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F1 RACING

INSIDE...



Kubica Answers your questions



Andretti A legendary lunch



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RON DENNIS
SPEAKS OUT



"MY VISION FOR MCLAREN"

PUNCHY "We'll win
a race this year"

PORKY "We'd got unfit.
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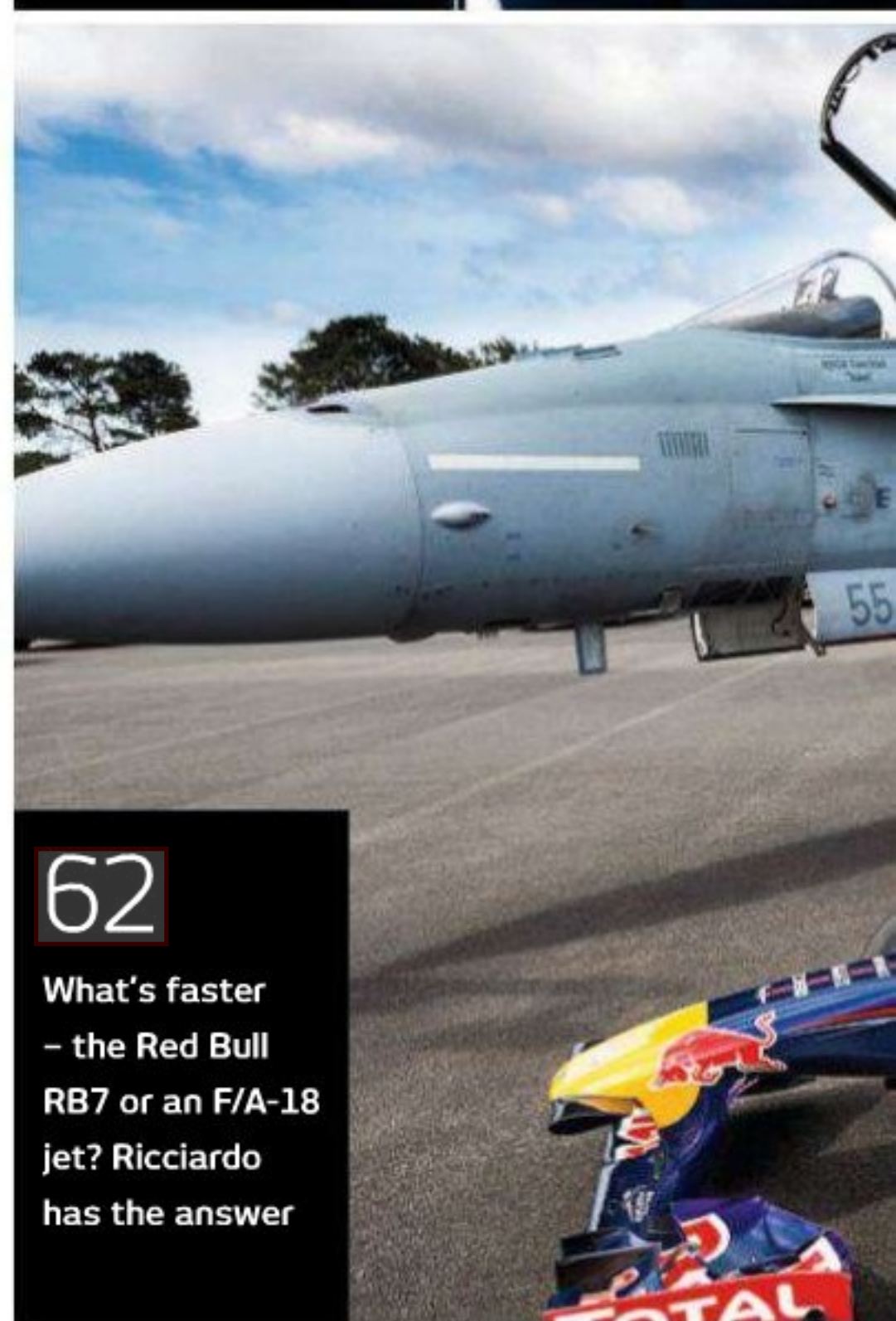
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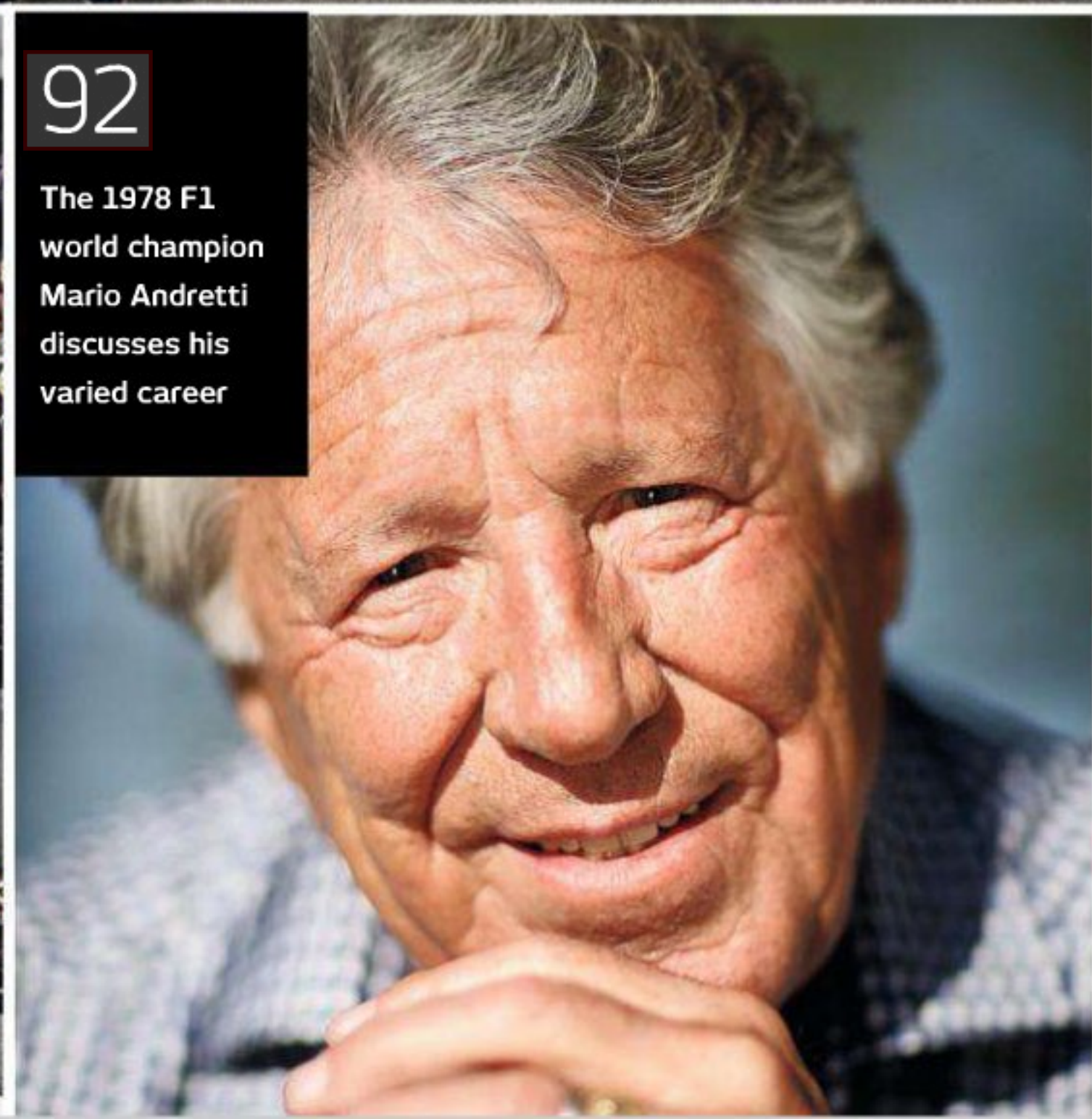
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F1 Racing visits Caterham to meet the experts who build each car from scratch





Ignition / Anthony Rowlinson / 05.14

Ignore the critics: F1 2014 is a classic in the making

The rush to judge, the willingness to blame and the keenness to find fault that are sadly endemic within and without Formula 1 never cease to amaze.

"The cars are too quiet," said Bernie Ecclestone before he'd even heard one. "They're too slow," grizzled Fernando Alonso – commenting, presumably, on his own Ferrari F14 T rather than the Mercedes W05s of Lewis and Nico. "The fuel meters aren't fit for purpose," opined Christian Horner – boss of the only team to have fallen foul of their metering restrictions. And on it goes – a lament almost loud enough to drown out the buzz of positive energy that's currently coursing through the sport, reinvigorated, as it has been, by new regulations, fresh faces and a more relevant vision of the future.

Almost loud enough – but not quite, for F1 itself has delivered the best possible riposte to the naysayers. This year's Bahrain GP was a *breathhtaking* race and a timely reminder of why F1 remains a fantastically compelling sport. It served up great entertainment with plenty of pure racing and did so within the 'constraints' of a radically different technical framework.

And we should pause to reflect on the scale of the technological achievement the 2014 grid represents. Eco-conscious, efficiency-driven F1 constitutes an era change, not merely a rules tweak, and it should be considered in that light, not sniped at because it doesn't deliver precisely the same fix as the aero-dominated, rev-addicted frameset that went before. Same drug,

a subtly altered high, you might say – yet nevertheless a comprehensively different challenge.

It's one that has exposed previously hidden vulnerabilities, while offering up new heroes. Who could have foreseen, for example, that Renault, winner of four straight constructors' titles with Red Bull, would have started the year on anything less than full power? (See [page 84](#) for an analysis of their troubles.) And who would have put money on the feisty Force India crew sitting at P2 in the constructors' table after the first three GPs? Meanwhile, a promising clutch of young tyros are emerging in the form of Kvyat, Magnussen and Ricciardo. We catch up with Dan in this issue (p62), having shadowed him throughout his Australian GP weekend. Not much seems to knock the perma-grin off his face, although if he carries on in his current form, he could well dislodge the smile from team-mate Seb.

That potentially tense intra-team rivalry is just one of many great storylines thrown up already by the rejigged rulebook and off-season reshuffle; there are doubtless more to come (Hulk vs Pérez for Force India supremacy, anyone? Or "Valtteri is faster than you..."?).

What is unsavoury about 2014 is the dieting forced on many drivers to ensure they hit the 691kg minimum total weight limit. Adrian Sutil, whose fighting weight is 75kg, tells us he can't afford the weight penalty of a full drinks bottle in his car. Forget the noise about engine noise – *there's* a problem that needs fixing.



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Dominic Harlow

Former Force India and Williams chief engineer

Formula 1's Byzantine Sporting Regulations can even tie the professionals in knots. Take Dom's quiz (p102) to see how you'd fare on the pitwall.



Malcolm Griffiths

Smooth shooter with an aerodynamic pate

He's a safe pair of hands, is our Malcolm, so who better to photograph McLaren's MP4-29 for our cover without scratching that high-lustre finish?



Mike Gascoyne

Former technical director and ocean racer

Legendary F1 engineer Harvey Postlethwaite would have turned 70 last month. Mike, who worked with Harvey at Tyrrell, pays tribute on p108.



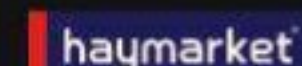
Alastair Staley

Roving race photographer

You'll usually find Al trackside, aiming a long lens at F1 and GP2 machinery, but this month we let him loose on a racing legend (p92).



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#KeepFightingMichael

PETRONAS



Parade

Sunset steal Lewis Hamilton has got the drop on his team-mate, snatching the lead at the start, and now it's time to do the hard work: build a gap while Nico is on the harder tyre during the second stint. As Murray Walker once said: "With half the race gone, there's still half the race yet to go..."

Where Sakhir, Bahrain **When** 6.36pm, Sunday 6 April 2014

Photographer Paul Gilham/Getty Images

Details Canon EOS-1DX, 300mm lens, 1/160th at F11



BlackBerry



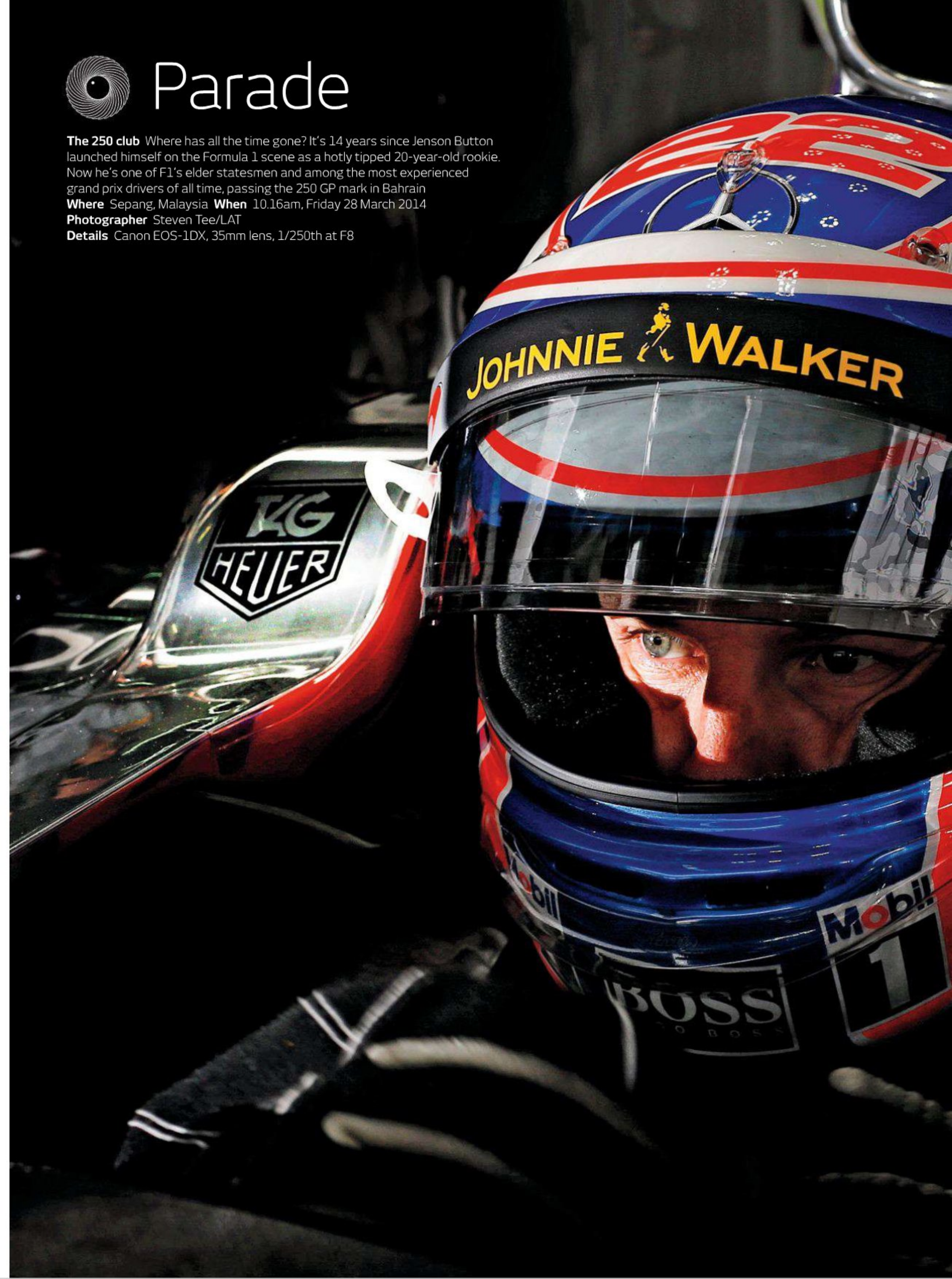
Parade

The 250 club Where has all the time gone? It's 14 years since Jenson Button launched himself on the Formula 1 scene as a hotly tipped 20-year-old rookie. Now he's one of F1's elder statesmen and among the most experienced grand prix drivers of all time, passing the 250 GP mark in Bahrain

Where Sepang, Malaysia **When** 10.16am, Friday 28 March 2014

Photographer Steven Tee/LAT

Details Canon EOS-1DX, 35mm lens, 1/250th at F8







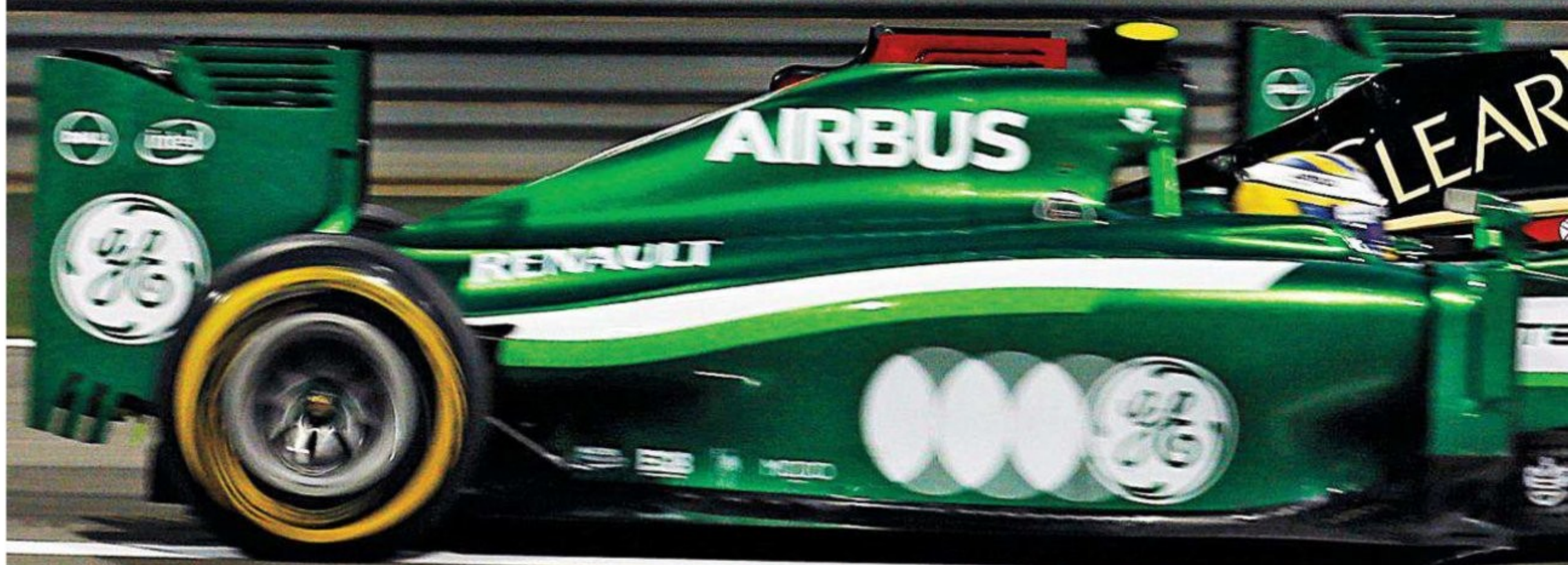
Parade

The budgetary squeeze Over the past few seasons Lotus have specialised in making a little money go a long way, but after the change in engine formula the cracks are starting to show. Twelve months ago, Romain Grosjean finished third in Bahrain; now he's sandwiched between a pair of cash-strapped Caterhams

Where Sakhir, Bahrain **When** 7.06pm, Sunday 6 April 2014

Photographer Steven Tee/LAT

Details Canon EOS-1DX, 200mm lens, 1/250th at F7







MERC ENGINE SECRET 21



THE DRIVER'S WIFE 24



SCHUMACHER HOPE 27

F1 INSIDER

NEWS ■ OPINION ■ ANALYSIS

■ ANALYSIS

McLaren seek top drivers for 2015 line-up

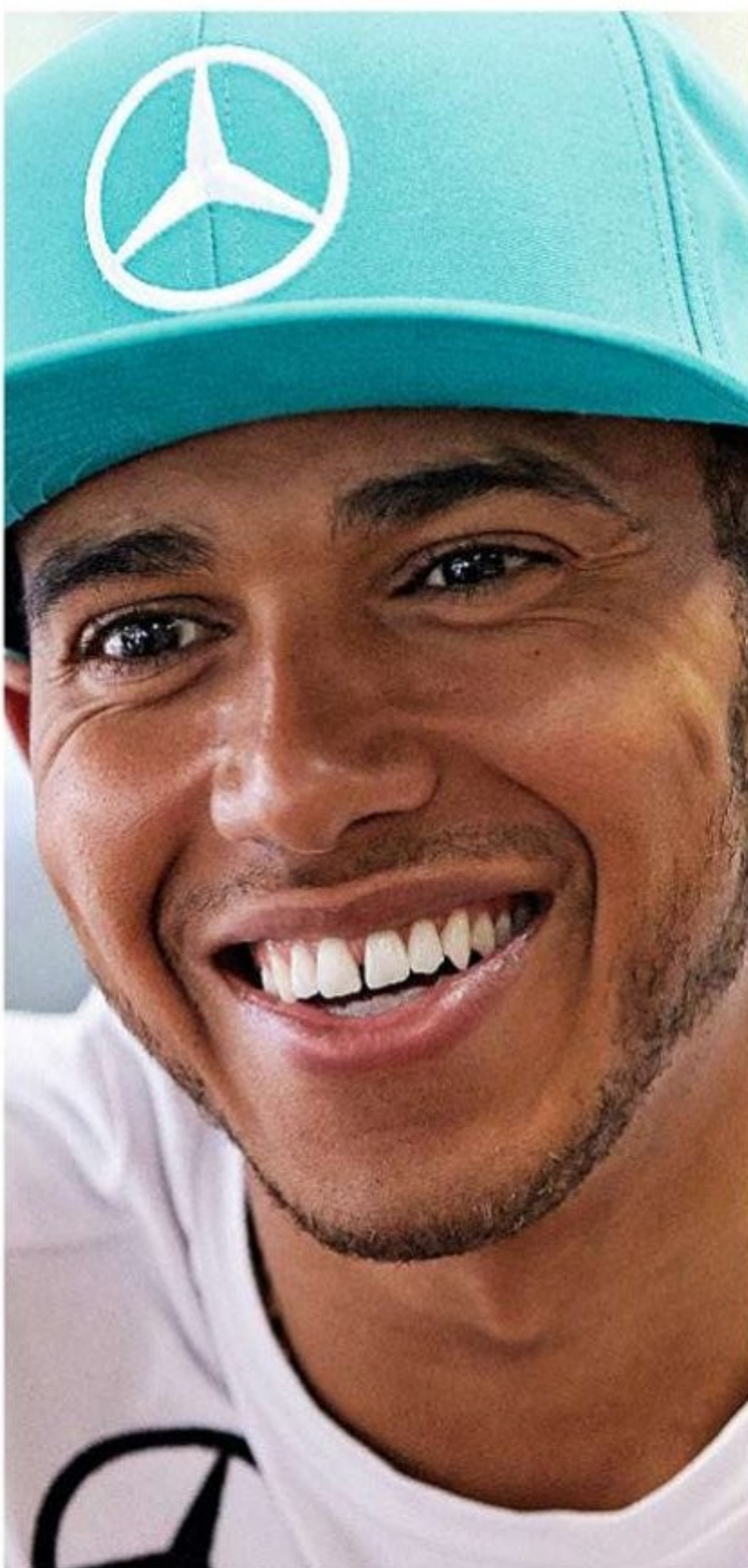
With Ron Dennis back in charge and Honda set to return as engine partner, McLaren have their eye on some big names for next season

Ron Dennis is determined to return his team to the top of F1 and has his sights set on obtaining the very best driving pairing possible. Inevitably, this means Dennis is considering Sebastian Vettel, about whom he has been particularly complimentary so far this season.

Holding a news conference to mark the 20th anniversary of Ayrton Senna's death, Dennis spoke of the German four-time champion in the same context as the great Brazilian. "Senna was the best of his time, without doubt," Dennis said. "And you could say: 'Well, what would have happened if Vettel was racing against Senna in the same cars? It's all subjective."

"Sebastian has, to me, shown what discipline and sacrifice is all about. You just see it. Totally committed. Of course you hear the stories of the girlfriend sat in the stand and all these things but what does that mean? It just means to me sacrifice; 'I want to bring 100 per cent.'"

It is difficult not to infer from this statement that Dennis considers Vettel to be the best of the current drivers, the logical extension of which is that he wants him at McLaren. The bottom line is that Dennis is pursuing what McLaren have always said they want: "The best available drivers in our car."





Magnussen (left) must outperform Button to validate McLaren's young driver programme and bolster the chances of Vandoorne (right)



That target means starting with a list of three – Vettel, Lewis Hamilton and Fernando Alonso – and seeing who is available and desirable. Hamilton is committed to Mercedes until the end of 2015, while Alonso is committed to Ferrari until the end of 2016. But Alonso is potentially more obtainable, given the apparently uncomfortable nature of his relationship with a struggling Ferrari. This has been likened, by one seasoned insider, to 'a couple whose marriage is on the rocks, but who are forced by circumstances to live in the same house'.

Alonso had been openly courted by Martin Whitmarsh, prior to Whitmarsh's departure from McLaren. Dennis had implied in December that the falling out between him and Alonso in 2007

would not be a barrier to his return, saying: "Whatever obstacles sit between a team wanting to win and winning, be it engineering, fiscal or human issues, you resolve them. You never say never." However, insiders understand that in fact Dennis would not countenance Alonso's return. Which just leaves Vettel.

The problem there is that 26-year-old Vettel is contracted to Red Bull – officially until the end of 2015, although their motorsport adviser Dr Helmut Marko has claimed he is committed until 2017. And while team principal Christian Horner will not confirm that, he does say that Vettel is "committed to Red Bull for the next few years."

So even if Vettel is amenable to a move to McLaren, Dennis will have to wait. Which hangs a question mark over their line-up for 2015 – an extremely important year for the team, due to the return of Honda as their engine partner. Honda are back in F1 to win. They want to rekindle the alchemy that brought them domination with McLaren from 1988-91. And, like McLaren, they want the very best drivers they can get.

Jenson Button's contract comes to an end this season. For all his undoubted qualities both in and out of the car, McLaren do not regard the 2009 world champion as of quite the same calibre as Alonso, Hamilton and Vettel. But he is highly regarded by Honda, with whom he had a good relationship when he drove for their works team from 2006-2008. But whether he will be kept on depends on how he performs against Kevin Magnussen this season.

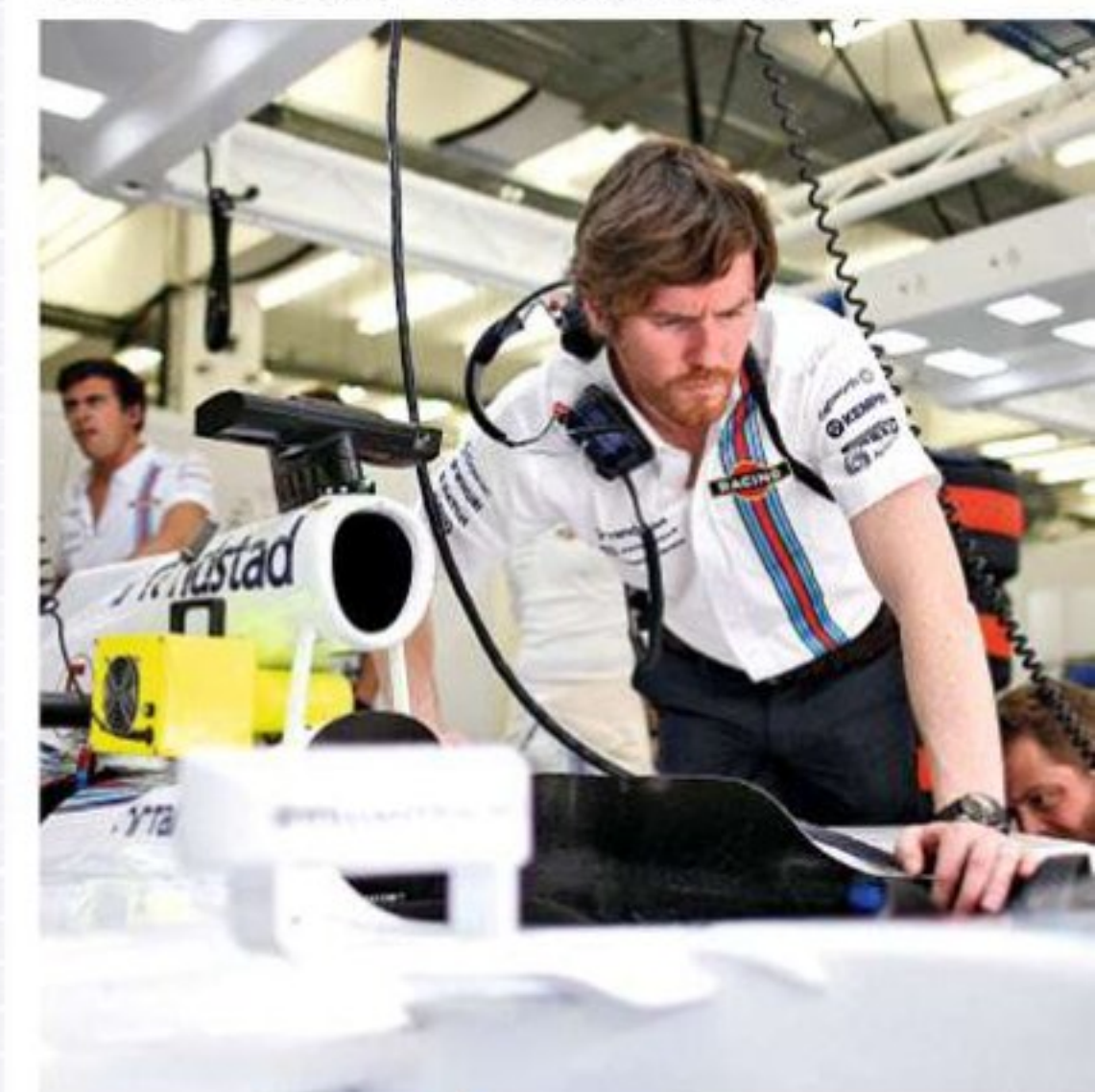
McLaren engineers rate Magnussen extremely highly – as they do their reserve driver, Belgian youngster Stoffel Vandoorne, who just lost out to Magnussen in their Formula Renault 3.5 battle title last year and who is competing in GP2 this season. Vandoorne took an impressive debut victory in GP2 at the Bahrain Grand Prix and McLaren are making no secret of the fact that they consider him to be a future F1 star.

At this early stage in the season, a line-up of Magnussen and Vandoorne in 2015 would not be appealing to Honda. But if Magnussen can consistently beat Button over the course of this season, that would prove not only his value, but also that McLaren are good judges of young-driver talent, which would therefore boost Vandoorne's chances of a seat.

NEWS DIGEST

The month's big stories at a glance

29.3.14 Valtteri Bottas becomes the first F1 driver to be given penalty points after a qualifying misdemeanour **30.3.14** Daniel Ricciardo handed ten-place grid penalty for 'unsafe release' at Malaysian GP



2.4.14 Former Ferrari race engineer Rob Smedley joins Williams as their head of vehicle performance

5.4.14 Bahrain GP to remain a night race after increased ticket sales

6.4.14 FIA president confirms cost-cap plans abandoned **7.4.14** Merc boss says no team orders for Hamilton and Rosberg **8.4.14** Vandoorne F1 test debut postponed as Magnussen drives the McLaren instead

So Button's career depends on his ability to consistently outperform Magnussen this season. But that also works in reverse. Magnussen will need to consistently outperform Button if he wants to retain his McLaren seat.

Magnussen made an impressive debut in Australia, but faded a little in Malaysia and Bahrain. Under Dennis, there is a new ruthlessness about McLaren and with Vandoorne waiting in the wings Magnussen is by no means safe. Look back in time to the experience of Michael Andretti, who was dropped by McLaren in mid-1993: that proves there is no guarantee McLaren will stick with Magnussen all year if he does not impress.

So for everyone at McLaren, these are times of great uncertainty.



Hamilton, Vettel and Alonso are all on the McLaren shopping list, but all are contracted to their current teams beyond 2014



Williams overhaul their structure to focus on F1

After selling off a tech company and restructuring their team, Williams are enjoying a successful start to the new season

Williams have underlined their absolute determination to get back to where they believe they belong, at the top of Formula 1, by deciding to sell off one of their successful ancillary companies. Williams Hybrid Power, which develops electric flywheel energy storage technology, has been sold to the global engineering group GKN.

Williams will, however, retain Advanced Engineering, another of their companies, which provides "world class technical innovation,

engineering, testing, and manufacturing services to a diverse customer base". Although both companies have provided revenues to the wider Williams group, Advanced Engineering provides the most, and Williams are holding on to it because they believe it will continue to do so.

According to deputy team principal Claire Williams, a decision has been made to focus the business more on F1 and on where the board believes the most lucrative future revenue streams will come from. This follows a major

restructuring of the F1 team during 2013 and over the winter, after Williams and the rest of the board realised they had lost their way.

The leadership structure was overhauled as technical director Mike Coughlan left and was replaced by Pat Symonds in the new role of chief technical officer. Symonds, in turn, set about reorganising the engineering staff. The final piece in that jigsaw fell into place in Bahrain, when former Ferrari race engineer Rob Smedley joined Williams in his new role as head of vehicle performance.

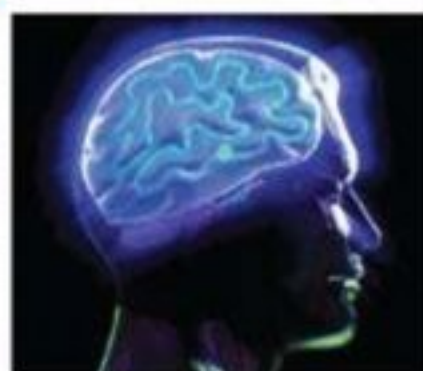
The evidence so far is that the changes have made a difference. Even allowing for the advantage of a Mercedes engine, Williams have made a big step forward, battling with McLaren and Force India for the honour of being fastest Mercedes team in the early part of the season.

For Williams, that is not enough. But it is another step in the right direction.



Massa on his way to a points finish in seventh place at the Bahrain GP

QUIZ



F1 Mastermind

Your chosen specialised subject: the world's greatest sport



Q1 Which driver scored his first ever pole position at the 2008 Bahrain Grand Prix?

Q2 Michael Schumacher missed six grands prix in 1999 because of a broken leg. Who replaced him?

Q3 At which former grand prix circuit would you find Rifle Bend and Cocobana Corner?

Q4 What was the only year in which Monza did not host the Italian Grand Prix?

Q5 Who won the first and only Pescara Grand Prix?

Q6 Ferrari notched up their 125th grand prix win in 1999 in Malaysia. Who was driving?

Q7 Which pre-war Monaco Grand Prix winner became the oldest driver to take part in a Formula 1 GP at Monaco in 1958?

Q8 Forty years ago this month, Tom Pryce made his F1 debut in the Belgian GP at which circuit?

Q9 Apart from Niki Lauda and Alain Prost, who was the only driver to win more than one race in the 1984 season?

Q10 Who scored the Toleman team's first and only pole position?

Q11 In which year did the Bahrain Grand Prix take place on an extended version of the Sakhir circuit?

Q12 Norberto Fontana earned brief notoriety for himself when he

held up Jacques Villeneuve in the 1997 season finale. What car was Fontana driving?

Q13 Which driver has won the most Monaco Grands Prix?

Q14 Who set the fastest lap of the race for the first time at the 2013 Spanish Grand Prix?

Q15 Which was the last country other than Brazil or Abu Dhabi to host the final race of the season – and in which year?

Answers: Q1 Robert Kubica Q2 Mika Salo Q3 East London Q4 1980 Q5 Stirling Moss Q6 Eddie Irvine Q7 Louis Chiron Q8 Niveles Q9 Nelson Piquet Q10 Teo Fabi Q11 2010 Q12 Sauber Q13 Ayrtton Senna Q14 Esteban Gutiérrez Q15 China, 2005



NEWS

Secrets of Mercedes engine success revealed

It's all in the turbocharger, as Ferrari very nearly found out



The secret behind Mercedes' one-second-per-lap performance advantage has been revealed. An ingenious feature of the company's V6 turbo engine not only produces more power more efficiently than rivals Ferrari and Renault, but gives the car a major advantage as well.

Mercedes' designers have split turbine from compressor in their turbocharger, in what has been described by one technical expert in F1 as "a masterstroke".

Normally placed together in one unit, the compressor is at the front of the Mercedes engine and the turbine at the rear. The advantages are numerous. Putting the compressor at the front of the cylinder 'v' means the inlet pressure is higher because it is closer to the inlet above the driver's head. The air is also cooler, and therefore denser, so it produces more power.

The design also reduces turbo lag to virtually nothing. This means less of the electrical energy stored in the MGU-H needs to be used to spool up the turbo to its 120,000rpm operating window to eliminate lag before the driver goes on the throttle. It means more of the MGU-H

Mercedes-engined cars are proving to be the class act of 2014

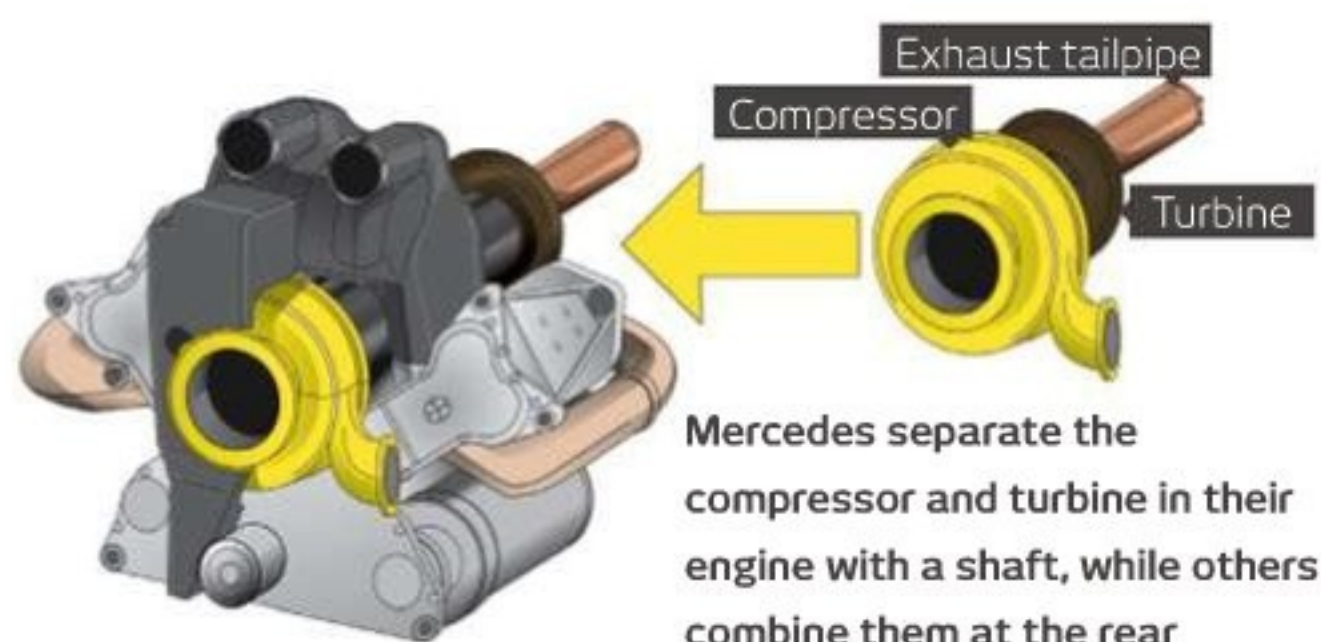
energy – unlimited by the regs – can be used as pure power at the rear wheels.

The lower temperature of the inlet gases from the compressor also means the intercooler can be smaller, while the layout requires less piping to carry the air around the engine. That adds up to a significant saving both in overall weight and in weight distribution – and therefore in the centre of gravity of the car.

The smaller ancillaries mean the rear of the car can be better packaged for aerodynamic and mechanical advantage. Their customers only discovered this last spring (despite Mercedes working on the engine since 2011), which meant less time in which to optimise their cars around it.

With engine specifications now homologated, Renault and Ferrari have no opportunity to copy the design until 2015. For Ferrari, this is especially painful. Their turbine and compressor are also separated, but not as much as on the Mercedes, perhaps because they

worried about the vibrations inherent in the longer shaft between turbine and compressor. Like Mercedes, they had the idea that is the key to success – they just failed to pursue it far enough.



YOUNG GUNS



Yann Mardenborough



Finding the stars of tomorrow, today

Yann Mardenborough is 22. He was born in Darlington, UK and will race for Arden Motorsport in GP3 this year

Who is he?

The son of evergreen footballer Steve Mardenborough, whose 21-year professional career included an unlikely goal against Liverpool while playing for bottom-of-the-table Wolverhampton Wanderers in 1984.

What's different about him?

His local kart circuit closed when he was 11 and he retreated to the virtual world of simulations. In 2011 he won a try-out in a sportscar at Brands Hatch through the Nissan-backed GT Academy, which puts players of *Gran Turismo* into a real cockpit. He won, thus teeing up a racing debut in the 2012 Dubai 24 Hours, where his team finished on the podium. He's since raced in the Blancpain Endurance Series, and comes to GP3 via Formula 3 and New Zealand's Toyota Racing Series.

How good is he?

He took one podium in British F3 with Carlin to finish sixth. In less 'edgy' machinery, he's found his feet, winning the 2014 Toyota Racing Series and securing Red Bull backing and a shot at GP3. He's been placed with Arden Motorsport and showed great pace at the GP3 test in Abu Dhabi last year.

How will he fare in GP3?

Better than in Formula 3 or Formula Renault 3.5, where the more on-the-limit machinery punishes the rough edges in his craft that are a consequence of not spending years in karts.

Will we see him in F1?

Red Bull backing is certainly a golden opportunity. But having Red Bull support can cut both ways – if you fail to make your mark, you're out...

NEWS

Todt stands firm against push for rule changes

FIA president insists F1 "is not a banana republic" as he resists calls from teams to abandon fuel-flow meters and shorten races

Jean Todt has rejected attempts by Red Bull and Ferrari to amend the 2014 regs. The teams' public motivation is to improve 'the show', with Ferrari president Luca Di Montezemolo saying the new efficiency-based formula "is not Formula 1". He says drivers should not have to save fuel, engine sound should be "music", and claims fuel-flow meters are "too complicated".

Red Bull want the FIA to abandon the max fuel-flow rate of 100kg/hour. They say the sensors are "not fit for purpose", pointing to the number of failures there have been this season, and to the discrepancies in reading that led to Daniel Ricciardo's disqualification in Australia.

All the sensor failures (bar one on Sergio Pérez's Force India) have been on cars from Red Bull, Toro Rosso or Lotus, who all use Renault engines and Total fuel.

Red Bull team principal Christian Horner says that since the fuel is legal, there must be a problem with the sensors. Opponents say that if their fuel does not work with a homologated part, then it is up to them to change the fuel.

Ferrari cannot produce the same power per unit of fuel as Mercedes, so Di Montezemolo is pushing for shorter races while leaving the fuel allowance the same. Rivals believe they are trying to reduce the gap to Mercedes.

Red Bull and Ferrari are influential figures in F1, but Todt is standing firm on both matters. "This is not a banana republic, where someone turns up and says, 'Let's change,'" he said in Bahrain. "If you want changes, it has to be through the regulatory framework."

In-season rule changes require unanimous agreement of all teams, and Mercedes and their customers have said they will block any amendment. In any case, Di Montezemolo says it is wrong to change the rules mid-season.

Mercedes have, however, acknowledged that something needs to be done about the noise produced by the new engines, and have agreed that engineers should look into the issue.

Todt says in-season regulation changes would be "wrong"


F1 BANTER

PASSNOTES

Your essential F1 briefing
#2: Fuel-flow sensors



Name Gill Sensors Ultrasonic Fuel Flow Meter
Age Newborn
Appearance Small black tube of controversy

Oh, goody! A bubble machine!

Hardly. It's a somewhat more serious bit of kit.

And yet it looks so small. What is it – a bong?

One of those posh humidors that costs £900?

A vital piece of modern Formula 1 technology. According to its manufacturer, Gill Sensors, it "uses proven solid-state ultrasonic flow measurement technology to detect bi-directional fuel-flow rate up to 8000ml/min. The fuel-flow meter is capable of monitoring both transient and steady fuel flow, flow direction, fuel temperature and cumulative fuel usage."

Sorry to interrupt your flow but I'll pass on that cigar, thanks.

The FIA use these meters to police the 100kg/hour fuel-flow regulation and have threatened zero tolerance of those who go over the limit, hence Daniel Ricciardo's exclusion from second place in the Australian Grand Prix.

Ah yes. Now, can you explain to me, if a race lasts nearly two hours and each car is limited to 100kg of fuel, how can someone have a fuel flow of over 100kg/hour?

Cars aren't at full throttle all the time, my friend...

Ah, I see... but we can't all be experts, you know.

So, how does it work?

It uses ultrasonics to measure the mass of the fuel passing through the tube without interrupting it, and can transmit that data live to the FIA and the team. If the sensor fails, they can still calculate the fuel flow from injector timings and fuel-pressure data.

Sounds complicated... no wonder the whole thing has turned into a bunfight!

Well, quite. It's very likely that gripes about fuel measurement are going to be an ongoing thing this year.

Say it isn't so! Can't we talk about something more interesting than fuel flow?

Be my guest...

Do say Go with the flow

Don't say Fuel If You Think It's Over



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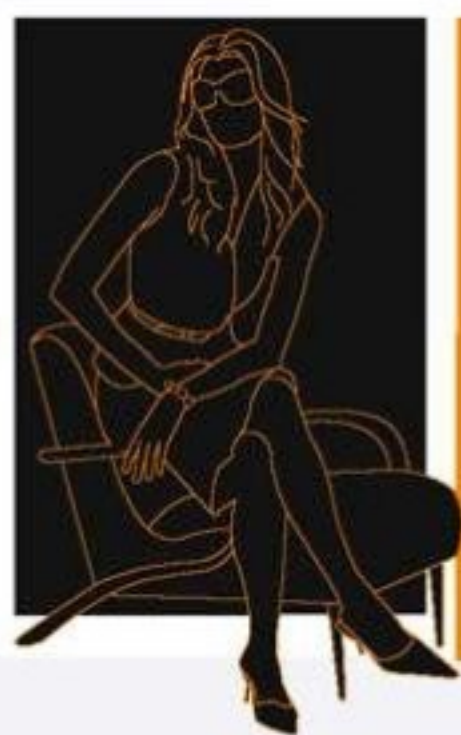
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COLUMN

THE
DRIVER'S
WIFE

Obscene? Me?

"It was a disappointing weekend," the press release said. *Falà serio!* Come on, you bunch of pussies! Just tell the truth!

This would be my report of the race weekend: Uncle Luiz's tractor handled better than Amor's car. And the little Italian who took him out on the penultimate lap had better have good health insurance, that's all I'm going to say.

Okay, okay, I'm making his press officer nervous again. He's like a bloody yeast infection, I haven't been able to shake him off all weekend. It's because of some gesture I apparently made in qualifying. He doesn't understand, I'm not like these reserved Brits: if I'm pissed off, I show it. He'd do better to have a go at the guys who made that dog of a car or the engineers who sent him out into traffic for his flying lap. So, yeah, when Amor doesn't make it through to Q3 for the first time this season, you can't blame me for reacting. It's not my fault the TV cameramen focus on me when I'm in the garage. Who'd tune in to look at mechanics and cars non-stop? No one – that's who. Even petrolheads need beauty... that's what Amor says anyway. Isn't he cute?

And don't even think of asking me to watch from anywhere else. The first time I stood in the garage, Amor got pole and you don't mess with fate. Plus my fans expect to see me there and I'm not letting them down. And, between you and me, they also want to see me wearing the latest designs of Brazilian genius Thiago Moreira, whose easy-chic collection will be available in all major European cities by the end of the year.

It's very strong to say the gesture was obscene. I'm also surprised it translated so well internationally. In parts of my country it's so exceedingly common it's practically a greeting. So much so, that Amor's fan club are already making T-shirts of it. You can just feel the love.

It's also not true that I directed it at his team-mate, more that it was just a coincidence that, as he bumped Amor out of the top ten for Q3, he flashed onto the screen.

Having watched multiple replays on the pre- and post-race shows, I conceded to the press officer (only because it was easier than getting a restraining order) that I could have substituted a more positive gesture. I showed him a few and asked him to pick, but he got all trembly again.

I'm concerned for Amor because his press officer clearly knows nothing about media. With the cameramen following my every move for the rest of the weekend, there was no way on earth you could claim a negative media impact.

God bless you – especially those of you who don't struggle under the crushing weight of celebrity.

Beijos

NEWS

Teams: double points
scheme must go

Bernie Ecclestone aside, it appears few in F1 are happy about plans for double points in Abu Dhabi

Leading F1 teams are determined to ditch the controversial double-points scheme. So far, the row over the plan to award double points at the season finale in Abu Dhabi has been overshadowed by debate over other elements of the new rules, and efforts by Red Bull, Ferrari and F1 boss Bernie Ecclestone to change them.

The public position of all those in F1 is that they will see how this season goes, then decide whether to continue with double points. But one leading team boss said: "Nobody's talking about double points at the moment, but it's important we get rid of it." Another added: "We'll get rid of it – don't worry."

The idea was presented by Ecclestone at a meeting of the F1 Strategy Group in December. There have been rumours that the idea may initially have come from Red Bull, once they realised how much trouble Renault were in with their engine, but senior figures both inside

and outside the team have dismissed these claims as false.

The FIA said the plan had unanimous approval when it was announced in December. But insiders maintain Ecclestone tabled it, there was a brief debate in which several people expressed reservations, and it was then announced in the meeting that it had been agreed.

Ecclestone remains in favour of the idea, which he justified on the basis of a drop in television audiences once Sebastian Vettel had tied up the championship early in 2013. He felt that double points would keep the championship alive for longer, and therefore keep viewers tuning in.

But other senior figures have pointed out that TV audiences have been dwindling over the past four years, and that this is an inevitable result of the new model of splitting coverage between low-audience subscriber channels,

big-audience free-to-air channels, which pay less for the rights.

F1 TV audiences dropped as coverage was split between free-to-air and subscriber-only channels



PHOTO: JED LEICESTER/LAT

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Todt warns Vettel to mind his language

Quadruple champion has his knuckles rapped by FIA president after a somewhat inelegant description of the new engines

FIA president Jean Todt has written to Sebastian Vettel, advising him not to use swear words in public appearances. The Red Bull driver caused controversy when he described the sound of the new engines as "shit" in a news conference at the Malaysian Grand Prix.

Todt did not want to make too big an issue of the situation, but was keen to remind Vettel of his responsibilities as a high-profile ambassador for the sport. He had already issued a general warning to all drivers not to use bad language

Sebastian Vettel was reprimanded after a news conference at the Malaysian GP

after Vettel and Räikkönen swore on the podium after the 2012 Abu Dhabi Grand Prix.

That earlier warning, which came in the form of letters written to the teams, said it was "very much our collective responsibility to make sure drivers are aware such language has no place during media events".

It added that bad language "shines an unwelcome beam of adverse publicity on their teams and sponsors, the sport and the FIA".

A spokesman warned at the time that further incidents could lead to disciplinary action. Red Bull team principal Christian Horner accepted that Vettel should not have sworn, but defended his right to speak his mind.

"He has just said what he thinks, and rather than others in the pitlane damning him for it, I think he should be applauded for saying what he thinks," Horner said. "Unfortunately we live in quite a politically correct world, and part of Red Bull's philosophy, even though sometimes uncomfortable for the team, is for the drivers to have freedom of speech and expression.

"All the drivers are allowed to express their own opinion. Sebastian has expressed his opinion and I don't think anybody would condemn a driver for voicing an opinion."

But McLaren chairman Ron Dennis disagreed: "Being a world champion requires a dignified approach to everything, so, putting aside the language, even the sentiment is inappropriate. The fact is, if he were sitting in a Mercedes he'd be extremely happy. And I'm quite sure any four or five-letter words would be more of joy.

"He should reflect on the fact that he's had a period of dominance. Just because that has been shaken by Mercedes-Benz, it doesn't give him the licence to be disrespectful of the obligations placed on him as world champion."





Kehm states: "It is heartwarming to see how much sympathy Michael's family is shown"

NEWS

Schumacher showing signs of improvement

Seven-time champion remains in hospital in Grenoble, but manager Sabine Kehm reports he is "making progress"

Michael Schumacher has shown the first signs of real progress in his battle to recover from head injuries sustained in a skiing accident in December. His manager Sabine Kehm says he is showing "moments of consciousness" after spending more than three months in a coma.

Kehm said the 45-year-old was "making progress" and that his family "remain confident Michael will pull through and wake up".

She added: "It was clear from the start that this will be a long and hard fight for Michael. We are taking this fight on together with the team of doctors, whom we fully trust. The length of the process is not the important part for us.

"It is heart-warming to see how much sympathy his family is shown and I can say that the family is extremely grateful for it.

"However, it should not be forgotten that Michael's family is dealing with an extremely intimate and fragile situation. And I would like to remind all of us that Michael has always actively kept his family out of the public eye and consequently protected their private lives."

Former F1 doctor Gary Hartstein said the news meant Schumacher's "life expectancy has now improved very significantly" and "opened up a very real chance of further improvement".



PHOTOS: CHARLES COATES/LAT; ALASTAIR STALEY/LAT; STEVE ETHERINGTON/LAT

F1 STUFF



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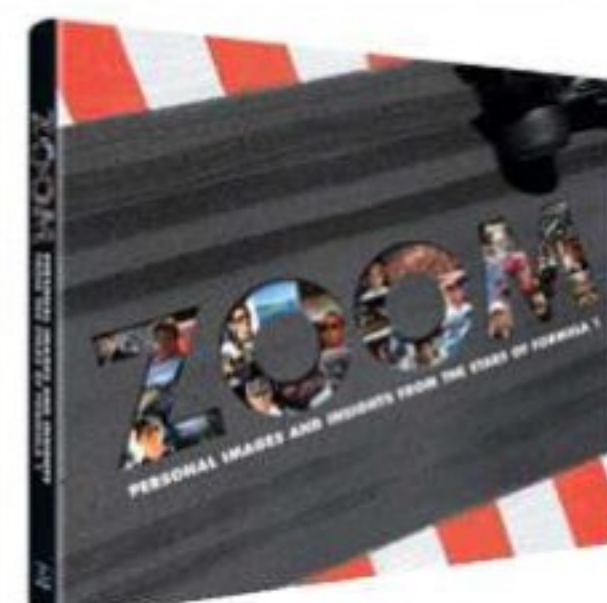
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www.visionssp.co.uk



Concern mounts over drivers' extreme diets

Jean-Eric Vergne is hospitalised and Adrian Sutil races without drinks bottle in attempts to meet weight limits

The difficulty in engineering the new generation of cars to hit the minimum weight limit has forced many drivers to shed kilos to remain competitive. But how much is too much?

Toro Rosso's Jean-Eric Vergne revealed he was hospitalised between the Australian and Malaysian GPs, saying: "The weight difference between me and my team-mate was making me lose four tenths [per lap]. I dieted this winter, but you get to certain limits that the body can no longer take. I got down to 67kg, which was a bit too low, and I lost energy."

Adrian Sutil, already one of the heavier drivers in the field at a quoted 75kg, and racing a Sauber that is thought to be around 20kg overweight, said at the Bahrain Grand Prix weekend that he was racing without a drinks bottle in his car when possible. Drivers can lose

up to 4kg of fluid in sweat during a hot race and rely on the contents of the bottle, usually a carbohydrate-based drink, both to rehydrate and to maintain energy levels.

"It's like you go for a run for an hour-and-a-half and you don't eat enough before," said Sutil, "then you have a sugar hole where you are almost getting into an area where you don't work well."

One senior team figure told *F1 Racing*: "We had a situation last year where one of our drivers came close to what any doctor would tell you was an unhealthy low BMI [Body Mass Index], and this year we have a driver who is approaching that area – and he has not been on anything like as extreme a diet as some."



PHOTOS: CHARLES COATES/LAT; STEVEN TEE/LAT; GLENN DUNBAR/LAT; STEVE ETHERINGTON/LAT; LAT ARCHIVE

At 1.84m, Adrian Sutil is one of F1's taller drivers, making it harder for him to lose weight to meet restrictions

The minimum car weight, previously 642kg, was revised to 691kg for 2014 to account for the heavier hybrid power units. As the challenges of meeting that target became clear, teams agreed to raise it to 701kg – but not until 2015.

FIA president Jean Todt has played down health concerns. "I don't think you go to hospital because you are on a diet," he said.

INFO

Jenson Button is one of only five drivers to exceed 250 GP starts...



J Button (250*)



J Trulli (252)



R Barrichello (322)



M Schumacher (306)

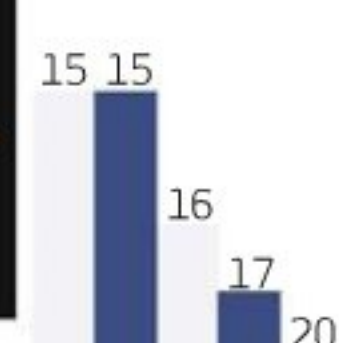


R Patrese (256)

...here's how they compare

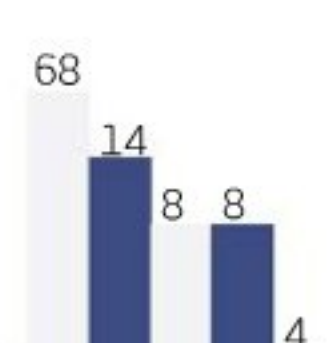
Years to 250 GPs

- 1 J Button
- 2 J Trulli
- 3 R Barrichello
- 4 R Patrese
- 5 M Schumacher



Poles

- 1 M Schumacher
- 2 R Barrichello
- 3 J Button
- 4 R Patrese
- 5 J Trulli



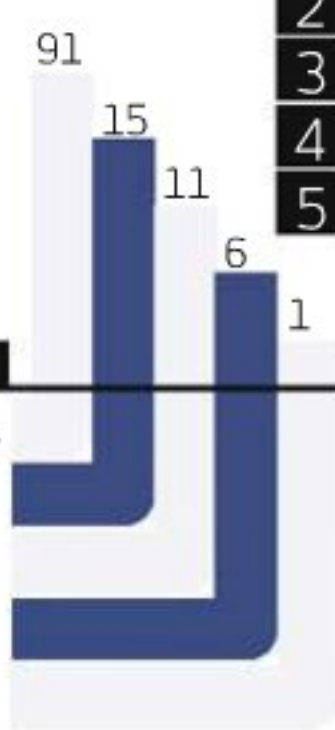
Points

- 1 M Schumacher
- 2 J Button
- 3 R Barrichello
- 4 R Patrese
- 5 J Trulli



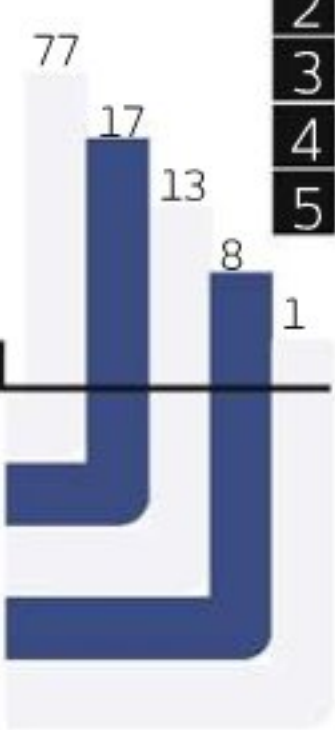
Wins

- 1 M Schumacher
- 2 J Button
- 3 R Barrichello
- 4 R Patrese
- 5 J Trulli



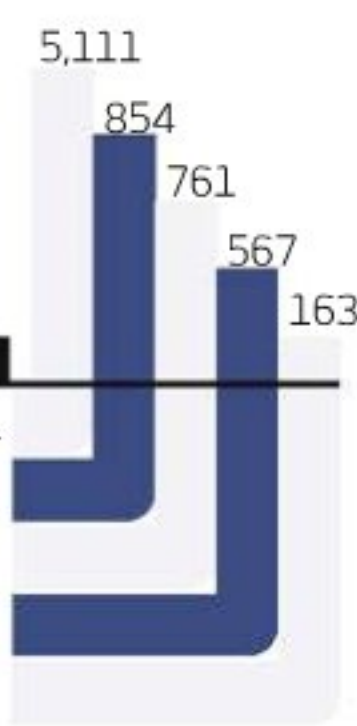
Fastest laps

- 1 M Schumacher
- 2 R Barrichello
- 3 R Patrese
- 4 J Button
- 5 J Trulli



Laps led

- 1 M Schumacher
- 2 R Barrichello
- 3 J Button
- 4 R Patrese
- 5 J Trulli





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Formula 1 poised for Californian comeback

With two West Coast venues vying for an F1 calendar slot, the sport could go from one US GP to three in a matter of years

Long Beach, which currently hosts an IndyCar GP, has renewed its contract with the US series until 2018, but has opened up a tender process for the next promoter of the event. This gives F1 another opportunity to return to the venue it effectively launched almost 40 years ago. But a return is by no means certain, as another city in Southern California waiting in the wings.

Chris Pook, who has been leading the charge in the US on behalf of Bernie Ecclestone, said: "We asked Long Beach to go out to tender. The City Council wanted to do that but IndyCar wanted a ten-year renewal. The council said, 'This is a serious decision, we want to do the right thing, but do it slowly. We'll extend your contract for three years and we will go out for proposal.'"

The tender process will involve analysis of the merits of F1 and IndyCar to the city. Pook is confident F1 would win that battle but admits

Long Beach might not win the war against its mystery rival. "Mr Ecclestone knows where it is and most team owners know where it is," said Pook. "We will examine that, and if we come to an agreement – and there is a good probability we will because this particular community is very excited about it and understands the value of what it brings – then we will do a deal."

Sources have speculated that the rival venue is the Del Mar Fairgrounds near San Diego, which hosted an IMSA race between 1987 and 1992.

The key to any decision by the City Council will be financial. F1's fee is significantly higher than the \$2million charged by IndyCar. Pook told *F1 Racing*: "People have said it would cost \$100 million. It's not even close to that." He added "The net tax gain for Austin in 2013 was \$4.9million, and the net gain for Texas was \$17.2million. F1 provides new money."

It opens up the possibility of three races in the US within five years. Pook is also a consultant to the New Jersey GP, due to make a debut in 2015.

Nigel Mansell in his Lotus at the penultimate US GP West, held at Long Beach in 1982


NEWS IN BRIEF
NEW RULES KEPT MERCEDES IN F1

It is already known that Renault would have quit F1 had the engine formula not been changed. Now Daimler board member Thomas Weber has confirmed that Mercedes would have done likewise. "To do motorsport only because it is marketing, for me the discussion is too short," he said.

**McLAREN AND RED BULL
TRADE AERODYNAMIC BLOWS**

As Peter Prodromou, Red Bull's former head of aero, began his gardening leave ahead of joining McLaren in October, Red Bull announced Dan Fallows as his successor. McLaren say they already have a contract with Fallows, and racing director Eric Boullier confirmed lawyers are now involved.

TODT SETS UP NOISE WORKING GROUP

After discussing the matter with teams in Bahrain, the FIA will address complaints that the new V6 turbo engines are not loud enough. "We must see if we can implement in short, medium, long term, a bigger noise," said FIA president Jean Todt. "And that we will do and we will get unanimous agreement."

SECOND NEW TEAM MOOTED FOR 2015

With NASCAR team owner Gene Haas already accepted by the FIA for a 2015 F1 entry, Bernie Ecclestone has hinted another new team may join the sport. "We have also accepted another team," he said. "Whether they will make it or not is another story."

LIGHTWEIGHT SAUBER COMING

Sauber are focusing resources on a weight-loss plan for the C33, which has been off the pace so far. "We are planning a big upgrade for Barcelona," said team principal Monisha Kaltenborn. The package should save 20kg.

BRITISH GP ANNOUNCES FAN DAY

Silverstone will open its pitlane to fans on the Thursday before the British GP. There will be five pitlane walkabouts, with tickets allocated on the day. Entry will be free to those holding a three-day ticket to the grand prix.



PHOTOS: KEVIN WOOD/LAT, LAT ARCHIVE

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Pat Symonds explains THE SCIENCE BEHIND... THE LAUNCH

F1 TECH

Launch control was a technology developed in Formula 1. Is it still allowed?

No. These days the race start has to be entirely controlled by the driver rather than a microprocessor. But that's not to say the engineers can't help the driver a little, and the lessons we learned from launch control shape the way we make conventional starts today.

We often hear drivers noisily revving the engine in the pitlane before a race. What's all that about?

The procedure for performing a good launch is, like most things in F1, carefully controlled and developed. The clutches are very small and are made of carbon. Just like carbon brakes they are very temperature-sensitive, and what you're hearing is the drivers performing a 'clutch scrub', which conditions the surface of the clutch and gets it to a good working temperature.

We also need to locate the bite point of the clutch, which we do through an automatic process. Initially this is done by the technicians as they warm up the car on stands in the garage, but as we need to keep a constant track of it we also perform what are known as 'rolling bite-point learns'. So by the time we make a start, whether it's for the start of the race, or just a practice, we know exactly where the bite point is and also have the clutch up to temperature.

At what temperature does the clutch operate?

Ideally we want it at around 200°C. The exact value varies depending on the clutch material used, since although the plates are all made of carbon there are variations in the type used. Of course, if the clutch slips excessively then, just like the clutch on a road car, it can overheat and lose performance. In the extreme it can get so hot as to damage the clutch diaphragm spring or even the gearbox input shaft.

How do an F1 clutch and a road-car clutch differ?

The differences are quite marked. An F1 clutch has to handle reasonably high torques at the start and some even higher torques generated by torsional vibration, but the values are no higher than may be seen in a high-performance road car. In F1, we need to keep the mass and inertia

as low as possible, while keeping the diameter small so the engine can sit low in the chassis.

An F1 clutch is less than 100mm in diameter, with multiple carbon plates, each around 4mm thick. The housing is made of titanium, which stays strong at elevated temperatures, and the diaphragm spring is steel. The actuation of the clutch is via a slave cylinder and release bearing as it is on a road car, but rather than use a hydraulic or cable link to the clutch pedal, in F1 we use a high-pressure hydraulic actuation system controlled by the standard ECU. We don't even have a clutch pedal. The clutch is actuated by levers behind the steering wheel.

Nearly as important as clutch weight is its inertia. Inertia is the property of a component that resists it changing its rotational speed, and as a race engine is continually changing speed this is particularly relevant. A typical F1 clutch weighs around 30 per cent of one designed for road-car use, but its inertia is around only ten per cent of that of its production cousin.

This might seem insignificant compared to the total mass of the vehicle, but the inertia of the clutch is multiplied by the square of the overall gear ratio to give an equivalent mass that has to be accelerated. With a first gear with an overall ratio of around 14:1, a road-car clutch would have an apparent mass of around 130kg, while a race clutch would appear to be just over 12kg. This has a big effect on acceleration in first gear.

A race clutch sounds expensive...

Everything in F1 is expensive! Here you are looking at around £6,000 for the internals and a further £4,000 for the titanium housing.

So what makes for a good start?

Everything has to work together. The bulk temperature of the tyres needs to be correct. The clutch also needs to be at the right temperature, and the rear wheels need to be travelling around 8-10 per cent faster than the fronts. The pre-start

revs need to be just right to use the engine inertia to jolt the rear wheels, but not so great that they cause excessive wheelspin. Huge wheelspin, while effective for dragsters because of their tyre characteristics, does not do it for an F1 car.

Why do F1 cars use a hand clutch instead of a foot clutch? How does the driver feel the bite point on a hand clutch if it's fly-by-wire?


First, it's effective just to have two pedals and thereby eliminate the time it would take to move your right foot onto the brake pedal. Second, we use the two steering wheel paddles in a way that would be impossible with a foot-operated clutch. When making a start, the driver pulls the first lever all the way back. He then moves the other lever to the pre-learned bite point using a guide on the dashboard lights that tell him where he is on the travel. The lever that is fully pulled back at this point has authority and the clutch is therefore disengaged. When the start lights go out, he releases the first lever rapidly, thereby sending the clutch straight to the bite point which has been determined by the second lever.



One clutch paddle finds the biting point; the other feeds in the clutch as the driver pulls away

As the speed increases, he gradually releases the second lever until the clutch is fully engaged. This theoretically gives the best possible start.

How does the FIA know if a car jumps the start?

A sensor is buried in the ground at each grid position. This reads a transducer mounted on the car. If the sensor detects a car has moved before the start lights go out, it automatically notifies Race Control. There is no chance of gaining an advantage in this particular area. 

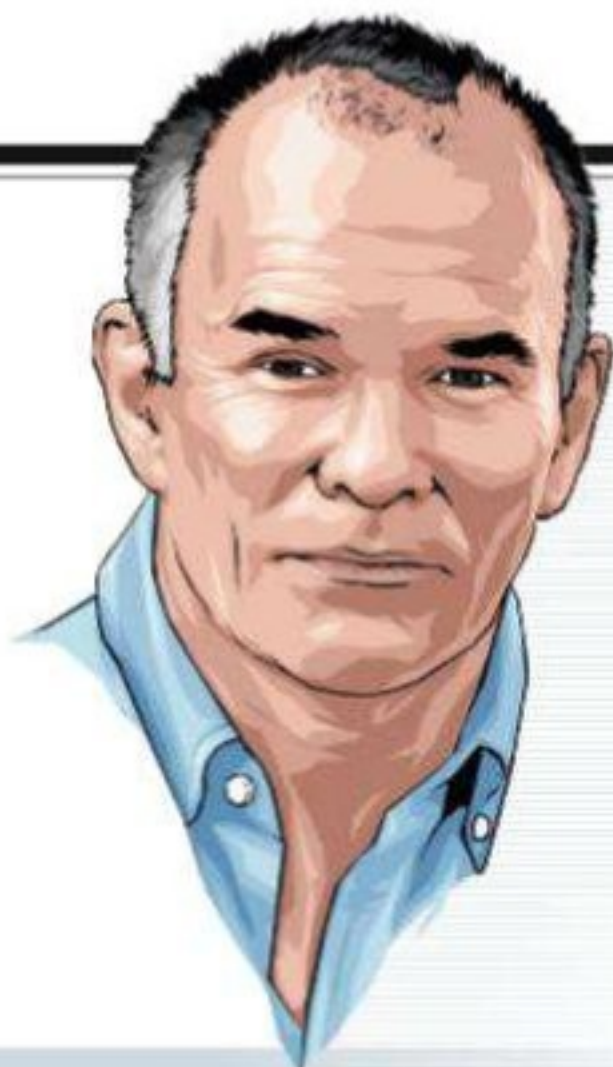


GOOD LAUNCH

Kimi Räikkönen makes up three places in the first 100m of the race

BAD LAUNCH

Kevin Magnussen starts from fourth, struggles to control wheelspin and narrowly misses Alonso's Ferrari



PETER WINDSOR

RACER'S EDGE

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

Forty years ago, in January, I was opening the phone book to find the number of Qantas Airways. I'd been working for David Phipps, writing race reports, filing photographs and running around London on my ex-Chris-Craft Suzuki, but now David was expanding his business into other areas and I was out of a job. London in the opening weeks of 1974 was cold, dark and foreboding: the fuel crisis had crippled the country. The unions were on the march.

"Peter, that would be a tragedy," said Nigel Roebuck when I told him the news of my departure. "Tell you what. We might have a vacancy here at *Competition Car*. Come round to the office tomorrow and have a chat."

Thus my life changed forever. Nigel and I spoke in the tiny office in Wood Street, Kingston (now a featureless part of the one-way system); we lunched at Bentalls; then later we drove all over the UK and Europe in search of what we today call 'content'. I bought my first Lotus Elan (a 1965 S3 coupé). I learned from Nigel's style and syntax. I began to put together my own features for the monthly magazine.

And I befriended Mike Hailwood – a laid-back hero of a man who was also "uncommonly brave". One minute he was a leather-jacket-wearing Isle of Man gladiator; the next he

Remembering Mike Hailwood, a fallen idol

was there in the background, chatting and laughing with anyone who came along. The Surtees F1 car was knife-edgy at best in 1973, but Mike was always on the perilous limit of slight understeer, shaving the Armco and teasing the concrete walls. He was fast and skilful – a man who earned the respect even of John Surtees. That was also the year, of course, in which Mike dived into the flames at Kyalami, selflessly determined to save the life of Clay Regazzoni. For this he was awarded the George Medal "for an act of great bravery". He shrugged away the honour with the most genuine display of humility you'll see this side of Roger Federer. I was in awe of Mike – in awe of his skill and his guts and his versatility and also his brain – and thus I think it right to taste a little bit of Hailwood now, if only because we shouldn't let too much time pass before racing drivers like Mike dissolve into history. Call it a re-set with a racing driver from whom many can still learn much.

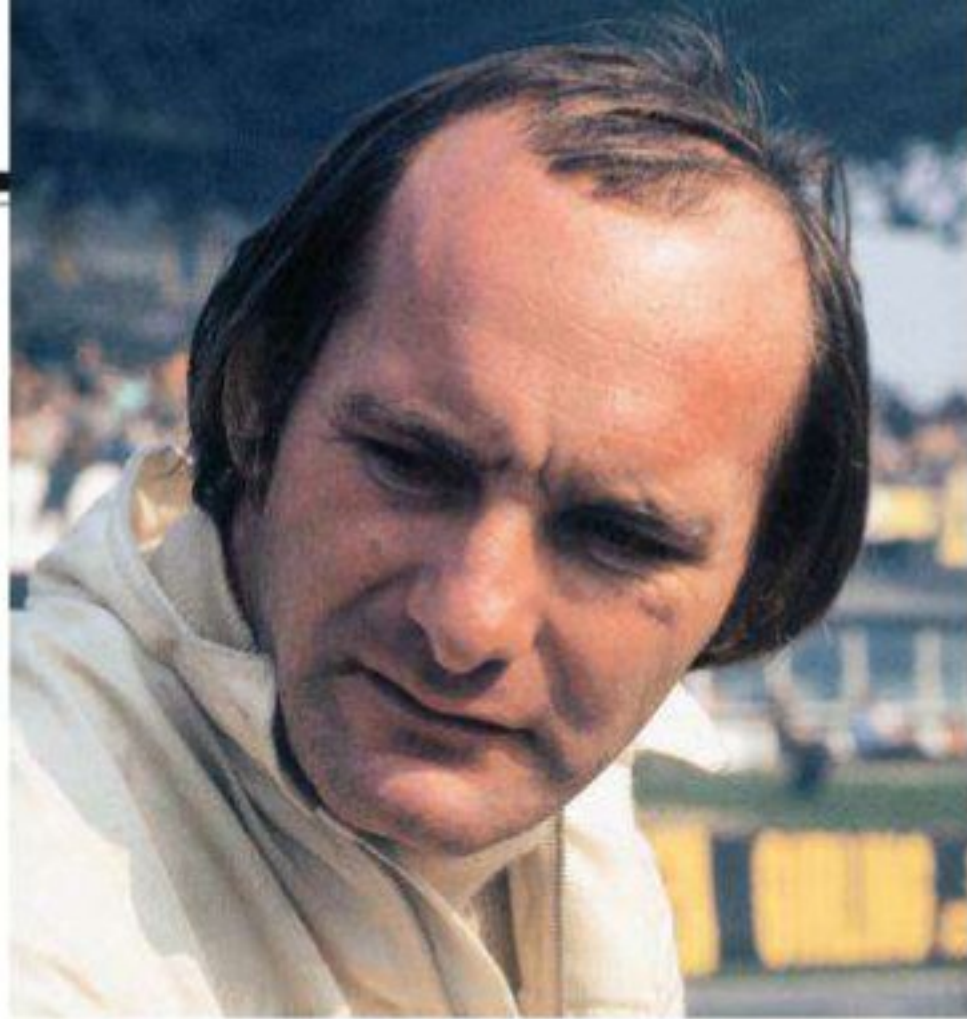
We spoke early on in my new *Competition Car* career in a London restaurant: Mike had briefly tested James Hunt's Hesketh March before signing for McLaren in early 1974, and I was desperate to know what he thought of it. In other words – how good was James?

"I was quite surprised that it wasn't better than it was, actually," he replied, in that very relaxed way of his, "but there again it was only a tyre test. James was unwell and they asked me to drive it, which I was rather surprised about. Come to think of it, I wasn't feeling the best that day either! [Cue laughs all round] It certainly felt no better than the Surtees through the corners. Very skittish." James was good, in other words.

Mike told me that he'd never really intended to switch to four wheels when he began to race bikes. "I was quite content riding bikes, but obviously I got a bit fed up doing the same thing all the time so I tried a Formula Junior, thought it was quite easy,



"I was in awe of Mike – in awe of his skill and his guts and his versatility and also his brain"



Mike Hailwood, "a laid-back hero of a man", pictured below handling the Surtees TS14A Ford around the streets of Monte Carlo at the 1973 Monaco Grand Prix



and progressed to F1. It was a complete failure. I gave up and went back to bikes. When I returned to motor racing, it took me three years before I could do it reasonably properly."

"Do you think a decent F1 driver could be successful racing a bike?" I asked.

"No. No way. It's entirely different. It requires an entirely different mental approach."

"You once lived in *that* flat in Harrow with Frank Williams, Piers Courage and Jochen Rindt..."

"Yes and Chris Amon, Peter Revson and Tony Maggs..."

"Was your attitude to racing different back then in 1963-4?"

"Not really, although I think one has to take it more seriously now because there's so much more financial involvement. I used to enjoy my F5000 days with Ulf Norinder and Jackie Epstein. They were all characters and we had a good time. But now all the teams are separate. They all stay in different hotels; they're all cliquey and they don't speak to one another. It breaks their heart to nod 'good morning' to you, which to my way of thinking is very stupid."

Shades of 2014 – and Mike was never afraid to mince his words, as you can tell. I asked him about his 1972 season, when he was searingly quick in the Surtees TS9 – particularly on fast circuits. Typically, Mike immediately transferred the credit to the car: "I think the TS9 was very good on fast courses."

"John Surtees has said that it was you who had that characteristic!"

"Well, it was partly the car and it was also one of my basic faults. I couldn't go round slow corners very well. I can't go round fast corners very well, either, but still..."

Finally, I asked him about that George Medal. Mike was self-deprecating to the last.

"I was very surprised and very honoured. I don't think I deserved it. David Purley deserved it more than I, and other people deserve it far more than either of us. What we did we did instinctively without thinking. I don't know how they decide who should get it. It's like the MBEs, the OBEs and the knighthoods: some undeserving people get awards and people who do deserve them don't get them."

Mike was also given an MBE for his success. Despite much canvassing by some sections of the motor racing industry, John Surtees, OBE, Mike's mentor and the only man ever to have won world championships on both two wheels and four has still not received a knighthood.

Mike and his daughter Michelle died early one morning in March 1981, in a road accident caused by a truck driver executing an illegal U-turn across a dual carriageway. 🚒

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THE ORIGINAL F1 EXPERIENCE OPEN ON 23/24/25 MAY



F1 AFTER PARTIES RACE VIEWING YACHTS TERRACES Paddock CLUB ACCOMMODATION

MONACO



MONACO

23/24/25 May



SINGAPORE

20/21 September



AUSTIN

1/2 November



ABU DHABI

22/23 November



EMERSON FITTIPALDI

SPEED KING

The double world champion writes exclusively for *F1 Racing*

At the end of March, Sebastian Vettel was named Laureus World Sportsman of the Year, and I had the honour of presenting him with his trophy in Kuala Lumpur, a few days before the Malaysian Grand Prix. This was great for motor racing, because Sebastian was chosen ahead of many other athletes from all sporting disciplines. Five times he has been nominated for this award – and this time he unquestionably deserved to win it. He is a great champion.

I spent a lot of time with him over the weekend and got a good look at the way he works. I have a lot of respect for him: he's a four-time world champion, yet he's so down to earth. He's a great guy, a brilliant young driver, and a tremendous ambassador for F1. I take my hat off to him.

Now that the season has started, it has been very interesting to see the new Formula 1 up close and talk to the drivers, engineers and team managers about the challenges presented by the new regulations, and F1's future.

It confirmed my feeling about the new rules, that the main challenge for engine manufacturers has been the management of all the separate energy systems on the car – the energy recovery on the exhaust and the brakes, and the energy store itself. There is an incredible complexity in the interaction of these systems with one another,

Youth is F1's future

and the key factor for future success lies in the technology – software and hardware – that controls these units. A lot of the difficulties have been caused by electronic miscommunication.

You can see already, from the results of the early grands prix, that the engine manufacturer who has been fastest to adapt to these challenges has so far been the most successful. How long will this situation last? Well, it was interesting to talk to Sebastian about this.

Red Bull have recovered very quickly from the setbacks they had in testing and in Melbourne. As I write, their appeal against Daniel Ricciardo's disqualification from second place in Australia is yet to be heard, but from a technical point of view, both they and Renault have made great progress in solving the problems they've had.

When you think of all the top teams that are operating in Formula 1, they have the experience, the know-how, the financial resources, and – most importantly – they have the people. It lets them react quickly and overcome their problems, and Red Bull are proving this. By the second race of the season they were fighting at the front again, and the Sepang circuit has a lot of straights – there is nowhere to hide if you are down on power.

Renault are bouncing back and I have no doubt that Red Bull will be contenders again this year. Already they are running strongly.

Another interesting thing about new-look F1 is that so many teams have taken on much younger talent. The young generation have great electronic know-how; they hone their craft in simulators, and process and understand the telemetry data their cars are producing. They learn and adapt quickly, which is very important in an era in which the driver has to adjust so many control settings on the steering wheel throughout the lap, even from corner to corner.

Look at a steering wheel and it's amazing to see how many adjustments are possible. A driver's mind must work so fast – not just piloting the car on the limit, but making decisions about changing the car's behaviour on corner entry, mid-corner and exit, not to mention fuel-mapping and energy-recovery strategies. It's a great new challenge: these guys are from a different world to my generation.


These technologies will be applied to the cars we'll drive in the future. I like the idea of new rules making engines more efficient, because it accelerates the flow of fresh ideas and new technologies that will benefit us all. It addresses many of the problems the world faces today. F1 is, at a very high level, expressing the future of



Current F1 youngsters Daniil Kvyat (left) and Kevin Magnussen (right): "These guys are from a different world to my generation"

the motor car, and this makes it more likely that more car manufacturers will want to get involved.

That's my view. In motor racing – especially F1 – you have to learn and change very quickly in response to new challenges, and that is how successful innovations are born. The fastest, most reliable and most efficient engine is the winner, and to be associated with success is a powerful marketing message. That's what Ford understood all those years ago when they invested in the DFV V8 engine that helped me win two world championships. I miss the noise of the normally aspirated engines of course, but turbos are always quieter. We'll get used to the new sound in time.

It's still possible that next year the FIA could bring in new exhausts that make a louder noise. It's not difficult – modern exhaust specialists can make a car produce any noise you want! 

"The young generation have great electronic know-how... they learn and adapt quickly"



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DIETER RENCKEN

POWER
PLAY

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

Regardless of the outcome of the FIA International Tribunal hearing into Daniel Ricciardo's disqualification from the Australian GP – due to be held the day *F1 Racing* goes to press – this unsavoury affair will surely have ongoing ramifications. And the consequences will not be limited to the sporting sphere – for, in the best tradition of the sport, politics abound.

Dietrich Mateschitz, who founded Red Bull, subsequently turning a sickly-sweet Thai energy beverage into a global must-drink netting billions, has not minced his words. Red Bull's fortune funds a promotional platform embracing virtually every adrenaline sport known to man. If it's 'edgy', Red Bull is involved, be it F1, World Rally, MotoGP, air racing or ice sports. Purely participating is insufficient; utter domination of the marketing agenda is the mission.

Within two days of the FIA announcing the date for Red Bull Racing's hearing against their exclusion from second place in Melbourne, Mateschitz issued a tacit threat to withdraw his team. If this happened, and the Red Bull satellite outfit Toro Rosso followed suit, such action would reduce the size of the grid by 20 per cent.

"The question is not so much about whether it [F1] makes economic sense, it's more to do with the sporting fairness, political influence and the

Are Red Bull getting ready to quit F1?

like," he said, stung, say sources close to him, by widespread accusations that his team had obtained an unfair advantage. "We have had it all, but from our perspective there is a clear limit to what we can accept."

His message is unequivocal: exclude my quadruple-title-winning team, and Red Bull is out of here. But what is the real motivation for this threat? It can't be the fairness, or otherwise, of the Tribunal. Consider that one of the first reforms instituted by FIA President Jean Todt after taking office in 2009 was a restructure of the FIA's judicial system, from a World Motor Sport Council – usually presided over by Todt's predecessor, Max Mosley – to a transparent and independent body drawing on legal specialists representing 14 countries (and nominated in part by the F1 teams).

Clearly then, the FIA are no position to influence the verdict, as became clear during the hearing into the Mercedes/Pirelli tyre test last year, when the FIA found itself heavily criticised. Given that Red Bull were among those whose protests set that judicial process in motion, Mateschitz must surely be aware of the tribunal's independence.

It's interesting to decode Mateschitz's reference to "sporting fairness, political influence and the like". Red Bull enjoyed a £100m slice of F1's 2013 revenues – within 3 per cent of that

netted by Ferrari, who are allocated a larger proportion than other teams on account of their iconic status, and 60 per cent up on the earnings of Mercedes and McLaren, not to speak of a 200 per cent premium over Lotus. Clearly Mateschitz is in no position to question "sporting fairness", for money ultimately buys performance.


As for "political influence", how much more does he crave? The two Red Bull teams provide twice the votes of, say, Ferrari or McLaren at Formula 1 Commission meetings. Red Bull sit on F1's newly devised Strategy Group – which frames regulations – by right. Horner regularly dines with FOM CEO Bernie Ecclestone, and last year went on holiday with the octogenarian.

Clearly, Mateschitz's sabre-rattling is rooted elsewhere, likely in engine partner Renault's woes. Already he is talking of manufacturing his own engines, as described in this column last month – much as he acquired Jaguar Racing before restructuring the beleaguered team into the lean, mean fighting machine it has become.

There exists, though, every possibility that Mateschitz is preparing an exit. Despite having contractually committed Red Bull to F1 until 2020 – hence Strategy Group clout and a 20 per cent share of F1's revenues – he has a powerful card in race sponsorship. Witness his promotion of the Austrian GP at the Red Bull Ring. Offer title sponsorship of three races for six years as a softener, and Ecclestone will surely be receptive.

Why this possibility, particularly when his team are cresting a wave? The answer lies in the law of diminishing returns. No matter how many more titles Red Bull grab, they cannot provide the same return as that first crown in 2010. And audience fatigue is setting in: Sebastian Vettel was booed last year on podiums, while Ecclestone cited Red Bull's serial successes as the primary reason for F1's dwindling 2013 TV ratings.

The secret, as Benetton – the first commercial entity to score titles through team ownership – learned to their cost, is strategic withdrawal, not bumbling exit. By laying the ground in advance of the tribunal, Mateschitz has hedged his bets regardless of its outcome: if Red Bull withdraw, he can cite 'Fuel-gate' as a tipping point.

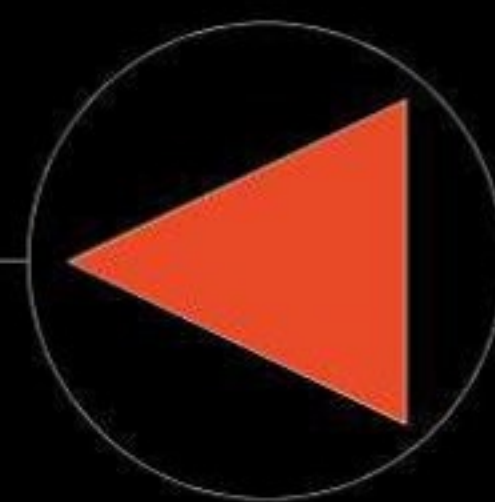
Canny, sure – but such canniness took Mateschitz from trainee detergent salesman to multi-billionaire... 

Red Bull team principal Christian Horner fields questions in the aftermath of 'Fuel-gate'



"Ecclestone cited Red Bull's serial success as primary reason for F1's dwindling TV ratings"

Now *that* was a car



No. 26 McLaren MP4-23

Born of controversy, this machine broke McLaren's long dry spell in 2008

No other championship-winning racing car has been designed and built in as toxic a political atmosphere as the McLaren MP4-23. Its gestation tracked parallel to the drip of revelations in the 'Spygate' espionage scandal that shook Formula 1 to the core in 2007, in which McLaren's chief designer, Mike Coughlan, obtained technical blueprints from former Ferrari race technical manager Nigel Stepney.


What they planned to do with this intelligence is debatable, for it was never proved that any Ferrari intellectual property appeared on either the MP4-22, in which Lewis Hamilton made his sizzling 2007 debut, or the MP4-23 in which he claimed the drivers' title. Even so, the scandal was damaging: McLaren were hit with a record fine of \$100m and stripped of their 2007 points, while FIA inspectors scoured the blueprints of the MP4-23 for any item that could have been influenced by knowledge illegally transferred from Ferrari.

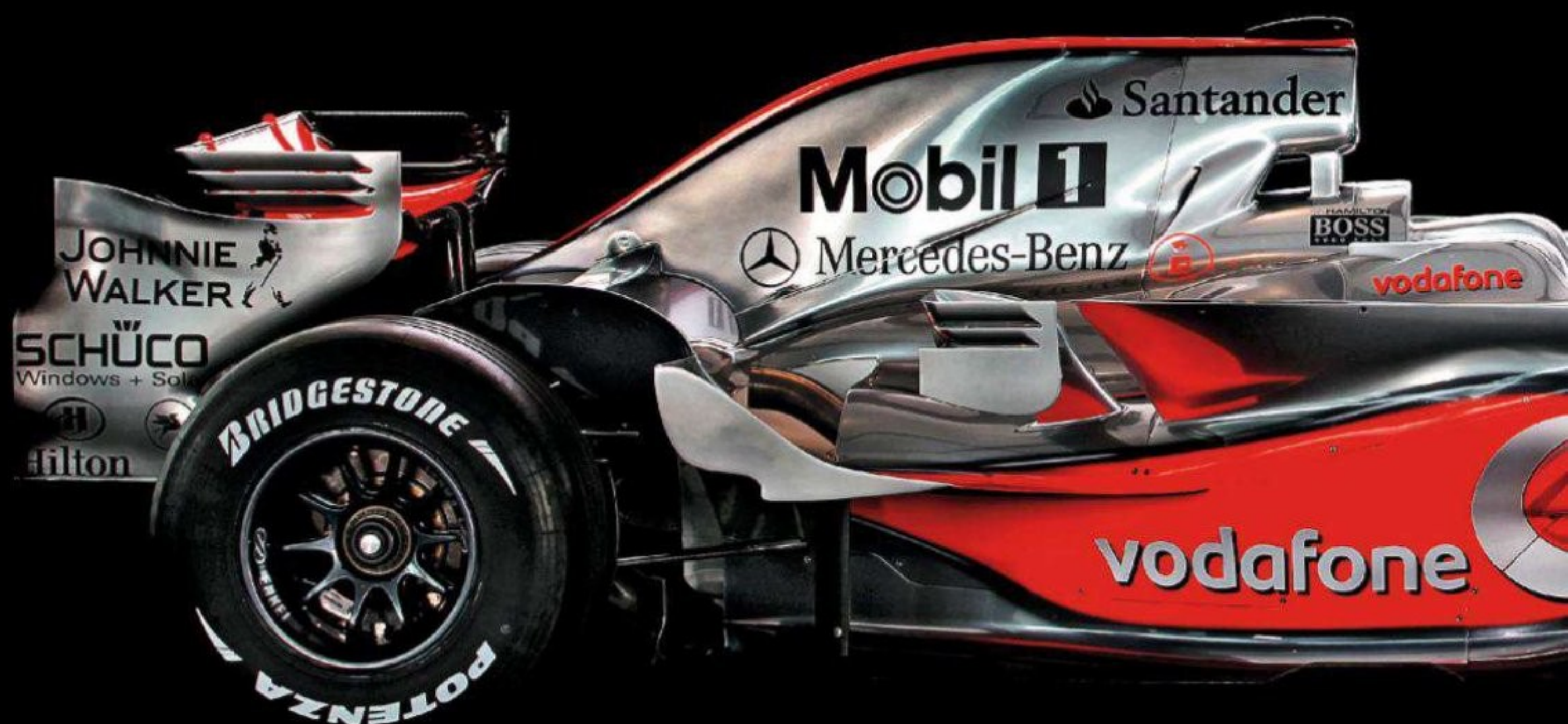
Questions continued to be asked about the MP4-23's technical provenance until the 2008 season began in earnest. Then suspicions faded, largely because Ferrari seemed to have the superior car. Hamilton won the season-opening Australian GP but was all at sea in the following races, even driving into the back of Kimi Räikkönen in the Montréal pitlane. But, mid-season, something clicked and a commanding win in the wet at Silverstone, where he appeared to be operating at an altogether higher level than any of his rivals, set him back on the road to championship contention.

The MP4-23 itself was an evolution of its predecessor, with a longer wheelbase and more aerodynamic detailing. During the season, the high-mounted 'bridge' wing was joined by a pair of curving, nose-mounted flow conditioners, an aero must-have pioneered by BMW. The MP4-23 also boasted another, concealed piece of trickery, the 'inertor'. This consisted of a spinning mass that helped dissipate the energy of suspension movements; Renault did something similar with their 'tuned mass damper' in 2006, only to see it banned for the spurious reason that it constituted a moveable aerodynamic device.

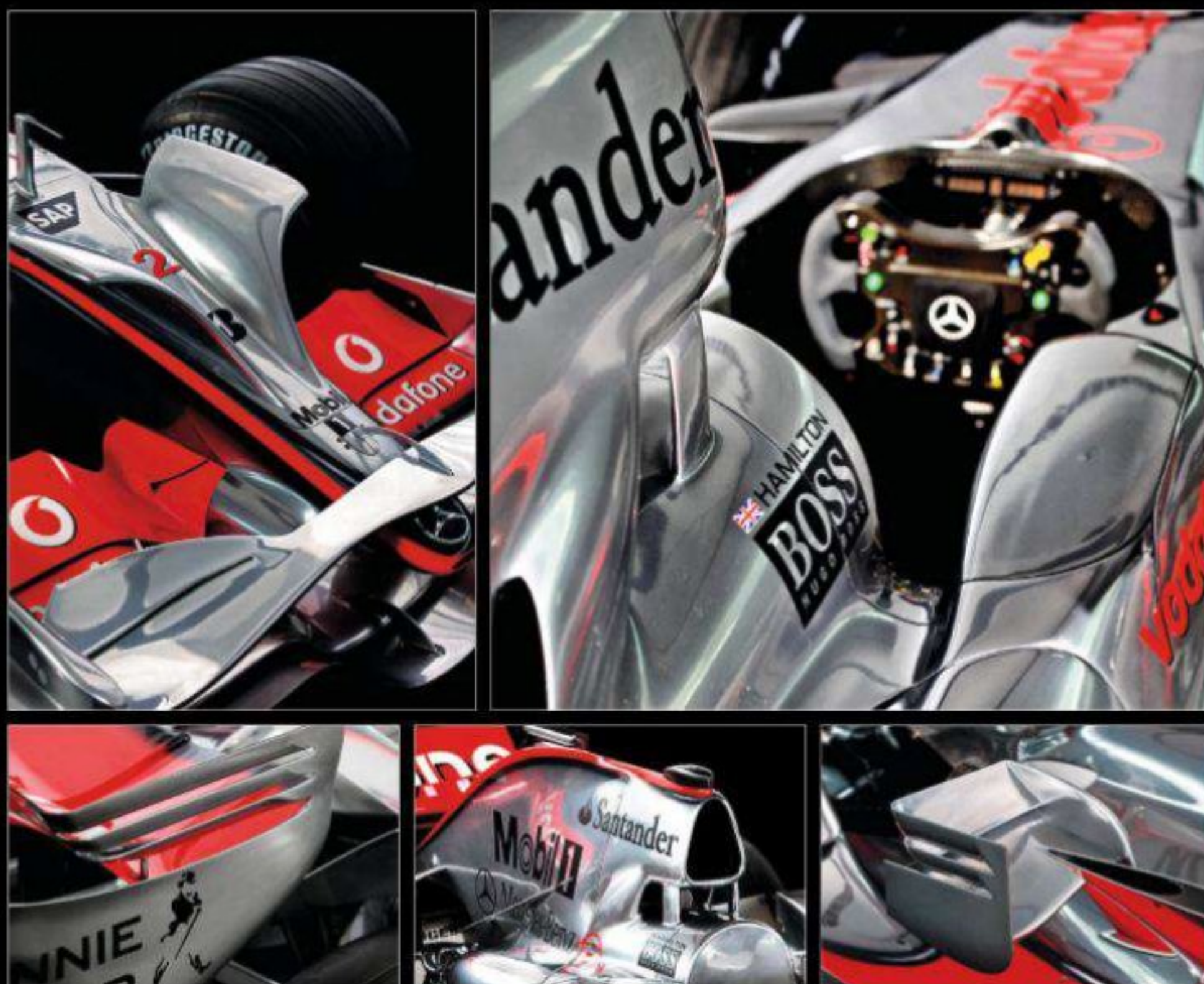
For both McLaren and Ferrari this was a wearying season of sniping politics and nose-to-the-grindstone technical development, and it would prove to be their undoing the following year. As the '08 season built up to its climax, each focused on wrangling more speed out of their current package rather than shifting focus to 2009.

Hamilton and Ferrari's Felipe Massa faced off against one another in the most nail-biting season finale of all time. Massa won from pole position and could not have done any more on the day. Hamilton looked to have allowed the drivers' title to slip from his grasp, undone by a late-race rain storm, only to clinch fifth place at the final corner – winning the title by a single point. It was McLaren's first drivers' title since 1999, but Ferrari beat them to the constructors' crown.

After victory, defeat. Having deployed all their resources in 2008, neither Ferrari nor McLaren would win again until late 2009. 



WORDS STUART CODLING PICTURES JAMES MANN/MCLAREN



McLAREN MP4-23 TECH SPEC ◀

Engine	Mercedes FO 108V
Layout	2.4-litre V8
Brakes	Hitco/Akebono
Fuel	Mobil 1
Gearbox	7-speed McLaren seamless-shift semi-automatic
Weight	605kg
Notable drivers	Lewis Hamilton, Heikki Kovalainen



CATCHING THE SLIDE

Last year was an *annus horribilis* for McLaren. But a clutch of key changes for 2014, with more on their way, has given rise to a bullish mood in Woking

WORDS ANDREW BENSON

PHOTOS STEVEN TEE/LAT & MALCOLM GRIFFITHS

"WE
WILL
WIN
THIS
YEAR,"

said Ron Dennis in his first news conference following the internal coup that put him back in charge of the McLaren Formula 1 team. And he said it again after Kevin Magnussen and Jenson Button finished third and fourth in the Australian Grand Prix – later to become second and third after

the disqualification of Daniel Ricciardo's Red Bull for exceeding the maximum fuel-flow rate.

Why so confident? After all, McLaren headed into 2014 on the back of their worst season since 1980, the year before Dennis took charge – and in Australia were almost a second a lap slower than the Mercedes cars. →



Cynics would say this was typical Dennis bluster, born of his delight at being back in control of the Formula 1 team mere months after it seemed as if his entire career at McLaren was about to come to an end. But there might just have been a little more to it than that.

EXIT WHITMARSH, ENTER BOULLIER

Dennis was speaking to the media as the McLaren Group's new CEO because he had, a few weeks previously, ousted Martin Whitmarsh, his former protégé, from his positions as team principal and CEO of McLaren Racing.

Yet less than 12 months before, Dennis's own time at McLaren was running out, as stories of boardroom battles and fall-outs between him and his fellow directors leaked from the McLaren Technology Centre into the F1 paddock.

Dennis had become increasingly concerned about what he felt McLaren were becoming under Whitmarsh; he believed the team were not as committed to winning as they should be and saw evidence of what he considered a lack of focus from the top down – a dangerous drift across the whole of McLaren's F1 operation. This is what Dennis means when he speaks now of the team having too many "distractions".

Feeling that, under Whitmarsh, McLaren had lost their culture of winning, Dennis had been seeking to remove his former protégé for some time. But he was blocked principally by Mansour Ojeh, Dennis's long-time business partner and a 25 per cent McLaren shareholder.

In spring 2013, Whitmarsh's future appeared secure, where Dennis's looked vulnerable. Still a 25 per cent shareholder, but lacking executive status and with less than four years left on his contract, Dennis faced the prospect of his McLaren contract not being renewed, leaving him without an official role at the company he

had built up into what it is today. But over the course of 2013, events played into his hands.

Chief among these was the dismal performance of the car in McLaren's first podium-free season since 1980. Then came Whitmarsh's determination to retain Sergio Pérez for a second season, when the engineering staff felt Pérez was simply not up to the job. Whitmarsh was made abundantly aware of his staff's concerns throughout the autumn of 2013, but on several occasions told news conferences that his inclination was to retain Pérez.

The situation came to a head after last year's Abu Dhabi Grand Prix. There, Whitmarsh had again implied to journalists that Pérez would be kept on – despite engineers impressing on him over that weekend that they felt Magnussen was a much better bet. Yes, Pérez had been reasonably close to Button at times in the year, and even beaten him on occasion. But this, they felt, was a Button who was not digging deep in

the way he had in the previous three years against Lewis Hamilton – simply because he hadn't needed to.

Not only did McLaren insiders believe Magnussen would be better, they also knew he would be cheaper. He commands a salary of around £500,000, compared to the £2m or so paid to Pérez – even if most of that was covered by the sponsorship money Pérez brought with him. Despite this, right after the Abu Dhabi Grand Prix, Whitmarsh sent a contract to Pérez, who signed and returned it.

Meanwhile, aware of the engineers' dissatisfaction with Pérez, Dennis sensed an opportunity. He contacted Magnussen's management, and said he was going to send them a race contract for 2014 – which they should sign. They did just that, whereupon Dennis announced to McLaren that Kevin Magnussen would race alongside Button in 2014.

Whitmarsh could have contested the move – after all, he was team principal



and McLaren Racing CEO, while Dennis had no specific remit over F1. But he chose not to, knowing that Dennis and all the engineers wanted Magnussen.

It was an embarrassing situation for Whitmarsh, which underlined to the team that he could not even sign the drivers he wanted. Around this time, he realised something needed to change – that he had two jobs and that they really needed to be done by two different people.

He could have concentrated on being team principal and suggested McLaren get a new CEO. But that would mean he would be reporting in to the new CEO. So instead, he chose to hire a new team principal. And who better, he thought, than the man who had been his deputy at the F1 Teams' Association (FOTA) and done such a good job of steering

Lotus through their own difficult time: step forward Eric Boullier.

But events were about to overtake Whitmarsh. Around this time, Mansour Ojeh became seriously ill and was taken to hospital to have a double lung transplant. With his main protector in intensive care fighting for his life, Whitmarsh found himself vulnerable when Dennis pounced.

Behind the scenes, Dennis ensured it was made clear to the Kingdom of Bahrain – which owns a 50 per cent share in McLaren through its Mumtalakat investment fund – that McLaren

under Whitmarsh were not in safe hands and that something needed to be done to stop the downwards slide.

On 16 January 2014, a McLaren board meeting took place, which concluded with the departure of Whitmarsh and the re-instatement of

Dennis. Whitmarsh left the building and, at the time of writing, has not been back since.

This was followed, a week or so later, by Boullier's appointment as McLaren's new racing director. The reasons were obvious. Dennis needed a replacement for Whitmarsh, Boullier's recruitment was already under way, and there was no one else better qualified for the job. So Dennis simply actioned Whitmarsh's plan.

Boullier is, to all intents and purposes, team principal under another title. He is in charge of all the performance elements of McLaren Racing – in short, it is his job to get McLaren winning again. But so far, Boullier has been coy about his future plans for the team. He is relatively new after all. What is clear, though, is that Dennis has set the tone for what is expected. He makes a big play of loyalty. But his treatment of Whitmarsh was anything but loyal. Forget personal relationships – McLaren will accept nothing less than the best from now on. →

BOULLIER IS, TO ALL INTENTS AND PURPOSES, TEAM PRINCIPAL UNDER ANOTHER TITLE



A BETTER CAR? NOT YET

The new MP4-29 drew admiring glances when it first ran at the opening pre-season test, where it looked innovative and quick. Since then, it has not shown front-running pace. Like the Red Bull and the Ferrari, it couldn't match Mercedes in Melbourne. Unlike them, it has a Mercedes engine – so the performance deficit has to be in the car.

And despite the two-three Melbourne finish, this shortfall has exacerbated the feeling that something is missing from McLaren's design team. Was losing Paddy Lowe to Mercedes GP, where he is now executive director (technical), a mistake? It is, after all, hard to find anyone in the paddock with a bad word to say about the softly spoken but gifted ex-McLaren technical director.

Some have questioned whether Lowe was the right man to replace Ross Brawn as Mercedes co-team boss – but only on the grounds that his abilities as a 'leader of men' – in the patrician Brawn manner – are unproven. No one, though, questions his excellence as a design director. "He's a very clever bloke," is the usual assessment.

Lowe's replacement is Tim Goss and you have to wonder whether his promotion from engineering director, shortly after Lowe's departure, was instrumental in McLaren's failure to capture James Allison from Lotus last spring.

The team were chasing Allison – and, indeed, they interviewed him. But in the end, despite the fact that it meant disrupting his family with a move to Italy and despite the fact that sources close to Allison say he would have preferred to move to McLaren, he went to Ferrari instead.



Did he not like what he saw in the structure at McLaren? Did he doubt he would be allowed the freedom to change things that he has clearly been given at Ferrari? So it would seem.

On this front, McLaren may have a problem. Adrian Newey is committed to Red Bull until 2017 – and about as likely to want to work for Dennis again as Sebastian Vettel is to sign for Caterham. And the two men most regarded as the next best technical leaders in F1 – Allison and Lowe – are newly committed elsewhere.

Button has said the new McLaren has more potential than the 2013 car. That may be the case, but on the evidence so far, the MP4-29 is not a dramatically better car relative to the opposition than its predecessor.

THE MP4-29
IS NOT A
DRAMATICALLY
BETTER CAR
THAN ITS
PREDECESSOR

Goss and his team may be able to develop it into a winner over the course of the season. If they don't, given the advantage the Mercedes power unit has over its rivals, some tough questions will be asked – and not just by Dennis.

This is McLaren's final season with Mercedes power before they begin a new partnership with Honda. The Japanese company is back in F1 to win – and the net worth of the new deal to McLaren, taking into account a research and development contribution and the fact Honda will be providing free engines, is \$100m a year.

For that money, Honda expect success. And a chassis clearly below the standard of those produced by the team's main rivals won't do. ➔

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A STAR IS BORN



Kevin Magnussen made quite an impression on his debut in Australia. A few minor off-track moments on Friday caused some disappointment, but when he outqualified Button in the wet, taking a sensational fourth on the grid, and then beating him in the race, it was clear the rookie had been exploring the limits of his car on the track by going over them.

Judging how far to push without going so far that any off-track moment might turn into a weekend-wrecking crash is quite a balancing act. Those with long memories remembered someone else who did that on his debut and went on to be rather good: Gilles Villeneuve.

It is far too early to go any further with that comparison, but the initial signs are that Magnussen is a future race winner at the very least. Not that anyone at McLaren is surprised. Magnussen has been quick from the very first

day he drove a McLaren, and the team have been hugely impressed by his commitment.


He lives in an unassuming flat in Woking, and visits the factory every day, to go to the gym or spend time with the engineers. Already, signing him has proved an inspired decision, and undoubtedly his pace in Melbourne will have registered with Button. The 2009 world champion proved during his three years alongside Hamilton that he can lift himself

to compete with the very fastest. And with his contract up at the end of the year, a determination to stay on for the start of the Honda era, no desire to leave F1, and another highly rated McLaren junior in the wings (Stoffel Vandoorne), Button understands the danger Magnussen's presence poses.

The battle between the drivers will on its own raise McLaren to a level above 2013, and if Button is right about the car's potential, perhaps Dennis could also be right about McLaren returning to the winners' circle this year.

The situation brings to mind an incident from 2004. At the Spanish Grand Prix, McLaren racers David Coulthard and Kimi Räikkönen finished tenth and 11th. Yet after the race, Dennis walked up and said to me: "Put money on us winning a grand prix this year."

At the time I thought it was bluster – an attempt to distract attention from one of the worst McLaren performances in some time. Yet three months later, with a heavily revised car, Räikkönen stood on top of the podium in Spa.

As Whitmarsh has discovered to his cost, Dennis tends to get his way in the end. 

Andrew Benson is the BBC's chief F1 writer

THE INITIAL
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A FUTURE RACE
WINNER AT THE
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In conversation with **Jenson Button**

An old hand on a new season, a new engine formula, a new team-mate – and the return of Ron Dennis

INTERVIEW JAMES ROBERTS PORTRAIT STEVEN TEE/LAT

What are the MP4-29's strengths and weaknesses?

We are struggling in the high-speed corners, but we're strong in the lower-speed turns. So it's the high-speed stuff where we need to improve, and I know everyone in the factory is working flat-out to bring more downforce to the car. Our aim over the winter was to have a car that was drivable and well balanced, and we've succeeded in that. We didn't expect to be so far behind Mercedes, but we're improving all the time. Leading the constructors' championship after the first race didn't really mean a lot, but for us as a team it was important to get that early result after the disappointment of last year.

Were you sorry you hadn't been able to stand on the podium, when you heard Daniel Ricciardo had been excluded in Australia?

It was probably a good thing I wasn't on the podium. I had a few drinks on Sunday night, but it was needed. I was able to celebrate with my friends and family and, emotionally, that was probably the best way for me. I have my family and fiancée keeping me strong, but they're going through the same pain as I am. My sister came to Australia but, for her, coming to a grand prix was about hanging with our dad, as she would see him more at the circuit than anywhere else.

Have you been surprised by the pace of your new rookie team-mate, Kevin Magnussen?

I wasn't surprised by his performance. He's quick and it's good he's proved that early on. He's got his head screwed on and hopefully he will have confidence in his own ability in setting up the car. When I came into Formula 1 aged 20, it was very different. I was very inexperienced, whereas he's been schooled very well by McLaren and has raced in some very good categories. The team have done a good job of making sure he understands the sport, working on his engineering skills and the simulator and his fitness. He is definitely ready for Formula 1 and it was good to see him get a good result in his first race. It's always a big gamble to take on a young guy, so it was important that he proved himself so early.

What do you make of Ron Dennis's return?

He has always been involved, but in recent years he was in the background whereas now he's back in the foreground. This is a new lease of life for him

FACTFILE

Date of birth 19 January 1980

Birthplace Frome, Somerset

Team McLaren

Role Racing driver

2010-present Races for McLaren in F1. In 2013 he set the record for the most starts by a British driver

2009 Champion with Brawn GP, taking six wins en route to the title

2003-2008 Races for Honda, managing to score a solitary win, in the rain, at the 2006 Hungarian GP

2001-2002 Two poor seasons with an ill-handing Benetton-Renault

2000 Becomes the youngest driver (at 20) to score a point in his second ever F1 race for Williams

1998-1999 Wins the Formula Ford title and finishes third in British F3

1989-1997 Wins numerous British, European and World Karting championships

and I think it keeps the whole team on our toes. He's a true racer and this team wouldn't exist if it wasn't for Ron. It's good to have him back. He's an emotional guy because he loves racing.

You are now the second oldest driver in the sport.

Will you carry on for many more years?


I've had a great career. It's definitely near its end, but I'm not ready to wind down yet. People have said, "Ah, 34, end of your contract coming up, what are you going to do at the end of this year?" It will be the same as any other year. I'm going to push harder than ever. It doesn't matter if you've got a contract; if a team don't think you're doing a good enough job they'll get rid of you, and if you're doing a great job they'll want you for another ten years. Nothing has changed, and age makes no difference. If you've still got the speed, as Ron always says, it doesn't matter.

How have you been coping with the substantial weight loss the drivers have had to aim for this year?

I have less body fat, but that is better for you in the higher temperatures. Between Australia and Malaysia I spent a week in high humidity working hard at the Thanyapura training camp in Phuket in Thailand, run by four-time triathlon world champion Chris McCormack. I was training with four professional athletes and it was bloody hard, but really good.

Each day I was cycling for two-to-three-and-a-half hours, then I'd swim for an hour and combine that with running. And of course you're fed a proper diet, and the menu gives you all the nutritional information about carbs, fat and protein. I've been okay with my weight, but I know some guys have been struggling. Some drivers have even been dehydrating themselves before qualifying.

The noise level of the new engines has been criticised – what's your view?

I remember moving to V8s from V10s, and it was awesome to hear those 20,000 revs before it was all limited. There are negatives to rule changes but there are positives as well. You can hear the crowd now above the noise of the engine. Previously, even though I wore earplugs, I'd get out of the car with a headache and be so knackered because of the noise. Now I get out of the car and for the first time I don't have a headache. So hopefully now I will still be able to hear when I reach old age! But when you win it doesn't matter what it sounds like: if these cars were silent you wouldn't care. 



"The company is unfit and it needs to get fit. There is pain to getting fit"

BACK TO THE FUTURE

Returning after a five-year hiatus, group CEO **Ron Dennis** is intent on restoring an underperforming McLaren to their former glory. And he won't be accepting *any* excuses

WORDS STUART CODLING
PORTRAITS JOEL ANDERSON

Ron Dennis, the most punctilious and detail-driven man in Formula 1, is 15 minutes late. The first sign that this most eminent of the sport's *éminences grises* is about to manifest himself comes when a black-suited security guard on one of the high gantries that overlook the McLaren Technology Centre's sweeping 'boulevard' dutifully dips his head and takes two steps back. You *feel* his presence before you see him, striding purposefully towards and then into a cylindrical glass-doored elevator that descends gently, suspended by a single, slim piston, to ground level. He is attired, as ever, in a neat but unostentatious black suit with a crease-free white shirt, tie precisely aligned in a Windsor knot. Only the upper of the jacket's two buttons is fastened – a concession not so much to fashion as to the practicalities of sitting down without rumpling the ensemble. This task he completes, assuming a relaxed but unslouching position before breaking the silence.

"Groveling apologies," he says. "I was unavoidably detained."

F1 has missed Ron Dennis – missed not only his characteristically long-winded oratory, which has come to be known as 'Ronspeak', and his fanatical attention to detail, but also his sheer →

McLAREN MERCE



Dennis was a visible and vocal presence at the season-opener in Melbourne this year... a race in which McLaren took their first podium since 2012



INSETS: LAT

"I STARTED IN F1 IN 1966; SINCE THEN, OVER 100 TEAMS HAVE COME AND GONE"

competitiveness. Here is a man who admits he feels "physical pain" when his team lose. Though he shares business acumen and entrepreneurial leanings with the new generation of operators in the paddock – many of them mere faceless suits to the general public – he is, at heart, a *racing* man.

And now he's back, not as team principal but as group CEO. Of the former McLaren team principal, Martin Whitmarsh, there is no sign. He has gone from CEO of various McLaren enterprises to 'TBC', following a shareholders' revolt initiated by Dennis. But – shhh! – Ron speaks again.

"It is pretty understandable that people would conclude that the primary objective is for our Formula 1 team to be returned to competitiveness. I can understand that. But it's a much bigger challenge than the changes we're making to the F1 team. It's really about the future of our group, differentiating ourselves from other companies who have F1 teams in them.

"If you look at F1, and make comparisons between F1 and a business, you're only allowed to have two customers – the drivers. And you're limited by a variety of things. The economics of F1, in the future, may involve cost-capping. So

if you want to grow your business, you're quite constrained if F1 is the centre of your universe. I started in F1 in 1966; since then, over 100 teams have come and gone."

This statistic is no less true for having been meticulously researched by McLaren's communications team and repeated at regular intervals by both Dennis and Whitmarsh over the past five years. But while sustainability was one of the mantras of the now-defunct F1 teams' body FOTA which, under Whitmarsh's chairmanship, introduced the Resource Restriction Agreement as a means of cost control, Dennis is dismissive of the concept of cost caps.

"If you can't afford to race in F1, there are plenty of other categories you can race in," he sniffs.

"There are two ways to run a team. One way is to work out how much money you've got coming in, and then spend 10 per cent less than that, and then your performance based on that spend is your performance. Those people compete. The other model is that you have a great deal of money, and you spend it all and you try to win. You try to be competitive. Now, to *compete* and to be *competitive* are two different things in F1.

“We most definitely want to be competitive and we definitely want to make money. In most years we do make money, but that isn’t the objective: it’s just the by-product of being successful in F1.

“It’s hard to be the best at anything in this world. It takes focus, dedication, commitment, sacrifice... not from one person, but from many people. What happens in life is that there’s evolution and revolution. When things evolve they don’t always do so in a positive way. In the natural world there are plenty of examples of evolution not working too well.

“When companies go down a particular path, small things go wrong and the focus is lost. To relate that to the team, there were lots of other peripheral activities. We did many things that were... distractions. And many people had responsibilities other than F1. That’s gone. Now there is nobody in McLaren F1 who has any responsibility other than F1.

He refers, of course, to the absent Whitmarsh, who held a bewildering portfolio of job titles: CEO of the McLaren Group, comprising McLaren Racing, McLaren Marketing, Absolute Taste, McLaren Applied Technologies and McLaren Electronics (now merged into one company); deputy chairman of McLaren Automotive (a position he held until Mike Flewitt was recruited as CEO in July 2013); team principal of McLaren Racing; and chairman of FOTA. There are at least four full-time jobs in that list. One can only imagine the veritable conga line of supplicants who beat a path to his office door either physically or electronically, each craving an individual slice of vital management input.

So, what are these ‘distractions’ of which Dennis speaks? There were technical partnerships with Force India and Marussia, various levels of FOTA ‘mission creep’ that sucked in HR, legal and marketing resources, and an unprofitable →



"Martin had to face the facts – it wasn't working. So it's not surprising there was... a breach"

dalliance with sportscars in which various technical personnel were seconded to develop a GT3 version of the McLaren 12C. Besides attending races as team principal, Whitmarsh often visited rounds of the series in which the 12C GT3 participated – and such activities must have eaten into his bandwidth.

But it was Dennis who put him in that position – and, indeed, Dennis admits, "I must bear some responsibility for the situation." Dennis abruptly stepped away from frontline F1 responsibilities at the beginning of the 2009 season, handing over the reins to Whitmarsh, then his lieutenant. Dennis recalls now that he realised, upon walking into the MTC shortly after the dramatic denouement of the 2008 season, that he "didn't want to do it any more". Just over a year earlier, McLaren had been handed a staggering \$100million fine over the 'Spygate' affair; the magnitude of the fine, it's said, was heavily influenced by the persistent rancour between Dennis and FIA president Max Mosley.

"One of the frustrations I'll always have is the year that evaporated," says Dennis of 2007, the season in which McLaren's points were annulled in the aftermath of 'Spygate'. "People forget that we went – I went – through a very challenging period in 2007, and, despite all of that, won the 2008 world championship.

"I felt a deep sense of injustice. Why? I didn't have any choice other than to stand at the top and say, 'I take responsibility.' No material ever entered this building – as was proven beyond any doubt and admitted to in statements by the individual and his wife – other than what was in this individual's head. How on earth a company can tease out of someone's head those thoughts that are his and those that have been created through exposure to others' material, I don't know. But, nevertheless, this whole thing gained a momentum, and there was nowhere to go other than to accept the consequences. How do I feel about it now? Well, we all bear scars. It's just a consequence of leadership. I'm quite philosophical about it. Put it this way – I'm here."

This latter sentence is indubitably a reference to Mosley, now no longer operating within F1. Neither will Dennis speak the name of the person he refers to as "that individual" – Mike Coughlan, the engineer whose unauthorised possession of Ferrari intellectual property set 'Spygate' in motion.

"I don't want to go over the past," says Dennis. "It serves no function. In a competitive world you need to have a certain style. I'm a pretty challenging person, but as tough as I am on other people, I'm far tougher on myself. There's a word that I don't think should be in anybody's vocabulary, and that word is 'hate'. The reality is, hate eats you up. It doesn't eat up anybody else. Let it go – get on with life."

Dennis shifted his efforts to building up McLaren Automotive. In January 2010, he signed a new seven-year contract with McLaren – three years as executive chairman, to be followed by four in a non-executive capacity – because "I didn't want my future to be tied to McLaren". That said, when the time came to assume the non-executive role in January 2013, he could not bring himself, even at the age of 65, to start the path towards a comfortable retirement.

"I took two days to realise that it [the non-executive role] wasn't for me," he says. "I had great trepidation going into it. I decided in the middle of the 2013 season it was either this way [continue as a non-executive] or that way [be more hands-on].

"I don't have to work. But I don't feel my age. I feel good. I've never broken a bone in my body. There are no challenging illnesses in my family's bloodline. So I thought: 'Why don't you do what you enjoy – which is working?' I enjoy what I do."

Concurrently with Dennis re-examining his priorities in life, McLaren were having their worst F1 season in decades. For a brand based upon winning, to fail even to finish on the podium – as Dennis once put it, "first of the losers" – and to be struggling to qualify in the top ten was simply not good enough. Dennis began to agitate behind the scenes, lending weight to senior engineers lobbying to replace Sergio Pérez with Kevin Magnussen, and quietly canvassing the shareholders. His mission was not to wrest back daily control of the F1 team, but to refocus it on modern racing principles. To do that, it would have to go back to basics.

"For some time I had been discussing this with the shareholders, with everybody, saying: 'This is not working – can't you see it's not working?' And so I think, inevitably, Martin had to face the facts – it wasn't working. So it's not surprising that there was a... breach.

"Everybody has seen the number of races creep up from 16 to 19 and even, theoretically, 20. The ratio of European races →





John Watson on Ron Dennis



INSET: LAT ARCHIVE

'Wattie' drove for McLaren in 1981 and remembers Ron Dennis's 'first take-over' of the organisation

"When Ron Dennis first came to F1, he had ambition like you wouldn't believe. Something he used to say was: "There's no such thing as bad luck. Bad luck is bad engineering, and bad design. It's something we can control."

"I remember Ron had gone to Watkins Glen in 1979 as a guest of Marlboro, and they were having discussions about the future. The following year, huge hopes were placed on Alain Prost, but the technology McLaren had at the time wasn't good enough to beat Williams – or even Ligier. So Marlboro said they were going to Ferrari instead. That's when it was decided that Ron and his Project Four organisation would take over.

"The McLaren Technology Centre in Woking is Ron's Utopian vision of the standards he sets himself. It's easy to laugh and poke fun, but when you think about a man as driven as Ron is, you can imagine how much it must have upset him to have seen Benetton, a lifestyle brand, and now Red Bull, a soft drinks company, beating him on the racetrack. Even though he doesn't like them, I imagine he can respect being beaten by Ferrari. But not a clothing company or a fizzy drinks firm – I think that explains a lot about his return."





Dennis will attend more than half the GPs this year, but doesn't intend to run the race team: "I will guide them and give them the benefit of my experience"

INSETS: LAT

to Continental ones has shifted in favour of the latter. Even if some of these races aren't physically back-to-back, weekend following weekend, very often the team will be away for up to two months at a time. For those people who are there and who held senior positions within the company – specifically, the *former* role of team principal – it was like being out of the company for months. I defy anybody to run a company and have four months of the year out of it."

From now on there will be no team principal. A 'racing director', the recently hired Eric Boullier, will have executive responsibility for the team's performance on track at race weekends. He will report to a CEO (yet to be appointed, but McLaren MD Jonathan Neale is currently standing in) who oversees factory operations. "Making the car go faster is a process that happens in this building [the MTC]," says Dennis. "It doesn't happen at a grand prix circuit. That just optimises what you've got." In an era in which everyone is an employee – look down the pitlane and even the people calling the shots on the pitwall are, at best, mere shareholders – the role of team principal belongs to a bygone age when the person who held that title had their name above the factory gate.

"Eric," says Dennis, "who has joined us from another team where he was a successful team principal, didn't have any hesitation in accepting the fact that the role is now *racing director*. We have a sporting director and a technical director as well as a racing director, but the primary responsibility goes back to the chief executive. Our objective is to focus completely on getting back to competitiveness. And we will do it faster than people think. We know where we are, where our weaknesses are. It will be challenging. These are just the first of many changes that will take place. The company is unfit and it needs to get fit. There is pain to getting fit."

It was Dennis who set the modern template for F1 sponsor relations back in the 1980s, when he launched McLaren Marketing (still notionally a separate company within the McLaren Group) as a full-service agency. Under the auspices of Ekrem Sami, this company has nurtured some of the most lucrative and long-lasting partnerships in the sport, from the likes of Hugo Boss and TAG Heuer to ExxonMobil. Under

Whitmarsh there were changes, the most notable from an outward-facing point of view being a more enthusiastic embrace of McLaren's history; brand cachet, as Ferrari prove day in day out, sells high-performance road cars more effectively than high tech. Now, though, there will be greater separation between the marketing agency and the race team so that the latter may have fewer "distractions".

"Effectively, now, the mindset of the F1 team is that they provide to the marketing company a car devoid of branding," says Dennis. "They have no responsibility for income. And they have the biggest budget they've ever had in the history of the company."

Until the new McLaren Racing CEO is appointed, how much direct input will Dennis have? He was a high-profile presence at the Australian Grand Prix, although not in team uniform, and he intends to be present at "more than ten but fewer than 16" of the events this year.

"What I have no intention of doing is running the grand prix team," he says. "I will guide them and give them the benefit of my experience and knowledge. And, if necessary, I will use my executive authority to change things. But I have a lot of respect for the people in the team and I think they were distracted – not focused enough."

For their part, the team are pleased to have him back. They knew that they had permitted themselves to let their standards slip while he was away. A photographer who works at that end of the pitlane regaled *F1 Racing* with an eyewitness account of an incident that is, on the face of it, inconsequential, but which cuts through to the essence of McLaren's identity: as Dennis was prowling through the garage in Melbourne this year, he was horrified to find the 'leaf blowers' that are used to cool the brakes not lined up neatly, by the car. He deployed his executive authority vocally and forcefully. The offending items were aligned perfectly from then on. And, while the berated crew members might have felt transient pique at being pulled up on such a minor issue, they knew, deep down, that it *mattered*. Dennis's passion for perfection is infectious.

He knows that the optimised whole is greater than the sum of its finely detailed parts.

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GO FIGURE

We look at the Scuderia's statistics as they contest their 65th F1 championship

873 races started

i x 93

drivers have started a GP in a Ferrari chassis



1.862 miles
the length of Ferrari's own test track, **Fiorano**

657

the number of Ferrari's **wins, poles** and **fastest laps** combined



The **percentage of F1 seasons** in which Ferrari have won races (**54** out of **64**)

WELCOME TO
MARANELLO

MONZA 107MI →

The distance between Ferrari's home in Maranello and Monza, the home of the Italian GP

12.76

In 64 years in F1, Ferrari have raced enough miles (**317,686**) to lap the earth **12.76** times

26



races have been started by **five Italian Ferrari drivers** (Gianni Morbidelli, Ivan Capelli, Nicola Larini, Luca Badoer and Giancarlo Fisichella) **since 1988, when Michele Alboreto finished the last of his 80 races** – a record for an Italian racer driving for the Scuderia

70

RACES

The number of consecutive races in which Ferrari have scored points. The last time they failed to score was at the 2010 British GP

18 *to* 1

Only one Ferrari win has been achieved from lower than 13th on the grid, when Rubens Barrichello achieved his first F1 victory from 18th in Germany in 2000

10TH

The lowest Ferrari have ever finished in the constructors' championship, in 1980

38

YEARS

The length of time for which **Enzo Ferrari** led Ferrari in F1 until his death in 1988

263

Laps spent in sixth by Ferrari drivers in **2013** – more than in any other position

31 GPs

were **started by the Ferrari 312T2**, that's more than any other Ferrari chassis

€25

The **price of a turn** in the **Ferrari F1 simulator** at the Ferrari museum in Maranello

DOWN UNDER WONDER

What a ride! *F1 Racing* shadowed local hero **Daniel Ricciardo** for every second of his stunning Oz GP, from a near-pole to a rousing second, then *that* fuel saga. And he smiled (almost) all the way...



8-9 MARCH, TOP GEAR FESTIVAL

Daniel's pre-Australian Grand Prix publicity duties kicked off a week before the race at the Top Gear Festival in Sydney. Besides meeting V8 Supercar drivers Lee Holdsworth and Will Davison (right), he thrilled the crowd with hot laps of Sydney Motorsport Park in an RB7 (above), beating Mark Webber's lap record.





12 MARCH, CAR RACES PLANE

Here's one to solve an old debate. The RB7 beat the F/A-18 off the mark (above), but once Flight Lieutenant Michael Keightley (right) got the jets spooled up he nearly blew Daniel off the runway as he rocketed past. Check out the video on YouTube.



13 MARCH, MEDIA WORK

It's a dirty job, but somebody's got to do it – with a smile, of course. Daniel joined Red Bull team-mate Sebastian Vettel in the drivers' press conference on Thursday: "I'm probably more excited than anyone else right now to get in the car."



14 MARCH, MEETING THE PUBLIC

Elevation to a front-running team has made Daniel more popular than ever at home, which meant a burgeoning crowd of autograph hunters outside the paddock gates – and this was on Friday morning, before he had even turned a wheel in practice. →

PHOTOS: ANDREW FERRARO/LAT; ANDY HONE/LAT; BRENDON THORNE/GETTY IMAGES; PAUL KANE/GETTY IMAGES; ANDY HONE/GETTY IMAGES; ANDY GREEN/RED BULL



14 MARCH, FREE PRACTICE

Daniel pulled out of the garage to rapturous cheers from the grandstands – you can hear such things now in the era of hybrid power units – and completed two relatively trouble-free practice sessions, ending the day within a second of the pace-setting Mercedes. After disastrous tests in Jerez and Bahrain, the RB10's pace and reliability came as a relief.



15 MARCH, MEETING TONY HAWK

Skateboarding legend Tony Hawk – not to be confused with comedian and *Just A Minute* stalwart Tony Hawks – led Albert Park's off-track entertainment agenda with his *Tony Hawk And Friends Vert Jam* half-pipe sessions. And of course, Red Bull being Red Bull, no extreme sports exponent can go to a grand prix without a visit to their garage...

15 MARCH, QUALIFYING

A rainstorm blew in on Saturday afternoon, drenching the circuit just in time for qualifying. Daniel sailed through to Q3 while team-mate Vettel, hampered by power-unit problems, was eliminated in Q2. Daniel's fastest lap in Q3 was good enough for pole position... until Lewis Hamilton beat it.



MELBOURNE



15 MARCH, QUALIFYING PODIUM

Daniel made his first ever appearance in the top-three photo opportunity post-qualifying – flashing that signature grin to a global audience delighted to see a fresh face up there. His performance at his home event – and his team-mate's absence from the top three – made instant news.



16 MARCH, PRE-RACE BUILD-UP

With Saturday's rain a distant memory, everything was looking good for the race. Daniel lit up the paddock again – and the queue of autograph hunters was even longer than on Friday. Add in the demands of the ever-present Formula 1 media and it's probably a good thing the race didn't start until 5pm.



16 MARCH, DRIVERS' PHOTOGRAPH

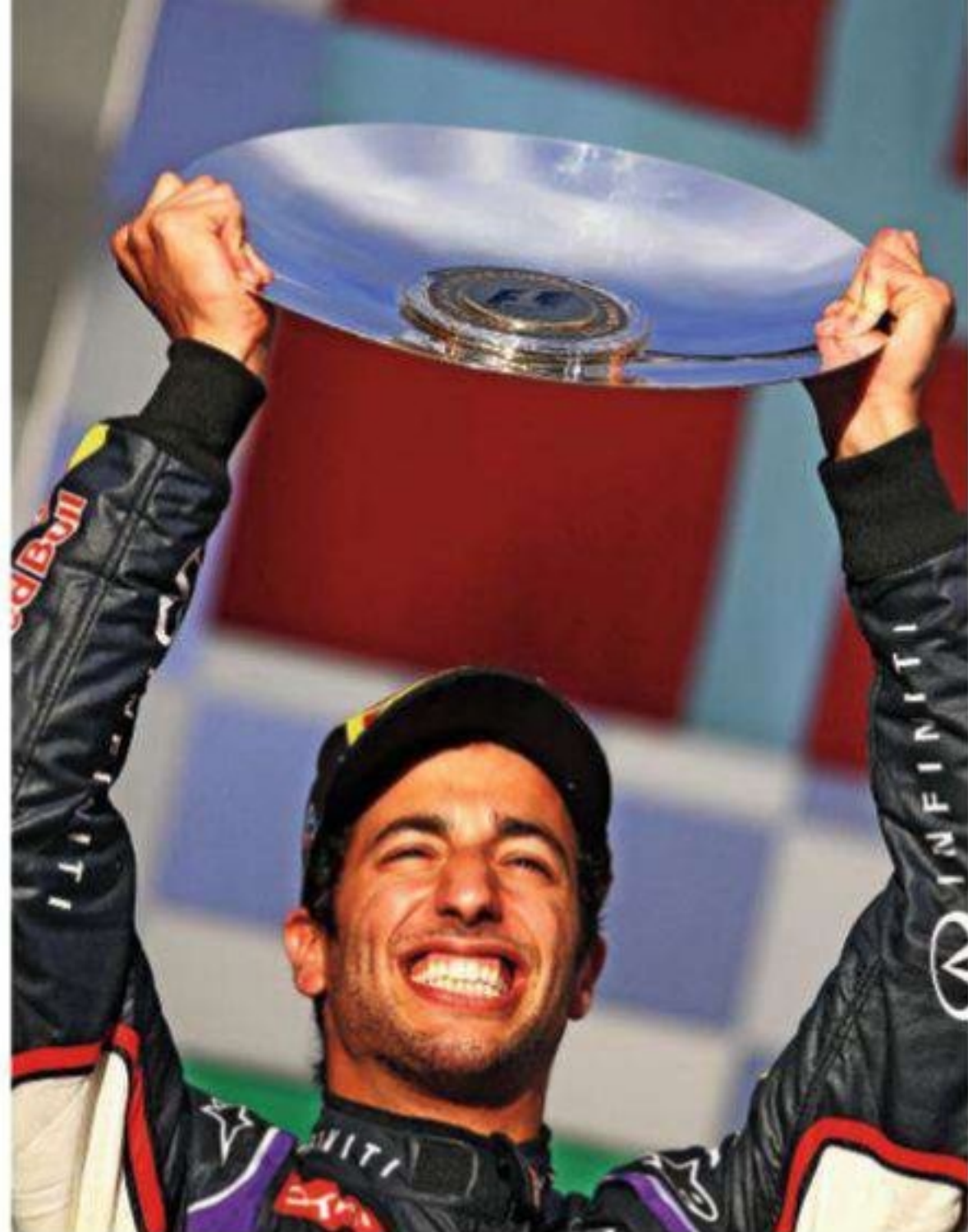
Eyes front, Sergio! It's the pre-race ritual that happens only once a year: the official driver line-up. As the Class of 2014 amply demonstrated, not everyone has mastered the art of smiling on cue – or looking at the camera while the picture's being taken. How many will still be on the grid come Abu Dhabi?



16 MARCH, READY FOR ACTION

Once the photographic formalities were over with, it was time to get in the car. "I'm excited, but at the same time I'm staying calm and collected," Daniel said. "I can't get ahead of myself. I still have a bit to prove to establish myself at the front. I'm excited about what lies ahead and giving it a bit of a crack." →

PHOTOS: ANDREW FERRARO/LAT; ALASTAIR STALEY/LAT; MARK THOMPSON/GETTY IMAGES; ROBERT CIANFLORE/GETTY IMAGES; CLIVE MASON/GETTY IMAGES; MARK THOMPSON/GETTY IMAGES



16 MARCH, ON THE PODIUM

The sweet smell of success: Daniel hadn't claimed a podium finish since his Formula Renault 3.5 days came to an end in 2011. He'd belied his reputation as a driver whose race performances never quite lived up to his qualifying form – slamming the door on Lewis Hamilton away from the start and driving a beautifully controlled grand prix, upping his pace near the end to fend off Kevin Magnussen.



PHOTOS: CHARLES COATES/LAT; CLIVE MASON/GETTY IMAGES; MARK THOMPSON/GETTY IMAGES; PAUL KANE/GETTY IMAGES



16 MARCH, SHARING THE JOY

Red Bull's mechanics are among the most competitive in the pitlane – note how seriously they take the evening 'track runs' during GP week-ends. So, while second place wasn't quite a win, for a crew that hadn't been optimistic about finishing the race, it was *almost* as good as a win.



16 MARCH, DISQUALIFICATION

The Australian Grand Prix finished shortly before 7pm. Within an hour it was revealed that the stewards were investigating Red Bull for "consistently" breaking the fuel-flow limit of 100kg/hour; and, finally, just before midnight, Daniel learned that he was to be disqualified.



17 MARCH, STILL SMILING

You'd forgive the lad for not being on top form after bad news, a late finish and an early flight home to Perth – it may be in the same country but it's a long way away. Yet that ever-present smile was still in place as Daniel found both media and fans waiting for him at Perth airport. **F1**

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In conversation with

Nick Chester

The Lotus technical director on a troubled off-season and his hopes for the year ahead

INTERVIEW STUART CODLING **PORTRAIT** ANDREW FERRARO/LAT

Lotus have had an eventful off-season, with the departure of several key members of staff. In the light of that, how much of a challenge has it been to develop a completely new car?

It's been a *bit* challenging – we've lost a few good people, but we've had other good people join us. We lost Dirk de Beer [head of aerodynamics] to Ferrari, but we've had Nicolas Hennel come from Ferrari to replace him. There's a strong core of people here. We've got a great chief designer in Martin Tolliday, and a lot of people who have been with us for quite a few years, which gives us enough continuity to do a good job.

Throughout all the name changes, your team have retained a reputation for being real racing people...

We've worked together for a long time as a team, and we love to race. When things happen, we're good at reacting to them: we keep pushing on.

How much of an effect has the team's financial uncertainty had on the development of the 2014 car?

In terms of design, it didn't have much impact because we started two-and-a-half years ago, so the design was already pretty mature by the end of last year. It gave us a few hiccups on the production side, which made the winter build harder, but we got through that, did our filming days [where the car ran on track for the first time; teams are permitted two such days a year, with distance capped at 100km] and got to the two Bahrain tests. And then we hit a lot of the same problems the other Renault teams have had, but we've got through that. We think we can do a good job, particularly as Renault improve further.

Given the amount of time that the teams and engine manufacturers have had to prepare for the new technical regulations, were you surprised by the magnitude of the teething troubles?

It's funny... there are things you worry about on the car as you design it. You plan for problems that you think you're going to have, and find back-up solutions. There are various areas such as cooling where we expected to have a lot of problems, which turned out really well. And then there were other areas where although we didn't anticipate difficulties, they became difficult. Not so much the known unknowns as the unknown unknowns.

FACTFILE

Date of birth 22 March 1969

Place of birth Ripon, North Yorkshire

Team Lotus F1

Role Technical director

2013 Technical director, Lotus

2012 Engineering director, Lotus

2010 Head of performance systems, Renault

2005 Head of vehicle performance group, Renault

2000 Race engineer, Benetton (Renault as of 2002)

1995 Joins Arrows Grand Prix as race engineer

1991 Graduates from Cambridge University with a BA in Engineering

As a team, have you missed the close relationship you used to enjoy with Renault, even though chassis and engine were never designed and built under one roof?

Being a works team back in the mid-2000s, we had a great relationship with Renault and enjoyed a lot of success. Many of the guys who were at Renault Sport in that era are still there, and just as many of our designers from that time are still with us. So it has let us carry on in the same vein. Now we don't have the same sort of weight we used to have as a works team, but all the technical liaison has been similar, so we did a lot of work early on that helped the packaging of the engine. While Renault were scheming the engine, that gave us info for the car. We've sort of worked in parallel, but our strong ties have helped a lot.

Why did you miss the first test, and at what point did you realise you wouldn't make it?


We struggled on the production side to get all the parts made in time. It's a complicated car and there were a lot of parts to be made. We pushed hard to get ourselves ready, but a few weeks beforehand it became apparent that it just wasn't do-able.

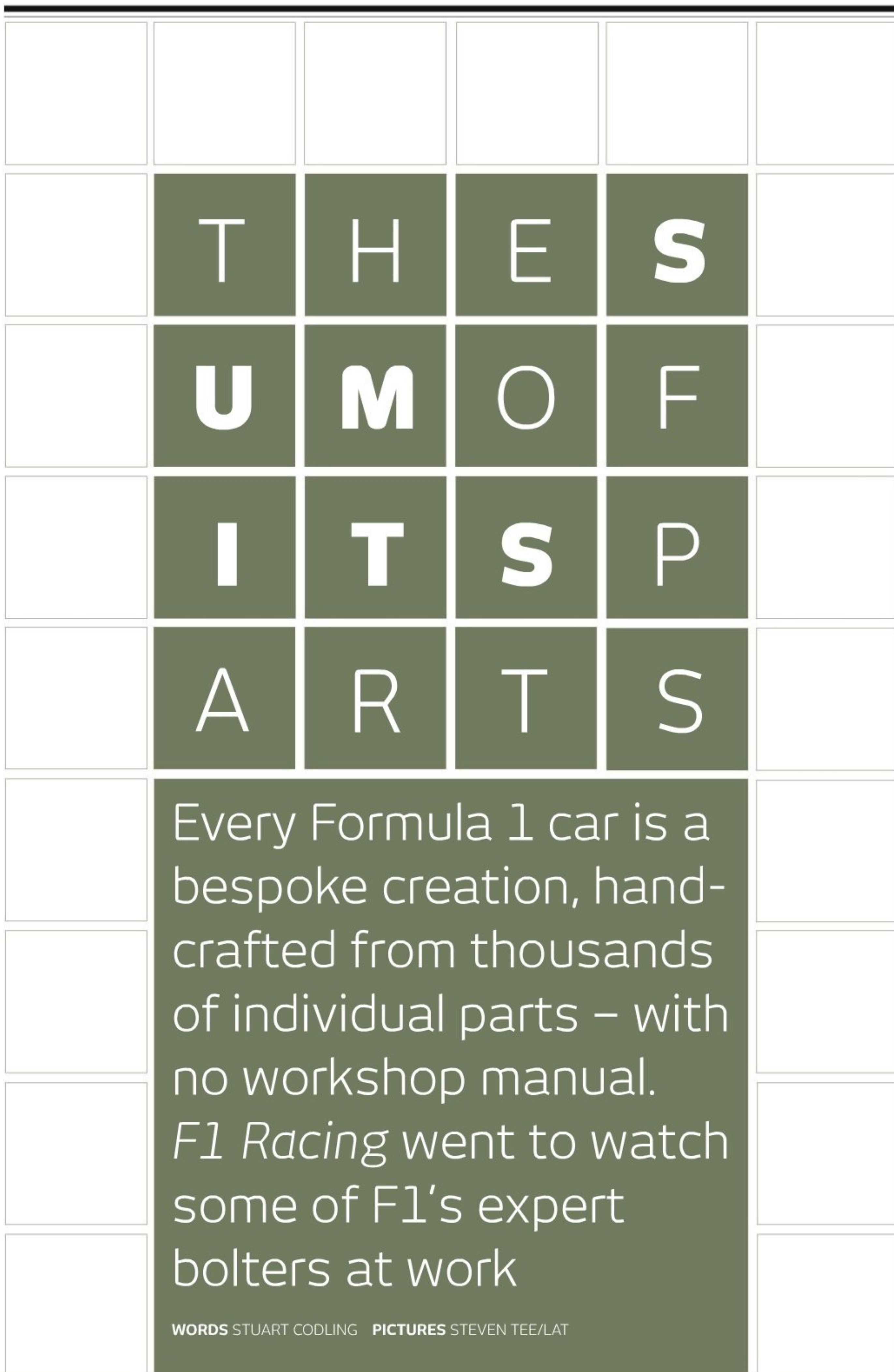
You've gone for a very unusual nose treatment – although some say that area of the car isn't particularly critical. How brave is it on your part?

Structurally it's very brave. It's not easy to make that structure work *and* pass a crash

test. Aerodynamically, it's not so brave because we've had very good performance from it in the windtunnel. For us, it's an obvious choice and it stands out nicely. Finding enough time to make it work structurally was the hard bit, so we started very early.

Have you now pinned your colours to the mast? How difficult would it be to change the design, in terms of its impact on the overall car concept?

It would be very difficult, because going to a new nose concept would mean re-homologating the nose, more crash tests and so on. It's not straightforward and it would take a few months. One nice thing with our current nose is that the development of the front wing hasn't dried up. We're still seeing good gains. At the moment I see no reason for us to move away from it. But you have to keep an open mind, look at what everyone else is doing and see how your car performs on track. 



A

pppearances can be deceptive. As *F1 Racing* is guided into the Caterham F1 team's immaculately clean race bays, deep within the Leafield Technical Centre, the

atmosphere is like that of a public library. A pair of CT05 chassis sit on stands, part-built – no floor, no wings, no engine, no seat, no pedals, no steering wheel, no radiators – and attended by just a handful of technicians. The activity is precise, measured, purposeful; there is little chat, but, equally, little in the way of urgency.

And yet, in just over 48 hours, both cars must be ready for transport. The Australian Grand Prix is barely a week away and the CT05s won't be returning to this building until after the Chinese Grand Prix near the end of April.

Each car is, in effect, a hand-built prototype; there's no assembly manual, so Caterham – like all F1 teams – rely on the expertise of their mechanics to translate a set of blueprints and a pile of components into a car that can, at the very least, be driven around a circuit without anything breaking or falling off. Hence in the early part of the season, especially one in which the technical ground rules have changed so substantially, chassis builds progress at a stately pace.

"By this stage, we've built the cars for three tests this year," says chief mechanic Stuart Cramp, "and through those tests we've had a learning curve in terms of how we put them

together. So in the first instance we had the assembly drawings, which are compiled as part of the design process. We followed those, and then as we test and develop the car we follow that learning curve – we hone the process to a stage where it becomes... repeatable, for reliability reasons, and quicker.

"In terms of man hours, it's tricky to quantify. Our first build of the car, at the factory, would be from what we call the chassis bonded assembly, which is when it's finished in the composite shop, to a built car – and you're looking at about three weeks, with ten people working on it at any one time. But once you've built the first one, you've learned a lot for the second and third ones. Then when you rebuild them later in the season, the time can be cut down to three days to build a car with a crew of about half a dozen people."

Before leaving the factory for a test or grand prix, each car has to be brought up to a fundamentally functioning point with front suspension and cooling ancillaries in place, ready to accept an engine with gearbox and rear suspension – plus the aerodynamic parts – on arrival. Most teams take three, and there are just two here: chassis number one, which was →

Initial build takes ten staff three weeks. By mid-season, six staff can rebuild a car within three days



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used at the first Jerez test and will be raced by Marcus Ericsson, and chassis three, which will be built as a spare. Chassis two, Kamui Kobayashi's car, tested at Bahrain and went straight on to Melbourne from there. Thus, pre-Australia, the spare is built to 'box' spec, with just the front suspension and fuel system installed, so it's ready to roll in case of accidents – but the plan is to leave it untouched until the in-season Bahrain test.



Getting a reliable car to the first test is number one priority. Developing the package thereafter can be done on the go

"We don't want to go into a race weekend with a brand new chassis," says Cramp. "We like to shake them down first to make sure there are no issues."

Indeed, there were 'issues' aplenty up and down the pitlane during the first track sessions of 2014 as teams got to grips with the practical implications of running cars to the new F1 rules. Some had it worse than others; Red Bull's RB10 sprouted all manner of holes, bulges and tubular protuberances during the pre-season tests. And, while the CT05 is manifestly more slab-sided and conservative around the hips than Adrian



Newey's shrink-wrapped special, the arrival of a mechanic with safety glasses and a device that looks and sounds like a dentist's drill amply demonstrates how on-the-edge all F1 designs are. To the accompaniment of a harsh-edged, grinding racket that makes your fillings resonate in sympathy, he begins to shave fragments of carbon fibre away from an angled flange upon which the radiators will be mounted.



During development, Cramp confirms, there is a certain amount of finessing to be done on the fly: "The hope is that you go with a product that's runnable and then you tune it from there. It is often the case that we have to modify them



and we have people on the team who are skilled in machining, fabrication and working with composites. If there are any parts that need to be modified to fix a reliability issue, or if the driver crashes and various parts need to be repaired or replaced, we can do that trackside.



"At this point in the year we often have to tweak things, and we always have the support of the factory here, and the design team, to guide us through that process. But we have the mechanical acumen to do that at the circuit."

In categories such as sportscars and some of the single-seater formulae, it's not unknown for new cars to require major modifications trackside once they're running – even to the extent of compositors having to add extra layers of carbon-fibre to a tub as a temporary fix for a lack of structural stiffness. F1 has enjoyed so many years of stability in terms of the fundamentals, such as the crash regulations, that it's almost unheard of for items such as the tub to have designed-in flaws.

The bulk of the work at race weekends therefore focuses on assembly and operation, the tuning and modification of aerodynamic upgrades, and a regular running battle with cooling. The latter is also intertwined with aerodynamics because while smaller cooling apertures theoretically yield better aero, a delicate balance must be observed between having too much or too little cooling.

A modern F1 car has more 'hard points' that can't be adjusted on the fly:

suspension pick-up points, for example. For 2014, the location of the engine mountings is defined by the technical regulations. And more accurate simulation technology means teams arrive at the circuit

with close to an optimum setup, so there are fewer changes to make to suspension configuration. Nowadays, it's all hard graft on the basics. →



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staff numbers under the Resource Restriction Agreement, this doesn't mean there is any less work – just fewer hours in which to do it. At the start of the year, the FIA extended the number of curfew exemptions, or 'jokers', from two to six, due to the added burden of getting to grips with the new generation of V6 cars.

"In testing we had two crews working in shifts – 12 hours on, 12 hours off – with extra personnel brought along to the track," says Cramp. "And it was still difficult to service the car within a realistic timeframe. Going into the season, there's double the workload because we have two cars, and we're halving the available man-hours per car. So



Curfews at races mean staff have the same amount of work – but less time to get it done


"The power units are more sophisticated now," says Cramp. "They have a lot more ancillaries, cabling and pipework. Most of that is to do with the high-voltage systems – the two MGUs [Motor Generator Units] and all their cabling, then obviously you've got the intercooler for the turbo and all the turbo exhaust pipes. That's where the complexities come in, through those components, and on the charged-air side you have systems operating at high pressure.

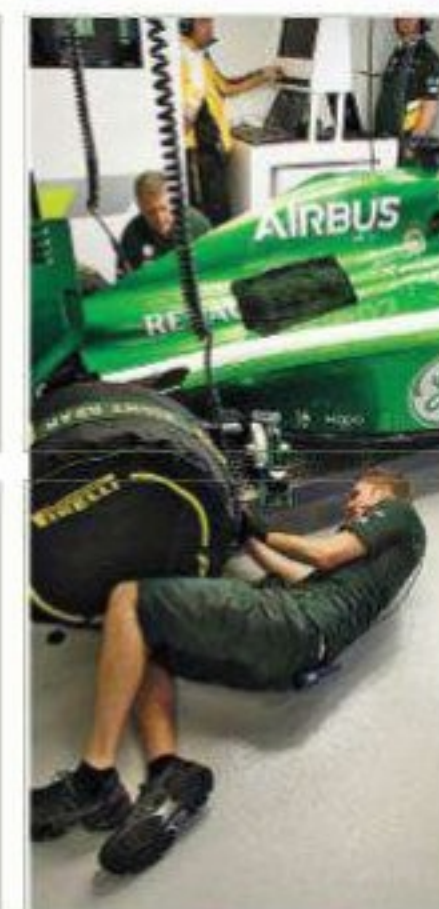
"For many years now, F1 has been pretty standardised in terms of the regulations, so the teams have got used to building cars that are fairly easy to build and rebuild. This year a lot of the teams are in the same situation, where early on in the design stage not enough time was given to the concept of building and servicing the cars, and a reflection of that is the late nights you'll see in the garages – and, possibly, a

For the moment, though, there is no sign of panic. By the end of the day, both CT05s have been nudged towards the packing stage. There is still nothing to see in the cockpit – no seat, no dashboard, no pedals, no brake cylinders, just a bare void with the factory floor showing through below. A pair of radiators are offered up to the sidepods to check fit and finish before being returned to the store room. Wiring looms are examined, measured and gently edged into place. Technical director Mark Smith appears, briefly peruses both cars, then departs.

"Believe me, there are other things going on," says Cramp. "What you see here is the end process, the final assembly."

Like a swan appearing to glide effortlessly over the water while the legs pump furiously beneath?

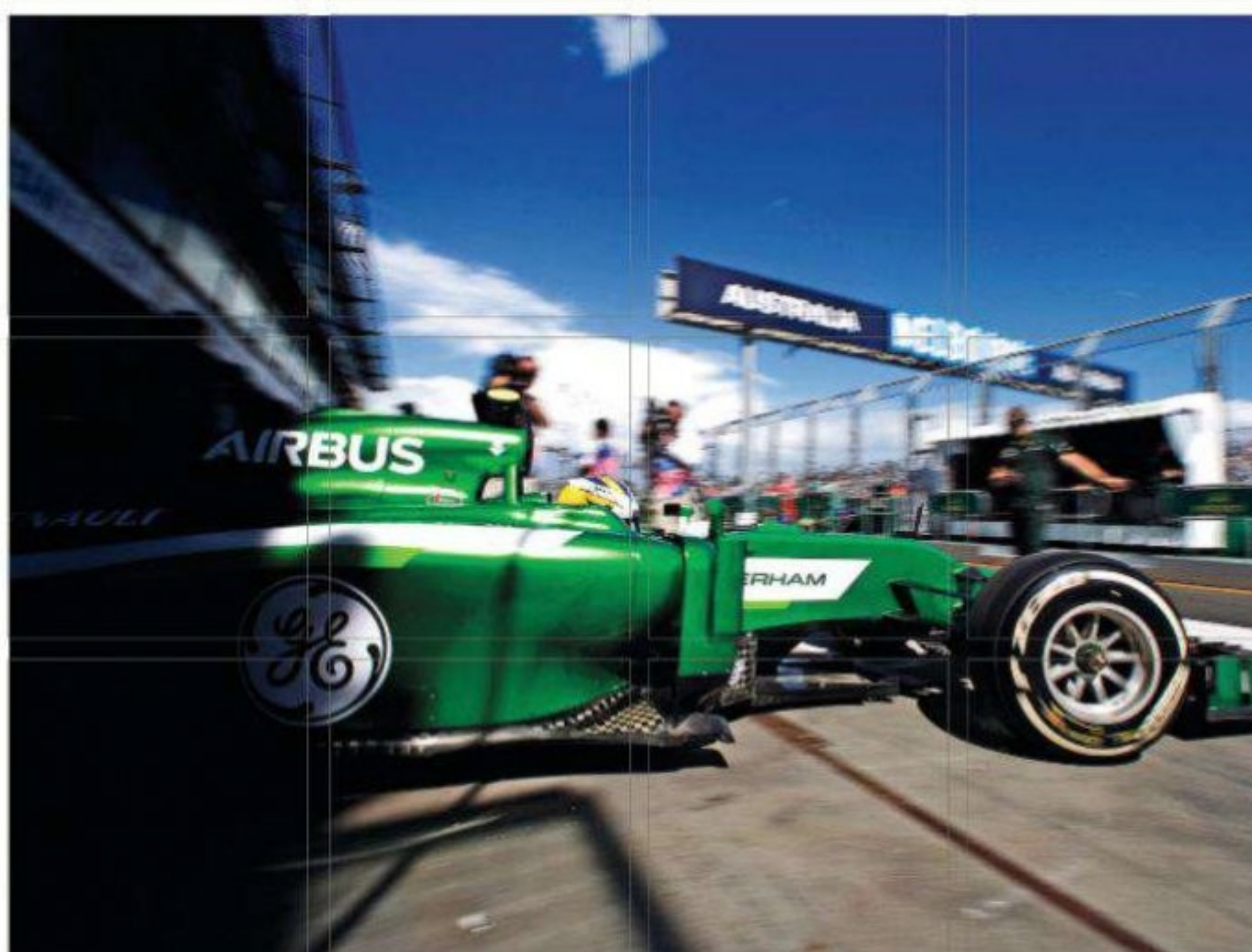
"Yes, something like that..." 



lack of running on the track. Servicing probably wasn't thought through enough at the conceptual stage."

Many elements of the new power units are hard to access because they were designed to be as compact as possible, for performance-related reasons. Should anything go wrong with the energy store, for instance, the engine and much of its associated plumbing have to be removed because the energy store is mounted flat on the floor just behind the driver's seat.

F1 operates a curfew – extended from six hours on Thursday nights to eight ahead of the 2013 season – in theory to prevent mechanics from working too many hours. But, in tandem with the tight limits on



INSETS: CHARLES COATES/LAT



THE REAL DEAL

Dark clouds are swirling around Bernie Ecclestone; have been for some time. Claim and counterclaim. A bribery allegation. A court case in Germany pending. These are uncertain times for the 83-year-old, and the lack of an anointed heir to his FOM empire, or any publicly stated succession plan, have had paddock tongues wagging for many months on the prickly topic of who – or what – might replace him.

Christian Horner, a known Ecclestone confidante, has had his hat tossed into the ring; Justin King, the outgoing and monstrously successful Sainsbury's CEO has also of late been tipped as 'the next one'. Both, for the record, have been at pains to dampen any flicker of speculation. Perhaps Red Bull could buy the sport's commercial rights from holders CVC Capital Partners? Maybe one of Ecclestone's able though media-shy lieutenants, such as Sacha Woodward-Hill, might rise to a position of greater prominence? Or perhaps a more conventional executive board structure will be formed from what's left of a post-Bernie world?

Then there's Zak Brown, the man most likely... aka F1's go-to-guy-for-big-time-sponsorship-deals... aka the-man-who-brings-the-money.

A reputation as maybe *the* key F1 financial broker is no handicap for any prospective Ecclestone successor and, savvy operator that he is, Brown makes no attempt to hide the success that he and the motorsport marketing company he founded, JMI, have enjoyed in recent years: "We're the world's largest motorsport agency, whether measured by staff, the money we have, the deals we have... however you slice it, we come out as market leader," he breezes, in a fast, engaging, West Coast lilt. "We've got deals with Bernie, Williams, Red Bull, McLaren. Probably half the grid, through UPS, Martini, Johnnie Walker, Unilever, UBS... small clients!"

"But," he cautions, "you have to stay on the throttle with deals like these to remain the market leader."

F1 Racing meets **Zak Brown**, the man tipped to be the next Bernie Ecclestone

WORDS ANTHONY ROWLINSON
PORTRAIT THOMAS BUTLER

Brown, 42, has been hard on that pedal for more than 20 years, since funding his own European racing career through single-seaters, having won US karting titles in the late '80s then hopping the pond to pursue his F1 dream.

Hustling for the dollars that would keep him in a race seat, he quickly adopted an 'eat what you kill' mantra that drives him to this day: no cash, no drive. TWA were key early backers, and this relationship proved to be the one that sparked Brown's rise. He was encouraged by the airline to find other clients for their marketing budget and almost overnight, he says, "I became friendly with the industry because I was raising money for other people. I got started out of my house in Sheffield... now we employ 130 people."

Brown's zeal for a deal, allied to a work ethic "my wife and kids will say is a problem", are key qualities that make him the biggest fish in the piranha-infested waters of F1's commercial pond.

More interesting, however, is what happens next for Mr Brown, as he appears ideally placed to benefit from the post-Ecclestone apocalypse that, one way or another, looks likely to engulf F1 in the not-so-distant future.

He laughs – a hearty, engaged, warm laugh – when asked directly if he could be "the next Bernie", although the considered response that follows is very far from a denial: "I think I want to be in F1 for the rest of my life," he says, "and all forms of motorsport for the rest of my life. But F1 is my favourite. It's the biggest business."

"I've always been a fan of it," he adds, "and in the business for most of my working life, so first and foremost I want to be a key influencer in the commercial side of F1 and all of motorsport. So long as me and my company continue to do deals like putting Williams and Martini together, that will keep us at the forefront. If and when chances present themselves to continue to build our presence, I'm open to what that could look like."

Open, too, to what F1 itself could look like, as and when it comes 'under new management'. Greater engagement with the fans is one area for future focus, Brown reckons, as is an increased emphasis on digital communication channels, to make F1 more easily accessible, more of the time.

But he's also stout in the sport's defence: "F1 isn't broken you know, it just needs a little incremental tuning here and there. Tons of money comes in. It's just that the thirst of the sport is ever greater, so it's out of balance. You've got to step back and look at the involvement of, say, Martini, UPS, Rolex, Emirates, Coca-Cola... These deals represent hundreds of millions of collective investment and I don't think there's another sport in the world doing that. Maybe we should be hearing about that a little more often."

It's refreshing to discover such a relish for F1 and its myriad opportunities; and to hear the racer inside the business attire: "Nice talkin' to ya," Brown concludes. "Let's get a date in the diary to do lunch and talk racin'." 

"If and when chances present themselves to continue to build our presence, I'm open to what that could look like"



CV

Born 7 November 1971
Los Angeles, USA

2013 Sells JMI but remains as CEO and takes up new role as global head of business development for CSM Sport & Entertainment

2010-2013 Continues to compete in sportscars and historic events

2009 Founds sportscar team United Autosports

2007-2009 Competes in Ferrari Challenge USA

2005-2006 Enters Britcar endurance series

2001-2005 Concentrates mainly on building up JMI

1999-2000 Competes in American Le Mans Series

1997-98 Comes second in GT2 at Sebring

1996 Enters German F3

1995 Founds Just Marketing International (JMI) and competes in Indy Lights

1994-1995 British F3

1991-1993 Formula Ford and Opel Lotus

1986-1990 Competes in karting, winning 22 races

Robert Kubica

The former F1 hero and reigning WRC2 champ speaks frankly about the challenges he's faced after his near-fatal crash and explains why an F1 return is unlikely... although he'll never say never

WORDS RICHARD RODGERS **PORTRAITS** THOMAS BUTLER

Had Robert Kubica's career gone to plan, early February 2014 would have been spent looking back on the Jerez test, discussing what changes were needed for Bahrain and recruiting players for a spot of paddock poker (more on that later on...).

Instead, the 29-year-old is preparing for *F1 Racing's* reader questions in the comfort of the Karlstad Congress Culture Centre in Sweden, where he will shortly be contesting the country's World Rally Championship qualifier for the first time. But the fact that this interview is taking place at all owes everything to the wonders of modern healthcare, not to mention Kubica's determination never to give up.

Almost three years to the day of this interview, Kubica was fighting for his life in an Italian hospital. A section of Armco barrier had penetrated the Skoda Fabia Super 2000 he was driving purely for fun on a local-level rally, ahead of the 2011 F1 season. As Kubica puts it, "it destroyed my right side".

While his physical limitations – he has restricted movement in his weakened right arm, which was partially severed in the crash – will probably rule out a return to Formula 1, he insists that chapter of his life is still not closed. But instead of forever reflecting on what might have been – let's not forget he challenged for the 2008 F1 world title – consider that Kubica is now one of the hottest properties in the WRC.

He won the second-tier WRC2 crown in 2013 and began his full 13-event campaign in 2014 by winning the opening two stages of the famous Monte Carlo Rally, proof, if any were needed, of the tremendous natural talent that made Ferrari his chief suitor when he was in his F1 prime.

Do you miss Formula 1? If so, what do you miss the most?

Agne Lazauskaite, UK

Of course, and the thing I miss the most is driving an F1 car – the special feeling on your body with the G-forces, the acceleration and the

deceleration. But it's not just driving the car. Working with the engineers to improve the setup and get the most out of the package: that's something I also miss.

What gives you more pleasure, driving a rally car or a Formula 1 car?

Mertol Shahin, Bulgaria

A Formula 1 car. Both are giving a lot of pleasure, but I feel I am definitely a better F1 driver than a rally driver because I have much more experience. A rally car can give you a lot of pleasure when you have really nice stages, but when you approach them for the first time they can be really difficult.

Would you consider a test role in F1 – maybe on Fridays?

Chris Micallef, Malta

I have mixed feelings, to be honest. I have ambitions and I like challenges, but I know that every Friday evening would be bad because I'd →





Competing with Renault in his last year of Formula 1 at the 2010 Hungarian GP

know that I could not carry on for the rest of the weekend. Rallying keeps my mind completely off what I was doing. That's the best medicine for me. Fridays would be a good taste, but it would have bad side effects.

What advice would you give young people returning from setbacks in their lives?

Matthew Lloyd, UK

Never give up. Try to focus on what you can do and try to get pleasure from doing it.

Have you considered racing in other formulae, like DTM or NASCAR, or will you always prefer rallying?

Mark Innis, UK

I did consider them and I did a test in DTM because it's the most similar to what I was doing before, trying to finish the race as fast as you can. Le Mans is very attractive for the drivers but NASCAR is a completely different way of driving. I chose rallying because of the situation I am in and because I like challenges. Rallying is certainly a big challenge.

Who do you think is the more skilful, Sébastien Loeb or Sebastian Vettel?

Jarlath Garvey, UK

It's like comparing the best football player and the best basketball player – it's impossible. They have been the best in their sports for a long time and I have big respect towards them.

When will you come to an F1 race again? We miss you!

Jemma Bowles, UK

I was very close to seeing a DTM race at the Nürburgring last year, but waiting in the traffic queue for the circuit I heard the AutoGP race and

the noise reminded me of the good times.

I have too many memories from circuits, so I try to avoid them.

Do you like to drink vodka from time to time? And also, do you still play poker with other drivers?

Ewa Kaluzny, Poland

We did play poker in the paddock in F1 but I am not playing any more. I am not a big fan of alcohol although many people think that because I am Polish I should drink a lot of vodka. I have drunk only a few times in my life.

FIR: Is that because you're a good boy?

RK: I don't like the taste of it. Actually, my fitness is a bit different now from what it was when I was racing in Formula 1. The other day I signed a picture from 2010. I was wearing my Renault shirt and I could see I was 12kg lighter. But that's how it is.

Is it true you were faster than Lewis and Nico driving the Mercedes simulator?

Nikodem Tomala, Poland

I don't know, because we have never driven together. When I was racing, I thought simulators were a pain in the ass. But this time round I thought that it was a great opportunity. Actually I did some very long sessions, six or seven hours driving in the car without getting out. I did sometimes more than two distances of a grand prix or even more.

FIR: How realistic is a simulator compared to driving a real-life F1 car?

RK: Let's say, from the cockpit point of view, it's very, very close. From the driving point of view it's different of course because you don't have G-forces. The difficulty is to produce all the variations you get on the circuit. I think it's

becoming bigger and bigger, especially when you have such limited test days in the year and with the new regulations.

What would you prefer – to return to F1, or to become a champion in WRC?

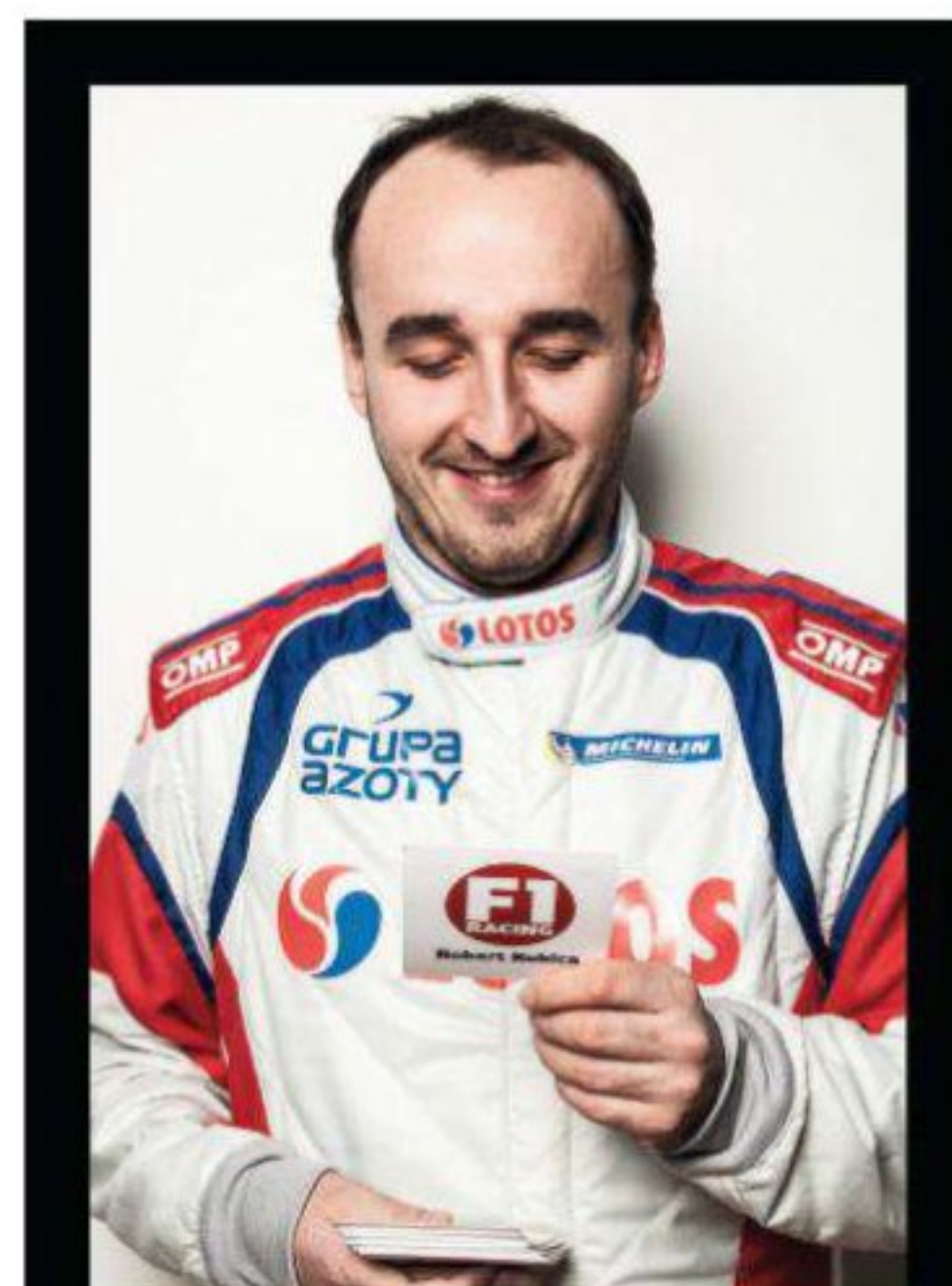
Szymon Zacharski, Poland

I would take both! To win WRC I need to gain more experience and it could take three years to set the consistent times. Coming back to F1 would mean my health had improved, so I would sign straight away – more for my health than coming back to F1.

What do you think of the plan to award double points in the last F1 race?

Philip Craig, UK

I don't like it, just like I don't like the reverse grids in junior single seaters. You are trying to force a championship to stay alive for longer. You have so many races that, in the end, the winner should be the one who has done the best job across the year – not someone who got lucky in the last race. It's unfair. →



"Never give up. Try to focus on what you can do and try to get pleasure from doing it"

INSET: GLENN DUNBAR/LAT



SILVER ARROWS ON TOP

15:08

In the second race of the season in Malaysia, Mercedes gained its first 1-2 in F1 since 1955, with Lewis Hamilton and Nico Rosberg holding off the challenge of the fast-improving Red Bull team.

During the build-up to Sepang, *The Racer's Edge* interviewed proud father Jan Magnussen as he travelled to watch his son Kevin race in F1 for the first time. Host Peter Windsor also spoke to the youngest ever point-scorer in F1, Toro Rosso's Daniil Kvyat.

There was plenty of post-race analysis too, from Scarbs' insight into the Mercedes engine to Rob Wilson's view on team orders at Williams. There are multiple episodes each week, so stay tuned to *The Racer's Edge* for analysis of all the key issues.

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What do you feel was your best F1 race ever?

Frank Wiater, USA

Okay, winning in Canada in 2008 was a result, but one very, very good weekend starting from qualifying, through the start and all the laps and ending up with a very good fight was Fuji in 2008. It wasn't noticed so much because I finished second and I was leading in the beginning of the race. But I know the package I had, and it was a really great performance.



Second-placed Kubica congratulates race winner Alonso at Fuji in 2008

INSET: STEVE ETHERINGTON/LAT

Is it true someone once left a mobile phone in your cockpit?

James Knight, UK

It is true. It was the mobile phone from my chief car mechanic in Bahrain in 2010 during the free practice session. I thought one of the Velcro straps on the extractor seat had come loose, which does happen. But then I realise that it is moving when I brake and accelerate. So I grab it and it is an iPhone!

F1R: What happened to the phone?

RK: I came back and gave it back to the garage. The mechanics had a big laugh but, to be honest, if it was a normal test I would throw it away. Because I was doing an official weekend I have to come back!

Who was your toughest rival in F1?

Garry Robinson, UK

When you are driving in the top ten in Formula 1 there are no weaker or tougher rivals. They are all really tough opponents and you should have big respect for all of them because they are all doing the same job that you are doing and trying to be professional.

F1R: Are you still friends with your old F1 rivals?

RK: I have a bit of contact but not a lot, to be honest. I am very busy, F1 drivers are very busy so it's normal that the contact is lost a bit.

You have the last few gallons of fuel on earth. You can choose any car, any track. How would you use it?

Lukasz Galuszka, Poland

One of the best cars I have driven was the first F1 car I tried, the 2005 Renault. For the test I was limited to the V8, not the V10, but I would like to drive that car with the full power. I would also be keen to re-try the tyres we had then. They were

amazing because of the competition between Michelin and Bridgestone. The circuit would have to be Suzuka.

What are your thoughts about what happened to Michael Schumacher?

Bill Molloy, UK

It's incredible and all we can do in respect of the family of Michael is wait, hope and pray for the best recovery. It's a very delicate time. In the position I was in when I was going into surgery or was in a bad shape, it was actually harder for my family and friends who were around me waiting. For sure, it's the toughest race for Michael and I hope that he can win it. He is a great champion.

Do you remember your accident? What actually happened?

James Finan, UK

I went into a short corner too fast. It was damp and we were on slicks. The front washed away and I lost the rear of the car. I hit the first barrier, an old barrier, which was not connected. Then the new barrier was not even turned, it was just cut. It was just waiting for me and it cut the car. I don't remember afterwards, but I remember moments and have pictures. But it's better to talk about something else.

What was your first road car and what do you drive now?

Atsushi Ichikawa, Japan

My first car was a Renault Clio RS when I was 17. I still drive a Renault now, but it's a Mégane diesel. I like diesels because I am not scared to do a lot of mileage. Often I drive to rallies, and my current car that I have been using for two years has 99,500 miles on it.


Do you think you would be Fernando Alonso's team-mate at Ferrari now if you hadn't had your crash?

Daryl Chaffey, UK

There were high chances and it might be the truth, but I don't know. For sure, there are two things that you always want as an F1 driver: to win the world championship and to become a Ferrari driver.

What do you think about the 2014 Formula 1 rule changes?

Ian Green, UK

To be honest, I think the new cars look ugly. From a driving perspective it doesn't matter because you want the quickest car. But when you are a young kid, Formula 1 cars have to look nice. On the other hand, there are many new ideas and visions and that's nice. But I see it being difficult for the small teams. 

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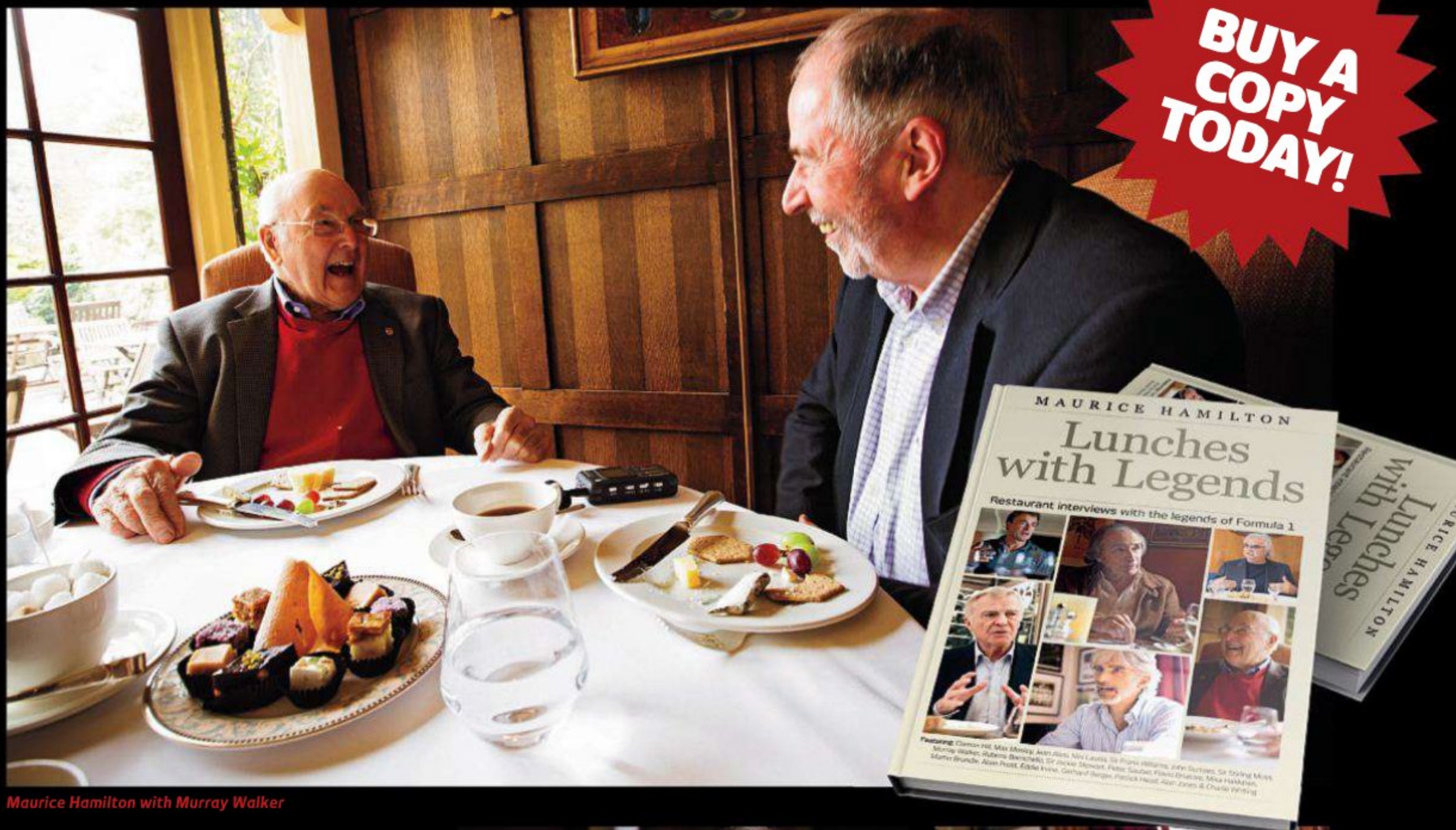


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LUNCHES WITH LEGENDS

by Maurice Hamilton

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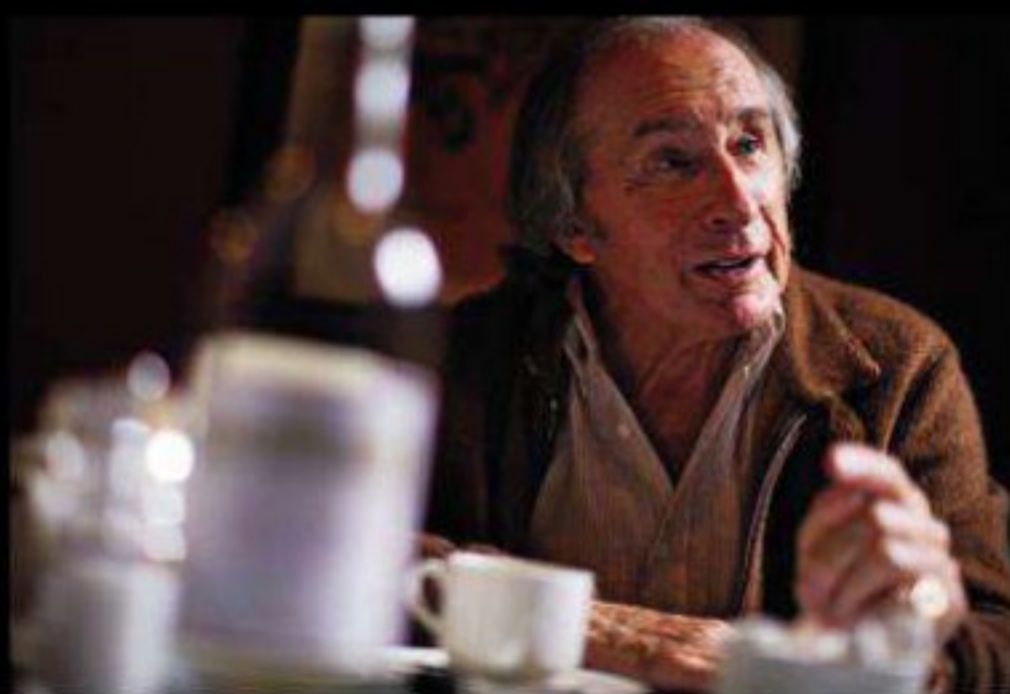
Maurice Hamilton with Murray Walker

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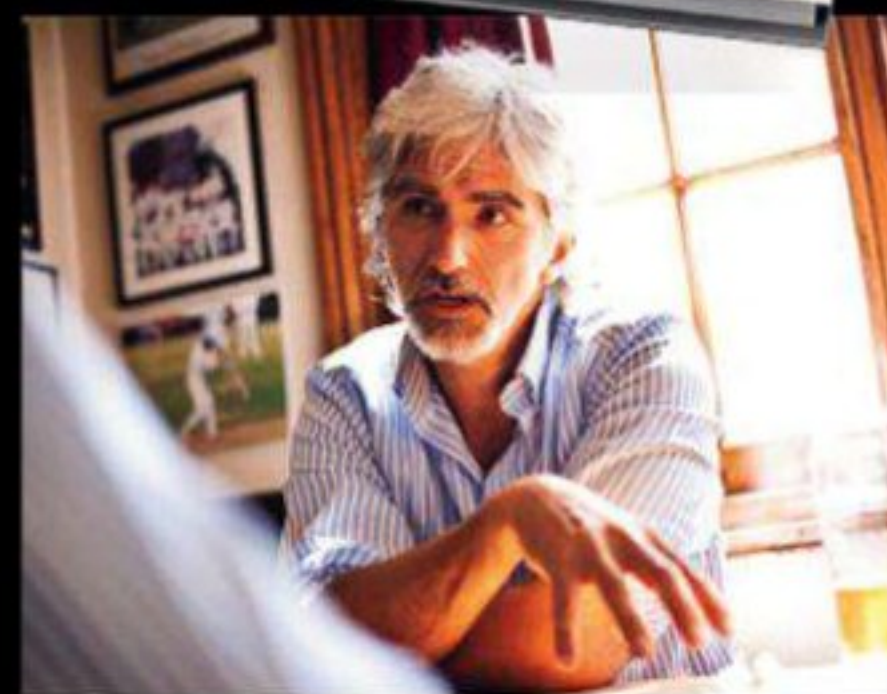
Maurice Hamilton

Lunches with Legends is the perfect accompaniment to the new F1 season, whether you're facing a long flight to a flyaway race or just want to get to know some of the biggest personalities in F1.

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20

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285

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What's wrong

Short on mileage in pre-season testing and outperformed by Mercedes in the opening races, are Renault in as much trouble as they seem? **Matt Youson** examines the evidence



with Renault?



AUSTRALIAN GRAND PRIX 14-16 MARCH

	PRACTICE 1	PRACTICE 2	PRACTICE 3	QUALIFYING	GRAND PRIX
Caterham	<p> Car 9 One lap. Electrical issue.</p> <p> Car 10 1 lap. Fuel-system failure.</p>	<p> Car 9 One lap. Hydraulic problem.</p> <p> Car 10 Did not run due to earlier fuel-system problem.</p>	<p>Car 9 21 laps.</p> <p>Car 10 19 laps.</p>	<p>Car 9 Qualified 19th.</p> <p>Car 10 Qualified 15th.</p>	<p> Car 9 P19 DNF (collision).</p> <p> Car 10 P15 DNF (oil pressure).</p>
Lotus	<p> Car 8 No laps. Gearbox issue.</p> <p> Car 13 Two laps. Wiring-loom problem.</p>	<p> Car 8 12 laps. Turbo and software problems.</p> <p> Car 13 Did not run due to earlier wiring-loom issue.</p>	<p>Car 8 Four laps.</p> <p>Car 13 15 laps.</p>	<p> Car 8 Qualified 20th. Power-unit problems.</p> <p> Car 13 Qualified 21st. Engine-mapping issues.</p>	<p> Car 8 DNF (MGU-K problem).</p> <p> Car 13 DNF (MGU-K problem).</p>
Red Bull	<p>Car 1 Ten laps.</p> <p>Car 3 26 laps.</p>	<p>Car 1 41 laps.</p> <p>Car 3 38 laps.</p>	<p>Car 1 14 laps.</p> <p>Car 3 13 laps.</p>	<p> Car 1 Qualified 13th. Engine software/sensor issues (down on power).</p> <p>Car 3 Qualified 2nd.</p>	<p> Car 1 DNF (engine sensor/software fault).</p> <p>Car 3 DSQ.*</p>
Toro Rosso	<p>Car 25 30 laps.</p> <p>Car 26 27 laps.</p>	<p>Car 25 35 laps.</p> <p>Car 26 36 laps.</p>	<p>Car 25 16 laps.</p> <p>Car 26 17 laps.</p>	<p>Car 25 Qualified 6th.</p> <p>Car 26 Qualified 8th.</p>	<p>Car 25 P9 (P8).*</p> <p>Car 26 P10 (P9).*</p>

*Finishing position subject to outcome of Red Bull appeal

"If you don't expect the first grand prix of the season to be hard work, then you're in the wrong job..."

So went the words of one team manager in Albert Park, faintly amused at the notion that his crew might struggle with the onerous schedule and a frantic dash to be out of the paddock by the curfew. As is customary in the early races of the F1 season, everyone capable of wielding a spanner or using a calculator had the slightly crumpled, hollow-eyed look common to those on the edge of endurance – but perhaps the most beleaguered were the yellow-clad engineers and

technicians of Renault, behind the curve and desperately playing catch-up. They have a mountain of work and a molehill of time – but are they really mired in the crisis that common perception suggests?

The results from the season-opening grand prix didn't quite support the theory. Renault, a disqualification notwithstanding, had three top-ten finishers, compared with five for Mercedes and two for Ferrari. Albert Park is an atypical circuit, so it's important to not read too much into *anything* – but based on what we observed there and →



Kobayashi's Caterham needs a push at the Bahrain test

at subsequent races on more 'normal' circuits, the Renault F1 Energy 2014 'power unit' certainly isn't a disaster – though based on recent history, anything other than domination might be perceived as such.

Given the amount of silverware won with Renault power in the V8 era, management in Viry-Châtillon could easily attempt to brazen out their current predicament – but they haven't. In fact Renault's public offerings in recent weeks have been both humble and contrite.

"We shouldn't beat about the bush," says Rob White, Renault Sport F1's deputy managing director (technical). "We had a fairly torrid pre-season testing campaign. We made some limited progress in the first test, but from a starting position that was unacceptably poor. In Bahrain we made some decent headway, but when you're on the back foot you're on the back foot. We made progress in every single session in Bahrain but we were not able to recover the ground we lost in Jerez – and that's where we were coming into the start of the season."

Planning for F1's new hybrid era began in the previous decade, with serious engineering resources committed to the project for the past three years. Time – or rather the lack of it – has always been at the top of the agenda. As with a chassis programme, the trade-off between reliability and sophistication is unavoidable: freeze design early and you have longer to study the finished product; push it for longer and you'll have something more advanced – but fewer opportunities to learn how it works.

Over a year ago White revealed Renault's intention was to be "aggressively late" with their power unit.

Underlining what that meant, Rémi Taffin, Renault's head of track operations, spoke at the 2013 Brazilian GP to explain that Renault's delivery schedule had absolutely no wiggle room. "Everything is heading towards the first day of the first test," he said. "It's very tight: Some days we say maybe we're going to be one day late, another day we think we'll be ready with a day to spare."

In the race to hit the ground running, the engineers in Viry always intended to be the last to open their parachute. So with the benefit of hindsight, was that the right decision? According to White, there was no other option. "We would have struggled immensely to achieve an earlier specification freeze – so it's difficult to say our overall project timing was fundamentally wrong. However, we allowed too much accumulated lateness in some of the earlier phases and that led to the latter phases being squeezed. We consumed all the margin there was in the programme, and every new issue created a compromise somewhere else, where we had to carve out resources – be that time, people or whatever – to fix it."

Renault's accumulated running over the winter makes pretty grim reading, even allowing for the Lotus no-show in Jerez. The four Mercedes teams completed 11,181 miles in testing; Renault's four managed less than half of that, finishing the winter with only 5,449 miles in the bank. But that doesn't tell the whole story. Backmarkers with

less well-refined launch cars and a perennial shortage of pre-season spares usually languish at the bottom of the mileage tables – yet Caterham completed twice the mileage of Red Bull. Can Renault's travails be attributed to their big guns perhaps being a little too ambitious with the design of their chassis and a little too parsimonious with the provision of engine cooling and packaging? Adrian Newey, after all, has something of a reputation for leaving nothing on the table when it comes to tolerances.

White doesn't bite: "The Red Bull chassis is aggressively packaged, but that's absolutely not a criticism. In fact it's something of which we and the Red Bull design team are incredibly proud. There was nothing we discovered on the car at the race track; the big design decisions and the detailed implementation were completely shared, as indeed were the problem-solving actions. It is absolutely not the case that we would suggest there is a deep-seated problem with what they've done.

"We contributed significantly to the time lost by Red Bull during testing – but it's in times of adversity that the strength of the partnership can be built. What's important now is that we work side-by-side to nail the problems."

"We shouldn't beat about the bush. We had a fairly torrid pre-season testing campaign" *Rob White, Renault Sport F1*

Red Bull chief designer Rob Marshall follows similar reasoning. "There are no real secrets or issues [between Red Bull and Renault] or any withheld information," he says. "Our relationship is free and open. It doesn't come down to being aggressive or not: you just aim to have the appropriate device to help you win. We designed the RB10 thinking it's got the best chance – we've not taken risks or made the job hard for ourselves for the sake of it. Everything is measured, and risks are calculated. That can make the job harder, but the job isn't expected to be easy."

Given the formidable partnership developed since Milton Keynes and Viry became a *de facto* works entry, Red Bull might have assumed they'd have a smoother pre-season, although Marshall is adamant they weren't expecting an easy ride. "We never thought that," he says. "We knew it would be hard. It's a big job and Renault knew it would be. They had a lot of fixes on the way and, like us, there were things they only discovered in testing.

"We struggled a lot in pre-season testing, but mostly the problems were the sort of reliability issues you suffer with a new design. The fixes aren't something that take a matter of minutes. You know it will take a while to →

PHOTO: ALASTAIR STALEY/LAT

The wraps come off Ricciardo's Red Bull in Jerez

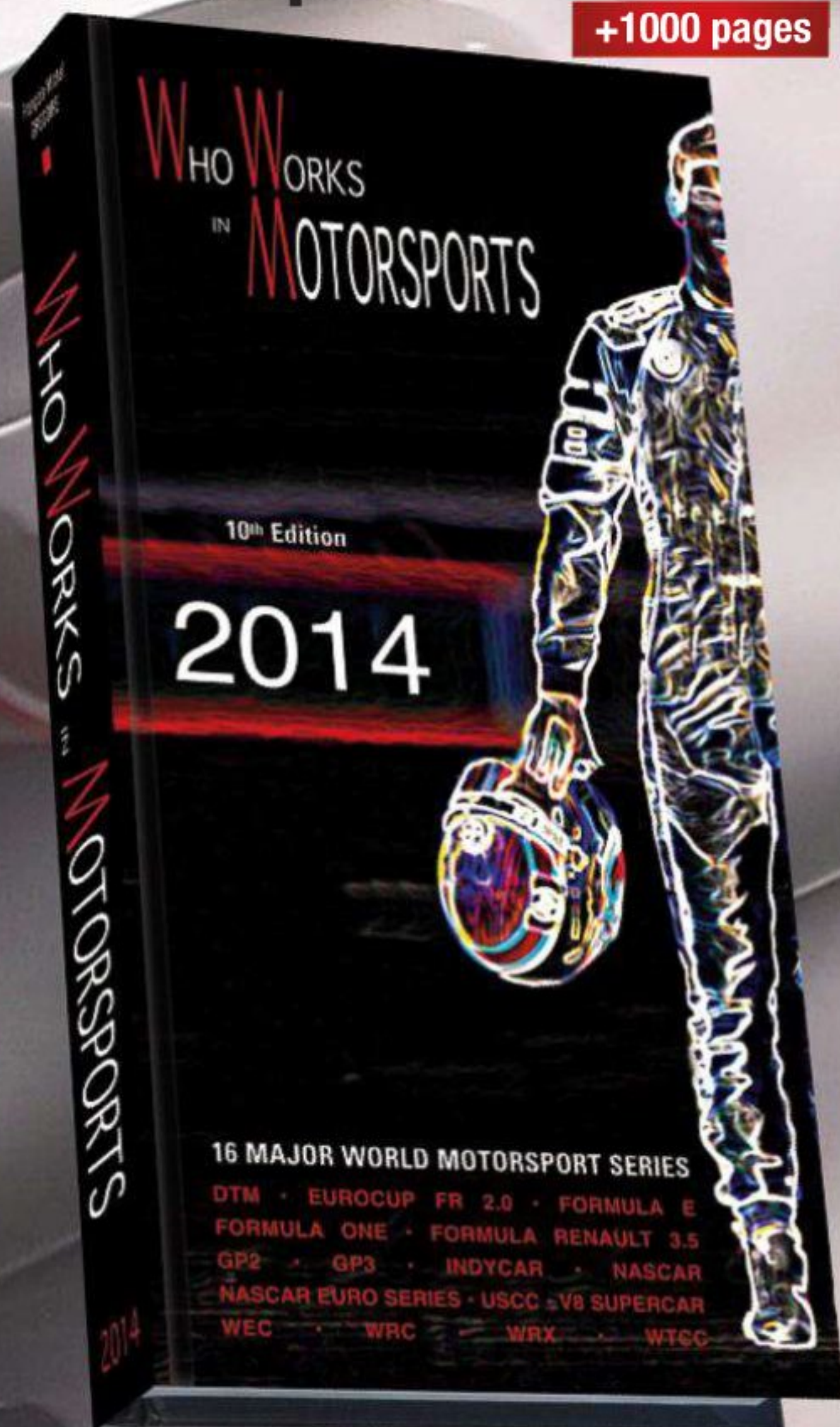


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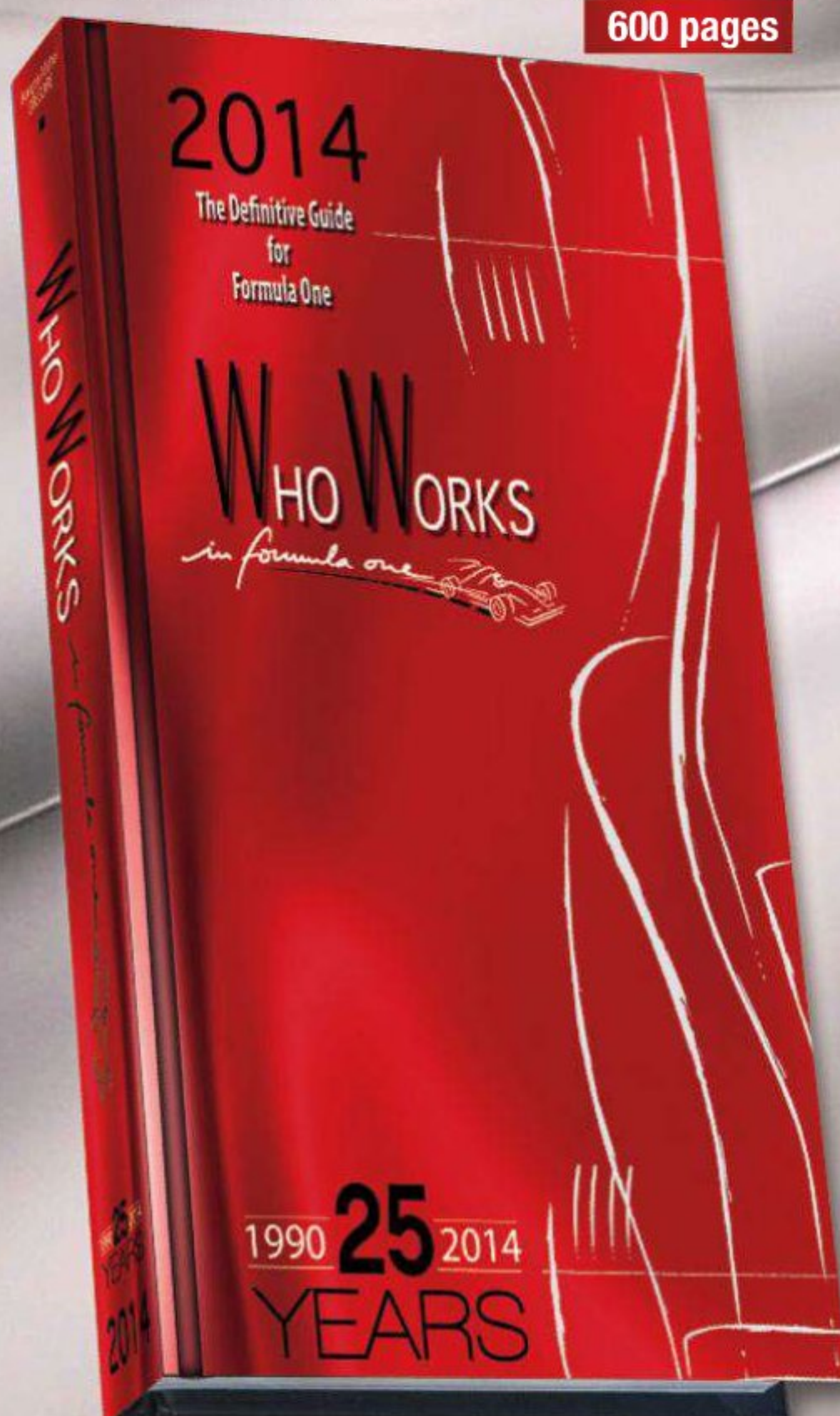
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get the new part, and that you're doomed to endure some misery in the interim. That's just the way it is."

If Australia suggested Red Bull were on the path to recovery, the same could not be said for Lotus. Renault's other front-running entrant was a day late and a dollar short all through winter, skipping the first test then struggling with a variety of power unit and power unit-related problems from then on, becoming a supremely rare sight on-track. The extent of Enstone's problems were brought home by Romain Grosjean's analysis of his race in Albert Park: "I expected to do around 15 to 20 laps... and we managed 45!" This, indeed, was progress.

Lotus began the season badly, with the least completed mileage of any team. Things were not quite so desperate as in the days when HRT would show up to the first race with a container of bits and a build plan, but the Lotus garage had the same air of flat-out activity over the weekend.

"I think it was a steeper learning curve than we expected," concedes technical director Nick Chester. "For us at Lotus, effectively we haven't had a change of engine for 20 years. Although we've

gone through V10s and the V8s, those were fairly small changes. Going to a turbo engine with a significant energy recovery system is a massive change to the car. It's the sort of change you might see only once every ten or 15 years – but it does mean you've got to do a lot more work to optimise it, to run the car at the finely honed end of the scale we're used to working at.

"We were late with our car, Renault Sport were somewhat late with the power unit as well, and that's meant there just hasn't been as much preparation as we'd like. We tried to catch up during testing but simply didn't have enough time. It means we're still trying to catch up at the races."

"We were late with our car; Renault were somewhat late with the power unit" *Nick Chester, Lotus*

It is interesting to consider that problems experienced by Lotus specifically and by Renault teams at large are not far removed from what opponents of the new power units predicted over these past two years. Following that line of reasoning, what we see is less a case of Renault underperforming and more a matter of Mercedes overachieving.

"It's an interesting question, isn't it?" says White. "I think the honest answer is that we are behind where we wanted to be in terms of our internal goals. →

Grosjean's Lotus is pushed back at the Bahrain test

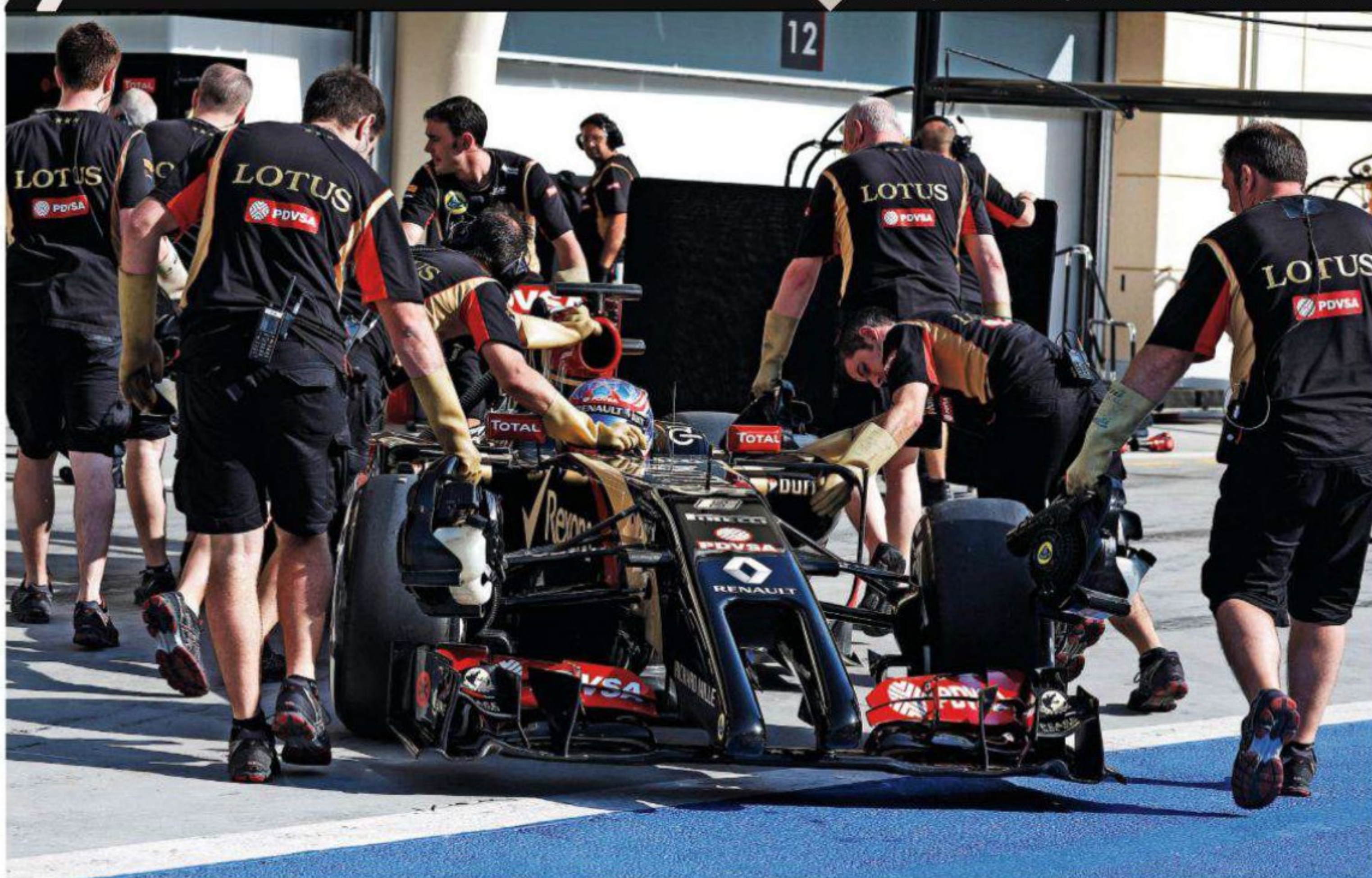


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Vergne's Toro Rosso gets a lift to the pits in Bahrain

We can't set objectives based on somebody else's performance. We can only set objectives based upon our own internal constraints, our own internal risks and opportunities. We have set, did set and continue to set internal goals and objectives – and those are the ones against which we must measure ourselves.

"Of course this is a competition, and the likely position of others needs to be taken into account when we're setting targets – but I'm completely clear that it's more significant that we didn't achieve our own internally set goals at the first time of asking."

Renault, Lotus and Red Bull are all adamant their 2014 powertrain doesn't have a fundamental flaw. "There wasn't any specific single thing that caused trouble," says White, "rather there were a large number of smaller problems that together caused us some grief." If that turns out to be an accurate assessment, will Renault expect their customers to be competing at the front of the field this year? White nods, ticking off a shopping list of targets:

"We know the type of thermal efficiency needed for us to be competitive and we've demonstrated we can deliver that. We know we can extract 120kW from the MGU-K. We know that the battery is able to operate at the limit

"There's a lot of performance to be unlocked in the engine as we find out what it's capable of"

Rob Marshall, Red Bull

of the technical regulations. We are confident the MGU-H can harvest and restore the upper bounds of our desired performance envelope. All of these things mean that we remain confident about the potential of the power unit. The task for us now is to make all of those systems peacefully coexist and deliver what the driver needs."

"We've only scratched the surface of what it's capable of," adds

Marshall. "We and Renault have been working hard to fix race problems and get the car talking to the engine, and the engine talking to the car, and the whole thing performing more coherently. We've got more to do, and they certainly have as well."

"There's a lot of performance to be unlocked in the engine as we find out what it is capable of delivering. We're attacking on all fronts, but the engine is the most obvious one. Getting that to perform as it should will be a big step."

Given how Red Bull-Renault were the dominant partnership of Formula 1's previous era, there's something slightly ominous in the words of Red Bull's chief designer. Their underperforming, barely tested package was capable of starting on the front row and – disqualification notwithstanding – racing competitively. You never completely forget how to win. **F1**

"When I retired from racing, I came down with allergies. A doctor told me: 'You've lived your entire adult life on adrenaline. And now your body thinks you're dead, so you've no defences'"

In a career that encompassed IndyCars, dirt racing and Formula 1, 1978 champion **Mario Andretti** never stopped. Here he looks back over a life lived at full throttle

PORTRAITS ALASTAIR STALEY/LAT

Mario Andretti proudly shows off his cowboy boots as he walks into the W Hotel in downtown Austin. It's typical of the man from Pennsylvania that he wants to enter into the spirit of the moment as this self-reliant Texan city cocks a snook at the rest of the USA by staging an F1 race – and a good one at that.

The choice of Mario as an ambassador for the US GP is obvious. No one else on earth better embodies the spirit of motor racing across its many disciplines. You name it, Andretti has done it – and probably won it. Champ Car champion (four times), USAC dirt champion and, of course, the 1978 F1 world champion while driving for Lotus during the one of the many peaks of Colin Chapman's technical genius. Andretti has also raced in World Sports Cars, NASCAR, F5000, IROC, Midgets and Sprint Cars.

In a career spanning five decades, Mario has remained passionate, laconic, balanced and wonderful company; the archetypal racer and entertainer. He may be small in stature but, for motorsport aficionados, he's the biggest man in town. And that's got nothing to do with the heels on those smart boots...



Maurice Hamilton: I was looking back over all the stuff you've done and I thought: 'Where do we start?' Since we're here in your home country, the one line of thought in connection with F1 is the enormous number of venues the US Grand Prix has visited. The one that probably means more to you than anywhere is Watkins Glen.

Mario Andretti: Indeed. That was the mainstay for so many years; it represented the hub of F1 and it was so popular in its day. It's so unfortunate it never kept up with time and attracted re-investment. Once it moved from The Glen, Long Beach captivated everyone. Europe was moving away from street circuits

– the only one remaining was Monaco – and here was America with a modern-day street circuit.

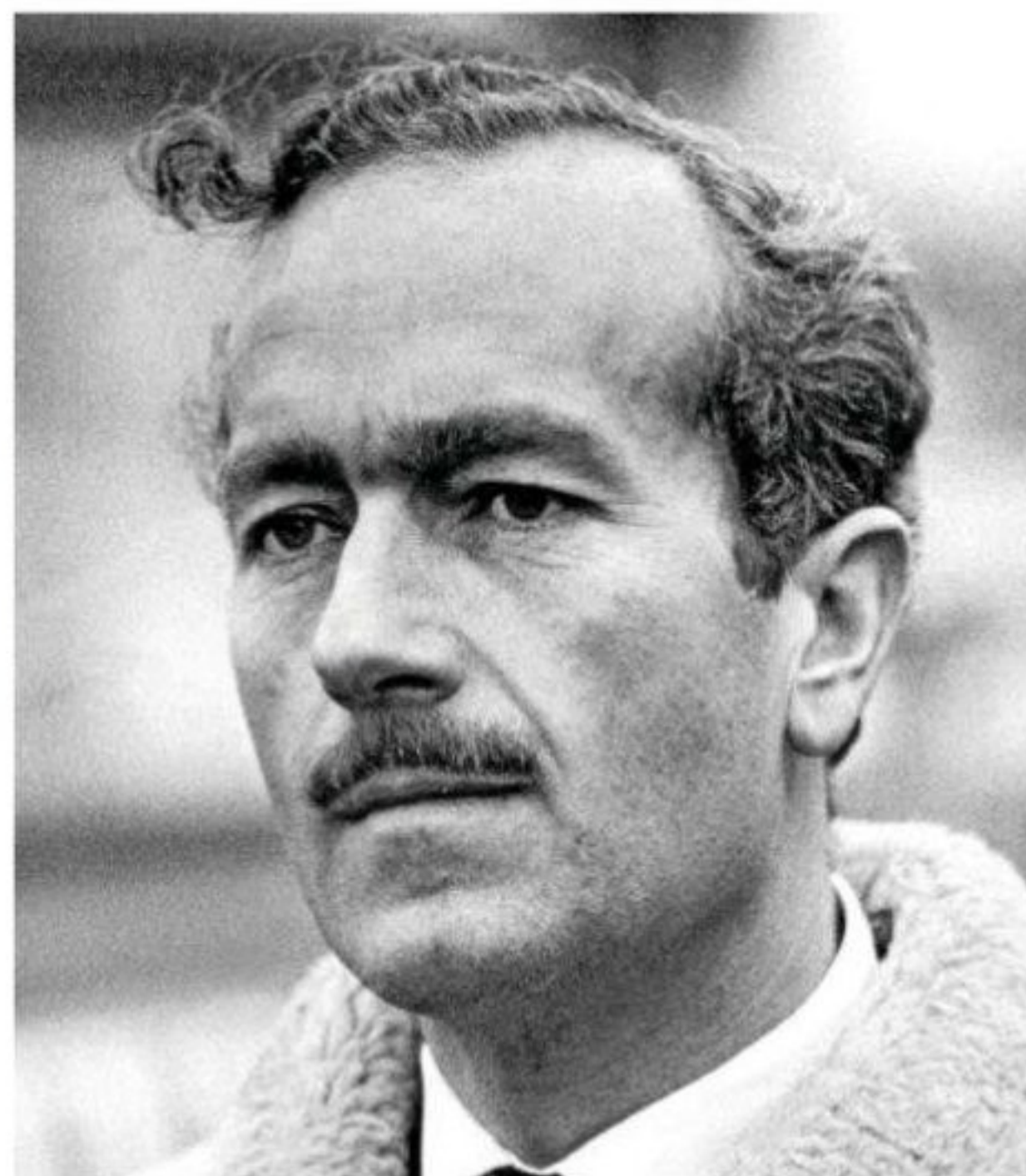
MH: It was quite a gamble, wasn't it? Long Beach in the mid-seventies was pretty low-rent.

MA: It was. There was nothing going on in that city. The first race we did prior to the grand prix in 1976 was for F5000. We were going through regular stop lights; they didn't even have those regulated and everyone was making jokes about it. But, fortunately, it picked up.

MH: One of many great memories I have is of my first visit in 1977 to Long Beach and California. You were holding a media breakfast on board the Queen Mary. I managed to get an invite and I remember driving my big rental car across the bridge to the port on a glorious sunny morning to have breakfast with Mario Andretti, I turn the radio on and it's The Mamas and The Papas *California Dreamin'*. I thought: 'I'm in heaven'.

MA: [Laughs]. Yeah, the ambiance was terrific. It's amazing what motor racing has done for that city. It has evolved. Every year they declare a city in the country that's been the most creative; the best place to be. Long Beach has met that criteria thanks to the hotels, the convention centre and people coming to the city. The race breathed →





Clockwise from top: Ford team-mate, Bruce McLaren; Lotus boss Colin Chapman; Chapman and Jim Clark at the 1965 Indy 500; Andretti at the same race

new life into the place and continued to do so with IndyCar for a while after F1.

MH: Going back to Watkins Glen in 1968; you set pole position for your first grand prix. That was a surprise for the rest of us. What about you?

MA: Oh yeah, it was a surprise. I had tested the Lotus 49 in Monza two weeks before. I'd never been in an F1 car before. It felt so right. Chris Amon was testing for Ferrari and I was quicker than him in my test – which surprised the hell out of me. I mean, this was Ferrari – at Monza.

So we go to Watkins Glen: I'd never raced there; I'd never seen it before that weekend. I was apprehensive at first, but at the same time I figured, 'What the hell – I've nothing to lose.' I liked the car and the circuit and for some reason a lot of things worked. We ran grooved tyres then, and they were always putting new tyres on to qualify. But I had a little trick from racing on dirt tracks. By bringing the grooves down, you

created more of a slick situation. I qualified on used tyres that had done many laps. That was unheard of, but it worked for me. It was a fight between Jackie Stewart and myself, and I pulled it off. It was so gratifying because F1 was so important to me. I grew up loving F1 and this was the opportunity that I really was looking for.

MH: I know you were born in Italy and saw Ascari race at Monza, so that's where the love for F1 came from. Tell me a little about those days; they were pretty tough, weren't they?

MA: The part of north-east Italy we lived in became part of Yugoslavia after the Second World War, and we were suddenly living under communist rule. We escaped back into Italy and lived in an old monastery, in one big room with ten families, separated only by blankets we'd strung up. We were there for seven years. My dad did odd jobs and provided for us. We were never hungry, never cold, but we knew this

wasn't normal. In 1955 [when Mario was 15] we emigrated to America but, as you say, I'd been to Monza to see the 1954 Grand Prix and I also saw the 1955 Mille Miglia come by. All of that made a big impression on me.

MH: Even so, it was unusual for an oval racer living in America to find himself in F1. I know you wanted to do it, but how did the deal with Lotus come about?

MA: When I met Colin Chapman at Indy in 1965, I'd finished third and Jim Clark won for Lotus. When I told Colin I would love to do F1 someday, he said: "Mario, when you think you're ready, call me." That's the best thing he could have said because then I felt I needed to do road racing. I lobbied like crazy in USAC [United States Auto Club] to get the IndyCars to start road racing. In '65, they had the first road race and I won it. Through '66, and '67, almost every road race I either won or finished second to Dan Gurney.

I was invited to be part of the Ford team for Le Mans. The amount of testing they were doing was unbelievable, just crazy, and I loved that. Bruce McLaren and I developed a great friendship. The guy was a nice bloke and I felt he was such a technical driver, I could learn a lot from him. I would get out of the car, jump on a scooter and go looking for the hairpin or the slow corners, just to watch him rotate the car because I figured I had the high speed pretty much worked out, I just needed to be more proficient on the slow stuff. Long-distance races are a great way to develop road racing skills. It's not F1, but it takes you there. So, in 1968 I called Colin and said I'd love to do two races – Monza and Watkins Glen. He said he would enter a third car. He didn't hesitate.

MH: Did you wonder if you could actually do it?

MA: They thought I was crazy because I couldn't ignore my USAC commitment. I was going for the title and the Hoosier 100 was the biggest dirt race on the circuit for the driver and, financially, for the team. It was the same weekend as Monza; that was the hurdle I had to clear.

MH: We're talking pre-Concorde days; you would have had to be on a Boeing 707 or something going back and forth across the Atlantic.

MA: Yeah, pre-Concorde. And we knew there was a rule that said you couldn't compete in anything else within 24 hours of a grand prix. We presented all of this to the right people in Italy and they agreed to waive the rule. I told Colin the only way I could do it was to qualify on Friday at Monza, go back and do the Hoosier, then return to Monza in time for the grand prix.

So I qualified eighth, but when I got back to Monza on Sunday morning, they said: "Don't even get dressed – it's under protest." We just could not overcome that. So I figured that Watkins Glen was going to be my debut. The good thing was, I'd had a taste of the car.

MH: Was it a nice car, an easy car to drive?

MA: Up to that point, the only cars I had driven on a road course were the IndyCars, which were not the most agile machines, and sportscars. When I sat in the F1 car, I loved it; it felt so responsive. I had done so much testing with Firestone that, technically, I really understood

the dynamics of a race car. I was giving Colin pretty good feedback; it was fresh, something different compared to what he'd been hearing. We meshed really well.

MH: You've won races in five decades. They always say the first is the best, but it must have been nice in the fifth decade to win races and say: "Okay guys, I can still do this"...

MA: It was meaningful, yes. Why? Because I was always afraid to outstay my welcome. I loved driving so much that I just didn't want to quit. But the end was coming; I was already pushing the envelope by several years. Winning when I was 53 was all-important to me and then it was time to make a decision. I've seen some of my colleagues who probably stayed a little bit too long and I didn't want to have that memory.

It was really important for me to come away from the sport with positive memories; I think I accomplished that. I made that decision to quit almost on a whim by saying I would do one more year. My wife keeps reminding me she said she was very happy that I was coming out of the cockpit, but she felt we should have discussed it. I didn't discuss it with anyone. It's a decision I had to make myself. She said: "You're going to be miserable to live with; maybe you could add another couple of years?"

Maybe so – but I have no regrets. It was a critical time in my life to make that call because I've been fortunate and dodged so many bullets in my career. You've got to keep knocking on wood. You've got to be realistic. The bottom line is, someone up there was looking after me and it was time. I can only be so grateful for everything that has happened to me in my career.

Look how many great champions were never able to finish their career. We can start naming them; that was the saddest part about our sport in those days. The danger was something that was accepted and some of us really paid the ultimate price for it. I was one of the ones who were spared, which is why I was able to satisfy my career to the fullest. Do I know how fortunate I've been? You're damn right I do. →

Andretti's debut at Watkins Glen in 1968. He set pole, but the nose on his Lotus 49 broke in the race and he later retired



"When I told Colin Chapman I'd love to do F1 someday, he said: "Mario, when you think you're ready, call me"



"We bolted plastic strips to the edge of the Lotus 78 sidepod. I went out. First lap, I set a new track record"

MH: But it must be so difficult stopping something you've done day in, day out for such a long time. It's part of your life; getting the overalls and helmet on; waiting for the start lights to go out – then suddenly it stops.

MA: You have no idea how it changed my life. I just couldn't get away from disciplines such as the night before the race. When everybody was partying I remember saying that someday I'd be able to stay out there and party with the rest of them. But when it came to that point, I didn't want to do it. I was so used to not doing it.

There were other aspects I wasn't ready for. I came down with allergies for several years. I went to the University of Pennsylvania where

a doctor tried to analyse what was happening to me. He said: "You've lived your entire adult life on adrenaline. And now your body thinks you're dead, so you've no defences." In some ways it was like getting reacquainted with myself again. Right up to the very end of my career, I was active. I don't remember in my entire life as a racing driver being out of a race car for more than a couple of weeks. I never took a vacation. That's all my system really knew. It was a big, big jolt for me to change all that, it really was.

MH: What gave you the most pleasure when driving a race car?

MA: Just mastering the thing. It's like you're an animal trainer and you have a very dangerous

animal there. You know you're going to have a daunting job but it's the satisfaction of having that animal purr for you; an animal that could destroy you. It's the same thing with the race car. Getting it to really talk to you is something else. There were times, particularly in long distance races, when I thought: 'I'm in love with this car because the satisfaction is so immense.' Not every car is like that, obviously. But once you figure out how to make one really work, you find yourself wishing that every driver someday could experience what you're experiencing now.

It's difficult to put into words. It's the ultimate satisfaction because, again, you know that you're right on the very edge of disaster. I always said the trick is to just maintain that edge. If you fall off by one per cent, then you're mediocre. That's why my favourite quote is: "If everything seems under control, you're just not going fast enough." I was referring to qualifying when I said that. But it sums up what I'm trying to say.

MH: You must be aware of that when watching F1 now. Do you sense it in other drivers?

MA: Yeah, and not many drivers can reach that point. Watch Sebastian Vettel in qualifying. He's got one lap to go and, all of a sudden, boomp! He's on pole. You know why? He just has that ability to reach beyond. Qualifying was really a speciality of mine. You qualify on pole and feel you could never duplicate that lap. You do it out of that instinct. In your own mind, you feel: 'I cannot be beaten in this. Nobody will be able to do that.' Then, that night you think: 'Holy shit!' But you get away with it. And that's what puts you on pole.

MH: Driving championship dirt cars must have been an extreme sensation. What were you doing – 120mph and hanging the tail out?

MA: Yeah, there's a lot of satisfaction in that because you're really letting your hair down, so to speak. I just loved dirt racing because of that. You had to adapt almost every lap to different conditions to be able to maximise your grip and get the power to the ground. I always felt that it helped me develop some of the skills for racing in the wet. As a racing driver, I'm so lucky that I was able to do all that.

MH: Aside from the driving, your career has embraced so many changes to race cars...

MA: You know something Maurice, when I look back on my career it was so special. Lots of things like being part of the development of racing cars, starting in the mid-60s, going from front engine to rear engine, turbocharging,

aerodynamics; all of that. How do we make these things go faster and still stay within the rules? There was something captivating about that. Today, most of the series are spec series which is okay. It's great racing and so on but these series lack so much on the technical side. That's why F1 is still pure. I don't know for how long it will remain like that, but as long as it's there let's really enjoy that part because to me that completes the picture.

MH: In F1 terms, the most exciting thing for you must have been the ground-effect phenomenon coming in when you were with Lotus.

MA: At the end of 1976, we met at Hethel [Lotus HQ] with Colin and all of his engineers. We were talking about what would be on our wish lists. I said: "Downforce without drag penalty." It was kinda tongue in cheek – but nobody laughed. We talked a bit more and I said: "When I drove the STP March 701 F1 car, it had sidepods."

MH: Teardrop shapes, weren't they?

MA: That's right. Sidepods with the form of a wing. I was testing in South Africa and we decided to take those pods off because they were aesthetic and only a bit aerodynamic. As soon as I took them off, the front end was flying all over the place and I really had to crank on the front wing. That meant there was function. I told Colin that those things were valuable; they created downforce. Obviously these pods didn't have fences; nothing to give the flow direction. That's when it all started. He built the 78 and we're testing at Hockenheim, which then had the long fast right Ostkurve connecting the two straights. As I kept running, I told Colin I was picking up some downforce, right in the middle of the corner, when I had the most roll in the car. Colin figured right away that's when we were closing the gap between the sidepod and the ground. So he sent Bob Dance [Lotus mechanic] into town to get some plastic strips. We bolted them onto the bottom edge of the sidepod. I went out. Shit! First lap, I'm setting a new track record. But then, as I'm wearing the strips down,

it's getting worse and worse. So, that leads to putting brushes on the bottom edge and then the moveable skirts – and we're away.

MH: I have to tell you a story about that. I'd just started as a freelance F1 journalist in 1977 and I'd been commissioned to write a story about what was going on at Lotus... what was the trick thing with their car? The word at the time was that you were doing something clever with the diff.

MA: [Laughs] Yeah, I know what's coming...

MH: I'll bet you do. I get an appointment to see Chapman in the break between practice sessions at Zolder in that black John Player Special motorhome you had. I was ushered in. Colin was there, and you were sitting on one of those velour

couches along the side. I'm panicking. What do I know about F1 cars and I'm in this awesome company? I start to talk about the differential and there's a smile playing on Chapman's lips as he says; "Well, yes, we can't really tell you much about it, can we Mario?" And you're shaking your head and going: "No, Colin. We can't say much." And I'm completely taken in by this, thinking there really is something going on here. Which was your plan all along. It had nothing to do with the bloody diff, did it? It was a smoke screen to divert attention from the ground effect.

MA: [Laughs] We wanted some of the other teams to start doing some diff work – which some did, to a great extent! →



Andretti's March 701 at Brands Hatch in 1970. Its sidepods boosted downforce, paving the way for ground effect



The Lotus 79, the first car to make full use of ground effect, and the car that took Andretti to the title

INSETS: LAT ARCHIVE



"It was the greatest moment of my racing career, and the worst. To lose Ronnie was to lose family"



Andretti with team-mate and friend Ronnie Peterson in Brazil '76 (above); and Monza '78, where Andretti won the title and Peterson lost his life (right)



INSETS: LAT ARCHIVE

MH: Colin terrified me. I'd never spoken to him before; he sized me up immediately and spat me out the other side. You had a good relationship with him, but he could be a bit nasty with some of his drivers, couldn't he?

MA: You have no idea, Maurice. I heard him a couple of times with Gunnar Nilsson and also with Ronnie Peterson. On one occasion, I was so embarrassed to be hearing this and Colin said: "Mario, I'm sorry you had to see that side of me." I said: "You know, Colin, if you would ever treat me like that, I'll pick up my helmet and you'll never see me again. I can't believe you're doing that. You're deflating us, man – how could you do that?" He kinda shrugged his shoulders. I said it was not a pleasant thing to watch. I was really taken aback. He could be brutal, but I never experienced that side of him.

MH: In a way, that's a compliment to you.

MA: Well at least there was respect. My relationship with Colin was stupendous from the beginning. You knew that anyone like Colin

– Ferrari also – when they see you trying hard, when they see you're really committed, they respect that. I admired him immensely.

MH: You had a particularly good relationship with Ronnie, didn't you?

MA: And Gunnar. We developed a friendship that took us beyond the racetrack. I spent time at Ronnie's home, he spent time at my home. During the race weekend we'd play tennis together. We had an honest relationship as good friends, but also as the fiercest of competitors, because that's what good friends really are. It was like I was with my own kids; with my own son. You don't give an inch because you've got that extra pride, which goes both ways.

MH: It goes without saying that his death at Monza the weekend you won the championship must have had a massive effect on you.

MA: It was the greatest moment of my racing career, and the worst. To lose Ronnie was to lose family. I learned about his death when I was going to the hospital to see him the next day

[Monday]. I'm on the *autostrada*, get to a pay booth and the guy recognises me. He says: "Did you hear that Ronnie died?" Oh my God! I just could not believe it. He should have never died of those injuries at the hospital. That was one of the reasons that later on we created our own medical support with Professor Sid Watkins, a fabulous man who understood. He's the one that actually started putting some sense into our world because, this is for sure, our sport would not exist in modern times if the safety side of it had not been dealt with vigorously.

When you have companies spending millions of dollars to be part of a team, to be proud of it, they don't want to go to funerals. They want to celebrate. I said we've got to minimise that risk. That was another experience for me; working with drivers like Jackie Stewart at a time when our lives got better and better.

MH: What about the argument that it's too safe now, in that if drivers make mistakes they end up on asphalt run-off areas and carry on? →

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Vettel leads Alonso in Barcelona 2013 (left) and Andretti leads Lauda at Anderstorp in 1978 (below): "The champions of yesteryear would be champions today and vice versa"



INSETS: ANDREW FERRARO/LAT, LAT ARCHIVE

MA: Because you have all these features that allow a small mistake, you take more risk, which is natural. There's nothing wrong with that. All you do is just push the envelope a little further; that's what a racing driver is supposed to do. Today's racing drivers have paddles and so on, but because of that they're expected to go quicker. It's another tool that we didn't have. So when people say the driver of yesteryear was *really* a man compared to today's drivers, I disagree. I think the human element was a task then, and it is now. The champions of yesteryear would be champions today and vice versa. There's no question in my mind.

MH: There's been a lot of fuss about the drivers doing donuts and so on. I was there for your last win at Phoenix. I remember it well because I simply walked out onto the track after the race and took a picture of you. You did your slowing-down lap then parked the car at an angle, facing the grandstand. Then you stood up in the cockpit, received the applause and did media interviews. We stood round and talked to you; it seemed so natural and it showed respect for the spectators. I've got a thing about how drivers can't even take off their helmets on the slowing-down lap. Is F1 losing sight of the spectators?

"If a driver wants to do a donut, let him celebrate. He's telling his fans he is one happy dude right now"

MA: Yeah, to some degree. Alex Zanardi started the donuts: it caught on, a bit like Dan Gurney spraying champagne for the first time at Le Mans. It's wonderful. If the driver feels like doing a donut or whatever, let the guy celebrate. He's putting on a show; he's telling his fans up there that he is one happy dude right now. I've respect for what Sebastian did because he figured: 'You know what, I don't care what the rules say, I'm going to let go'. Never keep an individual from expressing him or herself when they've done something that feels so good.


MH: You mention connecting with the public. American racing is into that; F1 less so...

MA: I don't know about that. You hear it a lot but I think the F1 drivers are great. When I was doing the podium interviews in Austin 2012,

the drivers were having fun. Lewis Hamilton, Fernando Alonso and Seb; they were jovial. I don't see the issue there, quite honestly. You have more of a restriction on paddock access but, if they can get the sort of money they can get for those paddock passes, then why the hell not?

So, to answer your question, I'm not faulting any of this. Here's how I feel. F1, right now, is enjoying its best moments ever. As far as its popularity around the globe and the level of sophistication it's enjoying are concerned, I wouldn't change a damn thing. What F1 is doing is not bad. That's the way I see it.

MH: And you've seen a fantastic amount in such an incredible career. It's been brilliant to hear about it in your own words. Thank you, Mario.

MA: It's been a real pleasure. 



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Think you
know
everything
about F1?

Those making split-second decisions on the pitwall have to know F1's complex Sporting Regs inside out. Could you make the right calls? Former Force India and Williams engineer **Dominic Harlow** presents his fiendish...

Formula Quiz



Q1

You've just arrived at the track and hear your driver is feeling unwell. He might not be fit enough to drive on Friday and could even miss Saturday morning practice. Journalists are starting to question whether he will be allowed to race.

What do you tell them to set the record straight?

- a) He can start the race if he takes part in at least one of the free practice sessions.
- b) He can compete in qualifying (for the race), but only if he has driven in one of the free practice sessions
- c) He need only leave the pitlane in the first part of qualifying, and subsequently convince stewards that a lap within 107 per cent of the fastest of that session was possible.





Q2

It's Thursday afternoon and the truckies are preparing the tyres for the weekend. There is confusion over the number of sets of wheels and tyre blankets to cover the teams' tyre allocation for the coming weekend. It's further complicated because Pirelli have provided an additional prime tyre for Friday practice and a development tyre, too – and at least one of the Friday sessions could be wet.

What do you tell your truckie, who wants to know the maximum number of sets of tyres each car could use through the whole weekend – and on Saturday and Sunday alone?

- a) 12 sets and then eight sets
- b) 20 sets and then 15 sets
- c) 24 sets and then 16 sets



Q3

During the first Friday free practice session your driver forgets to re-set his pitlane speed limiter leaving the garage. His speed is recorded as 91km/h before he realises his mistake. You have to chalk it down to experience, but expect a fine.

How much is it and who pays – assuming the circuit has an 80km/h limit?

- a) €2,200 paid by the driver
- b) €1,100 paid by the team
- c) €1,000 paid by the team



Q4

In the final minutes of qualifying, your driver arrives back in the pits and exclaims over the radio: "Er, I think they might have wanted to weigh me. It was really difficult to see because I was behind a Red Bull, but then I saw the guy in the blue shirt waving."

You want to do another run, but what should you do?

- a) Tell the mechanics to prepare the car for your next run while you ask the driver for more information on what happened. Your team manager can then contact the race director, explain the situation and sort out what to do next.
- b) Get the car back to the FIA garage and have it weighed. You might not make the next part of qualifying but it's better than starting from the pitlane.
- c) Tell the driver to just get on with the next run. You might receive a reprimand after the session, but it won't cost you any grid positions. →



Q5

The order of the top eight cars after qualifying is: **HAM, ROS, BUT, ALO, RAI, MAS, HUL** and **PER**. Unfortunately both Jenson Button and Nico Rosberg require a change of gearbox, and neither are at the end of their current six-race cycle so both will incur a penalty; Rosberg's issue is a carry-over from the last event, and declared on Thursday, while Button's problem was found after fire-up and declared on Friday evening.

In what order will the drivers line up on the grid?

- a) HAM, ALO, RAI, MAS, HUL, PER, ROS, BUT
- b) HAM, ALO, RAI, MAS, HUL, ROS, BUT, PER
- c) HAM, ALO, RAI, MAS, HUL, PER, BUT, ROS



Q6

There are 25 minutes to go before the race starts, and you are making final preparations to go to the grid when your driver accidentally drops his steering wheel on the floor.

It is hurriedly re-fitted to the car and everything appears to be okay, but you need to decide what action to take next...

- a) Make an immediate written request to the FIA, asking to change the steering wheel. The driver is strapped in, so bear in mind he might have to drive to the grid with the old wheel and make a swap once there.
- b) Change the steering wheel, keeping the old one in view of the scrutineers; since it's obvious why you want to swap it, the FIA should have no problem when you later contact them to let them know.
- c) Just change the steering wheel since the rules expressly permit you to do so in such circumstances.

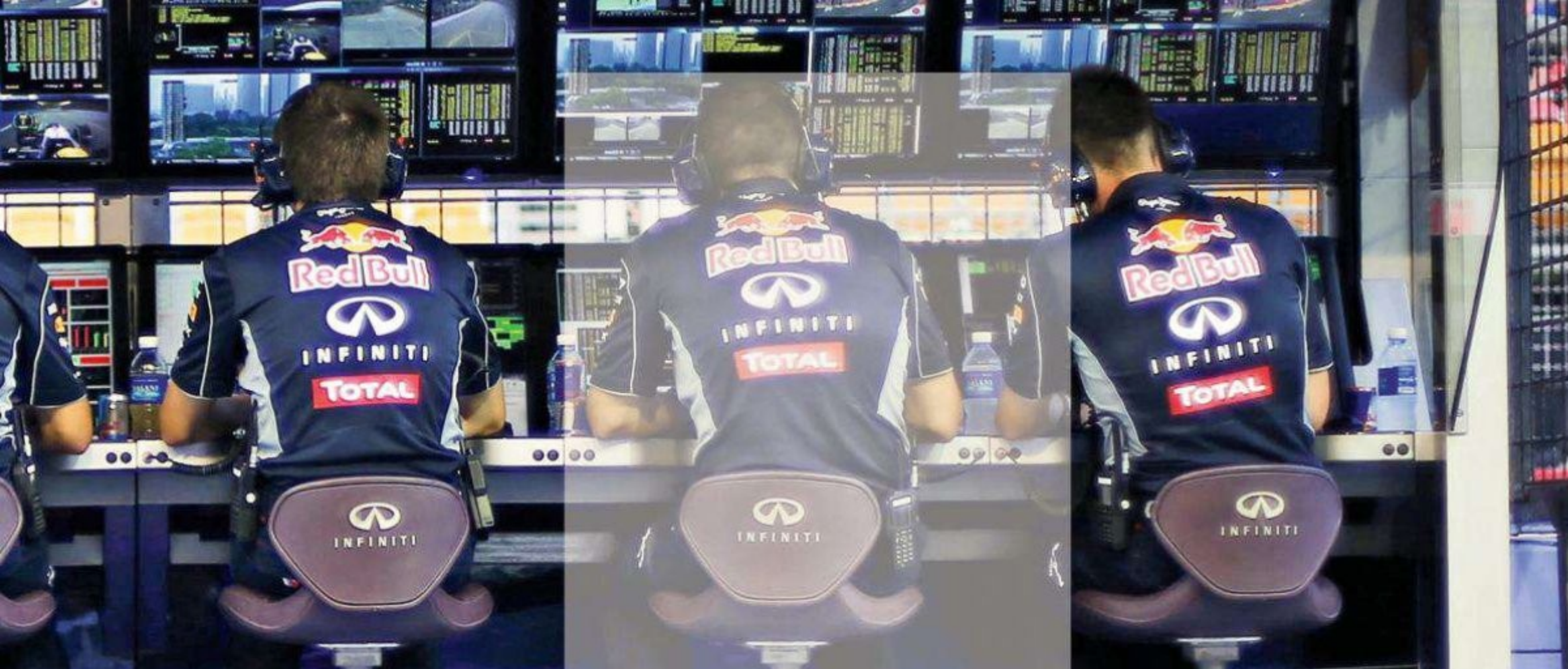


Q7

On the grid at the end of the first formation lap another driver raises his hands to indicate a problem. The 'Extra Formation Lap' board is shown. While the extra formation lap is completed, the affected driver is pushed to the pits and reaches the end of the pitlane in time for the second race start.

From this point, assuming there are no further mishaps, how many laps must the race leader complete for full points to be awarded (assuming full race distance is 66 laps)?

- a) 49 laps
- b) 49 laps, unless it's the affected driver, in which case 50 laps.
- c) 50 laps



PHOTOS: WILL TAYLOR-MEDHURST/LAT; ANDY HONE/LAT; ANDREW FERRARO/LAT; ALASTAIR STALEY/LAT; CHARLES COATES/LAT; STEVE ETHERINGTON/LAT



Q8

During an eventful wet race, you've been handed a five-second penalty. You were planning not to stop again, but the Safety Car and the rain have made it a necessity. Can you serve the five second penalty at the same time as stopping for wet tyres?

- a) Yes, it is effectively mandatory to do so.
- b) No, it would be a disadvantage tactically.
- c) No, you're not allowed to serve this penalty under the Safety Car.



Q9

Heavy rain leads to the race being suspended. The car has a damaged rear-wing endplate that you want to replace, and you also wish to change tyres. Are these actions permitted and what should you be looking out for?

- a) The car is in parc fermé, so you are stuck with the endplate and the tyres can't be changed until the FIA informs you via the timing screens that the race will resume behind the Safety Car.
- b) You can only repair damage if you were in the pitlane or pit entry when the race was suspended or if you took the car there from the track (meaning a drive-through penalty). The tyres can still be changed.
- c) Both can be done, but look for the FIA message about resumption, which gives a minimum of ten minutes' notice.



Q10

It's an incredibly close finish, and amazingly the timing system can't separate the fourth- and fifth-placed cars, one of which is yours. How many points will you and the other driver score?

- a) 11 points each.
- b) 12 points each.
- c) Ten and 12, with the FIA determining the order according to what criteria it thinks fit. ➔





PHOTOS: ANDREW FERRARO/LAT

HOW DID YOU DO?

Q1

C)

A driver must take part in at least one practice session (which includes qualifying) in order to start the race. *(2014 Sporting Regulations, Article 31.2)*

Q2

C)

Adding the 13 sets of dry tyres, two test tyres, additional Friday set, additional intermediate and the four intermediates and three wets usually supplied makes 24, eight of which must be returned before FP3. *(Article 25)*

Q3

C)

Until recently, the driver used to pay an unlimited fine of €200 per km/h over the limit. Now it's the teams' responsibility at a reduced rate of €100 up to a maximum of €1,000. *(2014 Sporting Regulations, Article 30.12)*

Q4

B)

A reprimand will be given for missing the weighbridge unless the car is immediately returned there with no work carried out. Otherwise the penalty is to start from the pitlane. *(2014 Sporting Regulations, Article 26.1iv)*

Q5

B)

The driver whose team declared the change to the FIA first gets preference in the order of application of penalties. *(2014 Sporting Regulations, Article 36.2c)*

Q6

A)

Since it is not qualifying and the car is not on the grid, it is necessary to make a written request for FIA permission to change the component. Once on the grid, you can make the swap first on a 'common sense basis'. *(Article 34.2)*

Q7

B)

The race is shortened by one lap for every extra formation lap, no matter where you start, but the leader must complete 75 per cent of the original race distance to be awarded full points. *(2014 Sporting Regulations, Articles 6.5 and 38.11)*

Q8

C)

Although a pitstop subsequent to a penalty being awarded would appear to require it to be served, this cannot be done under a Safety Car. *(2014 Sporting Regulations, Articles 16.3a and 16.4b)*

Q9

C)

Work on the cars is permitted, provided it does not delay the resumption of the race, and weight is not added during the race. *(2014 Sporting Regulations, Article 41.4b and Technical Regulations Article 4.5)*

Q10

A)

In a dead heat, 'prizes and points awarded for all the positions of competitors who tie, will be added together and shared equally'. *(2014 Sporting Regulations, Article 7.1)*

SCORE


0-3

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4-7

Not bad at all. Maybe you should consider joining the knowledgeable ranks of those who tweet the commentary teams during practice sessions...

8-10

Amazing! The Sporting Regulations clearly constitute your bedtime reading. Move over Sam Michael... 

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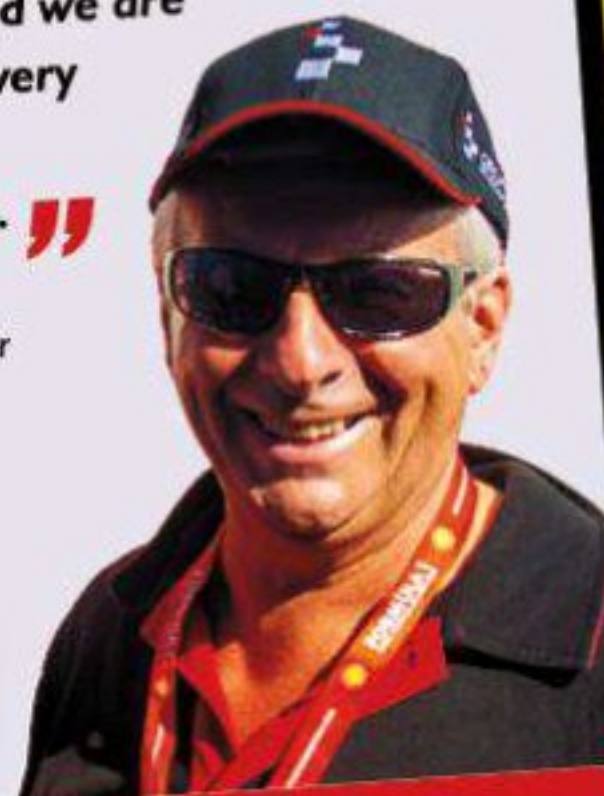
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THE ENGINEER'S ENGINEER

A quintessential English eccentric and a great engineering talent, Harvey Postlethwaite would have turned 70 last month had he not died of an untimely heart attack in 1999. Here, his protégé **Mike Gascoyne** shares memories of his mentor



Harvey Postlethwaite, bless him, said that he would go to his grave proving that F1 wasn't just about spending money. It was about engineering and being clever. He was passionate about engineering, insistent the sport wasn't just about bean counters and lawyers. When I see those types of people running teams now, it's soul destroying. Harvey would have felt the same way.

I worked with Harvey at Tyrrell for most of the 1990s and it was truly the end of a golden era of F1. Here was a man who had worked at Hesketh with James Hunt, then won two constructors' championships with Ferrari in 1982 and '83. And he came from the school where you worked hard and played hard. He loved his wine, but he was also very cerebral, a gregarious engineer with this wonderful Corinthian spirit. One of the reasons he loved working at Tyrrell was the lack of politics. There was no corporate structure admonishing him for his creative behaviour, and I think that's why we got on so well.

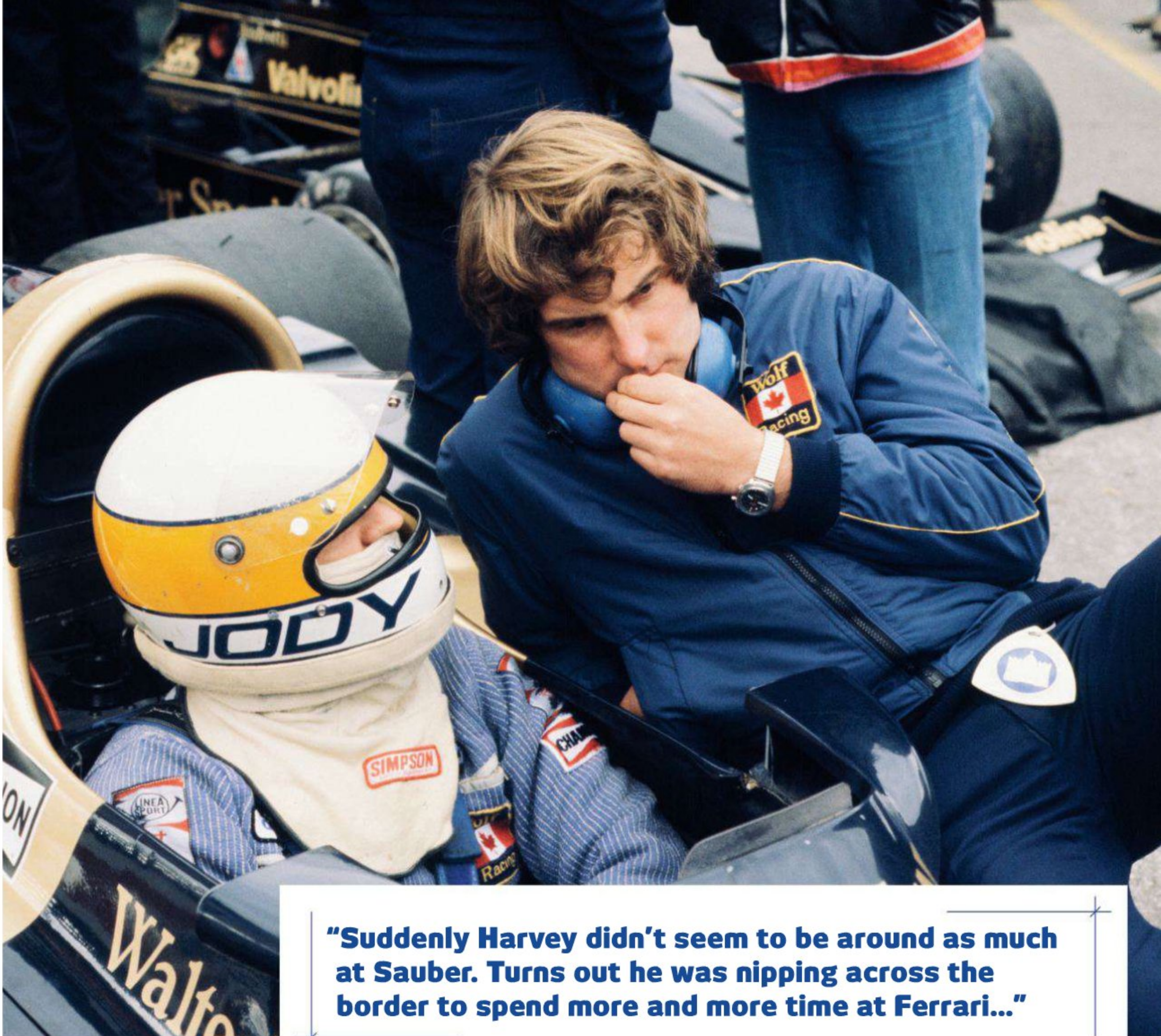
When I joined Tyrrell, there were design teams of just ten or 12 people working on the whole car. Now you've got, for example, a finite element method team of a dozen, then a drawing office of 200 people.

I first met Harvey when I went for a job interview at the tiny Tyrrell factory in Surrey, just after I'd left McLaren. I walked into his office and was greeted by this guy with wild, uncontrollable hair waving his arms around. I'd spent seven years at Cambridge, and this was just like going to see your mad professor at university. Within about five minutes we'd talked about vehicle dynamics, aerodynamics, engineering, politics, rugby and cricket. I walked out thinking: 'I don't really know what that was all about, but it was fun.'

At that time Tyrrell were very forward thinking: they had produced the first anhedral nose and they were working with Jean-Claude Migeot in the realms of aeromapping, windtunnel data and computer modelling – technology way ahead of its time. One day, Harvey asked me to write a report about setting up an R&D department. I didn't think anything of it, but when I went to see him he said it was very good and added: "Meet me in the pub down the road in 20 minutes."

Harvey had worked with Ferrari in the 1980s, but had been moved aside when John Barnard took over in 1988. He was quite bitter about that. He'd been approached by Mercedes who were looking to enter F1 as Sauber, →





“Suddenly Harvey didn’t seem to be around as much at Sauber. Turns out he was nipping across the border to spend more and more time at Ferrari...”

Jody Scheckter in the Postlethwaite-designed Wolf WR1, which won on its debut at the 1977 Argentine GP

and he saw this as a great opportunity to redeem himself – and he took me with him. For me, as a young aerodynamicist, it was a fantastic time to go out to Switzerland and set up an R&D department.

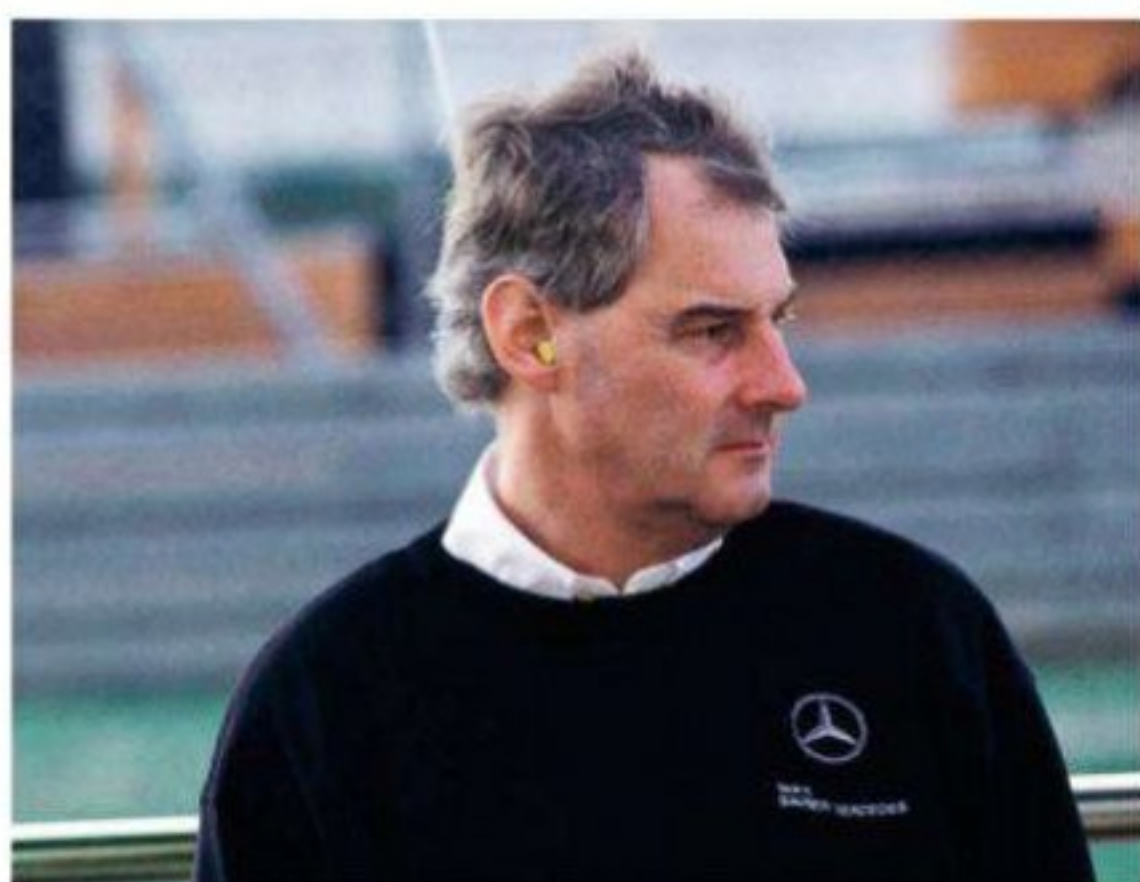
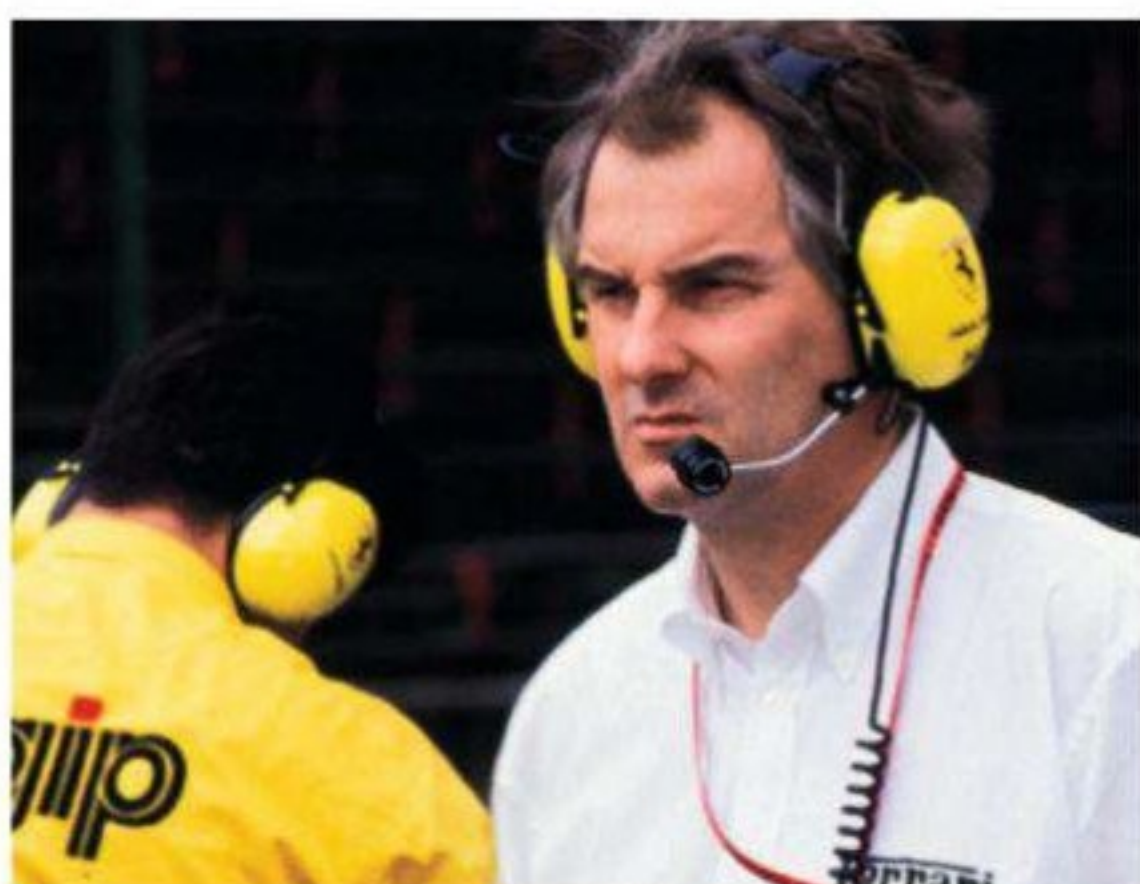
We went to Hinwil and there were big plans, but a huge amount of politics. As an example, the Mercedes bigwigs had a flat-12 in their C291 sportscar that was an absolute disaster, but they wanted to put it into their F1 car. It was Harvey who persuaded them to go with Mario Illien and badge the Ilmor as their F1 engine.

Despite the problems, it was a fun time. I remember watching the 1991 Rugby World Cup final at Harvey’s flat and having a few beers. Freddie Mercury had just died and when I came into work my screen saver had been changed to read: ‘Long live Freddie’. That was Harvey’s doing and then he would say: “Come on, let’s go down the pub at lunchtime [either in his Ferrari Daytona or 250 Lusso] and celebrate Freddie – wouldn’t want to be him, but what a guy!” He was tremendous fun to be with.

Then I became aware something was wrong, because suddenly he didn’t seem to be around as much. Turns out he was nipping across the border to spend more and more time at Ferrari. Mercedes hadn’t entered F1 quite as Harvey had expected. Meanwhile, Migeot had done the double-floor on the Ferrari F92A and Harvey thought that as it was quite radical he would return to Ferrari as the hero and be vindicated – but it didn’t turn out that way.

Before he left for Maranello, Harvey asked me to draw a windtunnel model at Sauber. He asked how it was going, looked at the wheelbase and gave it the thumbs up. Then he said: “How big is the fuel tank?” I said it was a model and didn’t need a fuel tank. But he continued: “No, no – what’s the fuel volume?” Then I twigged. I was designing the actual car! By hand – no CAD, nothing like that – all on a drawing board. It was Sauber’s first car – the C12 – and I didn’t really know what I was doing...

The double-floor Ferrari F92A turned out to be a disaster and Harvey aged massively during his second



PHOTOS: LAT ARCHIVE

Harvey's greatest hits

Five outstanding examples of race-car design innovation, penned by Postlethwaite

Rubber-spring suspension *Hesketh 308*

Supposedly inspired by rubber damping used in buildings in earthquake zones, the rubber-spring suspension used on Postlethwaite's 1975 Hesketh 308 was a simple and lightweight way of adding progressive springing to the car.



Carbon-fibre chassis *Ferrari 126 C3*

Although first used on the McLaren MP4/1, Postlethwaite introduced composite lightweight materials to Ferrari in 1983. With Mauro Forghieri, he penned the 126 C3, which would be Ferrari's final constructors'-title-winning car until the Schumacher era.



Anhedral nose *Tyrrell 019*

Developed with the help of Tyrrell's aerodynamicist Jean-Claude Migeot, the 1990 Tyrrell 019's anhedral inverted 'V' front wing revolutionised Formula 1. It worked by channelling more air under the front of the car, which boosted downforce.



Hydrolink suspension *Tyrrell 023*

This innovative system was developed in 1995 with the help of Fondmetal Technologies. It created independent control of the suspension's bump and roll characteristics, which allowed it to be precisely tailored to specific tracks.



X-wings *Tyrrell 025*

With a car lacking both downforce and engine power, Postlethwaite took old wing parts and attached them to a part of the car with no restriction on aerodynamics. They were copied by other teams in 1997, before being banned by the FIA.

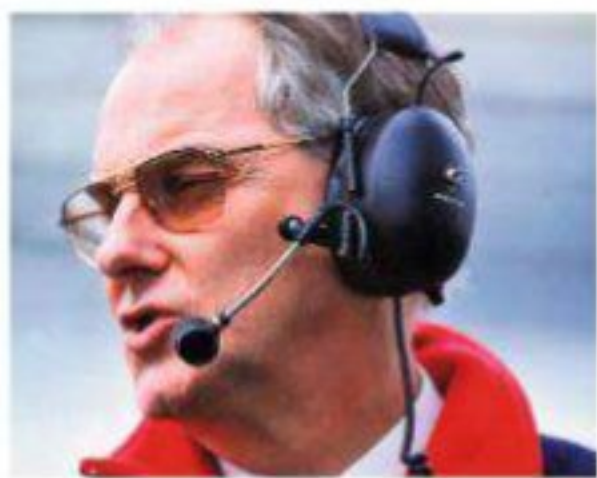


stint there. In 18 months, the guy I knew who had healthy brown hair was now gaunt and his hair had gone grey. It was no surprise when he went back to Tyrrell.

At the Portuguese GP in 1993 he arranged to meet me in the village of Sintra, in the mountains above Estoril. It was all typical Harvey. There he was with a couple of bottles of white wine on the go and a delicious fish meal, surrounded by chickens wandering about on the cobbled streets. "Mike, would you be my right-hand man and come back to Tyrrell with me?" he said. When I agreed, he bounced over, kissed the top of my head and immediately ordered another bottle of wine!

The next four years at Tyrrell weren't great in terms of results – because Ken couldn't always sort out the best engines because of a lack of money – but it was a great period for engineering innovation.

Harvey could inspire you to think outside the box. I remember at Hockenheim we decided to put front tyres on the rear wheels, and the narrower rubber meant we →



Harvey Postlethwaite His life's work

1970

Joined March as a designer, after graduating from Birmingham University with a PhD in Mechanical Engineering.

1974

Designed the Hesketh 308 that James Hunt took to an against-the-odds victory at the 1975 Dutch Grand Prix.

1976

When Hesketh's assets were bought by Walter Wolf, Postlethwaite went too and designed the Wolf WR1 that sensationally won on its F1 debut in Argentina 1977.

1980

Wolf sold his team to Fittipaldi, which built the F8 in which Keke Rosberg raced.

1981

Joined Ferrari, where his cars won constructors' titles in 1982 and 1983.

1988

John Barnard's arrival at Ferrari led to Postlethwaite's move to Tyrrell.

1991

Postlethwaite was hired by Mercedes to oversee their F1 return with Sauber.

1992

Moved back to Ferrari, where a combination of politics and the disastrous F92A prompted him to return to Tyrrell at the end of 1993.

1999

After Tyrrell were sold to BAR, Postlethwaite was overseeing the stillborn Honda F1 project when he died of a heart attack aged 55.



Tyrrell in 1995, including Mika Salo (far right), Mike Gascoyne (centre) and Harvey Postlethwaite (far right)



"Harvey would always challenge you. 'Why are you doing that?' 'Have you tried this?' And he would always offer really clever solutions"

saved a second in drag, (it was outlawed at the very next race). We developed aerodynamic wishbones and the X-wings. We used to say that our development list at Tyrrell was the same as Ferrari's because thinking is free. We just had to prioritise the three most important things on that list and develop those, because we knew Ferrari could develop all 100 items on their list.

As a trained mechanical engineer with a PhD, Harvey would always challenge you. "Why are you doing that?" "What do you want to gain from that?" "Have you tried this?" And he would always offer really clever solutions.

The whole thing with Tyrrell came to an end at the end of 1998, as BAR took over the operation and Honda started preparing for F1 with Harvey as team principal. We'd had a falling-out and I had gone over to Jordan. But we met up again a while later and he apologised for things not working out – he was intelligent enough to realise when he was wrong – and we patched things up.


Two weeks later, he dropped dead of a heart attack while testing in Barcelona. He was under a lot of pressure at that time, said he felt unwell, and died within a couple of hours. Steve Nielsen (now sporting director at Toro Rosso) went through his electronic organiser to contact his

family and found his to-do list. Top of it was: 'Go and see doctor about chest pains.' If he had done, he'd probably still be running around today.

People ask me what was the most important thing I learnt from Harvey, and I say: "Don't drop down dead of a heart attack in the pitlane at 55 years of age."

There's that classic picture of him, James Hunt, Bubbles Horsley and Alexander Hesketh sitting on the pitwall in the mid-1970s (below). Two slim blokes who have both dropped down dead of a heart attack and the other two big blokes, drinking champagne and still going.

A final memory of Harvey, is in Hockenheim where that huge grandstand stretches around the track. The crowd were excited and doing a Mexican wave. We were all on the grid with the warm-up lap a few minutes away and we heard this muttering: "Frequency... time..." What's the problem Harvey? And he was there with his

stopwatch looking at the crowd. "Hang on, I'm just trying to work out the natural frequency and speed of a Mexican wave!" And we were there about to put the engine cover on the car to start the race. But that was the bloke he was. I was very fond of him and to this day he's very deeply missed. 

Mike Gascoyne was talking to James Roberts



Hesketh, Hunt, Horsley and Harvey: "Two slim blokes who dropped down dead of a heart attack and two big blokes, drinking champagne and still going"

PHOTOS: LAT ARCHIVE, SUTTON IMAGES



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Mercedes play a blinder

The Silver Arrows' decision to let their drivers race freely produces a thrilling battle for supremacy between Lewis and Nico – and a classic Bahrain GP

REPORTS



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Merc claim their first one-two since 1955, with Lewis taking the victory



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Nico sets pole and Lewis takes the win, as silver domination continues

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There's understandably a lot of excitement about Bahrain



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Murray just can't contain himself as new-look F1 gets under way

RACE DEBRIEF by James Roberts

Malaysian Grand Prix

30.03.2014 / Sepang



Silver takes gold (and silver)

Lewis Hamilton led the first Mercedes one-two since 1955. And victories have seldom come easier

If this year's drivers' world championship is going to be a retelling of the fable of the tortoise and the hare, then the hare certainly made some significant gains in the second race of the year, at the Sepang International Circuit in Malaysia.

Lewis Hamilton already had the measure of his Mercedes team-mate Nico Rosberg following qualifying at the Australian Grand Prix, where he took pole position to his team-mate's third place, which, as it happened, turned out to be precisely the same line-up at Sepang. But his race in Melbourne was ruined by a hairline split in a £1 rubber tube that held his sparkplug in place, causing one of his six cylinders to fail.

It would be somewhat unfair to describe Rosberg as a 'tortoise', after his total domination of the Australian Grand Prix following Hamilton's fall, and in Malaysia he was there to pick up another hatful of points for second place, leaving him secure, for the time being at least, at the top of the drivers' standings.

Yet there was no doubt that Lewis was in complete control throughout the Sepang weekend. Proof of Hamilton's pace advantage over Rosberg was offered through their fuel-consumption figures. Under the 2014 regulations, drivers must use a maximum of 100kg of fuel between lights out and flag-fall, and the intervening consumption figures can be measured in real time. By lap 24, Hamilton had used 39.54 per cent of his allocated 100kg of fuel, whereas Rosberg had used 40.74 per cent – and Lewis held a lead of 9.925 seconds.

Fifteen laps later, Hamilton had used up 64.84 per cent of his allocation and Rosberg had used 67.18 per cent. Meanwhile, the gap between them had increased to 11.276 seconds.

By lap 51, just before Hamilton's final pitstop to change to the hard-compound tyre (taken late on in the race because of the threat of rain), Lewis had used just 84.73 per cent of his fuel to his team-mate's 88.08 per cent. The race lead was now 32.315 seconds.

The final winning margin of 17.313 seconds was indicative only of just how greatly Hamilton had eased his pace to ensure that no undue strain was placed on his Mercedes power unit. His need for a big points score after that DNF in Melbourne was doubtless at the forefront of his mind at all times.

Hamilton's race engineer, Pete Bonnington, confirmed the risk-averse strategy: "You are the fastest man on the track, but can we back the pace a little bit and look after the car? Take no risks," he emphasised.

This one looked just about as easy as they come for Lewis Hamilton, despite the ever-oppressive elemental challenges of this tropical clime. But, as Lewis himself put it: "I don't think any race is easy. Having to look after the car, the fuel, not making any mistakes – it was a massive challenge in that sense. I would hear that Nico had stepped up his pace, so reacting to that without damaging the tyres was without doubt a great challenge."

A challenge, indeed, most keenly felt by Rosberg, who struggled throughout the race with wear issues, particularly at the rear. And while monitoring their condition in his mirrors he would also have seen the ominous dark-blue threat of Sebastian Vettel's Red Bull RB10 looming up behind him.

The closest the two Germans got to each other out on track, however, was just moments after the start, Vettel veering to the right and ushering Rosberg's Mercedes towards the pitwall. It led to a blunt exchange between the two in the post-race press conference, betraying a degree of needle between the compatriots: "Sebastian... I thought he was going to put me right into the wall, but he stopped just before, so thank you for that," said Rosberg.

"I had a similar experience last year," replied Vettel, reliving his wheel-to-wheel 'Multi-21' dice with Mark Webber.

"That doesn't make it right to do it again," Rosberg snapped straight back at him. "My heartbeat skipped a little bit, but I kept right on it. I then had a bit of a moment in Turn 3 and it allowed him to get another run on me, but it all worked out okay."

A spicy subplot for the season...

Vettel's presence spoke of – should we be surprised? – another strong performance from Red Bull, after Daniel Ricciardo's second-on-the-road in Melbourne. Both drivers impressed, although Ricciardo, just as was the case in Australia, was undone by circumstances beyond his control. A botched tyre stop on lap 41 led to an unsafe release from his box, and given the FIA's declaration of a new strictness on pitlane safety this season, he was given a ten-second stop/go penalty and, on top of that, a ten-place grid penalty for Bahrain.

Behind the dominant Mercedes and irrepressible Red Bulls, there was further evidence of the need by a number of wannabe challengers – Ferrari, McLaren and Williams – to up their development pace if they're to have any chance of winning the championship.

Williams at least, although not establishing themselves as frontrunners in Malaysia, provided a feisty intra-team dice in the race's latter stages, prompting Felipe Massa's race engineer Andrew Murdoch to deliver a repeat of the unforgettable line that has haunted the Brazilian driver since the 2010 German Grand Prix: "Felipe, your team-mate is faster than you."

These days, of course, that team-mate is emerging hot-shot Valtteri Bottas, rather than Fernando Alonso, and times have changed in other ways, too: Felipe did not, on this occasion, make way.

As the fable tells us, it's not always the hare that finishes ahead... **F1**

The story of the race

V Pre-race, a minute's silence is observed to remember passengers of Malaysian Airlines flight MH370

SEPANG



> Hamilton leads from the start, while team-mate Rosberg is squeezed to the pitwall by Vettel



< Marussia's Jules Bianchi hits the Lotus of Pastor Maldonado at Turn 4 on the opening lap



< Kevin Magnussen is given a five-second stop/go penalty for running into Räikkönen's Ferrari



< Ricciardo is released from his pitbox before his front left tyre is securely fastened – leading to a penalty



> Four laps from the flag, Alonso passes an impressive Hülkenberg in the Force India for fourth



> Williams radio Felipe Massa with the unfortunate message: "Valtteri is faster than you"



^ Lewis Hamilton claims his 23rd win to give Mercedes their first one-two finish since the 1955 Italian GP

> Actor Benedict Cumberbatch performs the celebrity podium interview with the top three finishers



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Malaysian Grand Prix stats

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

THE GRID



2. VETTEL
RED BULL

1min 59.486secs Q3



4. ALONSO
FERRARI

2min 00.175secs Q3



6. RÄIKKÖNEN
FERRARI

2min 01.218secs Q3



8. MAGNUSSEN
McLAREN

2min 02.213secs Q3



10. BUTTON
McLAREN

2min 04.053secs Q3



12. GUTIÉRREZ
SAUBER

2min 02.369secs Q2



14. PÉREZ
FORCE INDIA

2min 02.511secs Q2



16. MALDONADO
LOTUS

2min 02.074secs Q1



18. BOTTAS*
WILLIAMS

2min 02.756secs Q2



20. KOBAYASHI
CATERHAM

2min 03.595secs Q1



22. ERICSSON
CATERHAM

2min 04.407secs Q1



1. HAMILTON
MERCEDES

1min 59.431secs Q3



3. ROSBERG
MERCEDES

2min 00.050secs Q3



5. RICCIARDO
RED BULL

2min 00.541secs Q3



7. HÜLKENBERG
FORCE INDIA

2min 01.712secs Q3



9. VERGNE
TORO ROSSO

2min 03.078secs Q3



11. KVIAT
TORO ROSSO

2min 02.351secs Q2



13. MASSA
WILLIAMS

2min 02.460secs Q2



15. GROSJEAN
LOTUS

2min 02.885secs Q2



17. SUTIL
SAUBER

2min 02.131secs Q1



19. BIANCHI
MARUSSIA

2min 02.702secs Q1



21. CHILTON
MARUSSIA

2min 04.388secs Q1

THE RACE



THE RESULTS (56 LAPS)

1st	Lewis Hamilton	Mercedes	1h40m 25.974s
2nd	Nico Rosberg	Mercedes	+17.313s
3rd	Sebastian Vettel	Red Bull	+24.534s
4th	Fernando Alonso	Ferrari	+35.992s
5th	Nico Hülkenberg	Force India	+47.199s
6th	Jenson Button	McLaren	+83.691s
7th	Felipe Massa	Williams	+85.076s
8th	Valtteri Bottas	Williams	+85.537s
9th	Kevin Magnussen	McLaren	+1 lap
10th	Daniil Kvyat	Toro Rosso	+1 lap
11th	Romain Grosjean	Lotus	+1 lap
12th	Kimi Räikkönen	Ferrari	+1 lap
13th	Kamui Kobayashi	Caterham	+1 lap
14th	Marcus Ericsson	Caterham	+2 laps
15th	Max Chilton	Marussia	+2 laps

Retirements

Daniel Ricciardo	Red Bull	49 laps – front wing
Esteban Gutiérrez	Sauber	35 laps – gearbox
Adrian Sutil	Sauber	32 laps – power unit
Jean-Éric Vergne	Toro Rosso	18 laps – turbo
Jules Bianchi	Marussia	8 laps – accident damage
Pastor Maldonado	Lotus	7 laps – power unit
Sergio Pérez	Force India	0 laps – gearbox/dns

THROUGH SPEED TRAP



Fastest: Felipe Massa, 201.63mph



Slowest: Pastor Maldonado, 172.55mph

TYRE COMPOUNDS USED



Medium



Hard



Intermediate



Wet

CLIMATE



Sunny 29°C

TRACK TEMP

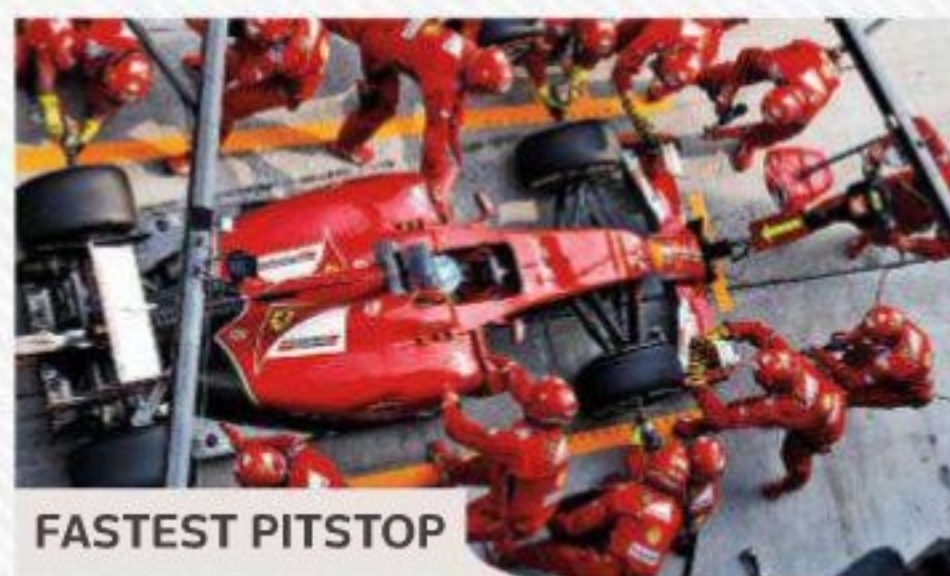


38°C



FASTEST LAP

Lewis Hamilton, lap 53, 1min 43.066secs



FASTEST PITSTOP

Fernando Alonso, 24.222secs (entry to exit)

DRIVERS' STANDINGS

1st	Nico Rosberg	Mercedes	43pts
2nd	Lewis Hamilton	Mercedes	25pts
3rd	Fernando Alonso	Ferrari	24pts
4th	Jenson Button	McLaren	23pts
5th	Kevin Magnussen	McLaren	20pts
6th	Nico Hülkenberg	Force India	18pts
7th	Sebastian Vettel	Red Bull	15pts
8th	Valtteri Bottas	Williams	14pts
9th	Kimi Räikkönen	Ferrari	6pts
10th	Felipe Massa	Williams	6pts
11th	Jean-Éric Vergne	Toro Rosso	4pts
12th	Daniil Kvyat	Toro Rosso	3pts
13th	Sergio Pérez	Force India	1pt
14th	Adrian Sutil	Sauber	0pts
15th	Romain Grosjean	Lotus	0pts
16th	Esteban Gutiérrez	Sauber	0pts
17th	Max Chilton	Marussia	0pts
18th	Kamui Kobayashi	Caterham	0pts
19th	Marcus Ericsson	Caterham	0pts
20th	Daniel Ricciardo	Red Bull	0pts
21st	Jules Bianchi	Marussia	0pts
22nd	Pastor Maldonado	Lotus	0pts

CONSTRUCTORS' STANDINGS

1st	Mercedes	68pts	9th	Lotus	0pts
2nd	McLaren	43pts	10th	Caterham	0pts
3rd	Ferrari	30pts	11th	Marussia	0pts
4th	Williams	20pts			
5th	Force India	19pts			
6th	Red Bull	15pts			
7th	Toro Rosso	7pts			
8th	Sauber	0pts			



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*Three-place grid penalty for impeding another driver

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RACE DEBRIEF by James Roberts

Bahrain Grand Prix

06.04.2014 / Sakhir



Like a thief in the night

Nico Rosberg had the faster car, but Lewis Hamilton stole this one from under his team-mate's nose

The 900th world championship Formula 1 race was a thriller. Held for the first time under floodlights on the tiny island kingdom of Bahrain in the middle of the Arabian Gulf, this grand prix will live long in the memory – for many reasons. At its heart was a classic cat-and-mouse dice between two drivers who have spent their careers racing wheel-to-wheel against each other.

For much of the weekend, Nico Rosberg seemed to have put his defeat in Sepang behind him and looked to have the advantage over Lewis Hamilton. From the trackside on Friday morning at the notoriously tricky Turn 10, he was smooth and unhurried into the long left-hander, getting excellent traction for the following straight. His rivals, meanwhile, were locking up their front-lefts as they scrabbled for grip.

Sakhir is a track on which Rosberg has always excelled. He won the GP2 title here, scored a point and set the fastest lap on his F1 debut here in 2006; he has been on pole here for the past two years. Nico downplayed the significance of

this form in his press briefing on Saturday night but, post-race, Lewis said that the combination of the track and the research the Mercedes engineers had accumulated in the previous week had helped his team-mate.

“When I arrived here this weekend there was this big document with all the reasons why I was so quick [in Malaysia], and he used that to his advantage,” said Lewis, incredibly relaxed after his titanic scrap from a few hours earlier. “I’ve worked so hard this weekend,” he added. “I stayed extra long last night to try to find out every little detail because I knew I didn’t have the ultimate pace this week, as I did in Malaysia. And you can’t be the quickest at every single track. There are going to be circuits where one gets it better than the other, and Nico’s particularly strong here.”

This race hinged on who led the early stages and as the red lights went out, it was Hamilton who outgunned his team-mate into Turn 1. Although Rosberg got a run back at him into

Turn 4, Lewis positioned his W05 astutely to repel any further attack on the rest of the lap.

As a result of being second at this stage of the race, Mercedes played out their pre-race plan and switched Rosberg to their alternative tyre strategy. The option-option-prime route was the optimal one (which Lewis took) and the option-prime-option was expected to shake out a couple of seconds slower. Rosberg was now placed on this strategy, which meant he would be on the faster tyre at the end of the race.

His goal became a whole lot easier thanks to Pastor Maldonado nerfing Esteban Gutiérrez into a frightening-looking roll at Turn 1, which led to the deployment of the Safety Car. Suddenly, Lewis’s nine-second lead (which he had pulled out while Nico was lapping with the medium tyre) was nullified. The Hamilton vs Rosberg battle was on: everything to play for, winner takes all. Which driver would emerge on top?

At this stage of the race, Mercedes’ executive director (technical) Paddy Lowe took to the radio

to remind both drivers of their duty to bring both cars home. He revealed later that evening that it wasn't just the drivers duelling for honours, but the engineers on either side of the garage, too.

"A new game you can play in F1 is energy management," said Lowe. "With this power unit you can save up energy and deploy it in double boosts and what we saw in the last ten laps was a cat and mouse game with the drivers competing on track and each side of the garage competing in terms of playing with the energy deployment."

As they dived for the win, there were similar intra-team battles going on further down the field with the Red Bulls, Williams and Force India team-mates all closely fighting one another.

This on-track action was the perfect antidote to a morning of bluster. During the day, F1 bosses crisscrossed the paddock surrounded by camera crews and journalists. In one camp were Bernie Ecclestone and Luca Di Montezemolo, the latter criticising the spectacle of the new F1 as "taxi-driving". And yet they were notable for their absence in the aftermath of such a brilliant race. Mercedes deserved credit for allowing the show to go on – it wasn't so long ago that Ferrari would enjoy a huge advantage (much like Mercedes have today) and ensure that team orders were applied from the first lap.

Despite the Mercedes pair coming ever so close to touching, to their credit they didn't, and Hamilton held on to victory in one of the most exciting duels in years. Afterwards, just before the podium, he told Nico it had reminded him of their first race together in karting. Later, he elaborated on that remark.

"When I went to Italy to race karts, Nico was the superstar there. It was only my second race and he was leading. I was second and we slipstreamed each other to get away from the rest of the field. I was pushing him down the straights and every lap I was right on his tail. On the last lap I overtook him and won the race. That was the start of our career racing each other, and I was thinking while driving in the grand prix today, 'he's going to get me back'. I'd led the whole time and payback was coming..."

If both W05s can run reliably, it seems that, for now, each grand prix will feature an epic tussle for the lead between the Silver Arrows, with a similarly pitched battle to be 'best of the rest' raging a few seconds down the road. Sergio Pérez earned that place by seizing the initiative from his team-mate early on, then holding off a very determined Daniel Ricciardo in the latter stages. To win, though, would have required the two drivers up front to suffer a failure of discipline. "Were you hoping the two Mercedes would hit each other?" Pérez was asked on Sunday night. "I was praying they would," he said, "but it didn't happen." **F1**

The story of the race

V Hamilton beats Merc team-mate Rosberg into Turn 1, while Massa slots into third from seventh



SAKHIR



> Jean-Eric Vergne is forced to pit on the opening lap after being hit by a Lotus



> Tyre degradation is higher than expected for Williams, so the drivers switch to a three-stop strategy



< Pérez and Hülkenberg manage their tyres well to finish third and fifth – Force India's best ever result



> The Safety Car comes out when Maldonado hits Gutiérrez's Sauber and rolls him at Turn 1



^ Rosberg attacks on the restart, but Hamilton holds on for win 24th – equalling Fangio's record

> Jenson Button is classified 17th, but fails to finish his 250th GP after a clutch problem



MAIN PHOTO: CHARLES COATES/LAT; ILLUSTRATION: ALAN ELDREDGE; INSETS: GLENN DUNBAR/LAT; SAM BLOXHAM/LAT; ANDY HONE/LAT; CHARLES COATES/LAT

Bahrain Grand Prix stats

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

THE GRID



1. ROSBERG
MERCEDES
1min 33.185secs Q3



3. BOTTAS
WILLIAMS
1min 34.247secs Q3



5. RÄIKKÖNEN
FERRARI
1min 34.368secs Q3



7. MASSA
WILLIAMS
1min 34.511secs Q3



9. ALONSO
FERRARI
1min 34.992secs Q3



11. HÜLKENBERG
FORCE INDIA
1min 35.116secs Q2



13. RICCIARDO*
RED BULL
1min 34.051secs Q3



15. GUTIÉRREZ
SAUBER
1min 35.891secs Q2



17. MALDONADO
LOTUS
1min 36.663secs Q1



19. BIANCHI
MARUSSIA
1min 37.310secs Q1



21. CHILTON
MARUSSIA
1min 37.913secs Q1



2. HAMILTON
MERCEDES
1min 34.464secs Q3



4. PÉREZ
FORCE INDIA
1min 34.346secs Q3



6. BUTTON
McLAREN
1min 34.387secs Q3



8. MAGNUSSEN
McLAREN
1min 34.712secs Q3



10. VETTEL
RED BULL
1min 34.985secs Q2



12. Kvyat
TORO ROSSO
1min 35.145secs Q2



14. VERGNE
TORO ROSSO
1min 35.286secs Q2



16. GROSJEAN
LOTUS
1min 35.908secs Q2



18. KOBAYASHI
CATERHAM
1min 37.085secs Q1



20. ERICSSON
CATERHAM
1min 37.875secs Q1



22. SUTIL**
SAUBER
1min 36.840secs Q1

THE RACE



THE RESULTS (57 LAPS)

1st	Lewis Hamilton Mercedes	1h39m 42.743s
2nd	Nico Rosberg Mercedes	+1.085s
3rd	Sergio Pérez Force India	+24.067s
4th	Daniel Ricciardo Red Bull	+24.489s
5th	Nico Hülkenberg Force India	+28.654s
6th	Sebastian Vettel Red Bull	+29.879s
7th	Felipe Massa Williams	+31.265s
8th	Valtteri Bottas Williams	+31.876s
9th	Fernando Alonso Ferrari	+32.595s
10th	Kimi Räikkönen Ferrari	+33.462s
11th	Daniil Kvyat Toro Rosso	+41.342s
12th	Romain Grosjean Lotus	+43.143s
13th	Pastor Maldonado Lotus	+59.909s
14th	Kamui Kobayashi Caterham	+62.083s
15th	Max Chilton Marussia	+87.900s
16th	Jules Bianchi Marussia	+1 lap
17th	Jenson Button McLaren	+2 laps - DNF/clutch

Retirements

Kevin Magnussen McLaren	40 laps - clutch
Esteban Gutiérrez Sauber	39 laps - accident
Marcus Ericsson Caterham	33 laps - oil leak
Jean-Éric Vergne Toro Rosso	18 laps - damage
Adrian Sutil Sauber	17 laps - accident

THROUGH SPEED TRAP



Fastest: Felipe Massa, 208.59mph



Slowest: Esteban Gutiérrez, 186.41mph

TYRE COMPOUNDS USED



Soft



Medium



Intermediate



Wet

CLIMATE

Clear/night **23°C**

TRACK TEMP

29°C



FASTEST LAP

Nico Rosberg, lap 49, 1min 37.020secs



FASTEST PITSTOP

Nico Hülkenberg, 24.440secs (entry to exit)

DRIVERS' STANDINGS

1st	Nico Rosberg Mercedes	61pts
2nd	Lewis Hamilton Mercedes	50pts
3rd	Nico Hülkenberg Force India	28pts
4th	Fernando Alonso Ferrari	26pts
5th	Jenson Button McLaren	23pts
6th	Sebastian Vettel Red Bull	23pts
7th	Kevin Magnussen McLaren	20pts
8th	Valtteri Bottas Williams	18pts
9th	Sergio Pérez Force India	16pts
10th	Daniel Ricciardo Red Bull	12pts
11th	Felipe Massa Williams	12pts
12th	Kimi Räikkönen Ferrari	7pts
13th	Jean-Éric Vergne Toro Rosso	4pts
14th	Daniil Kvyat Toro Rosso	3pts
15th	Romain Grosjean Lotus	0pts
16th	Adrian Sutil Sauber	0pts
17th	Esteban Gutiérrez Sauber	0pts
18th	Max Chilton Marussia	0pts
19th	Kamui Kobayashi Caterham	0pts
20th	Marcus Ericsson Caterham	0pts
21st	Pastor Maldonado Lotus	0pts
22nd	Jules Bianchi Marussia	0pts

CONSTRUCTORS' STANDINGS

1st Mercedes	111pts	9th Sauber	0pts
2nd Force India	44pts	10th Marussia	0pts
3rd McLaren	43pts	11th Caterham	0pts
4th Red Bull	35pts		
5th Ferrari	33pts		
6th Williams	30pts		
7th Toro Rosso	7pts		
8th Lotus	0pts		



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*Ten-place grid penalty for unsafe release at Malaysian GP
**Five-place grid penalty for forcing another driver off the track

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The Spanish GP preview



Round 5 / 9-11 May / Circuit de Barcelona-Catalunya

Finding the right setup here will be hard... and overtaking will be even harder



THE ENGINEER'S VIEW

Pat Symonds,

Williams' chief technical officer

For the first time in many years, teams will arrive at the Circuit de Catalunya without having spent a significant proportion of their winter testing time here. Combined with regulation changes, this means teams will have to do more than simply fine-tune their winter test setups.

The Spanish Grand Prix is also the first race in Europe, closer to all the teams' bases than the fly-away races, which means most bring a significant upgrade package and have their work cut out to get new parts working in harmony.

Despite the introduction of the chicane towards the end of the lap, which removed one of the most critical aerodynamically influenced sections, this track is still one of the best barometers of aerodynamic performance, due to the long, high-speed corners. With the medium-speed corners found on the rest of the track and the long straight, Barcelona provides a varied set of exercises to assess a car's performance.

The one thing the track really does lack is long braking zones. Overtaking here is notoriously tough – demonstrated by the fact that only one driver has ever won here after qualifying off the front row, and nearly 80 per cent of races have been won by the car on pole position. Things should be a bit better this year, but qualifying is still extremely important to a good race result.

The track surface is quite abrasive and the combination of so many long, high-speed

corners has a major impact on tyre wear. Pirelli typically tend to bring harder compounds here, but that may need to be balanced this year by also selecting compounds of the correct temperature working range. Managing the tyres, especially the front left, will be vital to ensure the optimum strategy can be achieved. In particular, getting the balance of the car right through Turns 3 and 9 will be key to saving the tyres and avoiding too much understeer through these high-speed corners.

The circuit is not much of an 'engine' track, because the engine isn't put under a particularly high amount of stress and there are relatively few hard acceleration zones here. The pecking order, therefore, may be quite different to that seen at earlier races, and will be a good guide as to which teams have done the best aerodynamic job with their car.

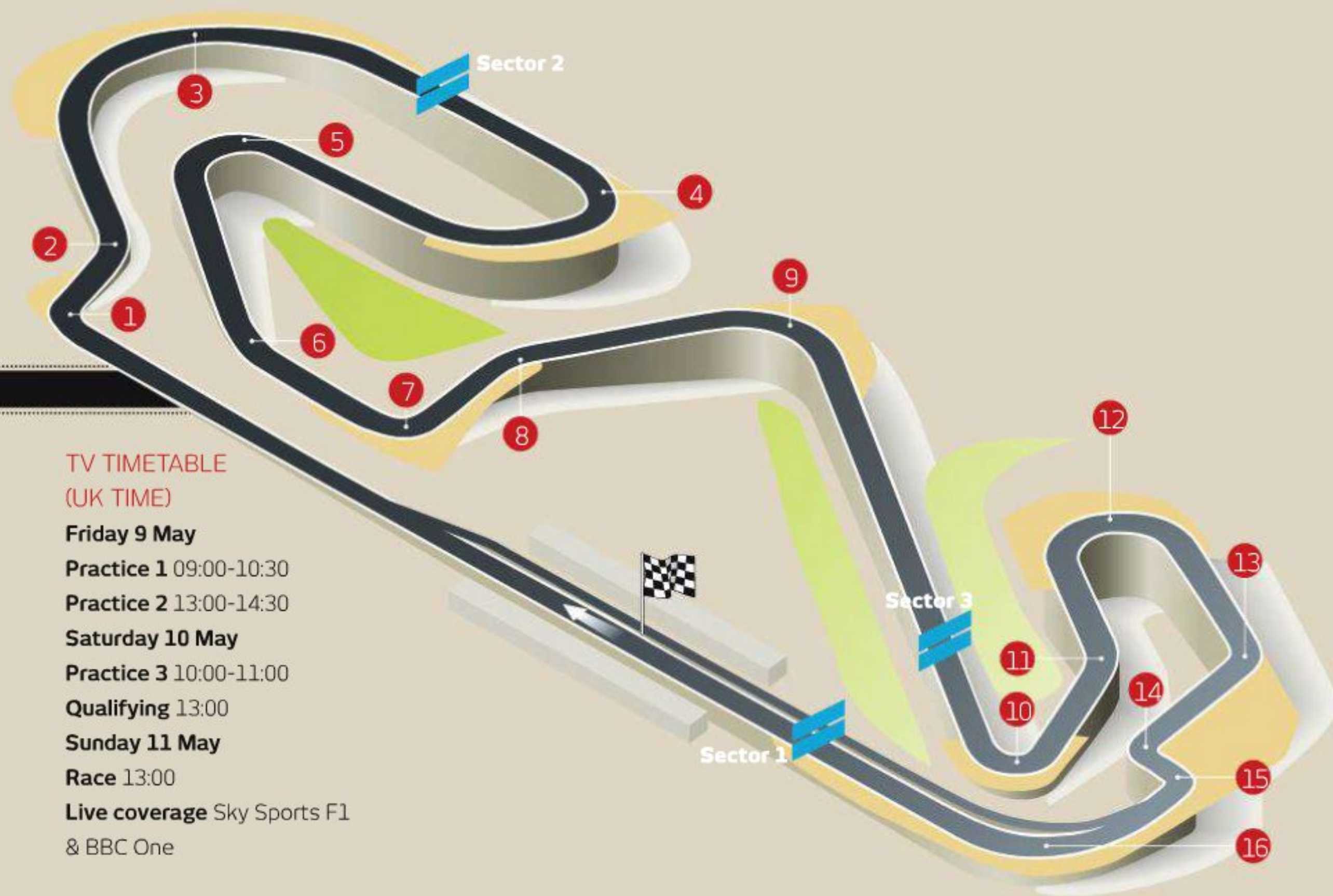


SPANISH GP RACE DATA

Circuit Name Circuit de Barcelona-Catalunya
First GP 1991
F1 races held 23
Laps 66
Circuit length 2.892 miles
Race distance 190.825 miles
Direction Clockwise
Winners from pole 17

TV TIMETABLE (UK TIME)

Friday 9 May
Practice 1 09:00-10:30
Practice 2 13:00-14:30
Saturday 10 May
Practice 3 10:00-11:00
Qualifying 13:00
Sunday 11 May
Race 13:00
Live coverage Sky Sports F1 & BBC One



WHAT HAPPENED IN LAST YEAR'S RACE...?

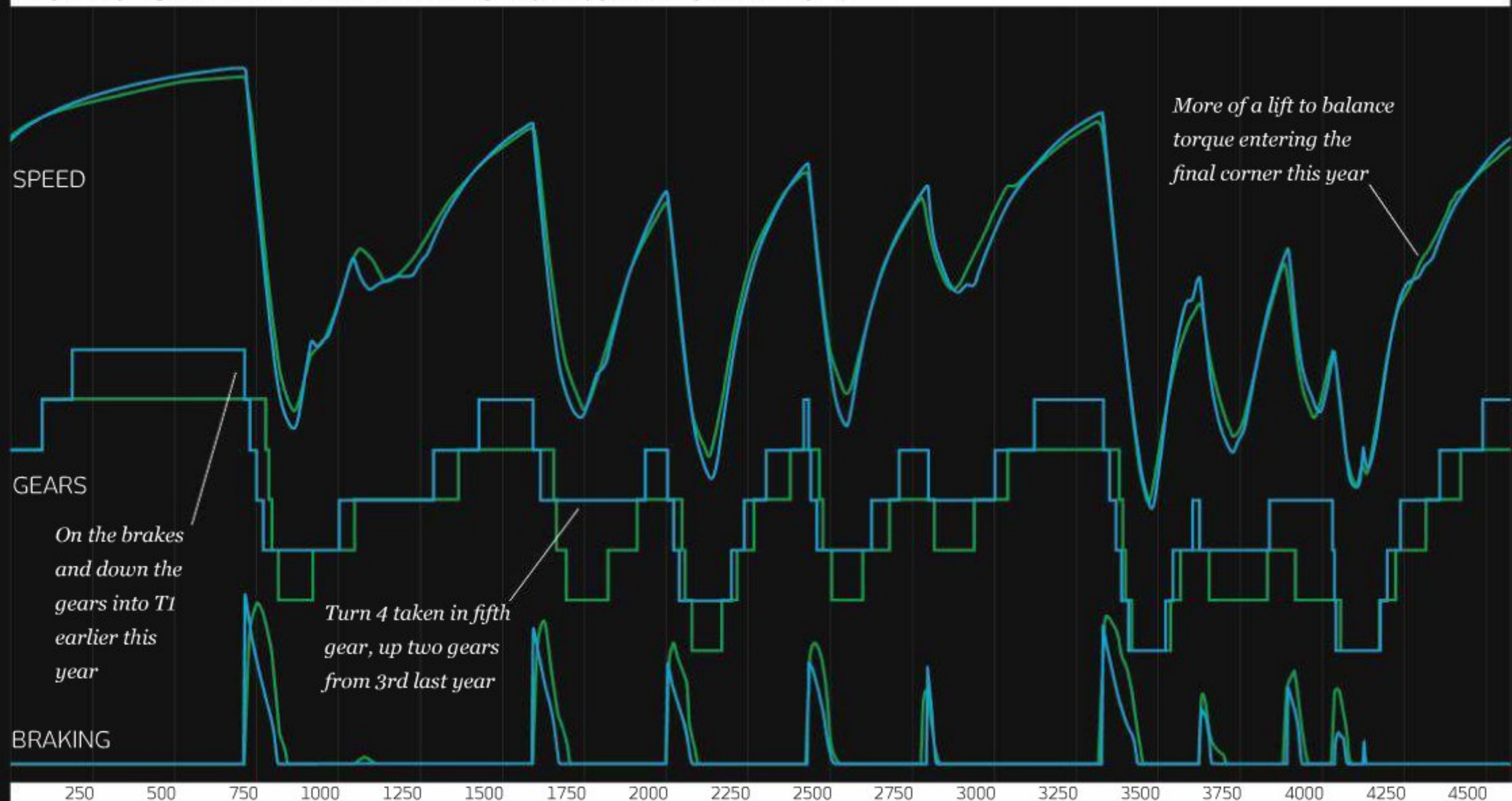
Winner Fernando Alonso
Margin of victory 9.338s
Fastest lap 1m 26.217s, E Gutiérrez
Race leaders 5
Pitstops 79
Overtakes 50



"We knew that to win, we needed to pass people right away," said Fernando Alonso after last year's GP. The Ferrari man aced the first couple of corners to leapfrog Kimi Räikkönen and Lewis Hamilton. He inherited the lead when both Vettel and Rosberg pitted, and held on to take another home victory.

BARCELONA TELEMETRY 2014 2013

HOW A SIMULATED LAP HERE IN A NEW 2014 CAR COMPARES WITH LAST YEAR



Start T1 T4 T5 T7 T9 T10 T12 T13 T14 T16 Finish

ILLUSTRATION: ALAN ELDREDGE PHOTOS: STEVE ETHERINGTON/LAT; ANDREW FERRARO/LAT



STAR LETTER



Hamilton and Rosberg:
racing freely in Bahrain,
without team intervention

Team orders get their marching orders

Mercedes' decision to let Nico Rosberg and Lewis Hamilton race freely has come under immediate criticism for being foolish, but I find it refreshing. No one enjoys watching team orders clumsily unfold, with drivers being asked to sacrifice their race position for their team-mate.

At the 2013 Malaysian Grand Prix, Sebastian Vettel ignored team orders not to pursue race leader Mark Webber, and the same year in Japan Felipe Massa ignored the team's instruction to let team-mate Fernando Alonso pass. In both examples, following the team order was clearly counterintuitive to a driver who has at some point had a shot at (or won) the title. At what point in a driver's career do you imagine it becomes acceptable to them to embrace the idea that it is time to pull over and let someone else win? I say never! An attitude of 'who dares wins' should prevail – it is a spectator sport after all, and entertainment is what the spectators want, not to mention what the drivers want to give them.

Ed Cartwright
By email

Brilliant Bahrain

I wonder if the early season critics of F1 2014 will be quite so vocal after the Bahrain GP? It was by far the best grand prix in terms of wheel-to-wheel racing for several years. The skill and the racecraft of the drivers was breathtaking throughout the field.

I think the highest praise needs to be reserved for the team bosses, though. From Mercedes down to Caterham, team-mates were racing hard and fair from lights to flag with no apparent interference from the pitwall, which was a massive breath of fresh air.

Forget the critics. We're in for a terrific season!

Richard Arthur
Worcestershire, UK

Did I hear that right?

In the heat of Malaysia, we all seem to have experienced *déjà vu*. I didn't believe it when I heard the radio order come through from Williams. Surely not... did they? Once again Massa was asked to put his own race aside for the sake of his team-mate.

I'm glad he didn't give up his place. He raced well for the position he had and proved he could hold on to it. Let Bottas race for the position, but if he wants it, he has to win it. That is racing.

Malaysia however did prove one thing for sure – it seems the number one driver slot at Williams is very much up for grabs.

Sophie Dean
By email

F1R says: Williams have since apologised to both drivers for their handling of the matter, saying "At Williams we want our drivers to race. We're a team that's renowned for that, not a team with a number one and a number two driver."

Trumpet the (lack of) sound

Let's forget for a moment the problems of engine noise, or lack thereof. Australia 2014 was a triumph for the sport's engineers. Contrary to fears of cars running low on fuel, it is now likely teams will not need to run 100kg in later races. Environmentally speaking, F1 has taken a huge leap forward.

So why is this news not being trumpeted? The prospect of fuel consumption in road cars being reduced in future through greater efficiency and energy recovery will interest millions globally, yet F1 suffers as a brand because nobody handles promotion.

Perhaps F1 needs to go down the route of Premier League football and establish a group committed solely to maximising and promoting the F1 brand globally?

Daniel Stafford
Oxford, UK

A Senna fan speaks

As a subscriber to *F1 Racing* and a fan of Ayrton Senna, the April edition was simply fantastic, justifying the annual subscription all on its own!

From the brilliant editorial at the start to Murray Walker's balanced appraisal at the end, memories of F1's most thrilling era flooded back. And the stand-out contributors were Richard Williams and Richard West.

The best part for me was unquestionably Richard West's recollections; not only of the final public interview he conducted with Ayrton shortly before midday on 1 May 1994, but, most poignantly of all, his final meeting with Senna in the quiet environment of Frank Williams's motorhome, barely an hour before the start of the fateful race, where Senna was enjoying what turned out to be his final moments of quiet reflection before going to the grid. I found Richard West's memory of this chance meeting to be a very powerful one that took me, as the reader, from the comfort of an armchair into the private environment of



Ed Cartwright wins a pair of three-day general admission tickets to the 2014 Formula 1 Santander British Grand Prix. For more details, visit www.silverstone.co.uk/events. Hotline number: 0844 375 0740



the motorhome on that dreadful day. His recounting of that brief conversation with Ayrton, during which they shared a joke and both laughed, shone a bright light on a day (and weekend) otherwise filled with sadness and tragedy.

Will people still want to read about Ayrton Senna in another 20 years' time? You bet your life they will. So much more than just the greatest F1 driver ever: he was, and will always be, irreplaceable.

Nick Warner
By email

Roland remembered

As the F1 community mourns 20 years since the passing of Ayrton Senna, it is important not to forget the other driver who lost his life that awful weekend.

Roland Ratzenberger was a promising Austrian racer – a winner of the Formula Ford Festival, joining a list that includes Eddie Irvine, Mark Webber and Jenson Button. He pursued his F1 dream, landing a seat at Simtek for 1994, where he performed admirably with a car that wasn't up to the job, and dragged it to 11th in his first and only F1 start at Aida. Two weeks later he was killed just down the track from where Senna died the following day.

Sadly, Roland's death has been overshadowed by the events of 1 May. Spare a thought for the warm Austrian who had his crack of the F1 whip cut tragically short.

Matt Gutteridge
By email



Roland Ratzenberger started just one F1 GP and was killed during practice for his second

Let's live in the present

I've only just started buying *F1 Racing*. The April issue was my third in a row and I'm really enjoying it.

But I've noticed in articles, letters and so on, how openly accepted it is that F1 isn't what it used to be. I can understand that, and probably agree. It's not quite the same these days as Hunt vs Lauda, Senna vs Prost and Schumacher vs Hill, and if you were watching that every year, it must be hard to see the sport strangled by regulations, and a little bit of the thrill lost.

I'm 22 and I'm relatively new to F1. My interest has built up gradually since Lewis Hamilton exploded onto the scene in 2007, and I now love it. I enjoy learning new things about it all as I go, and this is despite these new rules, new noses, new engine sounds, Vettel/Red Bull's recent dominance and the rest.

It isn't the same, but every sport has an incomparable 'Golden Age'. Today's era has got a lot to offer, especially after such a great start to 2014, and I'm sure there are plenty more people like me who will discover that and become fans.

William Robertson
Glasgow, UK

Correction...

On page 14 of the February edition we stated that Mumtalakat is the Bahraini royal family's investment arm, when it is actually the investment arm of the Kingdom of Bahrain

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NEXT MONTH...



BOTTAS vs MASSA

Youth comes up against experience in one of this season's most explosive driver partnerships

- > Claire Williams answers your questions
- > Bruno Senna drives his uncle Ayrton's race-winning Lotus
- > We grill the man behind the all-conquering Merc engine

ISSUE ON SALE 22 MAY*

MURRAY



WALKER

UNLESS I'M VERY MUCH MISTAKEN...

"After round two of the 2014 championship in Malaysia, I gave thought to how this momentous new season is going..."

Momentous because never before has F1 seen so many major regulation changes. All-new three-in-one hybrid power units, the return of turbos, demanding fuel consumption rules, new aerodynamics, and the ever-present need to look after the tyres. A whole new scenario for both drivers and engineers – and they've risen to the challenge magnificently. Some better than others, but then that's what racing is all about.

Take Mercedes. Conventional wisdom suggests it takes time for a new or recovering team to get up to speed and 2014 is year five of their

comeback. Their determination, dedication and expenditure is now paying off and well deserved it is, too. A word here for the much-missed Ross Brawn, who has literally gone fishing after his departure from the team he so patiently built up. Toto Wolff and Paddy Lowe took over a strong organisation on the brink of success, and have been generous in their praise of Ross's team-building and leadership. F1 needs people like him, so let's hope we see him back in a new role.


I rejoice for Williams' new-found form. They have been in the doldrums for too long, but their

2014 car is a revelation. But for bad luck, they could have had both drivers on the podium in Australia and both raced strongly in Malaysia. All the work done by the revised and invigorated team, led by Claire Williams and Pat Symonds, is generating success and it is great to see them at the sharp end again. Long may it continue.

Red Bull? Well, what an incredible fall from grace in testing, then what an amazing recovery by new boy Daniel Ricciardo, who finished second on his debut for his new team at Melbourne – only to be excluded through no fault of his own. There is no doubt that, once Renault have improved their power unit, the 2014 Red Bull will be a potential winner. But they'll have a job even to catch Mercedes.

Other thoughts? How refreshing to see so much new talent. Absolutely brilliant drives, for a McLaren team recovering from a disastrous 2013 – from Kevin Magnussen, whose ability, calmness and maturity are outstanding. Clearly a future champion and even better than his dad, Jan, who had a one-off drive with McLaren in 1995. Then there's Valtteri Bottas, who, now he has a car worthy of his talent, is demonstrating why Williams were so right to recruit him. His 'youth versus experience' battle against veteran team-mate Felipe Massa is fascinating to watch.

Outstanding too is Daniil Kvyat: just 19, and cynically thought by many to be at Toro Rosso because of his Russian roubles. He is the real deal, with points in his first two F1 races. And, although he is now far from new to F1, praise for the superb Nico Hülkenberg, who continues to show how sad it is that the current state of F1 requires money as well as talent. Hopefully his day will come, but it should have come already.

Before I sign off, a few words about the contentious new F1 sound. Yes, the screaming V8s had great impact, but we now have power units that are environmentally friendly, encourage car-manufacturer participation, make a genuine contribution to improving road cars, give us racing no less exciting than that of the past and whose guttural roar has an appeal all of its own. Is their comparative lack of ear-splitting decibels really demeaning the pinnacle of motorsport? I don't think so. They make the sound they make. To change it for the sake of doing so would be ridiculous. 



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