Achilles' heel for McLaren – and 2012 didn't start brilliantly for them either.

In China, Jenson Button's chances of reeling in Nico Rosberg ended with a cross-threaded wheel nut on the left rear tyre, while Lewis endured lengthy, position-dropping stops in Bahrain.

But such mistakes didn't tell the full story. Sporting director Sam Michael, brought in from Williams at the tail end of 2011, had overseen a raft of changes on the pitstop front, including the introduction of retained wheel nuts, quick-release jacks and a traffic-

light system. By mid-season the changes were paying dividends with McLaren recording the fastest stationary pitstop times in Canada, Europe and Silverstone (although there was another bungled stop for Hamilton in Valencia).

Then, in Germany, the team recorded the fastest F1 pitstop ever – four tyres changed in just 2.31 seconds. The racy stop enabled Jenson Button to get out ahead of Sebastian Vettel and was proof that McLaren's much-maligned pit crew were no longer a cause for concern, but a valuable asset.

Jonathan Reynolds

Honourable mentions

• To Ferrari, Red Bull, Williams and Sauber, all

of whom demonstrated remarkable calm under fire while performing the

modern-day miracle of the below-three-seconds pitstop



Most improved driver of the year

Lewis Hamilton

This was a tough category, as so many drivers impressed in 2012, relative to their 2011 performances. Look at the brilliant year Sergio Pérez had, putting in stunning drives in Malaysia and Monza to name but two. And then there was Mark Webber's early-season dominance over his team-mate, turning the tables on 2011.

But it was Lewis Hamilton who came out on top. At the start of 2012 he looked to be a hot tip for the title. He wasn't winning, but in an early season filled with randomness he was the most consistent driver. Podium followed podium. The erratic, crash-happy Lewis of 2011 had gone. The 2012 Lewis was happy, content, quick and in control. Nothing could go wrong. Then McLaren suffered a mid-season wobble, their early form ebbed away and reliability problems crept in to put Lewis's title aspirations on the skids.

McLaren admit they'll miss his electric pace; Mercedes hired him for it.

James Roberts

Honourable mentions

• To Nico Hülkenberg, for winning the toughest

team tussle • To a reborn Mark Webber • To Sergio Pérez, for emerging as a

future star • And to Pastor Maldonado, who proved he's not just a 'pay driver'



Drive of the year

Pastor Maldonado Spanish Grand Prix

In a year so wild and inconsistent, this drive was a performance of great maturity. The Sunday of the 2012 Spanish GP was memorable for so many reasons. First, we should recall that Lewis Hamilton put his McLaren on pole by a country mile, before he was demoted to the back of the grid. Then Fernando Alonso, electrified by competing in front of his compatriots, blasted into a Turn 1 lead from P2.

But both were pretenders to the crown, as this weekend belonged to Pastor Maldonado. There was not a corner where the Venezuelan

put a wheel out of place: his Williams looked as if it was on rails for all 66 laps.

When Fernando Alonso emerged behind Maldonado after that final pitstop, everyone had assumed he would wear Pastor down and force him into an error to take the win. But Maldonado withstood the pressure with aplomb, giving Williams their first grand prix win since 2004.

Then came catastrophe. A fire ripped through their garage to dampen celebrations; a terrible end to an extraordinary day.

James Roberts

Honourable mentions

• To Fernando Alonso, the king of Spain in Valencia • To Sergio

Pérez – a star born in Malaysia, who shone again at Monza • And to Sebastian Vettel

for force of will in Abu Dhabi, then again in the intensity of that Interlagos title-decider



MOTY



Driver of the year

Sebastian Vettel

When a driver has no perceptible weaknesses the temptation is to invent them. During Red Bull's period of dominance in 2010 and 2011, it became fashionable to sniff that Vettel could win only from the front and that he wasn't much cop at the elbows-out business of overtaking. But most of the time, he didn't need to be.

In 2012, Red Bull did not always have the best car, thanks in part to the efforts of the legislators and other teams in pegging back the effects of Adrian Newey's design genius. On the RB8's best days Sebastian parlayed its superiority into wins and podiums; more impressively, he demonstrated a new-found combativeness in conjuring results from unpromising circumstances.

At Abu Dhabi, he produced one of *the* drives of the year – helped by longer gearing and the opportune timing of two Safety Cars, but still a drive worthy of a champion, salvaging something from nothing. In future years, we may come to see this race as the one where the child prodigy became the maestro.

Stuart Codling

Honourable mentions

• To Fernando Alonso, who never said die • To Kimi Räikkönen,

who knew what he was doing • To Sergio Pérez for being big enough to fill Lewis's

boots (maybe) • And to Lewis himself, who'll lament another lost title **F1**

The Rev Revolution

The 2014 engine regulations are one of the most seismic F1 technical changes ever. *F1 Racing* goes behind the scenes at Renault Sport, gaining exclusive access to their 2014 motor

WORDS MATT YOUSON **PICTURES** RENAULT SPORT F1

The engine regs being brought in for 2014 will either change nothing of significance or prove to be a revolution of epic proportions. It all depends on whether you're holding a spanner or a pair of binoculars. Both statements are essentially correct – from a certain point of view.

From a vantage point in the grandstands, the new powertrains will deliver lap times broadly similar to those of 2012 cars. Drivers will drag performance out of their machines in different ways,

but the average speed over a lap will not change.

Over in the labs, the new powertrains represent the most radical change in the history of F1. This is bigger than ground effect, or turbos or active suspension. It's a bigger change than banning ground effect or turbos or active cars. It's the biggest change in F1 history.

The goal for the new powertrains is this: F1 cars currently use around 160kg of fuel in a race. In 2014, teams expect to get the same performance from a maximum of



100kg. They're going to do this using a downsized, turbo-charged, direct-injection engine with high-tech energy-recovery bolt-ons.

There is a small but vociferous faction who insist that F1 is out of touch, that it is a gas-guzzling, socially irresponsible exercise in decadence, with no place in the modern world. First and foremost, 2014 is supposed to negate those arguments by developing a generation of transferable hybrid technology that will power the greener, more efficient road cars of

the future. It's either a thoughtful re-examination of F1 and its role in society, or a two-fingered salute to its detractors. Take your pick.

New power generation

The facts are these. The 2.4-litre V8 will be replaced with a 1.6-litre V6. The fuel injection limit will be raised to 500bar, effectively meaning that F1 will get direct injection. The engines will be turbo-supercharged instead of normally aspirated. KERS will

become about ten times more powerful, and will work in tandem with a second electric machine that will recover energy from exhaust heat. Fuel flow will be limited to a maximum of 100kg per hour. Coupled with the 100kg tank size that's a shift in emphasis, effectively turning F1 into an efficiency formula.

"Because the amount of fuel is limited and the fuel rate is limited, then fuel economy and power become the same thing," explains Rob White, deputy managing

director of Renault Sport F1. "Therefore the single biggest performance driver of the new power unit will be the thermal efficiency – or the specific fuel consumption – of the power unit. Power unit efficiency will be a key performance differentiator."

Timeline for change

Like his colleagues and competitors, White has a clock ticking down in his head. With mule cars both illegal and →

The new Renault 1.6-litre turbocharged 2014 F1 engine

- A** Air intake
- B** Cold compressed air (from the blue pipe) is fed into the engine
- C** Hot air from the turbo enters the compressor (pink pipe) and then passes into the cooler
- D** Turbocharger
- E** Exhaust exit
- F** Hot exhaust gases exit the engine and enter the turbo-charger
- G** The Motor Generator Unit – Kinetic (MGU-K). This device is similar to the current KERS, which recovers energy from the drivetrain and is driven directly from the engine
- H** The Motor Generator Unit – Heat (MGU-H). This is the exhaust-heat-recovery turbine linked to the turbo, which generates electrical energy to either send to the battery or restore directly to the MGU-K



prohibitively expensive, the new engine will not run in a car until winter testing begins one year from now. Renault are planning to have the genuine race-intent engine running on a dynamometer by the middle of 2013. Design work on it began in the summer of 2012, while they continued working on a development engine that first ran in full V6 format mid-2012. The button was pushed for that one in September 2011, leading on from an aborted plan to have an in-line four-cylinder F1 engine introduced in 2013.

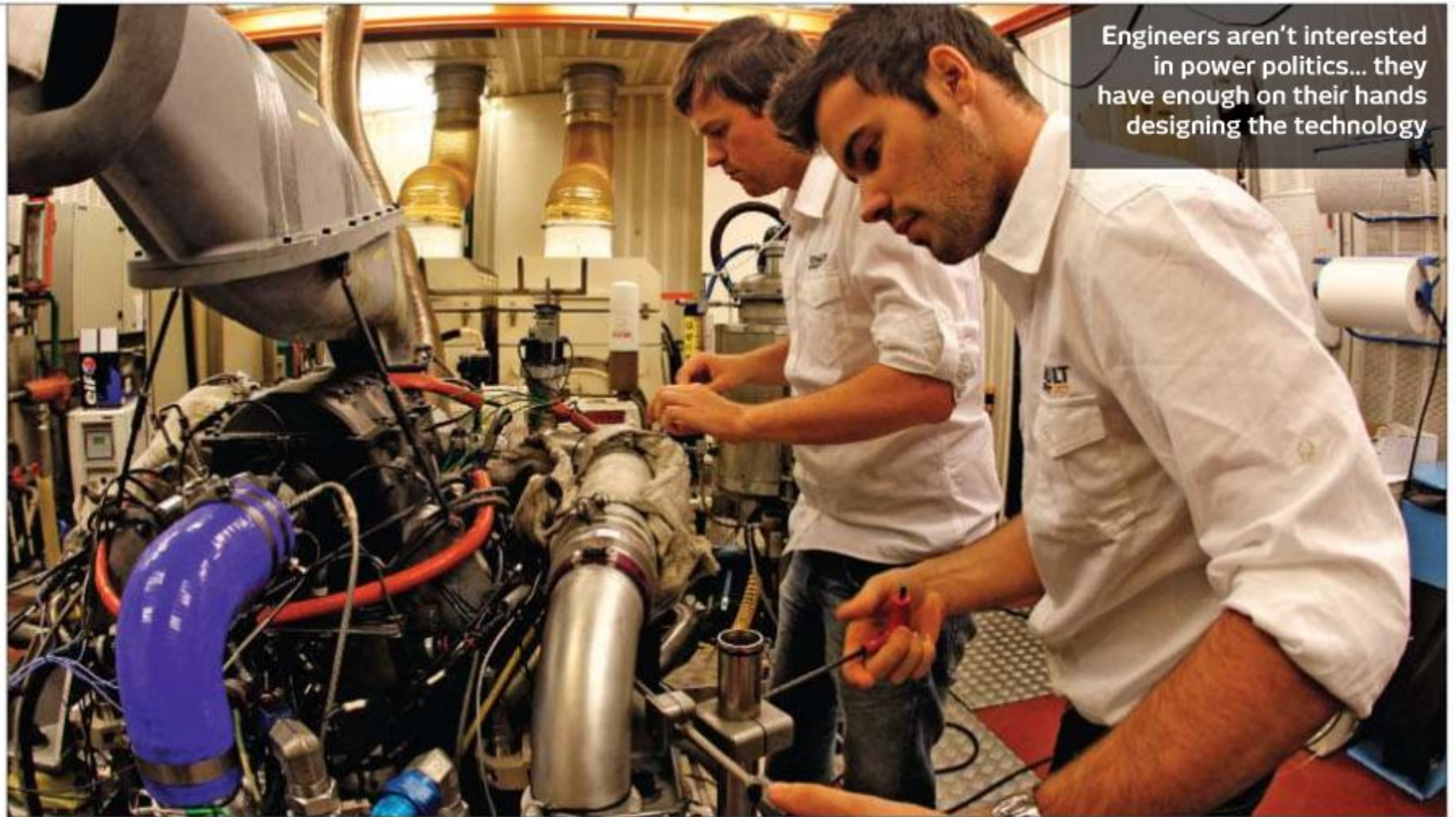
Despite these years of preparation, White still believes the project, in time-honoured F1 tradition, will be frantic right down to the wire. "Consider we didn't have any recent turbo-charged experience," he says. "We didn't have any significant direct-injection experience – certainly not in racing. We had to start from a clean sheet of paper, and so the development task is a particularly big one.

"It will be a very anxious period between the first car running and the first race. The challenge is to get all the pieces manufactured and in race spec, taking advantage of any late-running learning from testing, then fold that into the spec, deliver a legality dossier to the FIA and then deliver a reference engine to the FIA. It's going to be a big, big task."

Further development

Once those race-ready engines are delivered, Renault won't simply sit back with a well-earned croissant. Implicit in the new formula is the idea that the engine freeze won't return. F1 isn't going to develop technologies of the future if it isn't allowed to develop technology.

"No sporting regulations have been published yet, but what we're trying to achieve with the FIA is a mechanism in which we have a homologation process that keeps the spec of the engine the same during the season, but year-on-year there would be the opportunity for specification changes," says White. "I don't think anybody really wants to see a multi-year engine freeze in the way we've had in recent times."



Engineers aren't interested in power politics... they have enough on their hands designing the technology

"F1 won't develop technologies of the future if it isn't allowed to develop technology"

an incremental reduction in the size of fuel tanks, pushing the sport in the direction of great efficiency while at the same time keeping a lid on speed without resorting to perennial tinkering with tyre and aero regulations.

Reliability concerns

Another reason to avoid an engine freeze is the expectation that the new powertrains will not have the dependability of the venerable old donkeys they replace. For many fans, the spectre of unreliability raising its smoke-wreathed head is something to look forward to. It's anathema to engineers, of course, but when coaxed into comment, White admits the future might see rather more failures than have been common in the past five years.

"I think we will be much more reliable than we would have been, had we tried to develop the same thing in a previous era – but this is a complicated beast: the regulations will be immature; the engines will be immature and it will be extremely challenging to achieve the levels of reliability to which we aspire. Inevitably, there will be a

have some rocky times. And when I say 'we', I mean the whole pitlane."

Rise of the machines

To imagine the level of unreliability, you need only look at the performance of KERS. Despite three years of running, KERS still comes across as a relatively new technology, prone to the unreliability newness entails. The next generation of KERS will be an order of magnitude more powerful and, to complicate matters further, it will be joined by the second electrical machine, which harvests energy from exhaust heat.


KERS may currently recover 400kJ per lap. It is limited to 60kW in recovery or delivery. For anyone having flashbacks to physics lessons in draughty classrooms, the upshot is a circa 550kW (740hp) engine getting a power boost of 60kW (80bhp) for just under seven seconds a lap. In 2014, the power limit will double to 120kW but the permitted energy flow will be much higher. Cars will be allowed to recover five times as much (2MJ) and use ten times as much (4MJ) as they do now.

On its own that could mean twice the power for over half a minute per lap, but actually the new system has rather more potential. The second electrical machine, although attached to the turbo-compressor system, can operate without limits to either charge the battery or power the KERS machine directly.

White explains it more succinctly: "I think all of us have in our minds that 2012 KERS is operable for around seven seconds a lap. We expect the 2014 systems will be operated for a much, much higher-duty cycle. We would expect to be either recovering or restoring energy for most of the lap."

TV stations will need to invent whizzy graphics to explain where that energy is flowing at any given time, and there are other issues to iron out – not least of which is cost, with the maximum some teams are willing to pay being somewhat lower than the minimum their suppliers are willing to charge. Because of this, there have been rumblings about equivalency formulae or other grandfather clauses allowing small teams to keep their V8s – but the word from Renault and, more importantly, from FIA headquarters, is *non*.

Not that engineers are interested in power politics. They have enough to think about designing the technology. It is the biggest, most complex change F1 has ever made. And if it all goes well, then from the grandstands everything will look more or less the same.

That's a mighty big 'if... 



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Two and a half miles above Earth, **Timo Glock** is freefalling at 200mph. *F1 Racing* will do anything for a good story, so Tom Clarkson joined him for the ride...

“The rush is unbelievable,” says Timo Glock.

“When you jump out of the plane, you don’t know what’s going on; you’re spinning around and you feel like you’re out of control. That’s pretty scary, but when you stabilise in freefall it’s really cool. Seriously cool, man.”

This is sounding increasingly like something out of *Bill & Ted’s Excellent Adventure*, and Timo even looks a bit like Keanu Reeves. Ten minutes after jumping out of a Cessna 208 Caravan at 13,000 feet there’s no stopping him. He gesticulates wildly: his hands flip upside down to demonstrate the loop-the-loop he performed when he first left the plane; he arches his back to simulate the banana position he assumed during freefall and he holds his legs up to simulate landing. It’s as detailed and as enthusiastic a description of a skydive as you’re ever likely to hear.

In fact, it’s hard to believe that Timo has ever described the antics of a Formula 1 car with so much vim and enthusiasm. He’s on a complete high, which is to be expected considering he’s just leapt out of an aeroplane 2.5 miles above the Jumeirah Palm in Dubai. Ragging an F1 car around one of Hermann Tilke’s more anodyne racetracks must feel tame by comparison.

Skydiving is how Timo is killing time between the 2012 Indian and Abu Dhabi Grands Prix. He’s watched YouTube videos of adrenaline junkies falling out of the sky – and that includes seeing Travis Pastrana jump out of an aeroplane *without* a parachute – and now he wants a slice of the action. With a ‘chute. He’s come to Skydive Dubai, whose clients include Tom Cruise and various Middle Eastern princes, and since *F1 Racing* will go to any lengths to get an exclusive, we’re jumping with him.

The first point to note is that Timo is very relaxed prior to the off. He signs the indemnity form (all four pages of it) without a trace of nerves and asks calmly about the safety aspects of the jump. “What happens if the main parachute doesn’t open?” There’s a spare. “What happens if the instructor on my back passes out while in freefall?” The parachute opens automatically if it passes through the 2,000-foot mark while travelling too fast.

On paper, skydiving is safer than crossing the road and it helps that the instructors at Skydive Dubai are vastly experienced. Timo’s instructor, to whom Timo will be strapped for the tandem jump, has done more than 5,000 jumps, and Skydive Dubai are a slick operation. They oversee more than 500 jumps a day from their two jump stations in Dubai, so the company has to be run with the same military precision as an F1 team. In fact, Timo reckons there are many parallels between the two sports.

“You’re relying on other people all the time,” says Timo. “When you’re doing a tandem skydive you’re completely in the hands of →





someone else, and it's pretty much the same in Ft. If you go into a corner at 160mph and the wheel falls off or something breaks, it's going to hurt. Over the years I've learnt to trust other people, so I'm pretty relaxed in these situations."

Timo clammers into the back of the Cessna and sits down on a bench. He's wearing the harness that will attach him to his instructor, but there's a 15-minute flight to the jump height and they won't be joined together until minutes before the off. Timo's wearing a pair of shorts and a T-shirt, hoping that the desert temperatures will keep him warm during one minute of freefall from 13,000 to 4,000 feet

The pre-flight safety briefing deals with the essentials: what position to hold when leaving the aircraft; what shape to make in freefall and how to land. Three stages, all easy to understand, and there's no mention about what to do in the event of an aeroplane failure. No need.

Once we're under way, it's hard to talk in the back of the Cessna. A mix of engine and wind noise makes it a pretty hostile environment, but Timo's smiling and he looks relaxed. As we pass through 10,000 feet the instructor attaches himself to Timo, which involves a lot of clips. Once tightly in position, there's no room for independent movement: Timo has to move in tandem with his instructor, which makes getting to the exit tricky. They move awkwardly together like a snail with an over-large shell.

Disappointingly, there are no flashing red lights like in the movies. The time to jump is signalled by the instructor pointing at the door and, once they're in position, Timo hangs out of the plane while the instructor sits on the ledge. Glock's body is being blown around in the 200mph wind like that of a rag doll and only then does the instructor start the countdown: three fingers, two fingers, one finger... Then Timo's world turns upside down.

They roll out of the plane and are gone from sight. Judging by my own experiences two minutes later (thanks for the safe ride, Lynn), he won't have had time to think. The violence of the wind would have left him breathless and the end-over-end rolls would have disorientated him. The changing scenery of sky-land-sky-land

"Skydiving is
aerodynamically
interesting...
at 120mph, even the
smallest movement
affects how you fall"



would have made him feel dizzy and bewildered – although only afterwards did I make the association with Felix Baumgartner (no relation to Zsolt), who would have suffered similar issues but from 24 miles above the ground, as opposed to 2.5 miles, when he made his record-breaking skydive, back in 2012.

To appreciate the violent forces that you experience from the wind alone, try sticking your head out of a car window at 120mph (although perhaps best attempted on a track day, not out on the roads), and then imagine your whole body being buffeted around to a similar degree while hurtling towards the ground. Think bungee jumping on steroids.

One minute of freefall passes quickly, but it's long enough to settle into what you're doing. After a while you become aware that there's a photographer freefalling with you, and all inhibitions disappear. Hence some of the ridiculous facial expressions.

"Skydiving is really interesting aerodynamically," says Timo.

"You'll find that even the smallest movement at 120mph can affect the way in which you fall through the air. Move your chin up a little bit and you will feel your whole body move. It made me appreciate how even the smallest of aerodynamic tweaks on the car can make a difference."

That's one of the remarkable things about Timo; he's always thinking about F1, even when he's falling out of the sky. After three lacklustre seasons (by his standards) with Marussia, he can't stop enthusing about the progress they have made since their inception and such is his passion for the team that you begin to understand why he chose Marussia (née Virgin) over Renault for 2010.

"Operationally, the team is working better now than it ever has," says Timo. "We have the new factory in Banbury and we've restructured quite a lot recently. Pat Symonds has made a huge difference as a technical consultant and the technical partnership with McLaren is really starting to produce results: we're using their simulator and, since the middle of the year, the windtunnel programme has made a lot of progress. We've taken a big step forward relative to Caterham and I hope we'll make another one next year. I have total faith in this team."



"On a tandem skydive, you're in the hands of someone else. It's the same in F1"

Timo's affection for the team is such that he paid for 20 of the mechanics to do a skydive while in Dubai and he's going to take them out to dinner at the final race in Brazil. One of the mechanics, who, until recently, worked for McLaren, has Timo to thank for what he describes as two of the happiest days of his life: Interlagos 2008, when Lewis Hamilton passed Timo on the final lap to claim fifth place and secure the world championship – and the recent skydive.

Glock's commitment to the cause is impressive and there's no bitterness at having the rug pulled from under him at the end of 2009 by Toyota, when his career might have gone stratospheric. He finished second in that year's Singapore Grand Prix, yet six weeks later Toyota quit F1.

"There's no point looking back," he says. "I'm excited by what this team can achieve in the future; all we need is a bigger budget to allow us to compete on a level playing field. I still get excited when I turn up at a track to drive a Formula 1 car. Whether you're in a Red Bull or a Marussia, the cars are still faster than any others in the world. I know I'm lucky to be able to do what I do."

The engines might be powerful and the aerodynamics impressive, but the buzz must still be very different to the one you get from skydiving. Few things in life can be more unnatural than jumping out of an aeroplane, which is why it holds so much appeal for thrill-seeking F1 drivers. Sebastian Vettel and Mark Webber have both done it: now Timo has joined their ranks.

"I imagine the kick will always be there," says Timo. "Even after 100 jumps you're still going to be nervous before you go up because you can't get away from the fact that you're jumping out of an aeroplane. That's the fun of it and that's why I'll come back for more."

"One day I want to jump alone; that's the goal. I want to be up there on my own, without the safety net of having anyone else around." That would be seriously cool, man. **F1**



F1 Racing would like to thank everyone at Skydive Dubai for organising Timo's jump. See www.skydivedubai.ae for more details.

GO FIGURE

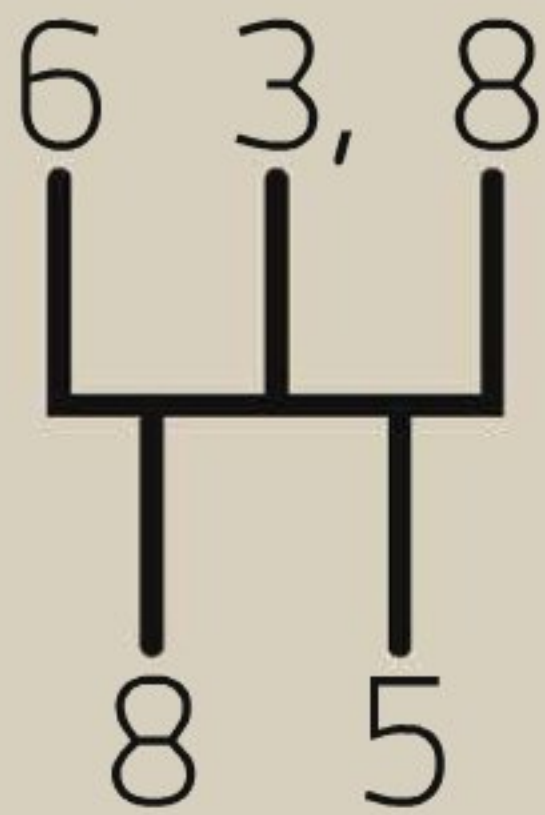
There's no doubt about it, 2012 was an incredible season. And here are ten incredible facts you probably didn't already know...



25 drivers competed in the **2012** championship – the fewest since '09

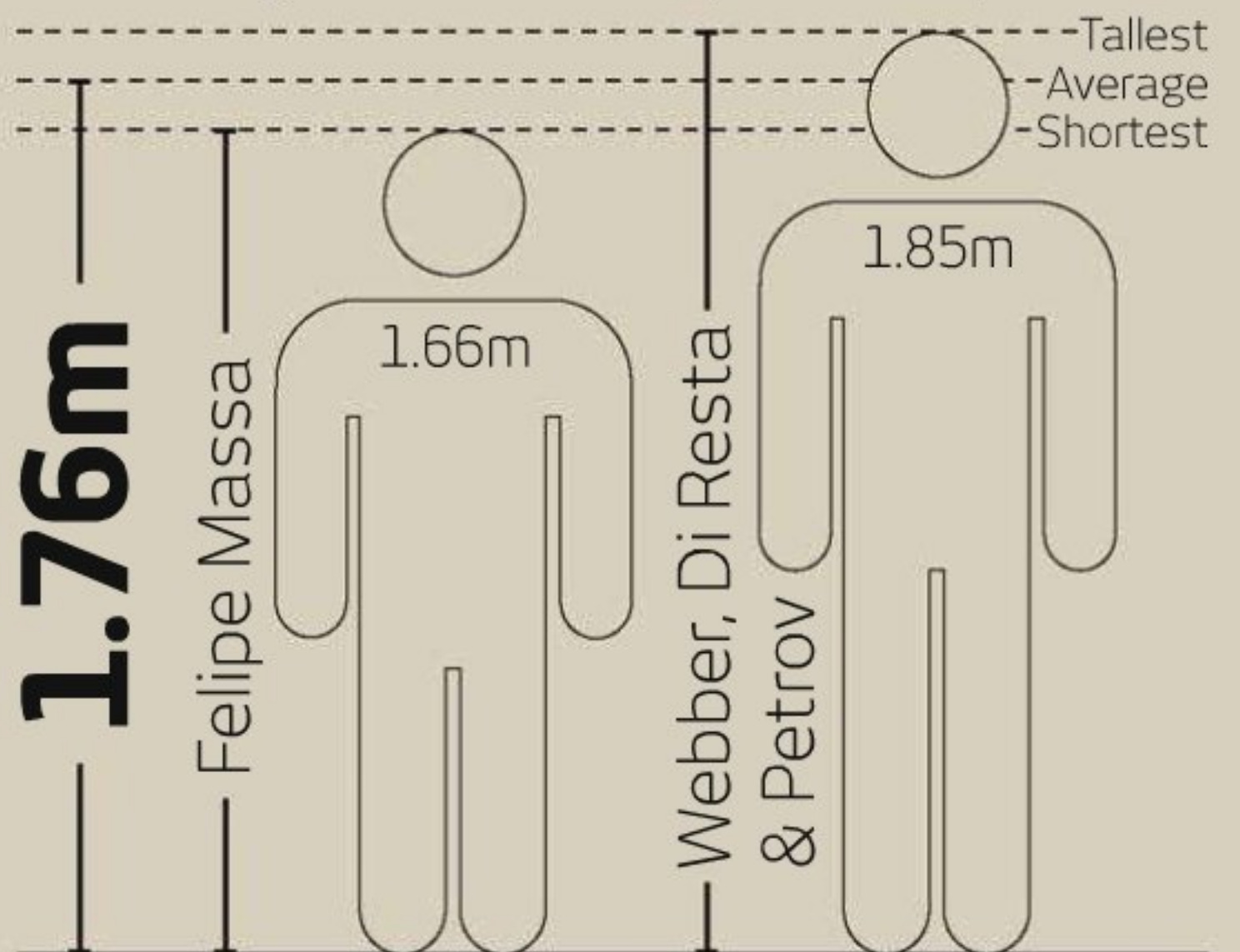
2020

No, it's not the year that Michael Schumacher will finally retire from F1 for a fifth time... it's the total number of points on offer to the drivers during 2012



The **number** of **gear changes** necessary to complete **every** single race **lap** of the **2012** F1 **season** (63,885)

The average height of the 25 drivers who have raced in this year's championship



31min 03.72secs

Start **Albert Park** ● Finish **Interlagos**

Add together every fastest lap on the 2012 calendar, from **Albert Park** to **Interlagos**, and you've got a total of 31 minutes and 3.72 seconds **of mind-blowingly quick racing**

20,523

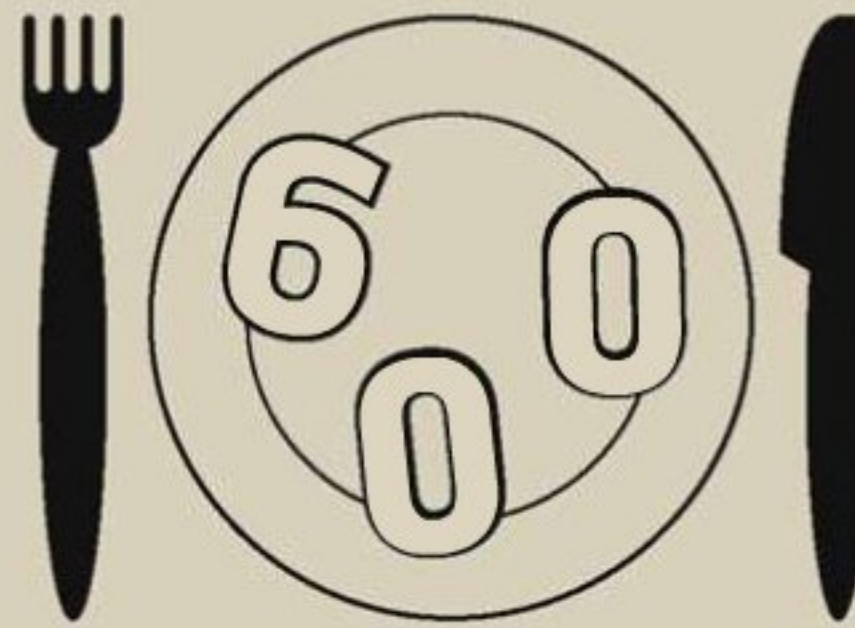
The total number of corners tackled during the 2012 championship, based on a driver completing every single lap of every single grand prix



have been run under the Safety Car this season, at nine different races



The miles spent at full throttle if a driver completed every single race lap in 2012 – that's 66.41% of full race distance



The average number of meals served in the **Pirelli motorhome** kitchen per grand prix. With 20 races in 2012, plus all the testing, that came to a total of **21,600** meals

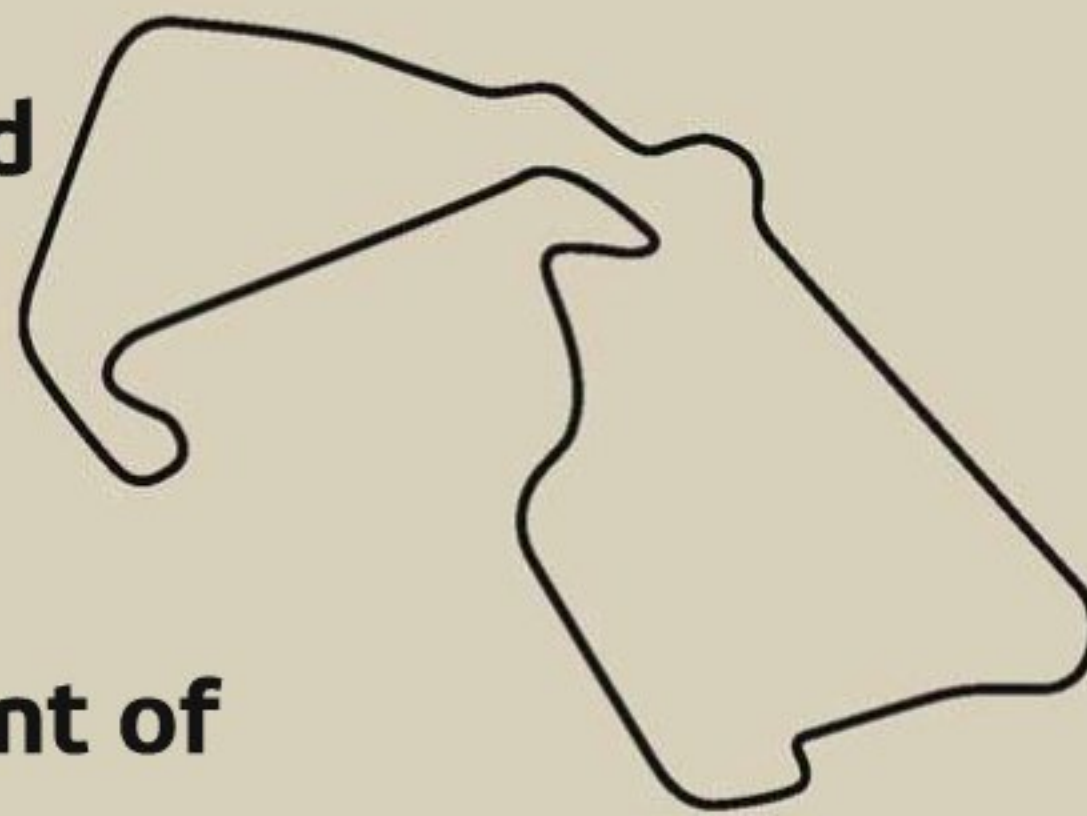
The numbers of laps **Heikki Kovalainen** drove in **sixth** place in **2012**, the **highest** position reached by any of the **six** drivers from the three **newest teams**



51,375.13

If you started in **Melbourne** and **travelled** from **race to race**, this is the **number of miles** you'd have **travelled** by the **time you reached São Paulo**, the **equivalent of**

14,037

 laps of **silverstone**.

16.03

The equivalent in eight-hour working days to what a driver could spend in total driving his car at GP weekends over the course of the 2012 season





THE MAURICE HAMILTON INTERVIEW

A lunchtime chat with the legends of F1, every month

“At Mercedes in the 1950s whatever you wanted, you got. If you wanted square wheels they’d say: ‘We tried it in 1928 and they vibrated too much.’ Or they’d be fitted the next day”

A racing legend most famous for never having won the Formula 1 world championship, **Sir Stirling Moss** waxes lyrical on his Mercedes youth as team-mate to the great Fangio, and explains why the team back then was nothing like the team Lewis Hamilton will take his chances with in 2013

PORTRAITS LORENZO BELLANCA/LAT

Sir Stirling Moss is a stickler for punctuality. So precisely three minutes before our appointment, photographer Lorenzo Bellanca and I ring the bell to his Mayfair town house. Spread over five floors, this has been the Moss abode for more than 50 years. I’ve read all about it but never been inside; one of many reasons to look forward to this lunch with a motorsport legend.

The door is opened by Mandy Shepherd, Sir Stirling’s PA. We are ushered in past his ground-floor office and up a spiral staircase, pausing at the first floor to be greeted warmly by Lady Susie Moss before climbing up to the kitchen. Seated at a desk by the window, that

familiar stocky figure removes his spectacles and rises – slowly, it has to be said, given the horrific accident he suffered in his lift shaft two years ago, which injured his ankles, legs and knees.

Once on his feet, his aura of urgency and energy is all too evident, just as it was when S. C. Moss was one of the world’s greatest drivers. Moss is more famous for not claiming the world title than some champions are for having won it at least once. It is a mark of the man and the reason why, at 83, he is always on the move. He’s just returned from a visit to the United States, then he’ll fly to the Isle of Man the day after our interview, then back to London and on to a function in York just 24 hours later.

“As busy as ever, boy,” he says, making room at the table. Then he pauses before adding: “Thank God I am.” He means it. Sitting still and doing nothing is not an option in the world of Sir Stirling Craufurd Moss. Never was and never will be. He’s ready. Let’s get going...

Maurice Hamilton: I want to start by linking the past with the present. Mercedes are in the news because Lewis Hamilton has decided to move there for 2013, so I guess you’ll have had people asking about when you raced for Mercedes?

Stirling Moss: I have, and there’s no comparison at all. In 1955, I was driving for a major motor manufacturer who were going →





THE MAURICE HAMILTON INTERVIEW

motor racing. It was a racing department; part of a big company. There were lots of reasons why going to Mercedes made sense. Alfred Neubauer [team manager] was there and so was Rudolf Uhlenhaut [chief engineer], both of whom were exceptional, particularly from a driver's point of view. Uhlenhaut was talented enough to race if he wanted to – can you imagine that now? He spoke perfect English, which was very useful. But they wouldn't let him race as he was too valuable.

MH: The standard of engineering must have been extraordinary at the time. You hardly had a single retirement, did you?

SM: Just one. And the thing was, at Mercedes, whatever you wanted, you got. If you wanted square wheels they'd look in the book and say: "We tried it in 1928 and they vibrated too much." Or they would be fitted the next day. They used four-spoke steering wheels, but I liked three-spoke, so that's what they made.

MH: From your point of view, the most valuable asset had to be having Fangio in the other car.

You were, in effect, number two to the great man – and you were happy to accept that?

SM: You bet I was. But I wouldn't have accepted that with any other driver in the world. I was not told to follow Fangio; it was a completely free situation. But I was very happy to sit right behind him. Neubauer said: "I don't like you going that close. What happens if Fangio goes off?" I said: "He doesn't."

MH: It must have been nice to know you could match his pace?

SM: It was, yes. But he gave me what you might call a lot of hints about driving; about where to place the car. But he never, ever said: "You're getting too close", or whatever.

MH: I guess the learning had to come from what you were seeing because you had a language problem, didn't you?

SM: Yes, he was Spanish-speaking and all I could manage was a little Italian. But I tell you, boy, if you're only talking cars, crumpet and food, you don't need much! A few hand signals

and you're in business. Our dialogue was kept to a minimum.

MH: Fangio always seemed such a gentleman. And he never gave the impression that he felt threatened by you. I say that, not in the sense that you weren't as quick – because you were – but because he was confident and mature enough to cope. That's always the sign of a top performer, isn't it?

SM: Exactly. I was faster than him in sportscars. When I asked him why, as far as I could make out, it was because he liked to see the front wheels. I can't really understand that because, apart from when you're in a hairpin, you never look down at your front wheels.

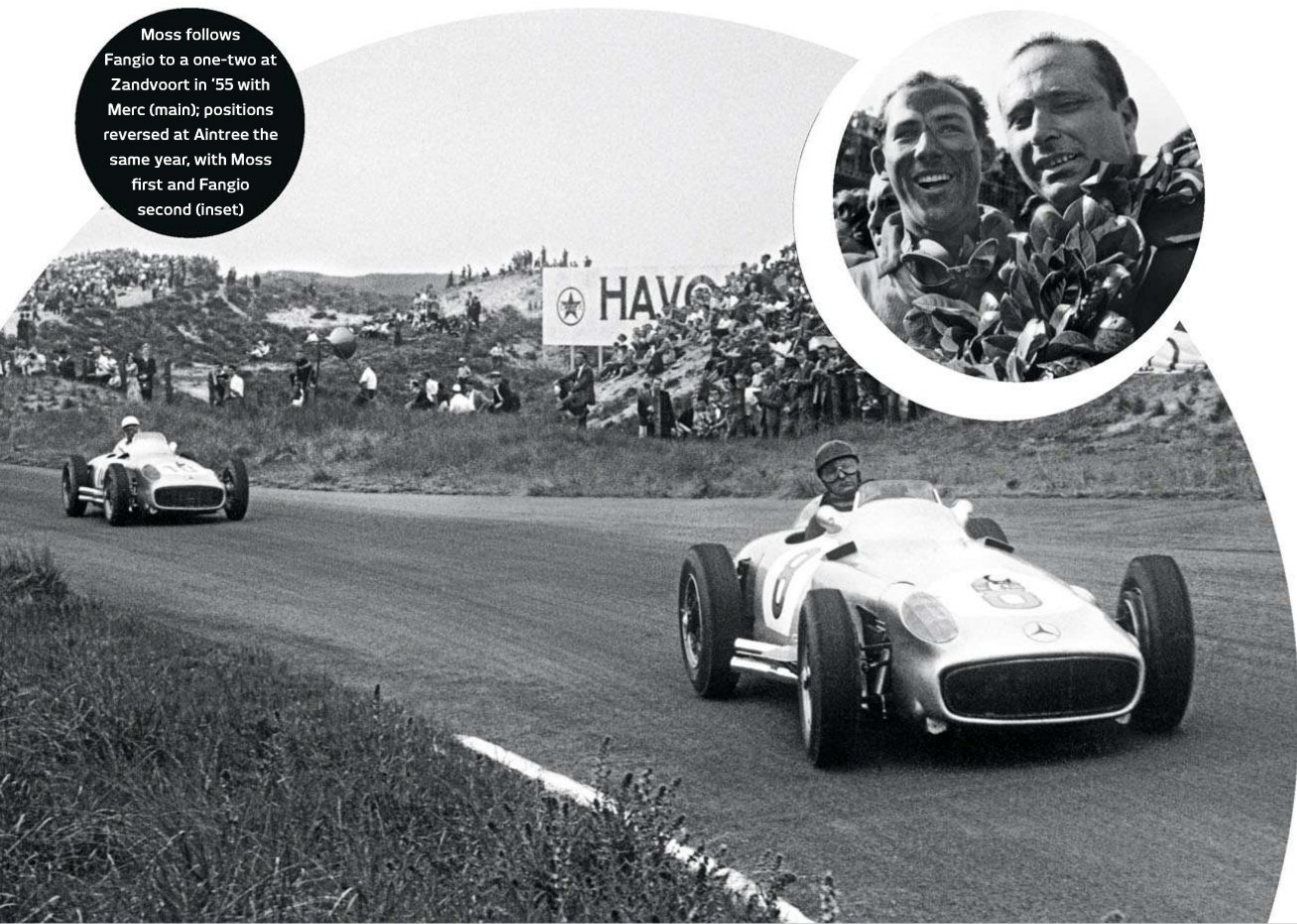
MH: That's interesting because when he had the streamlined W196 at Silverstone, he was hopeless – by his standards, anyway.

SM: Yes, he kept hitting the barrels marking the inside of corners.

MH: The W196 was quite a big car. Did it feel big when you were in it?

INSETS: LAT ARCHIVE

Moss follows Fangio to a one-two at Zandvoort in '55 with Merc (main); positions reversed at Aintree the same year, with Moss first and Fangio second (inset)





“I was not told to follow Fangio, but I was happy to sit right behind him”

SM: It was not an easy car to drive. Not like the Maserati 250F. The 250F was the most user-friendly F1 car – you ask anybody who has driven one. But the Merc was a large car; not what you would call an easy thing to throw around.

MH: I seem to remember you saying there was something tricky about the gearshift?

SM: It was back-to-front, very difficult until you got used to it. My problem was that I was racing every week. So, if I wasn't racing a Mercedes, I was driving something else. I had to remind myself about the gear change each time I got into the Merc. It had an off-set first [he indicates top left] then second back here [down, across left to right and down], then third up here [straight up], down, across and down to fourth, and then up to fifth. So, in any other car, you would flick it across and back one when changing down. Which I did in Argentina in the Merc.

MH: So, you went from fifth to third?

SM: Exactly. But it was no problem mechanically because that was where the desmodromic valves came in. Had it not been for that [the lack of springs], the valves would have bounced. Do that once at speed and you soon learned. I don't know why they had it like that – I never asked.

MH: Sadly, however, one aspect of your career that I must ask you about is that you never got to race for Ferrari. You were about to in 1962. Indeed, if the car had turned up as promised at Goodwood, you wouldn't have had the accident that ended your career. I often think, and I'm sure you do too, that...

SM: ...that if the Ferrari had arrived, I wouldn't have been in the Lotus and I probably would have continued racing until I was 50? It was a dream deal. Ferrari would have made whichever car I wanted. And it would have been painted, not red, but in the blue used by Rob Walker. Absolutely amazing, really.

MH: That is such a public admission of how much Mr Ferrari wanted you as a driver.

SM: It is, particularly when you know what the man was like and how he really couldn't care a sod about his drivers. In fact, he preferred to have different drivers winning because, for the

Old Man, it was all about his cars rather than the driver. He would say it was the best car – which was not necessarily true at all.

MH: This deal you had with Ferrari is all the more interesting because you got off to such a bad start with the Old Man in 1951. He promised you a drive at Bari and you went all the way to Italy, only to find he'd given it to someone else. I don't blame you for being pissed off about it.

SM: I flew down there with my father and we went to the Fiat garage where the racing cars were being prepared. I saw the four-cylinder car, knew that was mine and I was about to get in when the mechanic asked me what I was doing. I told him I was Stirling Moss and I was driving this car. He said something like: “No you're not. Taruffi is driving this car.” I was, as you say, really pissed off. Ferrari didn't even have the manners to call me and say: “Look, sorry. I've changed my mind.” I thought: “That's it, boy. I'm never going to drive for you. Never.”

MH: So when this incredible offer came along in 1962, you really had to put all that behind you, swallow your pride, and accept.

SM: Absolutely. It was *the* car to have. Apart from anything else, I couldn't think of anyone who had been killed in a Ferrari because of a mechanical failure. Not one. And that was saying something in those days. That sort of thing was fairly high in my mind because I had been driving Lotus cars and there was a ten-to-one chance something was going to fall off.

MH: Before coming today, I started to re-read Ken Purdy's book, *All But My Life*, which he wrote about you. I was reminded what an incredible effect that book had on me when I read it for the first time in the late 1960s.

SM: A fantastic book – absolutely fantastic. It was the only one of its kind in that era. He wrote in a vicarious way. Although he knew nothing about racing when he started out, he wanted to be part of it. He contributed articles to all the very big magazines and *Playboy* sent him over from the States to do a piece on me. But after a while, he said: “There is so much material, this is a book and not just an article.”

MH:

Purdy started all this before the accident and was with you right through the recovery, which meant he could provide a real insight into ‘Stirling Moss before and after’. He lived it with you. Which is the perfect situation – not for you, of course – but for a writer. He described you – and I want to quote this – as being ‘beyond doubt the best-known sports figure in the world’. He went on to make the point that, for example, Sonny Liston (World Heavyweight Champion from 1962 to 1964) was well-known in the USA, but that your name, because you raced here, there and everywhere, was global. That's a big claim. You probably wouldn't have said, but do you feel, looking back, that he was right?

SM: I suppose I was recognised wherever I went and, as you say, racing every weekend seemed to take me somewhere around the world. But I was lucky to have the name Stirling Moss. I was very nearly called Hamish – which is a ghastly thought! It also helped to be viewed as the underdog because I drove so many crappy cars early in my career. The English people get behind that sort of thing and, of course, they knew I was always looking for the British win.

MH: Yet you ultimately had to go for a Maserati 250F as a privateer in 1954 if you were to make any sort of mark in F1. Did you feel uncomfortable with that?

SM: I called in the British press and told them: “Look, I want to drive a British car, I've tried it and there's nothing suitable. I have to go with the Maser.” They agreed it would be better if I had a British car but that if I had to have a foreign →



THE MAURICE HAMILTON INTERVIEW

"When you've been through what I have, you take injuries in your stride. You name it, I've broken it"



Moss in 'the most user-friendly F1 car', the Maserati 250F at the 1956 British GP. He took pole and set fastest lap, but retired due to an axle problem

car to win, so be it. I needed to get that endorsement.

It was political as much as anything else.

MH: Saying that, you wouldn't leave the pits until your car – be it a Maserati or a Mercedes – had the Union Jack somewhere on its flanks...

SM: Oh, absolutely.

MH: So there's that and the BRDC badge on your overalls; the nice young Englishman, winning races, with an eye for the ladies afterwards...

SM: Chasing crumpet. Exactly!

MH: And yet Ken Purdy also wrote that you were – are – shy.

SM: Very much so. I wouldn't go into a room if I was on my own. If you were there and I could see you, I'd come in and say hello. Or take somebody with me. But otherwise, I find that quite difficult.

MH: And yet you chat away nineteen to the dozen; you are very easy to get on with. But you're saying it's the initial approach. Do you put this down to British reserve, or what?

SM: Lack of confidence – if I'm honest. I don't know why. I knew I was pretty good at what I did because of the success I had but, when I got out of the racing car, my disguise had gone.

When I was in the car, I was perfectly at home. But when the race stopped, reality returned. I had confidence in the car, but I didn't have the confidence to walk into a room full of people.

MH: It always struck me that you looked so relaxed at the wheel; your facial expression... everything. You appeared to be completely at ease and in control.

SM: There were bad cars when I probably wasn't quite at home, but I'm lucky in that of the 108 cars I drove, probably 100 of them were good.

MH: On that subject, this is a good point to mention that one of them was a Sunbeam Talbot saloon with which you won the Alpine Rally, not just once but three times, to claim the coveted Gold Cup. That's an immense achievement in its own right because that was a very tough rally.

SM: We were on public roads and you could really get your foot in. The cars we were driving were slow – the Talbot had a top speed of about 105mph – but it meant I could work harder and make the difference. If I had done it in, say, a Jaguar XK120, then, to me, that would have been far less of an achievement. It was all about time controls, and on one occasion I got in by a gnat's cock. The whole thing hung on this. I had tears in my eyes, boy; it was so emotional.

MH: You drove touring cars on your comeback in 1980 with Audi in the British Championship.

SM: Biggest mistake I ever made, boy. I never researched it. I'd never driven on slicks. I had no idea at all that the tyres had no grip whatsoever if the track was wet. And I wasn't ready for the driving standards; it was like stock cars.

MH: Not your style, is it? So, what do you think when you see the start of an F1 race today and the guy on pole swoops straight across the track in a blatant movement to block the man on the outside of the grid?

SM: There are certain things they're allowed to do. I presume it's done within the regulations – so that's it. I can see why they do it under those circumstances. My attitude is that you learn the rules and, if it's within the rules, you push the envelope as far as you can. But I'm not saying the rules are necessarily right to allow it.

MH: What would you say about incidents such as Senna and Prost at Suzuka in 1989? And Michael taking Damon off the road in Adelaide in 1994?

SM: Those things happen because the cars now are so safe. If you want to live, get in a racing car. It's remarkable what they've achieved. The shunt Mark Webber had in Valencia – unbelievable. That's the way it is. If the cars were as dangerous as they were in my era, I don't care how big your balls are, you simply wouldn't do what people do today. It was a dangerous sport. That was one of the reasons I entered it; I like playing with fire. I wouldn't swap my era for now.

MH: Why is that?

SM: I think the danger added a huge amount to it. If you and I are playing cards, you want to try and win. If I give you chips, you want to try and win a bit more. If I give you cash, it becomes even more important and you really concentrate if you are losing your money. The fact that there is danger on your shoulder certainly sharpens up your attitude towards what you are doing.

MH: And I presume racing in cars like that generated more respect between drivers?

SM: It did. There were certain drivers you knew damn well were likely to cause problems – Willy Mairesse was one; people who were competent to a degree, but not great. When you caught someone like that you had to make allowances. You'd say: 'Okay, I'm going to take two seconds to get by rather than go straight past.'

MH: In Purdy's book, there's a reference to a sportscar race in Sweden where you deliberately gave a slow driver a little tap.

SM: I did. I hit him in the arse. It was on a little circuit, in some former gravel pit somewhere. He kept blocking me all the time. When we went into a hairpin, I just nudged the back and he spun off. It wasn't dangerous. But that was dirty driving and I meant to do it. It was the only time I ever did anything like that.

MH: This really was a different age. People today would have difficulty getting their heads around the fact that when officials tried to throw Mike Hawthorn out of the

1958 Portuguese Grand Prix for going against the traffic after he had spun, you sprang to his defence. You had no hesitation.

SM: No, certainly not. Mike did go up the escape road and that was penalty enough in itself.

MH: Yes, but it was *you* – not Mike – who pointed out that, although he was going in the wrong direction, he was on the pavement and not actually on the track. The officials agreed and allowed his second place to stand.

SM: But I can't see how this is open for debate! He was not on the circuit...

MH: Yes Stirling, but if you hadn't said anything and he lost the six points, you'd be world champion. He was your only rival. That didn't come into your thinking?

SM: No! [Mere words cannot portray the genuine incredulity of Sir Stirling's expression at this point. It did not figure then – and doesn't now. Hawthorn was being hard done by. End of story.]

MH: I suppose you've gained more notoriety for never having won the championship?

SM: Absolutely.

MH: After your accident in 1962, you tried a Lotus sportscar at Goodwood, but it was too soon and you had not fully recovered.

SM: The reason it was too early was purely because of the press. I was only 32 and all the time they were asking: "Are you coming back? Are you going to race again?"

MH: You didn't allow for the length of time it would take your functions to fully recover from the brain injury caused by the shunt. You were unconscious for how long?

SM: A month. And I was paralysed on one side for six months. But so much had happened in between. Jimmy Clark had arrived and he was looking over my shoulder.

MH: You eventually got over that injury. But how, nearly 50 years on, how did you recover from that fall down the lift shaft?

SM: I opened the doors and got in at this height [two floors up] but didn't realise there was a malfunction and the lift was actually on the floor

above. My knees and my ankles aren't as good as they were before I did it! When I get up, I have to take my time before they'll take some pressure. And when I wake in the morning, I'm a bit stiff.

MH: But you must have such a strong constitution. The shock alone...

SM: It wasn't such a shock. It wasn't a case of: "God, it's not there!" because the first thing I knew, I was hurting in my legs and ankles. I was lucky I didn't bang my head. Broke both my feet, ankles and rest of it. A few rather depressing people said the recovery would take longer because of my age. Well, age is what you make it. There are times when I feel older than I am, but most of the time I feel really good, I must admit. When you've been through what I've been through in racing, you become professional with injuries and take them in your stride, so to speak. You name it, I've broken it.

MH: Well I must say, you look fantastic on it. It's been a lovely chat. Thank you.

SM: A pleasure, boy. 🍷



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Three in a row



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Team names and ownership may change, but for the most successful 'location' in F1, step forward Enstone



RACE DEBRIEF by Pat Symonds

United States Grand Prix

18.11.2012 / Circuit of The Americas

Lewis's last win for McLaren... Alternator failure no.3 for Red Bull... At last: Tilke builds a thriller



Better savour that win, Lewis

Hamilton takes what could be his last victory for some time at the exciting new Circuit of The Americas – a Tilke track unlike any other

With circuit testing having been curtailed, and running during a grand prix limited by the availability of tyres, one of the great challenges that can still be enjoyed by teams and drivers alike is that of a new circuit.

The same restriction on testing that was introduced some years ago has increased

the need for driver-in-the-loop simulation to replace lost track time. As teams developed the technology, they found that, in some cases, the experiments they performed in the simulator were more controlled than they were able to do on the track. Another welcome spin-off was the ability to investigate new circuits in a virtual domain before physically visiting them.

For the first race in Austin, detailed LIDAR (Light Detection And Ranging) mapping was not possible, so simulator maps were created from architect's maps issued by the FIA. This allowed an amount of realism to be applied and drivers worked hard to learn the new circuit... only to find it was no easy track to learn. Designer Hermann Tilke has created an amalgam of some of the most challenging corners from tracks worldwide. This inspired idea produces 3.7 challenging miles and is arguably the best of the ten venues to have hosted US GPs.

The first sector contains some tricky features. There is a 41-metre climb up to Turn 1, leaving the apex blind as the driver turns in. This is soon forgotten as the car drops downhill into a series of corners resembling a cross between the Becketts complex at Silverstone and the first part of Suzuka. The great feature of this is that the sequence of corners drops in speed, one after the other, making car positioning and corner entry very difficult and crucial to a good time.

A hairpin with a very open entry leads to a 0.6-mile long straight that has a good 740-metre long DRS zone. The straight finishes with a series of four corners which are, relative to the rest of the circuit, none too challenging, before leading into a long multi-apex right-hander, similar to the infamous Turn 8 in Turkey. For the frontrunners it was flat in qualifying but, for the rest, it was extremely challenging. On high fuel loads it took a lot of skill to maintain momentum. A couple of left-handers complete the lap, which, although outwardly simple, saw a huge number of errors during practice.

Also of note were the Pirelli choices of medium and hard compounds. This seemed incongruous given the nature of the circuit and the expected temperatures. While many imagine Texas to be constantly hot, the average temperature for mid-November is only 22°C. The choice may have been influenced by some dubious surface measurements made just 24 hours after the last of the three layers of Tarmac were laid in late September when temperatures peaked at over 30°C. With the surface just 24 hours old and measured in just a few points, the readings suggested an abnormally high micro-roughness. Measurements were repeated on the Wednesday before the race, with results much closer to the season average.

Friday practice, therefore, was a busy time as drivers struggled to learn a difficult circuit

with grip levels that more than one described as similar to driving on a wet track. Difficult or not, there was work to be done and, even as the circuit settled down, it was obvious that the tyres were taking an extremely long time to warm up and, once warm, were exhibiting virtually no degradation. It was looking like a one-stop race was on the cards once again. What's more, the softer tyre looked between 0.6 and one second quicker than the harder one, suggesting that the option needed to be used for as long a stint as possible. Also noteworthy on Friday afternoon was the fact that Sebastian Vettel had to sit out a large part of the session after suffering a water leak, but was still able to set the fastest lap.

Qualifying was remarkable in that it seemed more like an endurance event than a qualifying session. With warming the tyres proving to be so difficult, even in the mid-day temperatures, the consensus was that it would take around six flying laps to get them working irrespective of whether they were the harder or softer variety. In Q2, which is just 15 minutes long, this meant a single run. Button, who had looked set for a good grid position, was unfortunate to miss the cut when a problem with his pedal assembly stopped him getting full throttle.

Q3 saw Ferrari make the unusual decision to run with used tyres as indeed they had done in Q2. With a single-stop race anticipated there was no need to save tyres, so we can only presume they felt that in this state they were quicker to warm up. With Massa seventh →

The story of the race

V
Formula 1 finally returns to America after a five-year hiatus, and Vettel is first to react

CIRCUIT OF THE AMERICAS



> On the run up the mighty hill to Austin's first corner, Vettel and Webber lead from Hamilton

LAP	0
1	UET
2	HAM
3	WEB
4	RAI
5	MSC
6	HUL
7	ALO



< Hamilton's McLaren is super-quick in the early stages and by lap 4 he manages to pass Webber...

View from the paddock

An all-American triumph

The Circuit of The Americas has none of the opulence of Hermann Tilke's other tracks.

There are no lavish grandstands, or seven-star hotels; it's simply an awesome circuit.

"This place is so much fun to drive," said Mark Webber. "You can actually give an F1 car its head through some of the fast stuff, which is what the fans want to see."

Criticism of the slippery asphalt dried up when the best drivers realised that it gave them an advantage, and Hamilton, Vettel and Alonso – the top three drivers in F1 – duly made it onto the podium.

Off-track, the F1 circus had a ball. There was live music in the bars of Congress Avenue every night (Eddie Jordan on drums and Damon Hill playing bass were sights to behold) and enough beef was consumed to keep local ranchers in business for a year.

If F1 can't succeed at COTA, it has no future in America.

Tom Clarkson

> ...who suffers yet another alternator failure 12 laps on, prompting concerns for the next race



> Hamilton's mechanics celebrate as Lewis finally passes Vettel to take the lead on lap 42 with 14 to go



> Lewis takes his fourth win of the year – his 21st and final one for McLaren after six years together



MAIN PHOTO: GLENN DUNBAR/LAT. ILLUSTRATION: ALAN ELDRIDGE. INSETS: GLENN DUNBAR/LAT. STEVE ETHERINGTON/LAT. STEVEN TEE/LAT. ALASTAIR STALEY/LAT.

and Alonso ninth, the result was disappointing. Up front, Vettel took another pole but only by a small margin from an on-form Hamilton with Webber in third ahead of the two Lotus cars.

The controversy of qualifying did not play out until Sunday morning. The low grip experienced was worse off the racing line and so the left-hand side of the grid was much more slippery than the right. After third practice, teams had been allowed to do practice starts on the grid and, from this, it was deduced that at least one grid position would be lost by those on the left by the time they got to the first corner. With Massa and Alonso both on that side, Ferrari broke a seal on Massa's gearbox, prompting a five-place grid penalty and elevating Alonso one place but, more importantly, to the clean side of the grid. It was not against the rules and Ferrari admitted they were exploiting a loophole to the advantage of one of their drivers. Team orders such as swapping driver positions in a race are deemed acceptable and have little impact on other competitors but, with this action, Ferrari disadvantaged not just one of their own drivers, but also Hülkenberg, Grosjean and Senna, who were all 'elevated' to the dirty side.

The start saw the right-hand side gain the expected advantage, but luckily the wide entry

to Turn 1 did not produce the chaos many feared. Hamilton fell in behind Webber, but got past on lap 4. Behind them the racing was close and overtaking seemed easier than expected, although the first sector of the track was an exception. The tyres' durability meant that first stops for the leaders did not occur until 20-25 laps into the race. Button, who started on the harder tyre, held on until lap 35 but his race was already compromised.


While the racing was close Vettel was in command, but by three-quarter distance, Hamilton was relentlessly closing in on him. For seven laps he took every chance to harass Sebastian, finally passing him on lap 42 (with a little help from an HRT that got in the way) to take a well-earned win. Title contender Alonso kept the fight alive with third place, gifted after Webber retired with another alternator failure. His demise did not, however, stop Red Bull taking a deserved constructors' title for the third year running – a tribute to a well-organised team who are the very personification of success.

Also of note was Felipe Massa closing to within seven seconds of his esteemed team-



Massa is pushed to the garage to have his gearbox seal broken, promoting team-mate Alonso to the 'clean' side of the track

leader, despite that enforced low grid start, and putting in a lap that was tantalisingly close to the fastest of the afternoon. Button, too, recovered from a blameless poor grid position to claim fifth after a race that included some highly entertaining wheel-to-wheel combat with Räikkönen, Button eventually getting the better of the Abu Dhabi winner.

As Hamilton took the chequered flag he was elated to end his recent drought of podium finishes, but I wonder if he considered that it might be his last win for a while: Schumacher's qualifying result aside, Mercedes had an awful weekend. Their 13th and 16th place finishes meant their fifth race in a row without points. 

The GP you didn't see on TV

Taking you behind the scenes at the Circuit of The Americas as the weekend unfolded



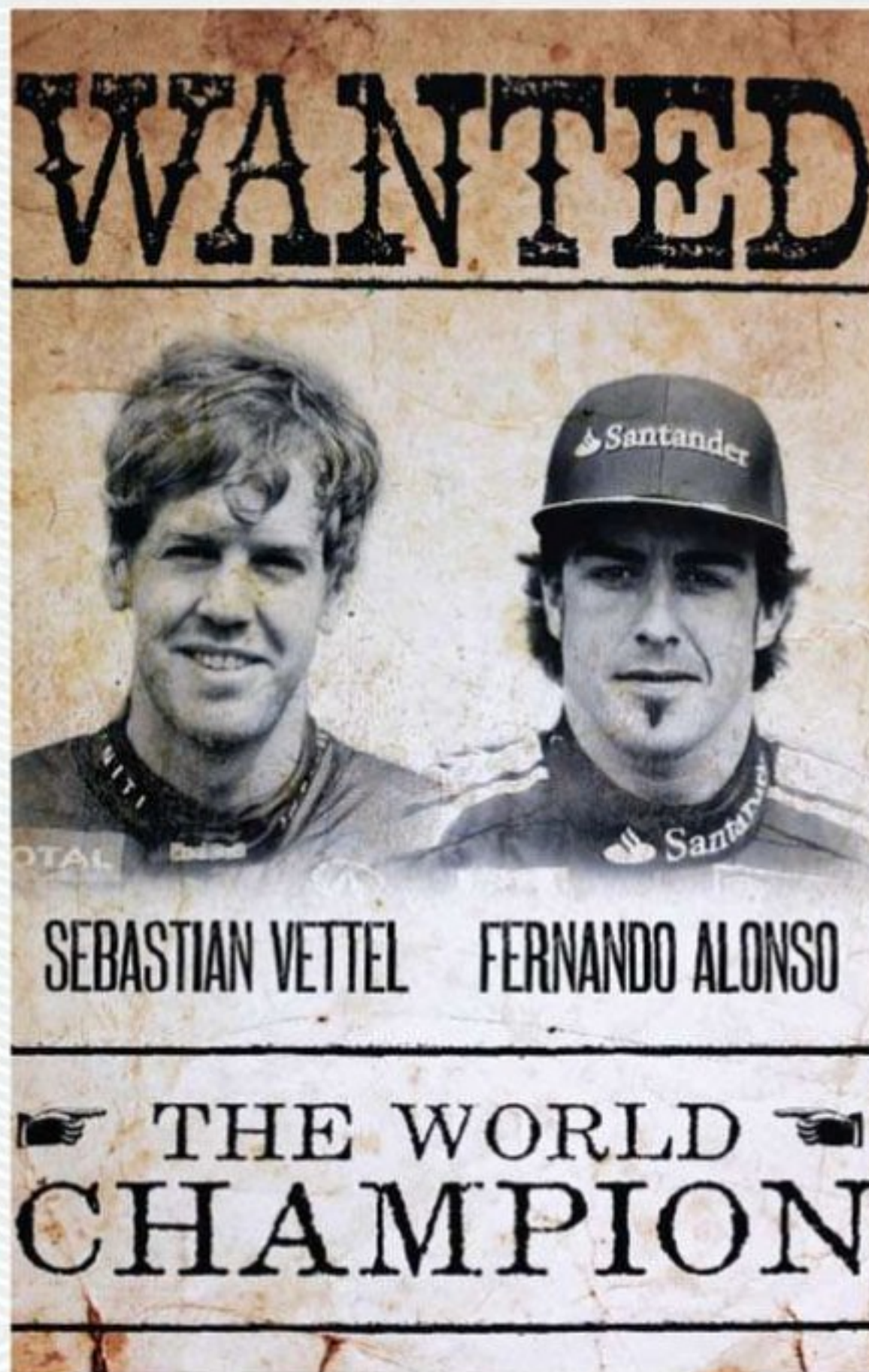
Who's fastest: Sebastian Vettel in a Red Bull RB8 or a helicopter? Probably still Vettel actually. Unless of course those pesky alternators start playing up



Gordon's got his mouth shut, so no expletive-laden telling-off for Ferrari then



Austin's as close as F1 will get to Mexico right now, so bring on the lucha libre masks



We all know now how that one panned out, but with Austin the penultimate race of the year, things were pretty tense

PHOTOS: LORENZO BELLANCA/LAT, MARK THOMPSON/GETTY IMAGES

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2-Centre Holiday



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2 Grand Prix Holiday

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Delhi - 27 October

INDIAN GRAND PRIX

5 Nights in New Delhi
Scheduled Flights

Austin - 17 November

UNITED STATES GRAND PRIX

Texas Hosts F1's
Instant Classic

2013 CALENDAR

Australian GP	17 March
Malaysian GP	24 March
Chinese GP	14 April
Bahrain GP	21 April
Spanish GP	12 May
Monaco GP	26 May
Canadian GP	9 June
Le Mans	22/23 June
British GP	30 June
German GP	7 July
Turkish GP	21 July
Hungarian GP	28 July
Belgian GP	25 August
Italian GP	8 September
Singapore GP	22 September
Korean GP	6 October
Japanese GP	13 October
Indian GP	27 October
Abu Dhabi GP	3 November
United States GP	17 November
Brazilian GP	24 November

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US Grand Prix stats

The lowdown on everything you need to know from the weekend at the Circuit of the Americas...

THE GRID

	2. HAMILTON McLAREN 1m35.766secs Q3
	1. VETTEL RED BULL 1m35.657secs Q3
	4. RÄIKKÖNEN LOTUS 1m36.708secs Q3
	3. WEBBER RED BULL 1m36.174secs Q3
	6. HÜLKENBERG FORCE INDIA 1m37.141secs Q3
	5. SCHUMACHER MERCEDES 1m36.794secs Q3
	7. ALONSO FERRARI 1m37.300secs Q3
	8. GROSJEAN* LOTUS 1m36.587secs Q3
	10. SENNA WILLIAMS 1m37.604secs Q2
	9. MALDONADO WILLIAMS 1m37.842secs Q3
	12. BUTTON McLAREN 1m37.616secs Q2
	11. MASSA** FERRARI 1m36.937secs Q3
	13. DI RESTA FORCE INDIA 1m37.665secs Q2
	14. VERGNE TORO ROSSO 1m37.879secs Q2
	15. PÉREZ SAUBER 1m38.206secs Q2
	16. KOBAYASHI SAUBER 1m38.437secs Q2
	17. ROSBERG MERCEDES 1m38.501secs Q2
	18. RICCIARDO TORO ROSSO 1m39.114secs Q1
	19. GLOCK MARUSSIA 1m40.056secs Q1
	20. PIC MARUSSIA 1m40.664secs Q1
	21. PETROV CATERHAM 1m40.809secs Q1
	22. KOVALAINEN CATERHAM 1m41.166secs Q1
	23. DE LA ROSA HRT 1m42.011secs Q1
	24. KARTHIKEYAN HRT 1m42.740secs Q1

*Five-place grid penalty for replacement gearbox
**Five-place grid penalty for broken gearbox seal

THE RACE



THE RESULTS (56 LAPS)

1st	Lewis Hamilton	McLaren	1h35m55.269s
2nd	Sebastian Vettel	Red Bull	+0.675s
3rd	Fernando Alonso	Ferrari	+39.229s
4th	Felipe Massa	Ferrari	+46.013s
5th	Jenson Button	McLaren	+56.432s
6th	Kimi Räikkönen	Lotus	+64.425s
7th	Romain Grosjean	Lotus	+70.313s
8th	Nico Hülkenberg	Force India	+73.792s
9th	Pastor Maldonado	Williams	+74.525s
10th	Bruno Senna	Williams	+75.133s
11th	Sergio Pérez	Sauber	+84.341s
12th	Daniel Ricciardo	Toro Rosso	+84.871s
13th	Nico Rosberg	Mercedes	+85.510s
14th	Kamui Kobayashi	Sauber	+1 lap
15th	Paul Di Resta	Force India	+1 lap
16th	Michael Schumacher	Mercedes	+1 lap
17th	Vitaly Petrov	Caterham	+1 lap
18th	Heikki Kovalainen	Caterham	+1 lap
19th	Timo Glock	Marussia	+1 lap
20th	Charles Pic	Marussia	+2 laps
21st	Pedro de la Rosa	HRT	+2 laps
22nd	Narain Karthikeyan	HRT	+2 laps

Retirements

Mark Webber	Red Bull	16 laps – alternator
Jean-Éric Vergne	Toro Rosso	14 laps – suspension

THROUGH SPEED TRAP



Fastest: Jean-Éric Vergne, 199.19mph
Slowest: Mark Webber, 182.72mph

TYRE COMPOUNDS USED



Medium Hard Intermediate Wet

CLIMATE

Sunny 24°C

TRACK TEMP

31°C



FASTEST LAP

Sebastian Vettel, lap 56, 1min 39.347secs



FASTEST PITSTOP

Lewis Hamilton, 20.814secs (entry to exit)

DRIVERS' STANDINGS

1st	Sebastian Vettel	Red Bull	273pts
2nd	Fernando Alonso	Ferrari	260pts
3rd	Kimi Räikkönen	Lotus	206pts
4th	Lewis Hamilton	McLaren	190pts
5th	Mark Webber	Red Bull	167pts
6th	Jenson Button	McLaren	163pts
7th	Felipe Massa	Ferrari	107pts
8th	Romain Grosjean	Lotus	96pts
9th	Nico Rosberg	Mercedes	93pts
10th	Sergio Pérez	Sauber	66pts
11th	Kamui Kobayashi	Sauber	58pts
12th	Nico Hülkenberg	Force India	53pts
13th	Paul Di Resta	Force India	46pts
14th	Pastor Maldonado	Williams	45pts
15th	Michael Schumacher	Mercedes	43pts
16th	Bruno Senna	Williams	31pts
17th	Jean-Éric Vergne	Toro Rosso	12pts
18th	Daniel Ricciardo	Toro Rosso	10pts
19th	Timo Glock	Marussia	0pts
20th	Heikki Kovalainen	Caterham	0pts
21st	Vitaly Petrov	Caterham	0pts
22nd	Jérôme D'Ambrosio	Lotus	0pts
23rd	Charles Pic	Marussia	0pts
24th	Narain Karthikeyan	HRT	0pts
25th	Pedro de la Rosa	HRT	0pts

CONSTRUCTORS' STANDINGS

1	Red Bull	440pts	10	Marussia	0pts
2	Ferrari	367pts	11	Caterham	0pts
3	McLaren	353pts	12	HRT	0pts
4	Lotus	302pts			
5	Mercedes	136pts			
6	Sauber	124pts			
7	Force India	99pts			
8	Williams	76pts			
9	Toro Rosso	22pts			



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RACE DEBRIEF by Pat Symonds

Brazilian Grand Prix

25.11.2012 / Interlagos

Title No.3 for Vettel... Alonso loses by three points... Lewis knocked out of final race for McLaren



Button finishes as he started

Button bookends 2012 with wins in Australia and Brazil. But all talk is of F1's youngest ever triple world champion, Sebastian Vettel

The tensions leading up to Brazil were palpable. The protagonists were probably grateful that the penultimate round had been but seven days before as the hiatus before a title-decider is the most stressful time for teams and drivers alike. The mathematics is simple, but the scenarios that can lead to the probabilistic outcomes are manifold,

and each one will be the focus of worried days and sleepless nights. All they want is a straightforward and simple race. The 2012 finale was to give them anything but that comfort.

In spite of the stress, no member of the F1 family would have it any other way. It is what they thrive on and it is what competition is all about. I am lucky to have been in this position

several times and I know from experience how the blend of adrenaline and sheer terror focuses the attention as you check, double-check and treble-check everything that could affect the race and over which you may have some influence.

Drivers experience the greatest pressure of all. They are most in the public focus and have less in the way of routine preparation to take their mind off the permutations and combinations of circumstance that will determine success for one and failure for another.

The reigning champion knew only too well from his experience in Abu Dhabi in 2010 that the odds-on favourite does not always triumph. There he overcame a pre-race 15-point deficit on Alonso to take the title. Similarly, Alonso has had his showdown races. True, he won the championship in 2005 with two races to go, but I remember the tension of 2006 and I am sure it was something that was also going through his mind in the week before the decider.

For Alonso to even be in contention at this stage was not only something that would never have been predicted at the start of the season, but was also a tribute to his tenacity and not inconsiderable driving talent. The 2012 Ferrari has clearly not been the class of the field throughout the season. While it may have developed from an ugly duckling to something approaching a swan, it certainly does not fly with the elegance that the RB8 has shown of late.

The circuit at Interlagos is one of the shortest of the year, but that does not diminish the challenge. The first sector is all about straights, but the challenging drop through Turn 1 has seen many errors made. The mid-sector starts with some reasonably quick corners and, in some respects, Turn 7 is the most challenging on the track. In reality this is not where lap time is gained or lost, but a clean sequence of corners here is an indication of a well-balanced car.

In terms of performance, the critical corner is T12, the last true corner of the circuit. It requires a careful approach to ensure traction is maximised out of it, allowing the early release of KERS to haul the car up the hill towards the finish line and the overtaking opportunity at the end of the pit straight. KERS is of particular advantage here as the 800-metre altitude robs the engine of 60bhp. The KERS motor, being electric, delivers its full 80bhp irrespective of the conditions and so forms a greater proportion of the overall powertrain performance.

With a pessimistic weather forecast greeting the teams as they arrived in São Paulo, Friday practice sessions were particularly busy. Adding to the normal levels of work required was the fact that Pirelli had brought two sets of prototype 2013 tyres for each driver to try. With tyre shape and deformation being so critical to the aerodynamic performance of the current cars, it was vital to gain as much information as possible. For first practice a number of measuring devices were seen on the cars as the engineers gleaned as much information as they could before the winter layoff.

That aside, the compound choice was more conservative than the previous year. On the one hand it was understandable since there had been some tyre blistering in 2011, but equally, the hard tyre (which was evaluated as a prototype last year) had been extremely hard to warm up. This year, in spite of the forecasts for later in the weekend, the Friday was extremely warm and, in fact, thermal degradation of the rear tyres became more of a talking point.

In terms of performance, Lewis Hamilton seemed determined to depart McLaren on a high as he set the fastest time in both sessions on Friday. The real focus, though, was on the relative performance of Alonso and Vettel. While you should always be careful of reading too much into Friday times, it did appear that the Ferrari was able to maintain a comfortably competitive position even if it was local hero Massa who had the slight upper hand. →

View from the paddock

And then it was all over

Ferrari and Marussia were the exceptions (Marussia having lost 11th in the standings to Caterham, due to Petrov's P11). There were stunned faces at both teams as they came to terms with their disappointments.

Elsewhere though, post-race was party time. Loud music blasted out of the Red Bull garage and out came the special T-shirts. Red Bull donned blue shirts printed with 'V3TTEL: Hat Trick, World Champion'. McLaren went rocket-red following Jenson's victory; Mercedes put on white "Thank You, Michael" T-shirts; and the "Leave me alone, I know what I'm doing" T-shirts reappeared at Lotus. To be fair, given the way Kimi spun his E20 through 180° in the narrow confines of the support-race pitlane, he clearly did.

The only team who just got on with the pack-up were Williams. They were done in record time – the only advantage of having both your cars out of the race by lap two.

Tom Clarkson

The story of the race

✓ Lewis cuts across to defend pole, Massa briefly grabs P2 from Button, and Vettel has a slow start from P4

INTERLAGOS



➤ Vettel catches Senna at Turn 4 and spins. Senna and Pérez are out; Vettel is told car damage is unfixable



⏪ A slow-moving Alonso comes off on lap 6, but just manages to rejoin ahead of Webber

➤ Hülkenberg ruins Hamilton's chances of a last win with McLaren, taking him out on lap 54



⏪ Button is delighted by his win, but second and third for Alonso and Massa spells heartbreak for Ferrari

➤ All hail the youngest triple world champion and the third driver in history to take three consecutive titles



MAIN PHOTO: ANDREW FERRARO/LAT. ILLUSTRATION: ALAN ELDREDGE. INSETS: STEVE ETHERINGTON/LAT. CLIVE MASON/LAT. ANDREW FERRARO/LAT. PAUL GILHAM/GETTY IMAGES

Fifteen minutes before qualifying, there was a short rain shower. This led to an entertaining Q1, with Glock and Kovalainen battling for track position as if the title depended on it. It was not the conditions, however, that saw Grosjean join those who would go no further; it was a mixture of a poor tyre choice and an even worse driving decision when he collided with de la Rosa.

With the temperature slowly climbing, many were struggling in Q2 but, in general, the formbook held up. The concluding confrontation produced, fittingly, the same front row as the first race of this ever-changing season. The championship contenders, meanwhile, were both behind their team-mates, with Sebastian fourth and Fernando in a disappointing eighth.

Race day came and, as the cars lined up on the grid, light rain was falling, which made for a tricky start. Massa found grip where others didn't and briefly held second behind Hamilton before Button reclaimed his rightful place. But the drama really started at Turn 4. Vettel, who had made a tardy start, braked early, sending Räikkönen off in avoidance. Vettel then turned in, seemingly unaware that Senna was already claiming the apex. The Red Bull made contact and rotated in front of the rest of the field. It sustained damage to the rear of the sidepod,

but was still able to continue, unlike Senna and Pérez, who were eliminated on the spot.

To add to Sebastian's woes, Alonso elevated himself to fourth with a single move past Webber and a reasonably compliant Massa. Further back, Hülkenberg was on a charge. He had no cares about who was to win the title when he passed Alonso, inheriting second as Hamilton headed for the pits after a monumental battle with Button at the front.

On lap 19 Hülkenberg took the lead, looking comfortable as those who had stopped for intermediates changed back to slicks. The Safety Car came out on lap 22 to allow debris to be cleared. This closed up the field, with Hülkenberg leading Button, Hamilton, Alonso and Vettel. Lewis was soon past his team-mate, but couldn't match Hülkenberg until a half spin by Nico let Lewis through. On lap 54, Nico lunged at Hamilton into Turn 1. He was unable to catch the subsequent slide and cannoned into the McLaren, eliminating it on the spot. A drive-through penalty then ended his challenge.

Regardless of the action up front, the title battle was still riveting. The rain became heavier, prompting Vettel to pit, but a radio malfunction meant his team were unprepared and the 11.4-second stop looked disastrous with Alonso



It's goodbye to Michael again. His parting gift? Giving sixth place to compatriot Vettel on lap 66

by now in third behind Massa and Sebastian in 11th. But while Alonso finished second, Sebastian had pulled up to sixth by race end.

Almost lost in the emotion was the fact that Jenson finished 2012 as he had started it with a well-judged victory under tricky conditions. That the race finished under a Safety Car after Di Resta spread his car over the pit straight did little to diminish Jenson's glory.

It has been an amazing year with some classic races and the most open first half to a season I can remember, but nothing could have prepared us for a finale like this. It had every drama that could be imagined and, ultimately, the champion was a deserving one. **F1**



PHOTOS: STEVE ETHERINGTON/LAT; PAUL GILHAM/GETTY IMAGES

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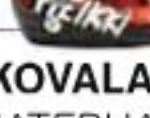





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Brazilian Grand Prix stats

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

THE GRID

 2. BUTTON McLAREN 1m12.513secs Q3	 1. HAMILTON McLAREN 1m12.458secs Q3
 4. VETTEL RED BULL 1m12.760secs Q3	 3. WEBBER RED BULL 1m12.581secs Q3
 6. HÜLKENBERG FORCE INDIA 1m13.206secs Q3	 5. MASSA FERRARI 1m12.987secs Q3
 8. RÄIKKÖNEN LOTUS 1m13.298secs Q3	 7. ALONSO FERRARI 1m13.253secs Q3
 10. DI RESTA FORCE INDIA 1m14.121secs Q2	 9. ROSBERG MERCEDES 1m13.489 secs Q3
 12. PÉREZ SAUBER 1m14.234secs Q2	 11. SENNA WILLIAMS 1m14.219secs Q2
 14. KOBAYASHI SAUBER 1m14.380secs Q2	 13. SCHUMACHER MERCEDES 1m14.334secs Q2
 16. MALDONADO* WILLIAMS 1m13.174secs Q3	 15. RICCIARDO TORO ROSSO 1m14.574secs Q2
 18. GROSJEAN LOTUS 1m16.967secs Q1	 17. VERGNE TORO ROSSO 1m14.619secs Q2
 20. KOVALAINEN CATERHAM 1m17.086secs Q1	 19. PETROV CATERHAM 1m17.073secs Q1
 22. PIC MARUSSIA 1m18.104secs Q1	 21. GLOCK MARUSSIA 1m17.508secs Q1
 24. DE LA ROSA** HRT 1m19.699secs Q1	 23. KARTHIKEYAN HRT 1m19.576secs Q1

* Ten-place grid penalty for third reprimand

** Five-place grid penalty for replacement gearbox

THE RACE



THE RESULTS (71 LAPS)

1st	Jenson Button	McLaren	1h45m22.656s
2nd	Fernando Alonso	Ferrari	+2.754s
3rd	Felipe Massa	Ferrari	+3.615s
4th	Mark Webber	Red Bull	+4.936s
5th	Nico Hülkenberg	Force India	+5.708s
6th	Sebastian Vettel	Red Bull	+9.453s
7th	Michael Schumacher	Mercedes	+11.907s
8th	Jean-Eric Vergne	Toro Rosso	+28.653s
9th	Kamui Kobayashi	Sauber	+31.250s
10th	Kimi Räikkönen	Lotus	+1 lap
11th	Vitaly Petrov	Caterham	+1 lap
12th	Charles Pic	Marussia	+1 lap
13th	Daniel Ricciardo	Toro Rosso	+1 lap
14th	Heikki Kovalainen	Caterham	+1 lap
15th	Nico Rosberg	Mercedes	+1 lap
16th	Timo Glock	Marussia	+1 lap
17th	Pedro de la Rosa	HRT	+2 laps
18th	Narain Karthikeyan	HRT	+2 laps
19th	Paul Di Resta	Force India	+3 laps/accident

Retirements

Lewis Hamilton	McLaren	54 laps - accident
Romain Grosjean	Lotus	14 laps - accident
Pastor Maldonado	Williams	1 laps - accident
Bruno Senna	Williams	0 laps - accident
Sergio Pérez	Sauber	0 laps - accident

THROUGH SPEED TRAP



Fastest: Fernando Alonso, 183.91mph

Slowest: Bruno Senna, 135.38mph

TYRE COMPOUNDS USED



Medium Hard Intermediate Wet

CLIMATE

Drizzle 16°C

TRACK TEMP

24°C



FASTEST LAP

Lewis Hamilton, lap 38, 1min 18.069secs



FASTEST PITSTOP

Sebastian Vettel, 20.997secs (entry to exit)

DRIVERS' STANDINGS

1st	Sebastian Vettel	Red Bull	281pts
2nd	Fernando Alonso	Ferrari	278pts
3rd	Kimi Räikkönen	Lotus	207pts
4th	Lewis Hamilton	McLaren	190pts
5th	Jenson Button	McLaren	188pts
6th	Mark Webber	Red Bull	179pts
7th	Felipe Massa	Ferrari	122pts
8th	Romain Grosjean	Lotus	96pts
9th	Nico Rosberg	Mercedes	93pts
10th	Sergio Pérez	Sauber	66pts
11th	Nico Hülkenberg	Force India	63pts
12th	Kamui Kobayashi	Sauber	60pts
13th	Michael Schumacher	Mercedes	49pts
14th	Paul Di Resta	Force India	46pts
15th	Pastor Maldonado	Williams	45pts
16th	Bruno Senna	Williams	31pts
17th	Jean-Eric Vergne	Toro Rosso	16pts
18th	Daniel Ricciardo	Toro Rosso	10pts
19th	Vitaly Petrov	Caterham	0pts
20th	Timo Glock	Marussia	0pts
21st	Charles Pic	Marussia	0pts
22nd	Heikki Kovalainen	Caterham	0pts
23rd	Jérôme D'Ambrosio	Lotus	0pts
24th	Narain Karthikeyan	HRT	0pts
25th	Pedro de la Rosa	HRT	0pts

CONSTRUCTORS' STANDINGS

1	Red Bull	460pts	10	Caterham	0pts
2	Ferrari	400pts	11	Marussia	0pts
3	McLaren	378pts	12	HRT	0pts
4	Lotus	303pts			
5	Mercedes	142pts			
6	Sauber	126pts			
7	Force India	109pts			
8	Williams	76pts			
9	Toro Rosso	26pts			



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TOM CLARKSON

Inside the paddock from our man on the road

Noodles for breakfast?

Size matters. Anyone who suggests otherwise has never been pinned against the wall of an economy-class cabin by an overweight gentleman for seven hours. His body spilled over the central armrest onto my side; I could feel the sweat through his T-shirt and he was snoring loudly. His New York Giants baseball hat sat on the back of his head and he could have closed his legs, just a little bit. Such is the glamorous world of Formula 1.

This was the final flight of the 2012 F1 season – the 16th long-haul flight of the last seven weeks. During that time, the F1 circus travelled to Singapore, Japan, Korea, India, Abu Dhabi, Austin and Brazil, amounting to 52 days on the road and just 20 days at home. It's been the busiest period I can remember in 13 years of working in F1 and, as ever, I've had one indefatigable travelling companion: jet lag. The second night is always the worst, particularly when you're in the Far East. On night number one, you're knackered after the flight and tend to sleep well. Come night number two, after a full day at the circuit and a few medicinal beers, you fall asleep immediately, but tend to wake early. Very early.

At any time from 3am onwards, your old mucker jet lag can kick in and you're immediately wide awake. What happens next follows a familiar pattern: first you contemplate ringing your wife, but think better of it because she's at work and won't have time to whisper the soothing words you want to hear; then you look inside the mini-bar. At some point after that, you decide against an early morning bowl of noodles (Japan), curry (India) or cheese bread (Brazil).

So you lie there in a state of contemplation. You ponder the day ahead; you wonder if any of your colleagues are also awake and you consider going out for a walk in the hope of bumping into Scarlett Johansson. Above all, though, you hope the lack of sleep won't affect the words you have to write or say later in the day.

Alain Prost always found Japan to be the worst country for jet lag. "I don't know why," he says. "It might be something to do with the atmosphere. In the end, I stopped worrying about it; if I was wide awake in the middle of the night, I'd go to the gym and begin my day. If I needed a sleep in the middle of the day, I'd go to bed and ask the team to wake me when they needed me. That's how I lived when I was in Japan."

"Anthony Davidson says it takes a day to overcome an hour of time difference"



PHOTO: CHARLES COATES/LAT

After 16 long-haul flights in seven weeks, you have to grab any chance you get for a sneaky nap...

The hotel rooms near Suzuka certainly don't help. The Platon Hotel in Yokkaichi tends to be frequented by journalists and teams; it's clean and quiet, but the rooms are small and the walls are very thin. And if you've got long arms, you can touch all four of them without moving your feet. They're not for the claustrophobic. Sky Sports F1 pundit Anthony Davidson says it takes around a day to overcome every hour of time difference. He's probably right, but when you work in Formula 1, you're rarely in one place long enough to straighten out your sleeping patterns. On a four- or five-day visit to Austin, which has a six-hour time lag to the UK, jet lag always wins. You survive on a heady mix of caffeine and Berocca.

When you're in one of Formula 1's less salubrious haunts, such as Mokpo in Korea, the F1 paddock provides a form of escapism. The English breakfast tea at Williams is the same wherever you are in the world; the cappuccinos at Red Bull are always excellent. The teams provide a sense of camaraderie that gives a warm glow to all those who experience it, and it doesn't matter whether you work in the media centre, the TV compound, in PR or in the pit garage.

Rubens Barrichello experienced some of that love in Austin, when he made his first visit to a race since being dropped by Williams at the end of last year. He couldn't move for all the people wanting to say 'hi' and he hadn't changed at all – except that he was able to enjoy himself a lot more in the evenings than when he was driving. And there was plenty of fun to be had in Austin.

To think that Rubens commuted from Brazil to the races during his latter years in F1 seems masochistic now, but at least he never had to share his seat with strangers, whatever their size.

MURRAY WALKER



UNLESS I'M VERY MUCH MISTAKEN...

"Out of Team Brackley, Team Silverstone, Team Milton Keynes and Team Enstone, who's done the best job?"

Formula 1 teams based in Britain are the immensely successful and enthusiastic backbone of the sport. No fewer than eight out of 12 are based in the UK and, because of team evolution and changes in ownership, just four complexes of buildings and personnel at Brackley, Silverstone, Milton Keynes and Enstone have been the homes to an impressive 15 teams over the years.

The team who started out as BAR in Brackley have become Mercedes via Honda and Brawn. Eddie Jordan's eponymous team got things going at Silverstone but after name changes, first to Midland and then to Spyker, it is now Vijay Mallya's Force India that resides just across the way from the BRDC's self-styled 'Home of British Motor Racing'. After Sir Jackie Stewart sold his

team's Milton Keynes premises to Ford as the base of their ill-fated Jaguar F1 operation, they became the home of Dietrich Mateschitz's all-conquering Red Bull. And since Toleman became Benetton, the Enstone squad morphed first into Renault and then into Lotus.

In every case, it has been the same locations, with many of the same people doing the same jobs for different bosses, so you could say, in a way, that we've had Team Brackley, Team Silverstone, Team Milton Keynes and Team Enstone. A bit far-fetched perhaps but, regardless, who's done the best job?

"Red Bull," you may say, "so it has to be Team Milton Keynes." But if you do, you'd be wrong. It's Team Enstone who take the laurels, with 48

race wins and seven drivers'/constructors' world titles – mainly thanks to Benetton's Michael Schumacher and Renault's Fernando Alonso, not to mention their team-mates.

A pretty useless bit of knowledge, I'll grant you, but now, to add controversy to the mix, it is 'Lotus' who represent Team Enstone. I put 'Lotus' in inverted commas because although last year's fractious battle between Tony Fernandes' 'Team Lotus' and the ex-Renault 'Lotus' was resolved by 'Team Lotus' becoming Caterham and the Enstone organisation retaining the 'Lotus' name, with no connection to the late, great Colin Chapman's legendary Team Lotus, it is, as far as I am concerned, no more 'Lotus' than my left foot.

But none of that diminishes what today's Lotus team have achieved. Now owned by Genii, a Luxembourg-based venture capital organisation who took over when Renault backed out, they have done a superb job. Since 39-year-old Frenchman Eric Boullier (39! My God – it makes me feel like Methuselah), a product of his country's prestigious polytechnique system, was parachuted in as team principal in 2010, he and the owners have had to grapple with some dire situations. Notably a major tarnishing of the team's image following Singapore's 2008 'Crashgate' outrage, the loss of superstar driver Robert Kubica, and a major loss of sponsorship.

But Boullier's sensible management, allied to a motivated and experienced workforce, a good car and a willingness to experiment with innovative technology, has worked wonders. New to the mind-boggling demands of F1, but not to racing, Boullier deserves the greatest respect for the way he has stabilised and developed the team, as do their Genii owners for raising and maintaining the funds needed to compete in modern F1.

The recruitment of Kimi Räikkönen, no means a guarantee of success after his years away, has turned out to be a masterstroke. So, too could be the re-introduction of Romain Grosjean – if he can stop driving into his rivals. The reward for endeavour is success and Lotus are deservedly getting it. Only the big guns – Red Bull, McLaren and Ferrari – finished ahead of them in 2012, while on his outstanding return, Kimi finished a worthy third in the drivers' contest.

So well done Lotus for maintaining Team Enstone's shining reputation! 🏁



"Recruiting Kimi was a masterstroke. So too could be the re-introduction of Grosjean... if he can stop driving into his rivals"





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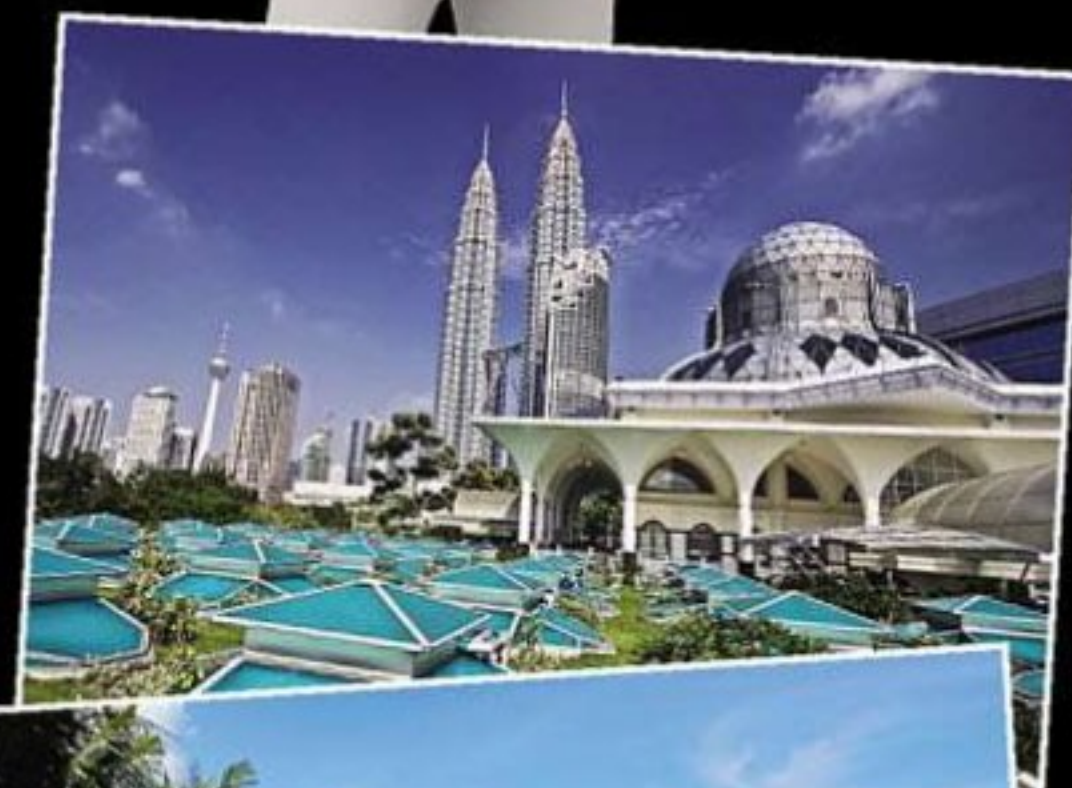
It's always summer in Malaysia and the Grand Prix is a great excuse to combine a race weekend with a holiday. Sepang circuit is well known for its superb spectator facilities and just under an hour from Kuala Lumpur where ornate temples, modern skyscrapers, street markets and shopping malls can all be found on a typical street. After a busy weekends racing extend your stay on one of Malaysia's idyllic beach resorts and recharge the batteries.

HUNGARIAN GRAND PRIX - 28 JULY

Budapest has it all - history, culture, great restaurants and an atmosphere to match. The Hungaroring is immensely popular and continues to be a favourite for race fans. If a weekend is not long enough you can extend your stay on our two-centre holiday where you will spend 3 nights in Vienna and see the highlights of this stunning city.

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