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F1 RACING



BRITISH GP SPECIAL

Exclusive interview

BUTTON ON SILVERSTONE

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Hamilton's mega-Merc



Lewis on what makes the W06
"The greatest car I've driven"

Silverstone class of '95



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Herbert, DC, Blundell, Brundle

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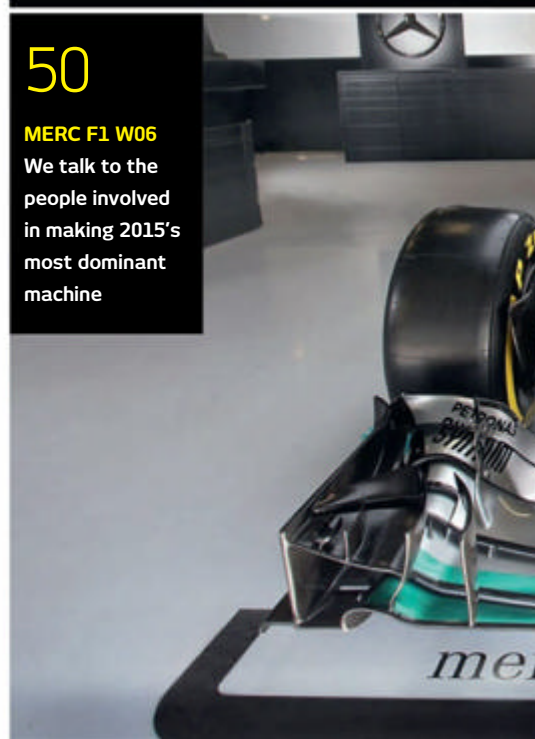
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remember the
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JENSON BUTTON

Sixteen seasons
in the sport and
counting: the 2009
world champion
opens up to F1R

Do you remember the '95 British GP?



Follow Anthony
on Twitter:
@Rowlinson_F1

Since **F1 Racing** was launched back in March 1996, we've published more than 3,000 features. I've read most of these, though by no means all, and I've written a few as well.

Of that 3,000 or so – always commissioned with the intention of providing our loyal readership with the best F1 reading material we can conjure – some have been truly memorable. I'm thinking, now, of former editor Matt Bishop's foray into zero-gravity flight with David Coulthard on a Russian transport plane. Or the ambitious, brilliantly executed pairing of Concorde (yes, *that* Concorde) with a Renault R23 F1 car, pulled together by former associate editor Stéphane Samson. Meanwhile, Peter Windsor's column on the late François Cevert, published in October 2013, may be the most perfectly crafted piece of writing ever to have graced these pages, and Maurice Hamilton's 'lunches' are a monthly delight – as I'm sure you will agree.

But for sheer, unadulterated reading pleasure, a piece in this month's *F1R* may just have raised the bar. When you turn to page 62, you'll see the beaming, grey-around-the-temple faces of five hugely popular British F1 veterans, namely: Damon Hill, Johnny Herbert, David Coulthard, Mark Blundell and Martin Brundle.

Twenty years ago these likely lads lined up on the grid for the 1995 British GP in (following the above-named order) first, fifth, third, tenth and 11th. One went on to

win, another finished on the podium, and another in fifth, so all in all it wasn't a bad weekend for the Britpack.

Our boys' recollections of their time in the sun make for hugely entertaining reading, whether it's Brundle describing his cars of that era as "old sheds" or Blundell recalling the mechanical failures that would bedevil top-level race cars being run on budgets and with manpower levels that seem almost laughable by today's standards. "There were 12 people in the team for my first grand prix," says Brundle, "including both drivers".

But better than any of this is the sharp banter between five middle-aged men who obviously still love each other's company – and are as competitive now, in conversation, as they were two decades ago, on track.

"Last again," quips a sheepish Johnny Herbert, arriving late to the interview to a ripple of sarcastic applause. Hill then shows Johnny some pictures of the grand prix weekend "to help his memory".

The story's a joy, whichever way you slice it, and hats off to our own James Roberts and the esteemed David Tremayne, together with ace photographer Steven Tee, for carrying off a tricky multi-handed round-table chat with such élan. Now go feast on the real thing!

• You can hardly have failed to miss the patriotic flavour to this month's *F1 Racing* as the British GP looms. European race circuits are under pressure to keep their place on the F1 calendar, so let the sport's powers know how much you love having the British GP at Silverstone by going to this year's race. Special offer tickets should still be available from www.silverstone.co.uk.



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James Mann

Capturing the beauty of Mercedes' F1 pacesetter

The 2015 Mercedes F1 W06 Hybrid is a stunning car. James Mann was allowed to capture Lewis Hamilton's latest mount in all its glory (page 50).



Dieter Rencken

Our paddock newshound is just a good ol' boy

Dieter took a break from digging into F1 politics to head to NASCAR country, Charlotte, North Carolina, to get the inside track on the new Haas F1 Team (p84).



Adrian Myers

Causing a splash with McLaren's British hero

With limited time, doing a photoshoot with a driver on a race weekend isn't easy – not that you'd know from Adrian's fine shots of Jensen Button (page 40).



David Tremayne

Keeping the British stars from the 1995 season in line

Trying to keep *five* British racing heroes in order is a tough ask. So for our British GP 1995 retro (p62) James Roberts enlisted the help of veteran journo Tremayne.



Thanks to Mike Arning, Matt Bishop, Roberto Boccafoli, Hanspeter Brack, Will Buxton, James Campbell, Stephen Carpenter, Steve Cooper, Russell Day, Sam Evans, Fiona Fallon, Paul Harpin, Alex Henderson, Will Hings, Silvia Hoffer, Ed Hood, Darren Jones, Bradley Lord, Tracy Novak, Anthony Peacock, Carl Price, Christian Staurengi, Andy Stobart, Jason Swales, Steven Tee, Katie Tyler, Carol Watts, Mark Wilkin. **Special thanks to** Alison Windsor, for quadrupling the sales of *F1 Racing* in her home town of Beaminstre, Dorset



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MORE ARTISTES TO BE ANNOUNCED

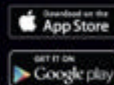


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Artiste line-up subject to change



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1967 FERRARI 275 GTB 4 CAM



1972 FERRARI 365 GTC/4 SPYDER



1959 FERRARI 250 GT PF CABRIOLET SI

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Parade

High-speed, high hopes After a dismal outing around the twisty confines of Monaco's street circuit, Williams hit back on the flat-out blasts of Montréal, a circuit that played to the strengths of the FW37. Valtteri Bottas was upbeat after Friday – and on Sunday he bagged his first podium finish of the season

Where Montréal, Canada **When** 11.21am, Friday 5 June 2015

Photographer Glenn Dunbar/LAT

Details Canon EOS-1DX, 50mm lens, 1/12th at F8







Parade

Home sweet home For many, Monte Carlo is about glitz, glamour and partying on opulent yachts – but for Nico Rosberg it's simply home. And the Mercedes driver clearly likes his home comforts, racking up a third consecutive win in Monaco. Although his victory this year was something of an unexpected gift...

Where Monte Carlo, Monaco **When** 2.15pm, Sunday 24 May 2015

Photographer Steven Tee/LAT

Details Canon EOS-1DX, 15mm Fisheye lens, 1/1000th at F7.1



Parade

Finding the limit Modern tracks feature acres of concrete run-off, offering little penalty to any driver who pushes too far. The Circuit Gilles Villeneuve is emphatically not one of those circuits, as Romain Grosjean can attest, pushing it *just* too far in qualifying and striking the fearsome wall. It was worth it: he lined up on the grid in a season-best fifth place

Where Montréal, Canada **When** 1.57pm, Saturday 6 June 2015

Photographer Peter Fox

Details Canon EOS-1DX, 600mm lens, 1/500th at F9





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F1 INSIDER

NEWS ■ OPINION ■ ANALYSIS

NEWS

Three battle it out for 2016 McLaren seat

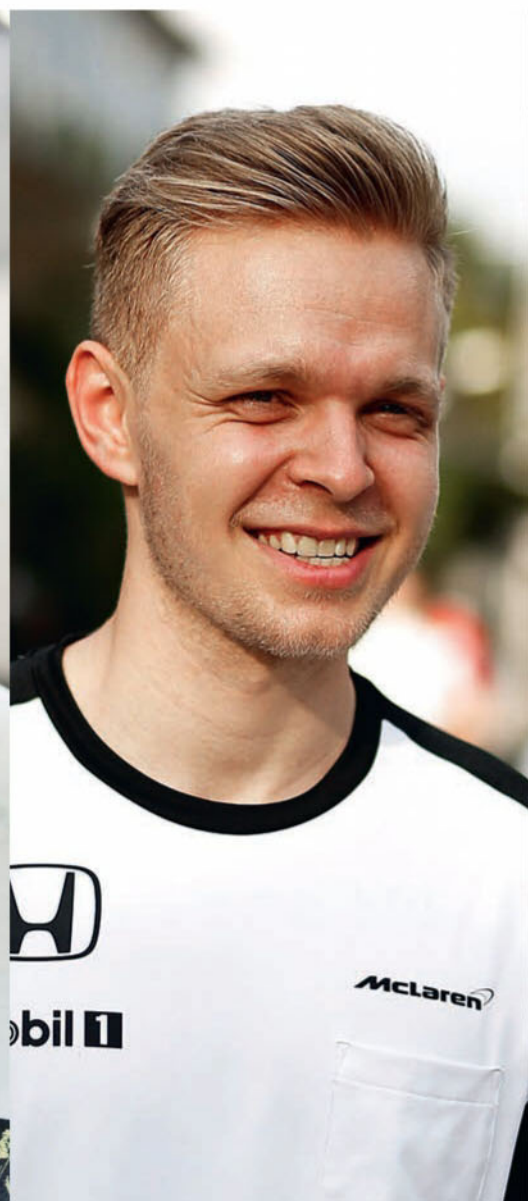
Jenson Button, Kevin Magnussen and Stoffel Vandoorne all in contention to partner Alonso next

McLaren are facing a difficult decision over their 2016 driver line-up, with at least three options to partner Fernando Alonso – all of them already under contract to the team.

Double champion Alonso is signed until the end of 2017, with the intention that he lead McLaren and Honda to the world title. And there is every indication that the Spaniard intends to see out his contract. The question is who will partner Alonso, with Jenson Button, reserve driver Kevin Magnussen and GP2 Series pacesetter Stoffel Vandoorne all in contention. McLaren racing director Eric Boullier has said that he has not given the issue any serious thought, but he needs to do so soon.

Kevin Magnussen raced for the team in 2014, and both Boullier and McLaren chairman Ron Dennis wanted to have him in the car alongside Alonso this year. But board member and shareholder Mansour Ojeh said he preferred Button, and Dennis decided not to fight it because he is trying to get into a position to buy Ojeh's 25 per cent shareholding, plus a small part of the 50 per cent owned by Mumtalakat, the investment arm of the Kingdom of Bahrain, to take majority control of the company. Dennis felt that, with his eye on the bigger picture, it was not worth upsetting Ojeh over the driver line-up.

Button was signed to a 'one-plus-one' contract – which covered 2015, with an option on the team's side to retain him for 2016. The intention





Jenson Button leads Fernando Alonso at Monaco, despite Alonso generally being the faster driver in terms of race pace. Button finished eighth, while Alonso, on a different tyre strategy, would later retire

at the time was that the 2009 world champion would be let go at the end of this season, but that is now far from a foregone conclusion.

Prior to the Canadian Grand Prix, the two drivers had been neck and neck in qualifying. Button was two-one ahead of Alonso on qualifying results, discounting races in which either had a reliability problem, and the average gap between them was just 0.007secs.

In the races, however, the picture is much more skewed in Alonso's favour. He was much faster than Button before his retirement

in Malaysia; beat him despite being on a disadvantageous strategy and suffering car problems in China; and was battling for a top-ten finish in Spain, while Button was struggling at the back as both suffered handling problems before their retirements.

Monaco was less clear-cut, because the two men were on opposite tyre strategies. But Alonso arguably lost less time than might have been expected on the soft tyres in the first stint while Button had the supersoft, although Alonso would not have beaten Button even had he not retired.

The form suggesting Alonso is the better race driver is hardly a surprise. But Button has done well enough to make McLaren think twice about dropping him. If they do release Button, the question is, who should they sign in his place?

Magnussen is in an invidious and vulnerable position. He impressed at times in 2014, and had the edge on Button in practice in Australia this year, where he stood in for the injured Alonso, only to be hit by an engine problem in qualifying.

Magnussen's problem is that Belgian Vandoorne is having a stellar season in GP2. He has been told by the team to dominate, and has won all three feature races so far and impressed in the sprint races, in which the top eight finishers from the feature race start in reverse order. Even before 2014, McLaren had a sense that Vandoorne might have the greater potential because of the season he spent as team-mate to Magnussen in Formula Renault 3.5 in 2013. In his second season in the series, Magnussen was champion, but as a rookie in a difficult category Vandoorne won four races – one fewer than Magnussen – and finished second.

With that in mind, and with Magnussen unable to further his cause due to a lack of action, it is not impossible that Vandoorne – regarded as a future star – could leapfrog him straight into an F1 seat. Notably, Vandoorne's F1 credentials were recently backed by Magnussen.

When asked about Vandoorne, Magnussen said: "Stoffel is doing a good job. He deserves to get to F1; there's something wrong if he doesn't



The contenders (left to right): 2009 champion and old hand Button; highly rated reserve driver Magnussen; and up-and-coming GP2 star Vandoorne

NEWS DIGEST

The month's big stories at a glance

20.5.15 Lewis Hamilton finally signs a three-year contract extension with Mercedes **26.5.15** FIA introduces stricter load tests on front wings to clamp down on flexi-wings **26.5.15** BBC *Crimewatch* reveals four men have been arrested in connection with theft of trophies from Red Bull Racing's HQ in December 2014

28.5.15 FIA president Jean Todt says a ban on alcohol advertising is "not possible", following calls from the European Alcohol Policy Alliance



4.6.15 Manor-Marussia secure backing from Airbnb for the rest of 2015 **5.6.15** Plans to reintroduce refuelling falter after opposition from team bosses **6.6.15** Plans are agreed for Pirelli to hold a wet-weather tyre test, likely in early 2016 **7.6.15** McLaren-Honda's Jenson Button is given a drive-through penalty for the Canadian GP after his team are forced to fit new ERS elements to his car for the fifth time in 2015

get to F1. Everyone is a threat when you are competing for an F1 seat. I've just got to focus on myself and not really worry about anyone else."

Dennis recently made a presentation to a group of Danish businessmen, with the Danish newspaper *Ekstra Bladet* reporting that he had called on them to help promote Magnussen back onto the grid. Dennis said Magnussen had "the ability to race next year", adding that: "I've got two world champions, two of the best drivers in the world, so he has to prove himself. Maybe proving himself means I have to facilitate his entry into another team to give him another learning year; it may be he has the opportunity to drive at our team."

Pirelli and Michelin to bid for F1 tyre-supply deal

With Pirelli's sole-supply contract set to come to an end in 2017, Formula 1 is inviting other tyre manufacturers to tender

Formula 1's governing body has opened an official tender process to decide which company will supply tyres to the sport from 2017.

Pirelli, who have been in F1 since 2011, will bid to stay on, with Michelin – who are highly regarded within the sport – also likely to be invited to tender, after expressing an interest.

The choice will come down to two key elements: money, with Pirelli currently paying £25.8m a year for trackside advertising; and

a philosophical decision about the direction in which F1's bosses feel the sport should go.

Commercial rights holder Bernie Ecclestone has privately told teams he expects Pirelli to be given the nod, partly because of the money they pay and partly because he likes the high-degradation tyres the Italian company produces.

Pirelli tyres are designed to degrade, which Ecclestone claims makes for better racing

Ecclestone has always insisted that Pirelli have designed the tyres in this way at his request. But when he suggested this to a meeting of technical directors recently, they collectively expressed their belief that it was the best Pirelli could do. Pirelli insists that is not the case.

The firm's chairman, Marco Tronchetti Provera, said: "Technologically speaking the easiest solution is to do tyres that last for ten races a season. What is difficult is to do it as we do today, providing different tyres lasting safely 10, 15, 30 laps. That is a good challenge."

Ecclestone said of Michelin: "All they would do is make a rock-hard tyre you could put on in January and take off in December because they don't want to be in a position where they can be criticised. It would be all the things we don't want, and goes against all the things Pirelli have had the courage to do from what we have asked, which has made for some bloody good racing."

Michelin's head of competition Pascal Couasnon questioned this idea, suggesting more predictable tyres that let drivers push would be better for F1. He said: "Tyres must become a technical object, not just a tool to do a more-or-less spectacular show. Tyres should offer stable performance and grip. It's not normal that after a few laps a driver says 'I need to slow down or the tyres won't last.' These days F1 drivers can't show their talent because the tyres don't allow it."

Despite Ecclestone's opposition, other senior figures are starting to see the logic of more durable tyres. Michelin also wanted to supply 18-inch tyres – up from 13 inches – but it has been reported that larger tyres were vetoed by teams at the Canadian GP weekend.



QUIZ

F1 Mastermind

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JENSON BUTTON

Q1 For which team did Jenson Button have his first full F1 test in December 1999?

Q2 Which Brazilian driver did Jenson Button beat in a shoot-out to secure a race seat with Williams for 2000?

Q3 Button's father, John, competed successfully in which motorsport discipline in a Volkswagen Beetle?

Q4 Button was dropped by Renault in favour of which driver for 2003?

Q5 In which 2004 race did Jenson Button score his first pole position?

Q6 Name the Somerset town in which a footbridge has been named in honour of Button.

Q7 Button scored his first race win in Hungary in 2006, from which starting position?

Q8 In which GP did Button score his only points for Honda in 2008?

Q9 How many races did Button win in his championship-winning 2009 season with Brawn?

Q10 At which race did Button seal the 2009 championship?

Q11 What is the name of Button's triathlon team?

Q12 Button is the fifth driver to start more than 100 races for McLaren. Name the other four.

Q13 In which 2010 race did Button score his first win for McLaren?

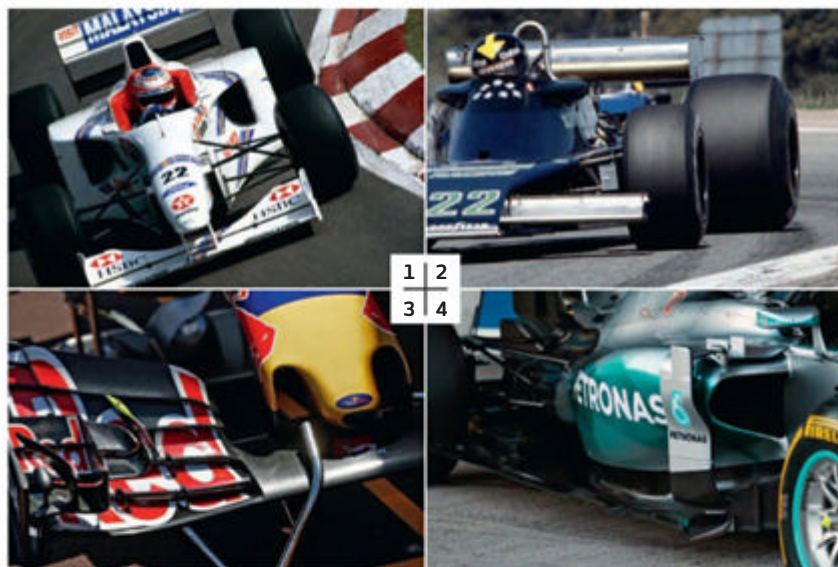
Q14 The Australian Grand Prix is the only race Button has won more than once. How many times has he topped the podium so far in Melbourne?

Q15 In which UK city will the Jenson Button Trust Triathlon be held this year?

1 Prost 2 Bruno Junqueira 3 Rallycross 4 Fernando Alonso 5 San Marino Grand Prix 6 Frome 7 14th 8 Spanish 9 Six 10 Brazil 11 Ichiban Triathlon Team 12 David Coulthard, Mika Häkkinen, Lewis Hamilton, Alain Prost 13 Australian GP 14 Three 15 Derby

Wider, lighter cars suggested for 2017

Formula 1 will tweak dimensions to boost speed – but the reintroduction of refuelling may have been vetoed



F1 bosses have agreed the shape of the rules for 2017 that they say will create the fastest ever grand prix cars.

A series of changes have been agreed, including making the cars wider and lighter, increasing the size of rear tyres and front wings, and changing the floor to increase downforce from the underbody. Cars will be widened from 1,800mm to 2,000mm, returning them to pre-1998 dimensions. Rear tyre width will be increased from 325mm to 420mm.

Dimensions for the bigger fronts and rear wings, and changes to the floor, had not been finalised as *F1 Racing* closed for press. The likelihood is that front wings will be made in the region of 1,950mm wide. The central 'neutral' section, from which teams may not create downforce, may be widened. This would follow the lessons of a study by the Overtaking Working Group of the mid-2000s, which found that a car following another lost downforce from the central part of its front wing first, with that area widening as it drew closer to the car in front.

The logic of teams using the outboard parts of the wing to create downforce is

What's new for 2017:

- 1** Width of cars to be increased from 1,800mm to pre-1998 levels of 2,000mm
- 2** Rear tyres to increase from 325mm to 420mm
- 3** Front wing likely to be widened to 1,950mm
- 4** Changes to floor and sidepod yet to be agreed

based on findings that this area sucks in clean air from the sides of the car in front.

The step plane – the vertical distance between the central narrow part of the floor and the underside of the side pods – may be reduced. Teams aim to take at least 50kg off the weight of the cars. One approach is to lose the underbody 'plank' as a means of restricting ride height, because this can be achieved in other ways. Driver aids will also be reduced.

The reintroduction of refuelling was suggested to let the cars run lighter for longer and to add to the spectacle, but it's been reported that this has been unanimously rejected at a meeting of team managers in Canada. Teams oppose the idea on the grounds of cost and because each year of the refuelling era from 1994-2009 had fewer overtaking manoeuvres per year than any season since 1980.

FACT FILE



ON THE TURN

Every corner tells a story...

No 2 Silverstone



1 ABBEY CORNER

The left-hander on the original circuit was named for Luffield Abbey Farm – the original name of the nearby BRDC Farm. The turn was previously called Abbey Curve, but was changed to Corner because the new right-hander is more acute.

2 VILLAGE CORNER

Honours Silverstone Village, following a tradition established by former track boss Jimmy Brown. He didn't like corners being named after people (because the names would lose relevance), preferring monikers linked to the local area.

3/4 AINTREE AND BROOKLANDS

These turns are named after previous British Grand Prix host circuits. Brands Hatch doesn't have a corner named after it...

5 WELLINGTON STRAIGHT

The straight is located along one of RAF Silverstone's old runways, and recognises the airfield's use as a training base for Wellington Bombers during World War II.

6 COPSE AND MAGGOTTS

Both are named after geographic features: there were two small woods near Copse, and Maggotts is close to Maggot Moor. It's thought the extra 't' was added to the name to ensure it wasn't associated with the fly larvae...

7 BECKETTS

The turn is adjacent to the site of the Chapel of St Thomas the Martyr, built in 1174. St Thomas Becket was Archbishop of Canterbury until he was beheaded at the behest of King Henry II. An extra 't' was added for reasons that are unclear.

8/9 CLUB AND WOODCOTE

Since the RAC organised the first British GP, Club is named for their clubhouse on Pall Mall. Similarly, Woodcote is named after the RAC's Country Club in Surrey.

NEWS

Ecclestone goes back to court over £1bn tax bill

The head of F1 will fight the Inland Revenue's claim that he owes £674m in tax and £349m in interest, going back 13 years

Formula 1 boss Bernie Ecclestone has insisted that he is not concerned about the Inland Revenue's judgement that he owes just over £1billion in unpaid taxes.

The ruling is related to the Bambino Trust, set up in Liechtenstein and held in the name of Ecclestone's ex-wife, Slavica. Ecclestone handed over his shares in the Formula 1 business to the trust in 1997.

The UK authorities spent nine years investigating Ecclestone's tax affairs and came to an agreement with him in 2008. However, the Inland Revenue has now torn up that agreement, arguing in court in May that it had been "misled and relied on representations that were false". Its new bill is based on 13 years of income for the trust, totalling £674m in tax and £349m in interest, with the possibility of penalty charges on top.

Ecclestone's lawyers are arguing that the Inland Revenue should stick with the previous agreement and have applied for a judicial

review. A High Court judge ruled in May that this review should be put on hold until a commercial court had heard another challenge by Ecclestone to the decision.

Ecclestone said: "The lawyers are dealing with it. That's why it's in court. It's very technical." Asked if he was worried about the situation, he replied: "No."

The latest twist comes after two court cases involving Ecclestone last year over a payment to a German banker over the sale of shares in F1 to current main shareholder CVC Capital Partners in 2006. Ecclestone paid £60m to end a case in Munich in which he was accused of paying a bribe, without assumption of guilt or innocence.

A case heard in London's High Court, in which a rival company had sought damages over the sale was dismissed, but only after the judge had said: "Even... making allowances for the lapse of time and Mr Ecclestone's age, I am afraid that I find it impossible to regard him as a reliable or truthful witness."

Ecclestone on his latest court battle: "The lawyers are dealing with it. That's why it's in court. It's very technical"


F1 BANTER

PASSNOTES

Your essential F1 briefing
#16 Contract



Name Contract

Age Dates back to the *Senatus Populusque Romanus*

Appearance

Inscrutable, bloated sheaf of inky legalese

A handshake seals a contract.

Well, I suppose it does, but...

From the contract there's no turning back.

Ah, you can say that, but...

A turning point in a career; in Korea being insincere...

Oh, I see your game now. If you missed Depeche Mode's last tour you won't see 'em again for a few years now. Get over it.

So why, pray tell, are contracts in the news?

Lewis Hamilton announced before the Monaco GP that he'd signed with Mercedes until at least the end of 2018. "Mercedes is my home and I couldn't be happier to be staying here for another three years," he said. "This is a company filled with real passionate racers, from the board room to the factory floor, and an incredible hunger to win."

Seems a bit odd to announce a new deal at this point in the season – why's it taken so long?

Lewis parted company with XIX Entertainment last year and now looks after his own affairs. That includes reading his own contracts. "I'm fluent in lawyer jargon," he said. "I could pretty much write my own contract right now."

Puts me in mind of Groucho and Chico Marx in A Night At The Opera – "It says here the party of the first part will hereafter be known as the party of the first part." "Well, I don't like that part." "What, the first part of the party of the first part?"

Seems he was pretty hard-nosed. "I'm my own man. I know my worth," he told the BBC.

Oh, I see. It's a take-all-the-blue-M&Ms-out-of-the-bowl job, is it?

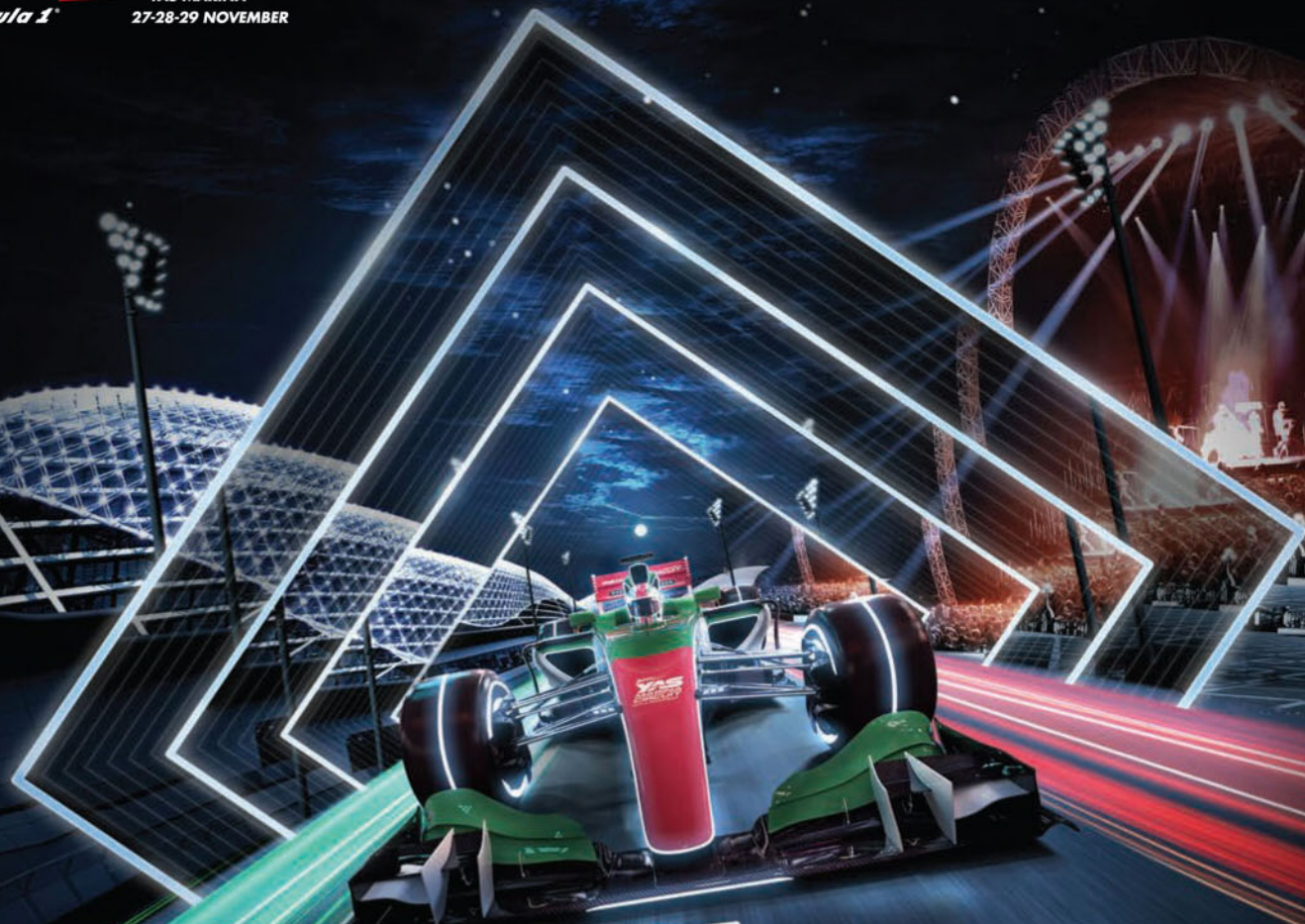
Indubitably. Lewis now has more control over his image rights – and the contract is worth 100million something.

100million something?

Meeja being what it is, that figure has been quoted in pounds, dollars and euros.

Do say You can't fool me! There ain't no sanity clause!

Don't say Ten red roses, 75kg ice (no straight edges) and a 12-foot boa constrictor.



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COLUMN

MOTOR MOUTH

What we're talking about at *F1 Racing Towers*

BERNIE COVER: YOUR REACTION

Given the amount of power he wields, Bernie Ecclestone is a divisive figure, so we knew that making him last month's cover star would attract a varied response.

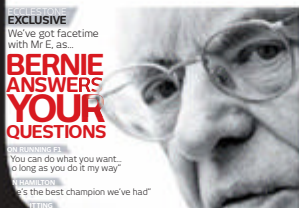
Our esteemed art editor, Frank Foster, opted for a stylish black-and-white treatment of Bernie to give the portrait more impact, and it certainly caused a stir among followers of our Twitter account (@F1Racing_mag).

Ewo (@effa64), was a fan of the cover, tweeting: "This cover is perfectly creepy, I might buy it." And Formula1chick (@Formula1chick) said: "Interesting interview with Mr E. Some very good points."

Not everyone was happy though. John-Luke Casey (@JLACasey) tweeted: "Given the parade of handsome drivers adorning @F1Racing_mag, this month's cover is like a visit from the bogeyman." Meanwhile, F1 Love (@f1love) responded: "Please, no more covers with Bernie on it. It attracts mice."

James Attwood

Our June Bernie cover (below) drew a mixed response...



Can atmosphere make up for predictable racing?

IT'S TIME TO SHAKE UP THE SPORT

Many years ago, when I first visited Monaco for the grand prix, I was blown away by the place. I thoroughly recommend going there: television can't do justice to what the drivers achieve on every single lap.

But the majority of people who watch F1 do so not from a grandstand, but from their sofa. Teams need sponsors and sponsors need TV. Predictability, whether due to a lack of overtaking or iron-clad reliability, can turn viewers away, and F1 needs to set up the opportunity for the unexpected to happen. Witness the surge in interest in Monaco after Hamilton's unplanned late stop...

So, F1, be bold. Cricket did so when it encompassed Twenty20, and if reverse grids or something equally radical could do the trick, then the sport should embrace it. If F1 remains predictable, then increasing numbers of viewers will find something else to do on a Sunday afternoon...

Stewart Williams

NEWS

Customer-car plan sparks fresh arguments

Mercedes call customer cars a 'contingency plan'; small teams claim they'll put them out of business

The row over customer cars has moved up a gear after the F1 Strategy Group agreed to draw up regulations setting out how the concept would work in practice.

The decision created anger among the smaller teams including Force India, even though they have a seat on the Strategy Group.

All teams who would potentially run customer cars – Force India, Lotus, Sauber and Manor-Marussia – said they have no interest in not being constructors in their own right. But Mercedes F1 boss Toto Wolff cast doubt on that, saying: "Three of them came to see me about supplying customer cars."

The Strategy Group's customer-car plan is based on factory teams supplying cars, with would-be customer teams arranging individual deals with them. For example, a customer team could choose to buy a current car, or a year-old car. They could choose the

level of upgrade package to invest in, and so on. The more competitive the car, the more it would cost. But since customer teams lack the technical capacity of manufacturers, even a team buying a top-spec package would be unlikely to challenge the works outfits.

There is support for the idea from Haas F1, who will make their debut next year and who have based their business model on buying as many parts as possible from Ferrari. That means everything except the chassis and aerodynamic surfaces, although Haas would buy those, too, if the rules allowed.

The smaller teams claim customer teams are a back-door way of driving them out of business. But Wolff describes it as a "contingency plan" in case the smaller teams can no longer make ends meet as constructors.

"We have seen it done in NASCAR and it works pretty well," Wolff said. "It is a case of how we finance that and the sporting and technical regulations. If we can find a business case around it, we shouldn't rule it out."

Force India deputy team principal Bob Fernley (right) and Mercedes F1 boss Toto Wolff (left) are at loggerheads over customer cars



PHOTOS: ALASTAIR STALEY/LAT; STEVEN TEE/LAT



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Bianchi family "hoping for a miracle"

Eight months after suffering devastating head injuries at the 2014 Japanese GP, Jules Bianchi remains in a critical condition

Jules Bianchi's father, Philippe, has admitted his family are "hoping for a miracle" as the French racer remains unconscious following his crash at last October's Japanese GP.

Bianchi is still in hospital in Nice, having suffered severe head injuries when his car hit a recovery vehicle after he lost control of his Marussia in damp conditions at Suzuka.

"While there's life, there's hope, even though after a while you are hoping for a miracle," said Philippe Bianchi. "Every day the phone is by our side. When we get up we think of Jules' life, but we think also of his death.

"We have to think about death because we are in a situation where we know a lot of things

can happen. It's terrible. In neurological terms, I'm not sure he is able to do much now."

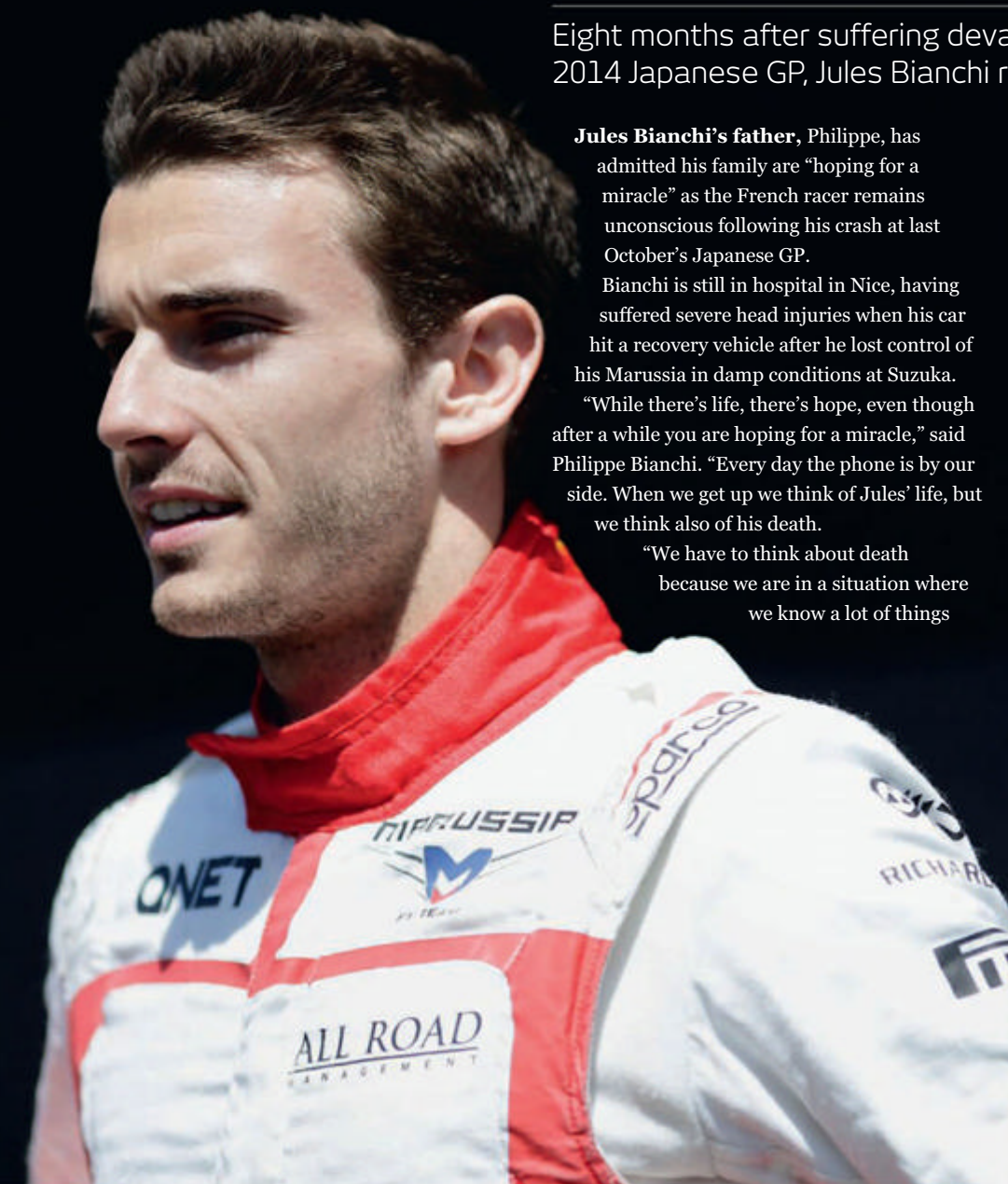
It was announced last November, six weeks after the crash, that Bianchi had come out of his coma and was breathing unaided. But his condition remains critical and he has never regained consciousness.

"The situation is stagnant," Philippe Bianchi said. "Jules' neurological progress is not what we would like it to be. The first thing is that Jules is alive – that's the most important thing for us.

"He's fighting with the weapons that he has. Seeing him fighting gives a lot of hope to his loved ones, and it's important for us."

Meanwhile, Michael Schumacher's manager, Sabine Kehm, says that the seven-time world champion is "making progress, given the severity of his head injuries". Schumacher was critically injured in a skiing accident in December 2013. No other details have been provided about his condition, but Kehm did say that Schumacher faced "a long road to recovery".

Michael Schumacher, who was injured in a skiing accident in December 2013, faces "a long road to recovery" according to manager Sabine Kehm



EVENT

Ayrton Senna charity fundraiser

David Coulthard, Martin Donnelly, Patrick Head, Paddy Lowe and *Senna* film writer Manish Pandey will all take part in a special charity event, 'The Life of Ayrton Senna Q&A', to raise money for Great Ormond Street

Hospital and the Royal Brompton and Harefield Hospitals.

The event is organised by Hexagon Modern Classics and will be held in Fortis Green, London, on Tuesday 30 June. Tickets cost £185

and will include an Asian buffet from Michelin-starred chef Christian Honor. There will also be a charity auction of Formula 1 memorabilia.

Coulthard worked with Senna at the start of 1994 in his role as test driver for Williams. Head was the design chief of the team during

that period, while current Mercedes technical chief Lowe worked in McLaren's R&D department when Senna drove for the team in 1993. Martin Donnelly raced alongside Senna in F1 in 1990.

Tickets can be bought from hexagonclassics.com/events.

De Villota family respond to HSE accident report

The family of Maria de Villota may seek compensation following her death from injuries sustained in 2012 Marussia testing crash

The family of Maria de Villota have said they are considering claiming compensation for the crash in July 2012 that led to her death.

De Villota was testing for the Marussia team at Duxford Airfield in Cambridgeshire when she crashed into a lorry as she returned to the temporary pits. She suffered severe head injuries and needed lengthy surgery. Despite losing her right eye, she was cleared to drive again in 2013, but died in October that year, aged 33.

Her family said doctors told them her death occurred "as a consequence of the neurological injuries" she suffered in the crash. But on 26 May, the Health and Safety Executive, which

had been investigating the accident, said that it would be taking no further action.

De Villota's family issued a statement saying they would analyse the report "to evaluate the next legal steps to claim the corresponding civil compensation from those responsible".

Marussia fell into financial difficulties and collapsed at the end of last year, but they were saved at the eleventh hour and are now racing as Manor Marussia this season. The team declined to comment on the matter.

De Villota was the daughter of former F1 driver Emilio de Villota, who competed briefly in Formula 1 in the late 1970s and early 1980s.

Maria de Villota died on 11 October 2013 as a result of injuries she sustained in a crash at Duxford Airfield the previous summer



NEWS IN BRIEF

NEW F1 TEAM SOUGHT

The FIA has launched a selection process to assess another new team (in addition to Haas F1) to enter the sport in 2016 or '17. Prospective teams must fulfill a number of criteria to measure their finances, capability and prestige. If all goes to plan, there will be 12 teams on the grid once again.



HAMILTON SIGNS MERC CONTRACT

Lewis Hamilton has finally signed a new contract with Mercedes. The world champion's deal lasts until the end of 2018, and is worth \$31m a year in basic salary, with a bonus structure that could take him well over the \$40m a year mark earned by the highest-paid driver in F1, McLaren's Fernando Alonso.

BAKU TRACK DESIGN ALMOST COMPLETE

The final design of the street circuit in Baku, Azerbaijan, that will host next year's European Grand Prix is close to being finalised. Event chief Arif Rahimov says the design for the 3.76-mile track will be submitted to the FIA soon, following minor tweaks to be made to some of the corners. The track will have only 19,500 grandstand seats.



FERRARI WINDTUNNEL ROW

The FIA has dismissed concerns raised by Mercedes that Ferrari could have found a loophole in the regulations restricting windtunnel usage by working on their own car using time claimed to be for the new Haas F1 team. Haas F1 have a technical agreement with Ferrari to develop their debut 2016 model. The FIA visited Ferrari and declared them to be operating within the rules.

PHOTOS: CHARLES COATES/LAT; ANDY HONE/LAT; GLENN DUNBAR/LAT; STEVE ETHERINGTON/LAT



Pat Symonds explains THE SCIENCE BEHIND... Tyres

F1 TECH

What are the rules governing tyre usage in F1?

At the start of each year, Pirelli determine four different dry-weather tyre compounds of varying hardness for use throughout the season. From these four types, they select two to bring to each race. They also bring one wet-weather tyre and an intermediate tyre for situations where the track is too wet for slick tyres but the level of standing water is too low for a full wet tyre to survive without excessive wear and overheating.

During the weekend, each car is allocated seven sets of the harder slick tyre and six sets of the softer one, as well as four sets of intermediate and three sets of wet-weather tyres. There are some restrictions as to when these tyres can be used, of which the most significant is that any car that makes it through to Q3 must start the race on the tyres it used to set its fastest time in Q2.

What is meant by 'prime' and 'option' tyres?

The prime is the harder of the two slick compounds brought to the event. The terminology doesn't indicate that the prime is the prime choice: generally the option will be the favoured tyre because it provides a faster lap time at the expense of a shorter tyre life.

The difference between the compounds is a complex subject, which is the focus of attention for many engineers. To regard one tyre as hard and the other as soft is a gross simplification and each tyre will have many other characteristics, such as resistance to graining, which will have a bearing on how the tyre is used.

Why is tyre temperature so important?

As well as the difference in stiffness between the various compounds, there is also a difference in the ideal temperature at which each operates. Teams must try to determine this temperature and then ensure that the tyres operate within a relatively narrow window around it.

The most problematic situation arises when one tyre has a high working temperature range,

and the other a low range. It's a common situation that requires compromise because both types of tyre must be used during a race.

How do you alter the working temperature range?

Usually you alter the brake-duct configuration to either use hot air from the brake disc to heat the wheel rim or to duct cool air through a brake-duct bypass to cool the rim. This is why current cars have such complex brake-duct designs.

The driver can also influence the operating temperature both in the way he warms the tyre during an out-lap in qualifying and by regulating the energy he puts into the tyres during a race lap. If a tyre overheats, the driver can modulate his speed in a fast corner and make a significant difference to the bulk temperature of the tyre. A small effect can also be achieved in qualifying by altering the temperature of the electrically heated blankets that pre-heat tyres before use.

Is there an ideal temperature for an F1 tyre?

Even for a given compound, ideal temperature can vary from track to track depending on the nature of the asphalt. To complicate matters further, the track surface will alter during the weekend as the forces generated by the tyres affect the Tarmac. This alteration also changes the ideal operating temperature of the tyre.

Teams measure the track surface with laser scanners to determine its macro and micro roughness. They then use sophisticated models fed with this data and assumed rubber properties to determine ideal operating temperature. This temperature is continuously monitored by an infrared device inside the wheel, which measures carcass temperature and wirelessly transmits the data to the team's data-acquisition system.

How are the compounds selected for each track?

There are three parameters. The first is track layout, in terms of the number and length of corners and the length of straights, which set a

requirement for tyre reliability. The second is the characteristics of the actual surface. The third parameter is the statistical weather norms, which tell us the conditions we can expect to encounter over the weekend. In 2016 it looks as if this task may once again fall to the teams rather than the tyre supplier, which presents a new challenge.

Many people will remember the disastrous tyre failures that occurred in Indianapolis in 2005.

What caused this problem and how is it avoided?

That was a widespread structural failure of the sidewalls brought about by 'standing waves' in the tyre. As a tyre rolls, it undergoes deformation as each area of the tread contacts the track surface in what is known as the contact patch. As the deformed tread exits this 'footprint' a combination of the sidewall construction and tyre pressure pushes it back to its normal radial position. At a critical speed, this combination can no longer push the sidewall back to a non-deflected shape and intense flexural waves emerge from the trailing edge of the contact patch and travel around the tyre's circumference. These waves appear stationary, but the deflection associated with them contains significant energy, which is converted to heat leading to rapid failure of the tyre shoulder. The only way to stop this destruction, other than redesigning it, is to run higher pressure or lower speed and load. **F1**





Right: A Ferrari mechanic manoeuvres a slick 'soft' tyre into position, pre-race. Left: a rare image of a 'standing wave' in a tyre. These high-energy deflections can overheat the tyre, causing it to fail dramatically as was the case at the 2005 US GP



PETER WINDSOR

RACER'S EDGE

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

When is an F1 car too slow or too easy to drive? Many of the power-brokers would say this is an easy one to call: if the lap times aren't much quicker than those of other racing categories, or if the car isn't physically exhausting, then clearly it's time to move on.

Personally, I think that argument is specious. Was Jim Clark's 1965 world championship demeaned by the superior speeds of the new big-banger Group 7 sportscar races taking place in the US and England? And was he less of a champion because he wasn't dripping with sweat whenever he climbed from his Lotus 33B?

It's all relative, of course, but to my (admittedly purist) way of thinking, F1 cars are not too easy to drive so long as Carlos Sainz can still lose it at Barcelona's Turn 3 and Felipe Massa can't sustain race pace because the back end of his Williams has gone away. Give me perfection, in other words, and that's when I'll accept the need for a more demanding Formula 1.

Don't get me wrong: I think there are plenty of ways we can improve today's F1. For one thing, we can discard the complicated and expensive-to-develop hybrid gizmos that save some energy but impair the racing. For another, we should go back to decent tyres

Formula 1 can never be called 'too easy'

– eliminate tyre degradation from the vocabulary, to be precise. Then there are the numerous aerodynamic devices we should expunge, which should have been expunged a long time ago.

What we *don't* necessarily need is more power commensurate with the current aero regulations... or indeed anything that comes under the heading of 'more'. Less is more. We should all know that by now. It's been F1's mantra for the past 40 years.

And there's another thing. For all the macho-man F1 emphasis, why is it that a non-gym-focused ex-racing driver two or three times the age of the current grid – Rob Wilson by name – is still as quick, or sometimes quicker, around a two-minute road-car lap of Bruntingthorpe Proving Ground than every F1 driver who has ever been brave enough to challenge him? Think about it for a second. What Rob does routinely up at Bruntingthorpe in a Vauxhall Astra is akin to – I don't know – Butch Harmon playing 18 holes with Ricky Fowler and consistently beating him by at least four strokes while playing from the back tees. That's something that just wouldn't ever happen... in golf.

Granted, the steering is light on a current F1 car. The grip is high. The brakes are amazing. The power – as Alex Lynn realised when he recently drove a Williams-Mercedes for the first time – is staggering. All that may add up to a car that is 'too easy to drive' but the reality is that only the very, very good can actually wring 100 per cent from a 2015 F1 car for a single lap, let alone for a decent race average. That's why Lewis Hamilton wins races – and occasionally gets beaten by Nico Rosberg. The difficulties of driving a Mercedes W06 Hybrid absolutely at perfection – or at 99 per cent of perfection, if we are to remember the thesis of Denis Jenkinson – are right up there with the difficulties of racing any other F1 car from



any era near or on the limit. If today's cars are that easy to drive, in other words, then Lewis Hamilton and Nico Rosberg would be doing what some drivers did back in the mid-1990s – namely setting identical lap times to their peers right down to a thousandth of a second, as happened in Jerez in 1997.

So what is it that we really need? We need more cars running competitively at the

"Give me perfection and that's when I'll accept
the need for a more demanding Formula 1"



If today's F1 cars are too easy, then surely Lewis Hamilton and Nico Rosberg (below) would be doing what some drivers did back in the mid-'90s – namely setting identical lap times, right down to a thousandth of a second as happened in Jerez 1997 (above)



front. Solution: make the power units less convoluted and not fuel-restricted. We also need more overtaking. Solution: restrict the aero even more and race with tyres that can take more than a lap or two of serious driving. A switch to 18-inch wheels would be a step in the right direction if only because wheel movement would be less about sidewalls and more about proper suspension. We need lower

costs. Solution: make less money available to the teams and spend the balance on promoting F1 in countries where the grandstands are empty or the races lack government underwriting. F1 teams will always spend whatever they can procure from someone else (in today's world from CVC, the commercial rights holder) but some of them are also very good at re-inventing themselves when times

are hard. Think Projects One, Two and Three at McLaren, or the bailiffs who pursued Eddie Jordan, or Frank Williams finding his worldly possessions on the grass outside his office or Enzo Ferrari digging deep into his passion when he was right on the outer edges of F1, and you get the picture of what real F1 people are all about. An F1 team who believe they have to employ at least 500 people to build two cars to enable two guys to go racing 19 times a year on Sunday afternoons, are an F1 team unaware of the bigger world and ultimately doomed to failure. What are they going to do if the F1 money supply dwindles by another 50 per cent? Pull out of F1? Perhaps. Of this I am sure: there will be a queue of young Enzo Ferraris and Frank Williamses out there ready to take their place, regardless of how easy – or not – the F1 cars are to drive.

So let's not confuse F1 cars being 'easy to drive' with all the other things we can do to improve the breed. Put another way, a training day with Rob Wilson costs around 0.00000001 per cent of the money that most F1 teams spend in a month trying to find an improvement of 0.2 sec a lap with CFD, thereby hoping, of course, to make their car 'easier to drive'.

I can't finish this column without mentioning the passing of Frank Match, the Australian driver/engineer/entrepreneur who raced wheel to wheel with Jim Clark in 1965 and, in the late 1960s, took regular calls from Bruce McLaren, so impressed was Bruce by Frank's racing brain. Frank captured my imagination when, as a kid who could barely peer over the Warwick Farm fencing, I saw him harass the giants at the 1963 Australian Grand Prix and then, a year later, when he won four races in one day at Catalina Park, Katoomba.

I was fortunate eventually to come to know Frank both as a friend and as a racing mentor and I will treasure forever the memories of the languid dinners we used to have up by the Narrabeen Lakes, on the north shore of Sydney: oysters and barbecued trout, smooth white chilling on ice. Thanks, Frank, for everything. 🍷



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DAMON HILL

KING OF THE HILL

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There are a lot of racing drivers who can drive, but not all of them want to be stars. If you are in F1 it will make you famous, whether you like it or not. And fame can be an unwelcome by-product for some.

Jim Clark was famously unsure about fame, preferring to just smile that enormous smile and drive like a god. My dad, Graham Hill, on the other hand, thought fame was a gas. He always used to sing, "Hi diddly-dee! An actor's life for me!" and was the notable exception in the film *Grand Prix*, in that he had a speaking part. Clearly his ambition exceeded his talents, as alongside James Garner he did a good impression of a piece of 4x2, but full marks for bravery. Show him a camera and he was ready for action, but he was a driver who couldn't act. He was, in fairness, an excellent after-dinner speaker, and people still come up to me today with stories about his hilarious speeches. But he loved the attention that came with the job and his fame made him F1's unofficial global ambassador, long before such things existed.

Sebastian Vettel is similarly adept in this regard and able to hold an audience with a comedic routine that includes *Monty Python* quotes. I'm not sure what the German equivalent of *Monty Python* is, but if there

Some seek fame; others simply race

is one I'll bet Seb will have used it. It was perfectly in keeping with this reputation that he got the timing just right in Monaco and bounced, like a year-old puppy, into the end of an unavoidably dour (thanks to Mercedes' surrealist race tactics) post-race interview with my Sky F1 colleague, Martin Brundle, and reminded us all that he was very happy with his second place, thank you very much. As all good humour should, it dispelled the dread and lifted the moment beautifully. I would say this was good for the show.

The race was, of course, won by that other disappointment to Bernie Ecclestone, Nico Rosberg. Three times in a row he has defied his detractors and gone for the home win. The Grimaldis looked anything but grim. They could hardly suppress their delight as their Monte Carlo boy bagged a hat-trick. His German nationality might not be enough to save the German Grand Prix but when you have the Monaco Grand Prix as a fall-back position, it's not so bad. Clearly his fame in this tiny principality is enough for the Monegasques and also for Nico.

Present in Monaco were the A-listers, who presumably came because they love 'auto-racing' as much as they love fame. Hard to tell though, sometimes. To some, fame is a thing in and of itself: a goal, an objective. The means is not important. To me, this is like saying 'I don't care how I win.' Surely, it matters?

In days of yore, the race was graced by Princess Grace Kelly herself. Style was very much the thing in Hollywood in her day. Her co-star in the 1965 French Riviera thriller *To Catch a Thief*, Cary Grant, epitomised humour and stylishness. They also knew all about fame and how to work it. They understood image is important. But that is because that was their job; they created images on screen, and in life.

Racing drivers, I would argue, are not too comfortable with creating an image. There are enough people around doing that. Racing is about reality; sometimes, a harsh reality. There's no dodging the facts of sport.

I've met a few Hollywood actors in my career and they are invariably impressed by the fact that we do something real, rather than pretending. What they do is real, of course. But it is acting reality. Their fame depends on a mixture of self-promotion, talent and marketing. Their value is their fame and is measured nowadays in Twitter followers.


But fame is also power, and power corrupts. Fame is a powerful mind-altering drug that affects not only the object but the subjects, too.



Sebastian Vettel is happy to pose for photos with his fans in Monaco – but there are others who shy away from fame

When confronted by a famous person, people tend to get over-excited. This places huge responsibility on the famous to use their fame wisely and not abuse that power.

In Monaco, a group of children from the charity Starlight were on the trip of a lifetime to get special access to their heroes. Needless to say, Lewis did not disappoint, spending a good amount of his time exercising his fame in his own special way. He has a gift for this. Like Ayrton Senna, he is genuinely compassionate and has charisma. The positive effect of his fame is palpable. It was incomprehensible to them that he was deprived of his win, but Lewis works in a rather less charitable world.

Fame or infamy, it can be tricky being famous. But as they say, 'Never explain. Never complain.' There is always the alternative. 

"There is responsibility on the famous to use their fame wisely and not abuse that power"

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DIETER RENCKEN

POWER PLAY

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

Ever since the formation of F1's Strategy Group was revealed by these pages in 2012, this column has raged against the inequity of a process that empowers four top teams (plus Williams, and the highest placed 'other') to shape future regulations by forwarding only approved changes to the Formula One Commission, which, in turn, escalates them to the FIA's World Motor Sport Council for ratification.

True, the sextet holds but one third of the 18 votes, while the FIA and commercial rights holder (CRH), Formula One Management, have six each. But team power can tip regulations, especially where stalemate between FIA and CRH is reached – as was the case with cost-cutting regulations, which the former favoured, but FOM (fearing reduced spectacle) and the majors (with their spending power) did not.

Proponents of the concept – mainly FOM and elements of the favoured few – insist all teams have a vote on the Formula One Commission; but it stands to reason that if motions fail to reach that stage they cannot be debated, let alone voted on. Thus it is not the democratic process many suggest it to be, but a system in which privileged teams are granted legislative powers over the rest to 2020.

Those in charge need to take charge

Fast-forward three years, though, and the concept seems to be unravelling: between the Spanish and Monaco GPs, the Strategy Group convened in Biggin Hill – FOM's operational headquarters – only to agree vague notions after six hours of hot air created by eight intelligent men plus observers/consultants.

Oh, they also agreed *not* to amend engine allocation regulations, but recognised that Formula 1 should return to what it had once been: fast and furious...

The most gratifying aspect though, is that the watershed meeting sparked introspection, with Robert Fernley, deputy team principal of Force India (the 'other' team), later stating the Strategy Group "is not fit for purpose", adding: "We need to look at a better system. In days gone by, with [FOM CEO] Bernie [Ecclestone] and [former FIA president] Max [Mosley] in charge, we knew where we stood. I don't think that you should have teams making decisions on where Formula 1 is going. The teams should be *told* where Formula 1 is going."

Red Bull's Christian Horner, an early proponent of the Strategy Group, went one step further in Monaco, saying: "Every team has their own agenda, and will fight their own corner. The sport is governed by the FIA and promoted by FOM, and it's those guys who need to get together and say: 'What do we want Formula 1 to be?'"

Bernie Ecclestone and Jean Todt have very different ideas on the direction F1 should take




"Yes we want the cars to be quicker and more aggressive to drive, but you are never going to keep everyone happy. Bernie and [FIA president] Jean [Todt] need to get together and say: 'This is what we want the product to be, and how it is to be governed – then give us the entry form and see if we want to enter.'"

There, in a nutshell, lies the root of F1's dilemma, compounded by the sport's horrifically inequitable revenue distribution table, as revealed last month by *F1 Racing* – which sees three teams share approximately 50 per cent of the team 'pot' while seven teams split the remainder, regardless of actual championship classification.

However, one (non-Strategy Group) team boss, who spoke to us on condition of anonymity, believes that: "Formula 1 has more chance of running V12 diesel engines than having Jean and Bernie agree on anything. They can't; they are too different and want totally different directions for Formula 1."

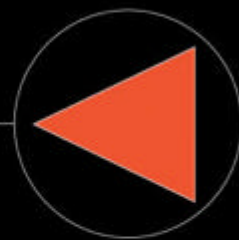
He believes that under Mosley and Ecclestone the sport flourished simply because between them they controlled the sport, and were friends who seldom disagreed – and when and where they did they quickly compromised. Thus, by implication, F1 flourished through friendship founded on mutual need: commercial control on one hand, and international stature on the other, with F1 providing the binding agent.

Todt, though, takes a more pragmatic view of his FIA portfolio, spending the inverse of the time his predecessor devoted to F1 on the sport, with the balance allocated to other sporting genres (WEC, WRC, Formula E) and touring matters. That, frankly, befits his brief as president – and, do not forget, the FIA owns F1, merely leasing it to FOM for another 100 years, albeit at a relative pittance in terms of a deal negotiated by Mosley.

None of which, though, helps F1 evolve during these times of crisis – although there was a welcome 'first step' after that crucial meeting on 14 May: the two men issued a joint media release featuring the phrases "all parties" and "agreed to work together". A welcome start indeed, but hopefully no V12 diesels will feature in F1's future... 

"The FIA and FOM need to get together and say: 'What do we want F1 to be?'" **Christian Horner**

Now that was a car



No. 40 The Penske PC-3

It came through tragedy to point the way to short-term grand prix success



WORDS STUART CODLING PICTURES JAMES MANN

As you'll see from our visit to the Haas F1 factory this month (p84), Gene Haas has the expertise, the experience and the equipment to succeed at the top level of motorsport – as he's already demonstrated in fields other than Formula 1. He'll be all too well aware, however, of how many other US motorsport magnates have tried and failed to make a long-term impact in F1.

Roger Penske is one of American motorsport's most successful entrepreneurs. Not only does he operate teams in the continent's top racing disciplines, but he also applies his name to a number of successful automotive businesses. In the early 1970s, Penske Racing added Formula 1 to a portfolio that already included successful Can-Am and USAC operations.

At the end of 1973, Penske bought workshop space near Poole in Dorset (just around the corner from where this magazine is printed). He assigned Can-Am team manager Heinz Hofer and chief mechanic Karl Kainhofer to oversee proceedings, and hired Geoff Ferris (the designer of several F2/F3 Brabhams) to act as chief engineer. The PC-1 car was ready by mid-1974, and Penske's next job was to cajole preferred driver Mark Donohue out of retirement to race it.

Donohue – by then several months into 'retirement' and already struggling to find a new niche in life – required very little chivvying to get back in the cockpit, even though the PC-1 was not very competitive. He ran the final two races of 1974, notching up 12th place at Mosport, where he had finished on the podium in a McLaren three years previously, and ran a full campaign in 1975.

Still the PC-1 failed to deliver, and by mid-season Penske's title sponsor, First National City Bank, was becoming twitchy. The team switched temporarily to a March 751, which proved little better. Three races into his tenure with the March, Donohue had a huge accident during practice at the Österreichring, fell into a coma, and died.

That could have been the end for Penske in Formula 1, and indeed the team skipped the next round. But First National had made plans for the final race of the year at Watkins Glen. Ferris had already built up the PC-3, a development of the March chassis, and Penske recruited Ulsterman John Watson to drive it, off the back of some decent performances in a Surtees. Watson duly qualified the new car 12th, but it broke down during the warm-up, and he had to jump into a PC-1 that had been on static display in the paddock. Having never sat in the car before (he would later claim to have crushed two ribs during the race, such was the poor fit) he finished ninth.

That was enough to secure Watson a full-time drive for 1976 and the PC-3 was competitive enough to qualify and finish in the top ten in several races (including a second-row start at Kyalami) before Ferris completed work on the PC-4, a further development of the March chassis. Thus armed, Watson finished third in France and Britain before winning at the Österreichring, scene of Donohue's tragic accident 12 months before.

There was talk of expanding to a two-car entry in 1977 but, without sufficient sponsorship, Penske decided to rationalise his efforts and quit the sport. **F1**



PENSKE PC-3 TECH SPEC

Chassis	Aluminium monocoque
Suspension	Independent via wishbones and coil springs
Engine	Ford Cosworth V8
Engine capacity	2,993cc
Power output	480bhp @ 10,600rpm (est)
Gearbox	Hewland 5-speed manual
Weight	560kg
Wheelbase	2,540mm
Tyres	Goodyear
Notable drivers	John Watson



JENSON'S TRUE COLOURS

In his 16th F1 season – still standing, still fighting, still silencing the non-believers – Jenson Button keeps on proving he's one of the sport's truest competitors

WORDS ANTHONY ROWLINSON

PICTURES ADRIAN MYERS



his interview might
never have happened.

Unlikely though it seems, given the sense of permanence surrounding Jenson Button's presence at McLaren – 102 races and counting – his F1 career looked to be over at the end of 2014.

After five seasons with the team that had become his spiritual home, eight wins, a sackload of points and a reputation as F1's classiest operator, time was about to be called, it appeared, by Ron Dennis, McLaren CEO and chairman.

You'll recall that the mood was turbulent at McLaren last year, following Dennis's return to a position of executive influence back in January 2014. Barely a month after that bombshell, Eric Boullier joined from Lotus in the role of racing director. Myriad further personnel changes followed, as part of an extensive (and ongoing) internal restructure. Then, last August, former team principal Martin Whitmarsh left, after 24 years' service. There was a change of engine partner to manage, too – a significant one, with former ally Honda back at the bulkhead in Mercedes' stead, marking the end of a relationship that stretched back to 1995.

McLaren's tectonic plates were surely shifting, and it seemed that the career of Jenson Button, one of Britain's most successful and widely respected racing drivers, might fall through the cracks, as the team reset and reshaped.



With Fernando Alonso's services privately secured for 2015, the choice being made behind the mirror-shade exterior of the McLaren Technology Centre was between JB and their talented 2014 rookie Kevin Magnussen. The cards fell Jenson's way, but only after an unseemly delay. Someone close to the negotiations memorably described Jenson's position, as he waited for a decision, thus:

"Ron's like a kid focusing the sun into a 'death ray' with a magnifying glass – and Jenson's the insect in the beam."

It was one of the most unedifying periods in an F1 career that extends back to first tests in 1999, but Button weathered it, as he has weathered so many other storms over 16 seasons. From the troughs of a dire Benetton-Renault back in 2001 (*Autosport* magazine called it Jenson's "year of hell"), through two woeful Honda factory team years in 2007-8, to the unforgettable epiphany of his 2009 title with Brawn, Jenson has seen it all. And, like the hardened Ironman competitor he has become, he has found ways to endure, prevail and survive – not simply for survival's sake, rather because he believes that at 35 →

JENSON'S SILVERSTONE RECORD				 2000 Team Williams Qualified 6th Race finish 5th	 2001 Team Benetton Qualified 18th Race finish 15th	 2002 Team Renault Qualified 12th Race finish 12th
 2003 Team BAR Honda Qualified 20th Race finish 8th	 2004 Team BAR Honda Qualified 3rd Race finish 4th	 2005 Team BAR Honda Qualified 2nd Race finish 5th	 2006 Team Honda Qualified 19th Race finish DNF			
 2007 Team Honda Qualified 18th Race finish 10th	 2008 Team Honda Qualified 17th Race finish 10th	 2009 Team Brawn Qualified 6th Race finish 6th	 2010 Team McLaren Qualified 14th Race finish 4th			
 2011 Team McLaren Qualified 5th Race finish DNF	 2012 Team McLaren Qualified 16th Race finish 10th	 2013 Team McLaren Qualified 10th Race finish 13th	 2014 Team McLaren Qualified 3rd Race finish 4th			

and with 272 grands prix notched up, he still has a role to play as a top-line F1 driver with a leading team. He gives short shrift to any who might doubt his ambition: "I have a team-mate alongside me who's regarded as one of the best in F1 history," he says with a steely grin.

"With a team-mate like that, it's not just about trying to do the best job you can in your car against the rest of the field. You have your team-mate to judge yourself against. It's a great position to be in and it's exactly what I want at this stage. It keeps me massively motivated."

Up against Alonso, how could Jenson be anything *but* motivated if he wants to prolong his F1 career? Fernando is a ferocious, political animal, intent on achieving the third title he believes one of his talents should attain.

Unsurprisingly, Button assesses himself and his fellow F1 lion as respectful of each other's abilities – but not close: "I haven't spent much time with Fernando," says Jenson. "Last year I saw him a couple of times in a dark club somewhere where we had some fun. Apart from that I don't see him away from racing, even though we have similar interests."

They also have intertwined F1 histories: in 2001 Button was a Benetton racer, while Fernando was the team's tester. Then, by 2003, Alonso had taken Button's Renault drive and won his first race.

It took Jenson another three seasons to win his first GP, by which time Alonso was well on →





the way to a second title. And now, post-Renault, post-Honda, post-Brawn, post-Ferrari, they are reunited, having had, in Jenson's view, "Great races together and some pretty special times."

Intriguingly Button rates Alonso as the team-mate he always wished he could have had: "You know which team-mate you would like in F1," he says, "and which would be interesting. And of current F1 drivers, it's always been Fernando."

We can revisit that assessment once Jenson's had a season head-to-head with F1's toughest competitor. But if Jenson plays to his own strengths, he'll surely be a strong rival for McLaren in-house supremacy. He has handled several quick, prickly team-mates over the years – from Ralf Schumacher, to Jacques Villeneuve to Rubens Barrichello... not to mention Lewis Hamilton for three seasons. And he outpointed Lewis, even if, in terms of wins and poles (eight wins and one pole for Jenson, versus Lewis's ten wins and nine poles) Lewis had JB beat.

McLaren racing director Eric Boullier is relishing the competition between his champion pair, reflecting that Button, perhaps, is a driver who needs the strongest possible intra-team rivalry to give his absolute best: "Maybe he is one of these, yes. I think it's an extra motivation – maybe motivation is the wrong word – but maybe Fernando being here forces Jenson to have extra focus, which makes him great."

"For sure he is a top driver," Boullier adds, "and like any driver, when your team-mate gives you a hard time, there is something special. And there is definitely a respect between them. I hope by the end of this year to have the kind of problems Toto is having with Nico and Lewis!"

It'll take a whole lot of lap-time gain before McLaren run at Merc-troubling pace, however. At the Spanish GP, the fastest lap was set by Hamilton's Merc W06: a 1m 28.270s; the fastest McLaren race lap (tenth overall) was Button's 1m 31.162s. In qualifying, Merc's best – Nico Rosberg's pole time – was a 1m 24.681s; Alonso recorded a 1m 27.760s for P13. Averaged out, those two benchmarks show a deficit to front-running pace of 2.9855s and, however much of that may be attributed to a currently gutless Honda RA615H (approximately 100bhp off the leading Mercedes PU106B Hybrid) and however much to the aero-chassis combo, they equate to McLaren being F1's seventh-fastest squad: demeaning for a team of such pedigree.

Yet Button, who would be forgiven drooped shoulders at the prospect of pedalling yet another dud (see also Benetton 2001, Honda 2007-08, McLaren 2013-14) is not downbeat. Reason? The team's performance curve is upward and he can see gains being made:

"Testing was challenging because we spent a lot of time sitting in the motorhome not doing anything. Nobody wants to finish last at the first race. But then you see the improvement that comes every race – it's a massive step."



Button reckons that gains are being found everywhere and he's been emboldened by the knowledge that his inputs into the team's engineering direction are helping boost performance. "It makes you feel pretty good about yourself, knowing that you're involved with those improvements and that you have directed the team," he says. "It gets you excited about going to the next race because you know there's more on the way. It means you can look at where you may possibly end up at that race – which team can you pick off at that race weekend to fight your way closer to the front."

It makes this second Honda chapter very different to the wilderness years of Button's first spell with the Big H. In the last two seasons of its factory effort from 2007-08, Honda netted just 20 points – a thin haul that led to the canning of the F1 programme at the end of 2008. That period was so dulling for his competitive sensibilities, Button recalls, it drove him to find fresh stimulus, namely triathlon.

Eight years on, Button is now a serious competitor in this parallel arena, and intends triathlons to be a large part of his post-F1 existence. "I loved triathlons when I started," he says, "and I've been more and more competitive ever since. F1 is such a team sport, whereas I wanted to do something that is just personal. It helps me in the car. The pain you go through and

the emotions you go through in a long-distance race is just... the ups and downs you have... You go through so many different peaks and troughs it's a bit like an F1 season really, in one race."

So even on his 'days off' Button's life revolves around elite-level sport. According to his race engineer Tom Stallard, a British rowing Olympian who won a silver medal in the men's eight at the 2008 Games, that continues to endow Button with a key competitive edge.

"Jenson is lucky because for him, fitness is what he does in his down time," Stallard says. "Most of the other drivers do fitness because they need to for F1, but for Jenson that's his hobby. It's something we take for granted. It means his weight is completely under control. It means you know when you go somewhere like Singapore or Malaysia he is going to be at an advantage in the second half of the race."

Beyond that, Button and Stallard, who replaced Dave Robson as race engineer in July 2014, share what might be termed 'athlete patois'. "I've worked in F1 since 2008," Stallard says, "not that long compared to some, but I worked in elite sport for eight years before that, so I have a lot of experience in that respect. What that means is that we have an understanding of certain things – psychology if you like."

Stallard cites the example of qualifying pressures, when a choice has to be made between the first run on the prime or the option, then assessing the 'feel' on the prime and *then* what to do if it's not quick. "Now," he says, "you have one chance on the option, and understanding and discussing how you will address psychological situations that will approach you throughout the weekend and understanding how it will feel for the race, in qualifying, in practice... is a benefit. It's not one specific thing – it just exists."

Even this 'secret weapon' is unlikely, though, to give Button any hope of a decent finish at his home race this year and his failure to stand on the British GP podium remains a frustration for him. In the past 15 starts, his best finishes are a trio of fourths in 2004, '10 and last year.

"I would *love* to win it," he admits, grimacing. "I would love even to get on the podium! It's a pain in the arse, really, because it's my home grand prix and it's the one where I get the most support. It's mostly just from bad luck. In 2011 we easily had a podium coming our way and we had a wheel fall off. Last year I was about five inches away from getting a podium behind Ricciardo. So it's just like, that hurts."

Not that he'll let it get him down. Through fair weather and foul Button has been a constant, classy presence in F1 for a generation and with that 'world champion' brand being his in perpetuity, he's now philosophical about ➔

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"I'm nearer to the end of my career than to the beginning. But I don't think you can plan your retirement – I haven't"

sport's vicissitudes. "I'm nearer to the end of my career than to the beginning," he admits, "and you have days after a run of bad races when you think: 'What the hell am I doing?' But I don't think you can plan your retirement – I haven't. I take every day as it comes and try to enjoy every race as much as I can. That's the best way to be – and if I get to the point where I'm not enjoying every moment, then that's the time when I'll think, 'This isn't right for me any more.'" **F1**

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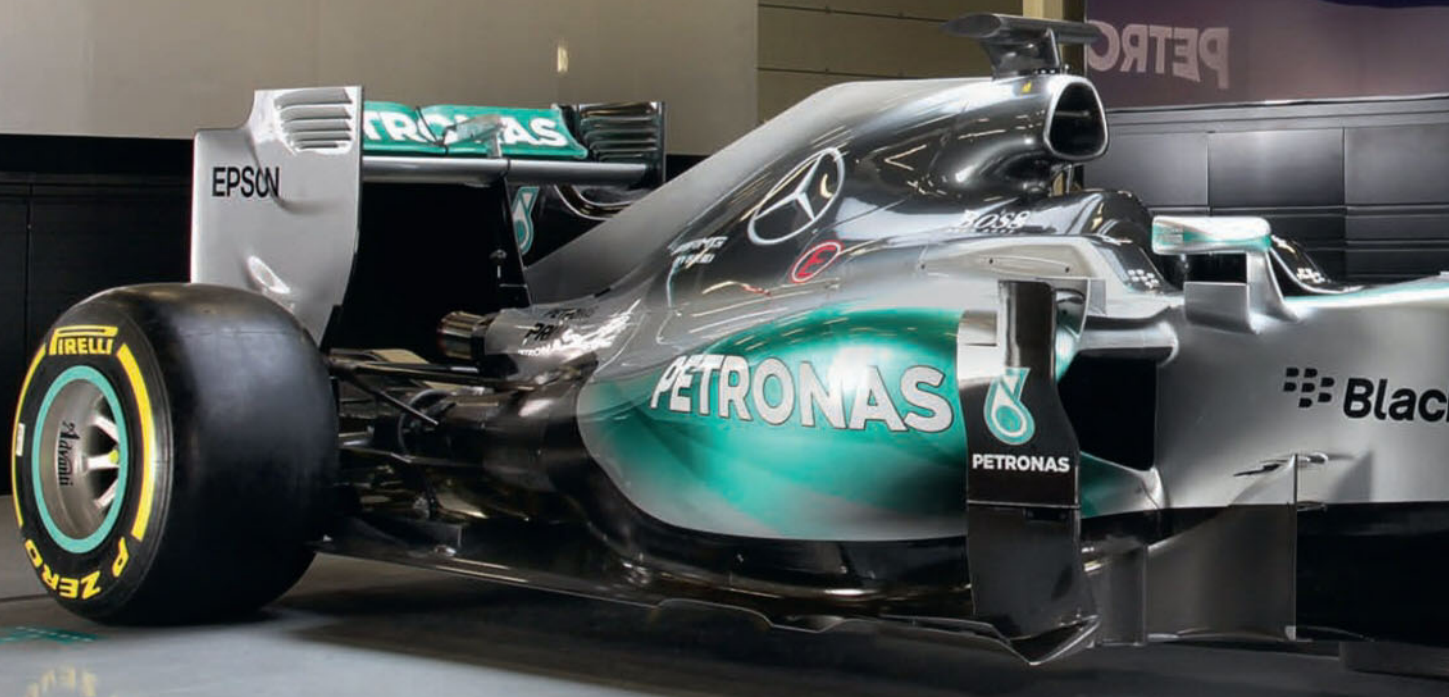


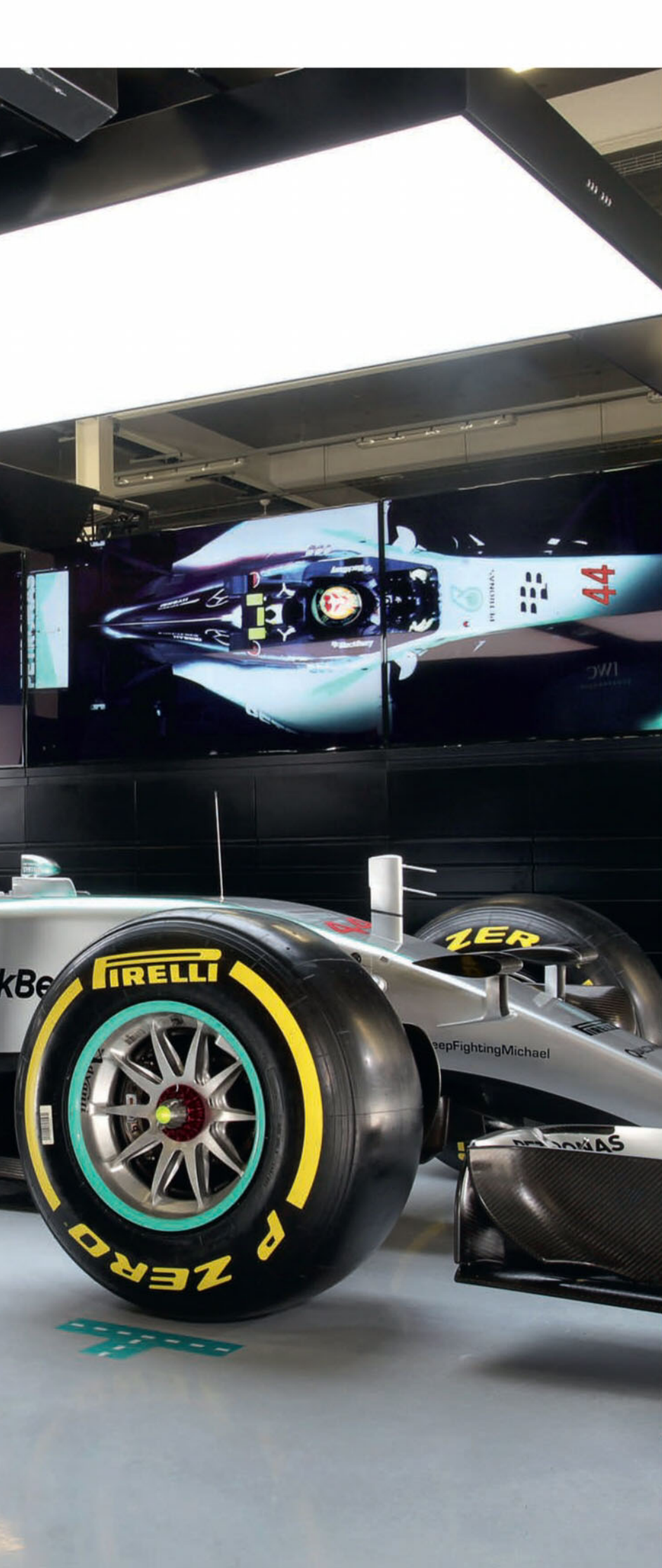
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WHY LEWIS LOVES THE W06

The reigning world champion says his 2015 challenger is the best car he's ever driven. So how did Mercedes set about improving on their double-title-winning W05 Hybrid?

WORDS STUART CODLING
PICTURES JAMES MANN

H

ow do you make the best better? That

conundrum must have vexed the talented and well-staffed brains trust at the Mercedes AMG Petronas Formula 1 team's Brackley base, and its equally formidable engine development wing in Brixworth, all through last winter and a goodly slice of the championship-winning season gone. And yet, all in all, given the odd slip and stumble here and there, they've delivered.

"Last year [2014] I had the best car I had ever driven and already this year it is the best car I have ever driven," said championship leader Lewis Hamilton earlier this season. "It is quite unbelievable. I love this car."

He's bound to say that though, isn't he? Cast an eye further down the grid and you'll see the likes of Jenson Button and Fernando Alonso desperately accentuating the positive, even though they're having a ghastly time of it with McLaren. With that in mind, we asked Lewis and the technical brains behind him to explain: how, and why, is the Mercedes F1 W06 Hybrid the best car a healthy budget can buy?

"I'm probably the happiest I've been for a long, long time," says Lewis. "I definitely feel more comfortable in this car – I was comfortable in last year's, but with this car more so – it has pretty much the same characteristics, it's just better. And having had a year of experience I'm now better equipped to utilise them even more."

"As a driver I've had to improve in areas where perhaps I wasn't the strongest last year. The car hasn't changed *that* much, it's just continued to climb on the same gradient as it was, getting stronger all the time – and the areas I might have had trouble with last season I've worked hard on with the engineers and the mechanics and the guys back at the factory to iron out."

Last season's W05 Hybrid was born of several years of pain as Mercedes struggled principally with tyre wear and the fall-out from the team's rebirth.

Having shed staff to cut costs during their previous incarnation as Brawn GP, they muddled through 2010 (remember that while Brawn dominated the first half of 2009, they fell off dramatically as rivals outdeveloped them), then in 2011 through to 2013 delivered chassis that were sporadically quick, but weren't sympathetic to the characteristics of the Pirelli-era rubber. Each car looked very different from the last as the team tried new solutions; look at Ferrari's performance this year at the Spanish GP – where Kimi Räikkönen raced the old-spec SF15-T while Sebastian Vettel used a development spec in which 90 per cent of the aerodynamic surfaces were different – and you'll see a team wrestling with the same challenges.

Having diverted resources early to the 2014 project, including the new hybrid power unit package, Mercedes defined the cutting edge throughout that season. It's not too surprising, then, that at first glance, the W06 Hybrid appears to share a family resemblance to its predecessor.





"Last year [2014]
I had the best car I
had ever driven and
already this year it
is *the best car*
I have ever driven"

"What's fantastic about working on F1 cars is that by definition, you bring out a car each year that you think is the best you could ever make," says executive director (technical) Paddy Lowe in a tone of infectious enthusiasm. "And if it actually is the best car on the grid, then that's justified and rewarded. Everybody has put 110 per cent into it. The amazing thing is that when you look at that car later, by the time it's two years old it looks agricultural. We have a W05 in our reception at Brackley and it looks fantastic – in another year's time it'll look like a bit of a relic."

"You just keep moving the bar upwards. There are some big innovations that people come up with over the years, such as seamless-shift gearboxes, but in general the lap time is coming through bread-and-butter work, which isn't that perceptible. It's better decisions, thousands of small improvements."

"So you might be asked to save money by carrying over large parts of the car to the following year, because there's not much performance in such and such a bracket or whatever. But →

INSET: STEVE ETHERINGTON/LAT



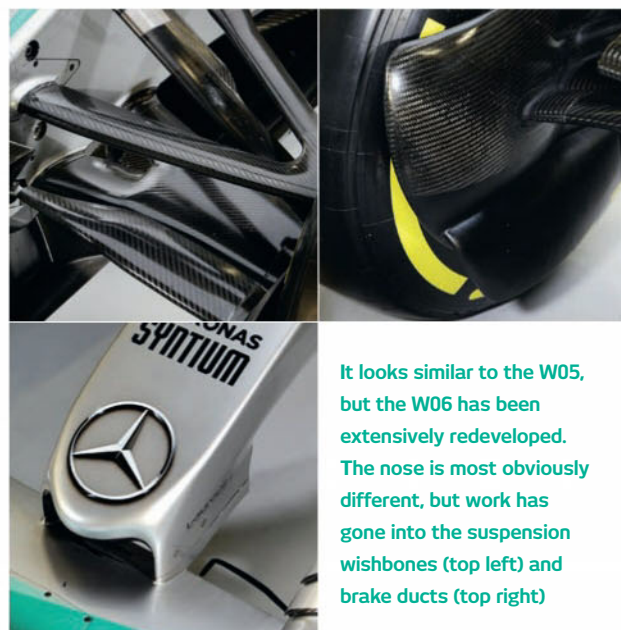


the reality is, you have to keep working on everything – every single person designing every single bit is thinking about how they can make it two per cent better. It depends what your job is: if you're an aerodynamicist, it's about going point by point in the windtunnel; if you're a structural engineer it's about finding that little bit more efficiency in terms of stiffness per weight. Even little packaging ideas – someone will come up with a better electrical connector and when you adopt it you save weight and volume across the car.

“Aerodynamics, for instance, is one of the major profit centres for performance, and most of it is not about the big, grand idea, it's about constant hard work on lots of little bits. So on the front wing you may not notice many differences from race to race, but look over the whole year and you'll see substantial change.”

Apart from the nose, then, which has changed substantially because of the revised regulations, the mechanical and aerodynamic changes from W05 to W06 are – from a visual point of view at least – matters of nuance. The conjoined lower front suspension wishbones are yet more extreme, so that all but the few centimetres nearest the tub are a smoothly blended whole. The brake ducts are a major focus of development and have changed much over the past six months, let alone from one season to the next. And the subtly different sidepods and rollhoop point to the hidden changes to optimise the cooling system.

While the W05 Hybrid was undoubtedly the best package in 2014, winning all but three races, it wasn't invulnerable, nor



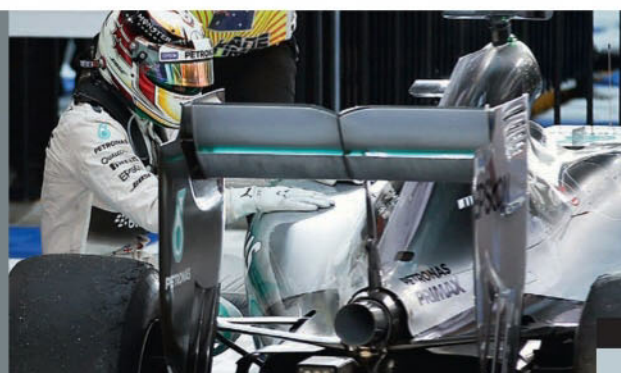
It looks similar to the W05, but the W06 has been extensively redeveloped. The nose is most obviously different, but work has gone into the suspension wishbones (top left) and brake ducts (top right)

was it as absurdly dominant in terms of pace as the likes of the 1988 McLaren MP4/4 or the Williams FW14B (whose active suspension was designed by a team including Lowe). At the very first race Hamilton's car retired after the failure of a minor component; in Canada and Austria both W05s experienced brake trouble; and by the end of the season the chasing pack had substantially reduced the gap.

But that chasing pack were for the most part motivated by Mercedes power units, leading some – those saddled with less effective Ferrari and Renault power units, naturally – to declaim the state of competition. No less an eminence than Adrian Newey has attributed his decision to draw boats instead of racing cars to F1 becoming, in his words, “an engine formula”.

“That’s just nonsense,” says Lowe. “We had a period from 2007 [after the freeze in the V8 era] where the engine was no longer an area of active development. And people became accustomed to the idea that the engine shouldn’t be a differentiator, that it was just a commodity – which I thought was a tragedy for F1. →

“It is quite unbelievable.
I love this car”



INSET: GLENN DUNBAR/LAT



"I feel more comfortable in this car. It's just better"

INSET: STEVE ETHERINGTON/VIA

"What we did as a sport in 2014 was to re-introduce the engine as a differentiator, but only one among all the others – chassis, tyres, brakes, aero, etc. Some people talk about it as though it's 90 per cent of the lap time. It's nothing like that, and I think the data makes that obvious when you look at the differences between various cars.

"If I were to pick a number, it's probably about 30 to 40 per cent of the gain at the moment, and you'd put another 30-40 per cent to aero, with the rest in everything else – brakes, weight saving, fuel, and so on."

Even so, the engine is mostly new for 2015, such is the scope of development permitted over the first closed season. That window will narrow, year on year, but for now, given the scope of what can be done even with one of the 32 development 'tokens' enshrined in the regulations, there is a lot of additional performance to be found. That can be unlocked in-season now, since Ferrari drove a coach and (prancing) horses through the regulations by pointing out that the FIA had neglected to set a deadline for this year's tokens to be used.

Mercedes AMG High Performance Powertrains boss Andy Cowell wouldn't divulge how many his outfit have used, or what work has been done to optimise the occasionally wayward energy recovery systems from last year. What he *will* reveal is that a key target was to improve reliability of the power unit by 25 per cent, partly owing to the reduction of units per driver per year from five to four, and partly because "last year we weren't as reliable as we'd like to be". There has been pressure from the likes of the Red Bull-Renault axis to

revert to five power units per season, but at a recent meeting, the Strategy Group rejected this move.

"It was a big internal challenge to increase the longevity of all the parts," he says, "making sure we had more certainty that the power unit would complete the last race use *and* increasing the performance. We're at about 40 per cent thermal efficiency, with a throttle response of less than 100 milliseconds."

Malign the relative absence of noise compared with the V8 era if you will, but it makes the internal combustion engines in F1 the most efficient on earth by a substantial margin. To reach that figure, the engine has to run as lean a mixture of fuel as possible while reducing 'knock', which is when the fuel ignites too early during the compression phase before the spark plug fires.

"Knock in a highly boosted engine is a problem in both road and race cars," says Cowell, "so you design everything from the fuel, the oil, the piston, the cylinder head and the crankcase to the fuel injector to minimise it. In development meetings we were looking at white papers people had written over the decades on this topic. We decided we had to be the masters of knock..."

"We'd created a completely new fuel blend for 2014," says Petronas fuel technology manager Chan Ming Yau, →



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Mercedes AMG Petronas F1 W06 Hybrid tech spec

Chassis	Moulded carbon fibre and honeycomb monocoque
Front suspension	Carbon-fibre wishbone and pushrod-activated torsion springs and rockers
Rear suspension	Carbon-fibre wishbone and pullrod-activated torsion springs and rockers
Wheels	Advanti forged magnesium
Tyres	Pirelli
Brake calipers	Brembo
Steering	Power-assisted rack and pinion
Gearbox	Eight-speed forward, one reverse. Sequential, semi-automatic, hydraulic activation
Overall length	5,000mm
Overall width	1,800mm
Overall height	950mm
Overall weight	702kg
Engine type	Mercedes-Benz PU106B Hybrid
Engine minimum weight	145kg
Capacity	1,600cc
Cylinders	Six
Bank angle	90
No of valves	24
Max rpm ICE	15,000rpm
Max fuel-flow rate	100 kg/hour (above 10,500rpm)
Max rpm exhaust turbine	125,000rpm
Energy store	Lithium-ion battery solution, between 20 and 25kg
Fuel	Petronas Primax
Lubricants	Petronas Syntium




“tailor-made for the V6, which gave a 30 per cent improvement in efficiency. It was different in a way we hadn’t anticipated – during testing we went through several hundred candidate fuels to get to the final blend. It had a very good energy density. We’ve refined it again for 2015, aiming for better combustion, and greater cleanliness in the high-pressure direct-injection system, to give better drivability. It’s still closely related to road-car fuel – the same chemistry, just different proportions of it. You could use it in your road car, no problem.”

Fuel and lubricant development has also helped with aerodynamic optimisation by enabling the team to run smaller radiators, which are therefore less bulky (helping with weight-saving, too) and require smaller openings. As Cowell explains: “If you reduce the energy going to the lubricant through friction, there’s less heat going out through the oil pipe to the radiators, so the radiators can be smaller. It’s a beautiful virtuous circle where you spiral up in car performance.”

The result is a package that may look outwardly similar to its predecessor, but which has taken a quantifiable step forwards in performance – although Ferrari, as demonstrated in Malaysia, use tyres more effectively in hot conditions. But it also seems to have enabled Lewis to find a new level of confidence, to explore the outer reaches of his craft and to be bolder with his choices. He talked recently about how the W06 has enabled him to be “innovative” with what he does on-track during a race weekend.

“Usually, on every race weekend you arrive and do pretty much the same thing,” he explains. “By ‘innovative’ I mean trying new things with the setup, new approaches, different approaches to techniques that you use. I’ve been putting new things in the mix to see if they work. Sometimes they do, sometimes they don’t.”

“And when driving against competitors, it’s about not using the same patterns – finding different ways of getting around a corner or attacking, which I love.”

When Lewis is happy within himself, that’s when he’s at his most unbeatable. And as for the fastest car in F1 – well, as Paddy Lowe says with a twinkle in his eye: “There’s never an end to what you can find...” 



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ROAD TO THE TOP

TAKING THE HARD

Aged 16, **Will Stevens** had Honda backing, was tagged 'the next Lewis' and was on course for F1. He's made it, but things haven't quite turned out as planned

WORDS STUART CODLING
PORTRAIT ADRIAN MYERS

A wag once remarked of the thriller writer Ian Rankin, author of the popular Rebus novels, that he took ten years to become an overnight success. Eight years ago, Will Stevens was anointed by some as 'the next Lewis Hamilton' – and the rest is history. Stevens, then a karting hotshot, was picked by Honda as a development driver, only to see the ladder pulled up when Honda quit Formula 1 in December 2008.

Shorn of manufacturer patronage, Stevens has climbed the junior single-seater ranks the hard way, making a low-key F1 debut with the briefly revived Caterham squad in Abu Dhabi last year. In a sport with a short memory and more up-and-coming young drivers knocking at the door than there are seats for them, it's important to note that Stevens is only just about to turn 24. But his experience means he's painfully aware that he can take nothing for granted.

Of 2007, Stevens remarks: "That was a huge year for my career because it really started everything off. I got picked up by Honda for their driver-development programme. Then timing-wise it didn't work out, because a year or so later they pulled out of F1. To have everything in a contract letter and then a year later for them to go, that was a big blow. But I always knew that if I kept working hard the opportunities would come, and I could still achieve it."

Stevens pieced his single-seater career together via Formula Renault, but it's fair to say that his results since then have been solid rather than spectacular. There *have* been wins, but too often he's been outshone over the course of a season by other prospects carrying more prominent backing – Robin Frijns and Jules Bianchi in Renault 3.5 in 2012, Kevin Magnussen and Stoffel Vandoorne in 2013, and Carlos Sainz in 2014. Last season was a case in point: Sainz took pole at the first round in Monza but Stevens beat him convincingly,

only to melt into the background over the following races, making just one more visit to the podium before winning again at the final weekend at Jerez.

Red Bull's millions duly elevated Sainz to F1 with Toro Rosso, and championship runner-up Pierre Gasly to GP2. Surveying the limited options ahead – a fourth season in Renault 3.5 or a back-of-the-grid berth in F1 – Stevens and his manager, Glenn Beavis, secured £500,000 from his backers to get the one-off Caterham drive last November. After a competent and assured F1 debut, he spent the winter putting together the funding – believed to be in the region of £5million – to run with the team now known as Manor Marussia when they sparked back into life.

"We knew that these guys [Manor] were pushing hard to get on to the grid," he says, "and we were confident it was going to happen. That's why we held off with other opportunities because we knew we wanted to be here.

"So it was a long winter, just waiting to see if they were going to be able to


make it. And, luckily for me, they did. When I did Abu Dhabi at the end of last year, I knew, once I'd got my foot in the door, that I didn't want to go back out again."

Racing a modified 2014 car at the back of the grid makes for a tricky comparison with his peers. The only fair measure of his achievements, besides qualifying the elderly Manor chassis within the 107 per cent rule, is through comparison with his team-mate. Roberto Merhi beat Stevens in Renault 3.5, but in F1 has come off second best thus far. Merhi is taller than Stevens and therefore heavier, but *F1 Racing* understands that accounts for only part of the pace deficit. Stevens, we hear, is doing a better job of managing the dozens of adjustments needed every lap to keep the notoriously attention-hungry 2014 Ferrari power unit on song.

"That's F1 these days," he says. "The driving side needs to come naturally so you've got the mental capacity to concentrate on other things. Yes, there are a lot of settings we have to change but that's no different to anyone else down the pitlane. Current F1 cars are complicated and you've really got to be on top of everything. That's where, as a driver, you can make a difference. If you're on top of all those procedures, when you get the call over the radio you can make the change quickly and get on with driving. There are lots of pieces of paper, pictures and diagrams – I studied it like a book. Certainly the work I did for the month before I got in the car really helped me for the first few races."

He's also made a seamless transition to the Pirelli tyres after years of driving on Michelins. But, though greater mainstream exposure beckons as his home grand prix approaches, Stevens – perhaps chastened

by disappointments past – remains keen to manage expectations.

"Formula 1 these days is hard," he says. "You never know what's around the corner. At the moment all I can do is do a good job and prove that I'm good enough to stay in F1. If you get good performances and keep working hard on and off the track, it goes a long way." 

FACTFILE

Date of birth 28 June 1991
Place of birth Rochford, UK
Team Manor Marussia
Role Racing driver

2014
F1 debut with revived Caterham team at Abu Dhabi GP. Finishes 17th

2012-2014
Competes in Formula Renault 3.5, taking two wins on his way to a best championship position of fourth in '13

2008-2011
Races in Formula Renault 2.0 in the UK and Europe

2008
Aged 16, he is signed by Honda Racing to a long-term development deal, only for the firm to depart Formula 1 at the end of the year

2003-2007
Karting. Wins the FIA Asia-Pacific Championship in 2007

"WHEN I DID ABU DHABI AT THE END OF LAST YEAR I KNEW, ONCE I'D GOT MY FOOT IN THE DOOR, THAT I DIDN'T WANT TO GO BACK OUT AGAIN"



REUNION THE N



Twenty years after they all took part in the 1995 British GP, we gathered together the five entrants who held British competition licences to recall that race and the era in which they competed. We let them argue among themselves about the merits of F1 then and now, and, of course, about which one of them was the quickest...

WORDS JAMES ROBERTS
PHOTOS STEVEN TEE/LAT



British F1's likely
lads from left to
right: Damon Hill,
Johnny Herbert,
David Coulthard,
Mark Blundell
and Martin Brundle





"You never stop wanting to race, so it's very difficult to look at any car going round a corner now without thinking: 'I'd like to have a go at that!' But looking at what the conditions are like now for the drivers, I do think that we had a lot more freedom to enjoy what we were doing" **Damon Hill**

David Coulthard responded first to the group email. *F1 Racing* had got in touch with all five drivers who had raced with a British licence at the 1995 British GP to invite them to meet up and share their memories of that weekend – 20 years on.

"I will fit in with the others who work for a living, as my schedule is almost certainly more open," wrote Coulthard, a race winner for Williams that year. His former team-mate Damon Hill then waded in, happy to cancel a round of golf to fit in with DC's non-schedule.

Once it became clear that Mark Blundell was to be one of the 'FIA magistrates' at this year's Chinese GP, both Martin Brundle and Johnny Herbert announced they were also happy to meet for breakfast at the Pirelli motorhome in the Shanghai paddock.

As ever, these things never run to plan. A last-minute Sky TV production meeting delayed proceedings, and then Herbert was further delayed because he hadn't been able to work the interactive Sky Pad during the channel's live broadcast of qualifying the day before, and had to go for extra tuition.

But the show must go on. So along with experienced F1 writer David Tremayne, we sat down with Blundell and Coulthard to ask them about their first visits to Silverstone. But not before DC – now with the BBC, of course – vents his spleen about the missing Sky members. "It's very unprofessional! And no one watches it anyway..."

F1 journalist David Tremayne kicks off proceedings, while the group await the arrival of a late-running Johnny Herbert



David Coulthard: The first time I ever went to Silverstone was when I was karting as a kid. I drove a car around the inner perimeter roads of the circuit. My mum had an automatic BMW – something like that – and I was probably ten. I went to Silverstone, Donington Park, Brands, Cadwell – long before I started racing. Then, as a car racer, I used to sleep in the truck. But I've always been sensitive about my hair, so I used to go and wash my hair at the Silverstone toilet block, in the sink with cold water and then go and get breakfast while David Leslie's father took the kart out of the back of the truck and young David would fire it up. A few years later, I would be too scared to stand next to Mark [Blundell] in the toilets.

Mark Blundell: Silverstone was my first ever race in a Formula Ford. It was a Formula Libre race.

DC: Really? On the National Circuit, or...?

Blundell: On the National Circuit in 1984. I was 17 and the very first time I turned a wheel was in that Libre race. It was wet and I was up against Formula 5000 cars and a million other things that were quick in a straight line, and I was a menace around the corners as it was quite nimble. We had zero motorsport history in our family; did anyone have links in yours David?

DC: Yes, my father had won the Scottish karting championship when he was a teenager, so he always had a passion for it. His old man died when he was 14, so that's why he had to stop. He sponsored other karters, because he couldn't do it himself as he was running a business.

Blundell: On my side there was zero. The only association was the fact that my dad was a car dealer, so I was always used to driving cars as

a kid. I had a brainwave where if I could drive around a forecourt at 10mph and get quicker at it, I must be able to drive around a circuit. I think the idea was driven more by me than my dad.

DC: You were a real man! [Coulthard is addressing Carlos Sainz Sr, the rally legend who has just stepped into the Pirelli motorhome]. You probably came back from partying all night, washed your balls in the sink and then jumped in the car!

Blundell: No, no. Not the sink, the bath!

DC: [laughs]

F1 Racing's James Roberts: Did both of you dream of being in F1?

DC: I'm not a dreamer. Dreaming, my grandmother told me, is what you do when you sleep. Achieving is what you do when you work.

Blundell: I used to dream because I came from nothing. To be honest with you, when you start in the early levels of the sport, you don't often think about Formula 1 because you are so consumed with what you are doing. You sometimes look up there – but it is such a distance away. I look back now and I started in 1984 and by 1989 I was testing a Williams F1 car.

DC: That's incredible.

David Tremayne: Do you remember the point where you thought: 'Actually, I could get into F1?'

Blundell: Mine was the reality of sitting in the car to do straightline testing, because I was the first generation of test driver. And then it dawned on me that, actually, there is an opening here.

Tremayne: So it wasn't until you were sitting in a Formula 1 car?

Blundell: Yes, because we're talking about a very exclusive club. Maybe today there is more of a channel of getting there because you can open a chequebook and know where you're going. When you go by merit, it's different. I remember sitting with DC and Martin at dinner and DC was the up-and-coming guy ready to take over from me and do a much better job. But his first entry into the club was that he had to pay for dinner.



Tremayne: You actually got him to pay?

DC: That was at Imola... Ah! Glad you could make it boys [Martin and Damon appear].

Martin Brundle: Johnny's still at the Sky Pad trying to learn how to work it.

DC: That's ironic. The guy who wins the race [the 1995 British GP] can't f**king make it!

Damon Hill: [pointing to Tremayne's drink] Is that a pint of Guinness or a cappuccino?

Tremayne: It's a pint of cappuccino. We're discussing the first time we went to Silverstone, Damon, and I'm sure you can trump everyone?

Hill: I must have gone there in 1961 I suppose.

DC: What?! What f**king year were you born?

Hill: 1960. I was born September 1960, so I probably went the following year.

Tremayne: I'm sure you told me once you were born in 1962?

Hill: I did and I lied! You will not believe the aggravation I had trying to get my driving licence re-jigged to the right date.

Brundle: Have you just admitted to some creative accounting on your age?

Hill: Yes, I lost two years somewhere but Stirling Moss came to my christening – so it's not really difficult to work out, is it?

Tremayne: When did you go to Silverstone for the first time, Martin?

Brundle: Late 1960s. I saw Jim Clark and Jackie Stewart. I went with my uncle and we used to take cardboard boxes and stand at Copse when there used to be temporary structures.

Tremayne: You all raced in a pretty good era, but would you rather have raced then or now?

Hill: I think the trouble is that you never stop wanting to race, so it's very difficult to look at any car going round a corner now without thinking: 'I'd like to have a go at that!' But looking at what the conditions are like now for the drivers, I do think that we had a lot more freedom to enjoy what we were doing.

DC: I wouldn't have wanted to miss out on all that testing. That was the thing I enjoyed

the most. I thought that Friday practice was a waste of time after we had got rid of qualifying on a Friday. There had to be an end point for me. I read Maurice Hamilton's lunch with Allan McNish [*F1 Racing*, April] where he said he didn't enjoy the driving, he enjoyed the competition and I think I come from that category of driver. The competition of developing the car as a test driver... I remember thinking that life didn't get much better and I was perfectly happy just to be a test driver.

Brundle: Picking up on what David said, but coming at it from a different angle, when I've been lucky enough to drive the cars now, they are so good. We spent a huge proportion of our lives trying to make a car go 0.1, 0.2 seconds faster. I jump into something from today and realise what an old shed I was driving then. We were always looking to try to get as close to perfection as we could with the cars we had. When you turn a car's wheel today, it goes into a corner and that's not something I remember from my career.

Tremayne: You don't tend to get gear-linkage failures any more...

Brundle: At Brabham in 1989, I non-pre-qualified because a bleed nipple broke and all the brake fluid was leaking out. I'd gone all the way to Australia to do a grand prix and I didn't even pre-qualify. That was rubbish.

Hill: Sticky throttle cables...

DC: Now that got your attention!

Blundell: I remember going down the pitlane at Silverstone and there was a Snap-on screwdriver in the footwell of the car. Martin, you didn't have a test driver role before you raced did you?

Brundle: I tested for Williams.

Blundell: Not in a test-driver capacity, because DC, Damon and I went in via the test-driver route.

Brundle: What are you trying to say?

Blundell: No, I'm just saying that it's the way things turned out.

Hill: [Pointing at Martin] He went in as a proper driver, we were just apprentices. ➔



"Silverstone was my first ever race in a Formula Ford on the National Circuit in 1984. I was 17 and it was the very first time I turned a wheel in that Libre race. It was wet and I was a menace around the corners as it was quite nimble"

Mark Blundell



Tremayne: An old gentleman looked upon him benignly.

Brundle: Yeah, I was just a charity case, wasn't I? Let's be honest.

Roberts: You all raced for big teams then, but they would be small by today's standards...

Hill: At Williams there were 150 people – and they were a big team. You could just about remember everyone's name if you really tried.

Brundle: The first time I raced for Tyrrell, in my first grand prix – there were 12 people and that included Ken [Tyrrell] and Nora [Ken's wife] and me and Stefan Bellof. So there were eight people in the team at a race. My wife Liz and Nora made the food for the team for the weekend. It's moved on a bit, hasn't it?

Tremayne: Has science taken away a lot of the romance of racing?

Hill: The thing I wonder about is what a driver does and his contribution to performance. I don't know if it's as much as it used to be, because without so much telemetry and engineering, you used to rely a lot on what the driver said to make the car work.

Brundle: It was much more rewarding.

Hill: You'd put Prost into a car because he'd be able to sense something another driver couldn't. Back then, a driver would be a data-acquisition device. Now, it seems to me, even watching my son, Josh, come up through the ranks, it was the engineer that told him how to drive the car. I have to say I found that really difficult to take.

Brundle: You three – and Johnny when he arrives, if he ever will – I bet you guys could compare gear ratios on a Formula Ford on the Silverstone grand prix circuit – could you remember your ratios? **DC:** I wouldn't be able to remember ratios, but I always took the view that's what the engineer was there to do.

I was there to remember the gear and the line and all that sort of thing. So I believe in delegation. The engineer is not driving the car, he never told

me how to drive the car and I never told him how to engineer.

Blundell: Don't you think there are different sorts of drivers?

DC: I think there are.

Blundell: There are guys who call the shots and there are those who absorb the information and relay it back.

Hill: Jim Clark definitely got in the car and drove it, and Colin Chapman engineered it. Whereas I think my dad wanted to be an engineer as well and he liked playing with the car.

Blundell: But to get back to your point, Damon, I'm sitting in the FIA Race Control and listening to all the audio information between the engineers and the drivers...

Hill: Information overload?

Blundell: It's all coming one way. There is a limited amount of information from the driver that goes back.

Hill: That's my point. You have a situation where a guy gets upset because he was sent out of the garage at the wrong time. The question is: why didn't *he* make that decision? That was down to us in our day. *We'd* call the shots.

Blundell: Now they go out in relation to where everyone else is on the track, thanks to the screen in front of them.

Roberts: Is that why a 17-year-old can jump into an F1 car now, but couldn't have done so easily 20 years ago?

Hill: I don't know. I'm sure a 17-year-old probably could have done.

DC: I don't think they would have had the strength for the steering. In the early Williams, I couldn't steer it on full tanks.

Brundle: Mike Thackwell was a teenager and he handled them. You can say they are not strong enough, but to be fair to them, they as drivers haven't developed that way because they need to be lightweight so the car can carry more moveable ballast. You can't criticise them, but I look at Daniil Kvyat and Seb [Vettel] when he first came in, and I think to myself: there's no

way you can drive an F1 car. My speed around Barcelona in a 1992 Benetton was limited by the strength in my shoulders.

Blundell: When I was doing the active suspension development work, at the last corner at Estoril my right foot was a limiting factor because I couldn't press down hard enough with the G-forces I was experiencing at such high speed. If I could get more gas on I could go quicker, but physically it wasn't possible.

DC: Estoril was a great test track. In the morning with a new set of tyres, it was fantastic. One mistake and you knew it was going to be a barrier moment.

Hill: I loved Estoril.

Brundle: That sharp right up the hill with the barrier right on the outside. That was quick.

DC: I think [Alex] Caffi crashed there in a Dallara or Minardi or something like that...

Blundell: You journals would have seen the shape of drivers change.

Tremayne: Well, we've seen your shape change.

Brundle: Now I know why they call you a **** [raucous laughter].

Tremayne: Has Formula 1 become too complex now for the driver?

Hill: For me, the driver has become – and Mark's just confirmed this – a recipient for information and a reactor to what the teams are saying. What people want, from a sporting point of view, is to know that the driver is conducting affairs according to their preferences and that's what determines their performance. So it seems to me you can't complain if you're constantly being spoon fed stuff.

Blundell: If you look at the current line-up, I don't think any of them have got the database that those of us sitting here have built up. Think about all the testing we used to do. We'd have a car each side of the garage and do fuel testing and jump from one to the other. We'd do underfloor testing and run four different configurations in a day. You'd pick one out and that would be the one sent to the grand prix →

"I wouldn't remember gear ratios, but I always took the view that's what the engineer was there to do. The engineer never told me how to drive the car and I never told him how to engineer" **David Coulthard**



Top: Home support for Williams driver, pole-sitter and championship contender Damon Hill was intense pre-race...



...but after leading Michael Schumacher into Copse (above), Hill lost the lead, then took both himself and Schumacher out of the race on lap 45 (left)

at the weekend. These guys don't get to do that any more. They sit in the simulator.

DC: It's all correlation.

Brundle: Look, we've driven Fangio's car and Moss's car, and DC and I have driven Lewis's 2008 title-winning McLaren and they are just different challenges. And the great drivers rose to the challenges that were required in their day. I'm about to drive the Force India [see page 76] and I've got a crib sheet on my desk at home to learn all the buttons on the steering wheel. There are so many things to do and that's a cerebral challenge we just didn't have.

Blundell: But what we were talking about is the way the cars are developed. In our day, they were developed with human input in collaboration with the engineering and design, whereas cars today are designed by human input at a keyboard. The driver plugs in and off he goes.

DC: I agree with Marty in that whatever era it was, the best drivers are still the best drivers – but we live for our time. The demands on your career and the job you have has changed from ten years ago and my experience with all those knobs and buttons is that if a driver had to sing the national anthem backwards while juggling and steering, if it made you go quicker you would learn how to do it. Anything that involves performance, drivers will find a way of exploiting: If someone gives you a Samsung, you'll say: "How does that work, I'm only used to Apple?" but if that's what you needed to do your job, you'd be able to manage it instinctively.

Tremayne: You've also seen from your era a massive change in safety following Ayrton Senna's accident in 1994. Is that the biggest change in the last 20 years?

Brundle: I think F1 is too sanitised now. The tracks, the cars. There needs to be an element of risk. The fans need to see the drivers are doing something that is barely believable and isn't something they could do themselves. I'm not saying we should... I'm so sad about Jules Bianchi, I love that kid, but the tracks we all love – Suzuka, Monza – are places where there is peril and a challenge.

DC: Monaco is largely unchanged. They've opened up the Swimming Pool, but it remains as it has done for years. Is it any more dangerous than any other circuit we go to? I think it might be the lack of consequence now. If we made a mistake then we were stuck in the gravel, so that was factored into any manoeuvre we tried, whereas now, with the Tarmac run-off, you get the place back. It's a different way of racing.

Hill: Mark, you've done IndyCar. Hats off to anyone who's gone round Indianapolis.

DC: Yeah, I would never do that...

Hill: One of the most thrilling things I've ever done in a race car is Le Mans. Going down Mulsanne, you don't do anything as you're on a straight, there's a corner at the end, but it's an adventure. Formula 1 used to have that and there is a certain satisfaction in overcoming your fears as you go around Suzuka. I'm not detracting from what David was saying and I'm not detracting from the drivers of today, they have just been delivered a set of criteria that the sport has chosen to impose on itself. I don't think the drivers have been given an opportunity to put their case forward. Drivers, ultimately, with the exception of the risk to spectators, are the people at risk and they should choose how much risk they want to take.

Brundle: Good point.

Hill: No one wants to see anyone get hurt, but the point is that part of the challenge is the fear and the danger. You used to see that. Look at the Isle of Man TT races – it's absolutely insane but they still do it and you have to admire that.

Tremayne: If you're jaded you only have to stand at the Swimming Pool section of Monaco and watch the change of direction and the closeness of the barriers.

DC: They've taken away the wall there, so now it's just a barrier, which is a shame.

Brundle: It used to be so much harder.

Hill: You knew what would happen if you clipped the apex on entry.

Brundle: That wall on the entry to the Swimming Pool was terrifying, wasn't it?

Blundell: When I did the 500 [-mile IndyCar race] at Michigan, I stood at Turn 4, watched two laps and then turned away.

Tremayne: It's worse to watch sometimes, isn't it?

Blundell: One hundred per cent. Especially when you see the tyre heading towards the concrete wall and it's 225mph on the exit of the corner.

Hill: I remember watching Nigel Mansell on the penultimate lap of the Indianapolis 500 and he was understeering towards the wall and he doesn't lift, then he goes up to the wall and there's a flash of magnesium as he clips it. You know the guy's got balls!

Blundell: There are no small crashes on ovals.

Roberts: Did you admire Mansell for his bravery?

Hill: I stood and watched Nigel at Brands Hatch and I was willing him on every single lap against Piquet, firstly because he was a British driver and part of your brain thinks that if they can do

Top: Herbert's memory is jogged by a selection of photos from Silverstone '95. Bottom: A fresh-faced Herbert clutches the trophy after winning the race





it, you've got a chance. Everyone was on Nigel's case all his career and there is a certain amount of satisfaction seeing him prove everyone wrong. And he was a brave driver. I know he isn't everyone's cup of tea, but partly people were prejudiced against Nigel because he was from Birmingham and perhaps that wasn't particularly glamorous. But if he'd come from Scotland...

Tremayne: ...We'd have hated him [laughter]!

Brundle: An era I appreciated was the refuelling era, when we had new tyres and a race of qualifying laps – that was extreme.

DC: It wasn't tyre management, only in places like Monza where you'd try to do just one stop. I don't remember anything other than trying to drive absolutely flat-out the whole race.

Hill: It was how hard you could push every lap.

DC: Unless you were leading by ten seconds with ten laps to go and could start to back out of it. Even then you might worry about locking up and going through the gravel, so you needed those ten seconds. [A round of applause breaks out for the arrival of Johnny Herbert.]

Herbert: Last again!

Hill: I know your memory's going a bit, so here are some pictures to remind you [passes Herbert some photos of the 1995 British GP].

Roberts: Johnny, do you remember winning the 1995 British GP?

Herbert: It was very special. After everything I had gone through, my biggest emotion was...

Tremayne: Spare us the sob story.

Herbert: On the last couple of laps I was thinking about the accident [in Formula 3000 at Brands Hatch in 1988, Herbert sustained career-threatening foot and ankle injuries] and, by the way, thanks David for going too fast in the pitlane and picking up a penalty. That really helped massively.

DC: You're welcome.

Tremayne: The Brundells are the only two here who didn't help you win that race...

Herbert: I was fortunate that year that at least I had a car that gave me a chance. I remember my first comment in 1995 when I said this is my chance to win the world championship and within a space of ten minutes there was another comment from Michael Schumacher, who said: "If he thinks he's going to win the world championship, he's got another thing coming."

Tremayne: Here's a picture of you celebrating with your wife.

Herbert: Don't we look young!

Tremayne: How were you able to keep smiling when all your mates were crying that day?

Herbert: I did a press thing afterwards and if there was one more question asked, I would have burst. I'd been right on the edge and luckily I didn't. The old throat was going, my lip was quivering, but I just held onto it. Looking around, despite our different careers, we all sort of came in together. I remember DC starting, Martin was there a bit before – but it was brilliant. It was a nice time for us all.

Brundle: There were six Brits at one point.

Roberts: Eddie Irvine raced under an Irish licence early on in his F1 career, but he did drive for Ferrari, which none of you did. Is that something you regretted?

Blundell: He never drove for McLaren when we had a car like that [pointing at the picture of the 1995 McLaren in Herbert's hand].

Herbert: Thank the Lord.

Blundell: That was an experience.

Hill: I think you do realise afterwards what Ferrari means and what it might have been to experience being a Ferrari driver. But when you're driving it's about winning and being with the best team to achieve that. Most of the time then, Ferrari were a complete nightmare.

Brundle: I would love to have driven for Ferrari. When I got the chance to drive a Ferrari at Fiorano for TV I nearly cried, to be honest. Utterly brilliant.

DC: I think I'm from a different generation because I was groomed from karting to cars, and I didn't have the emotion attached to Ferrari. I did actually visit Jean Todt in Paris to discuss driving for Ferrari and he offered me a contract, but I don't think I would have got on well with a foreign team for some reason.

Blundell: I think from the early days there was a desire to sit inside a red car, but that was more of a childhood dream than anything else. I think the reality is different. If I'm honest, I was more inclined to be sitting in a McLaren.

Tremayne: And that dream came true.

Blundell: It did when I tested for them in '92 alongside Senna and Berger. That was a great car and it showed what a bad decision it was to go to Brabham the year before. When I went there in '95 it was at a time when they had their worst car ever... but that's the way the cookie crumbles.

Hill: Could be worse – could be now.

Brundle: I had the '94 car and that was no better.

Herbert: The week before I crashed in Formula 3000 in 1988 I was at Monza and I was invited to meet Enzo Ferrari. After the accident I never got the chance. Just to have met him would have been an amazing experience. ➔



"I think F1 is too sanitised now. The tracks, the cars. There needs to be an element of risk. The fans need to see the drivers are doing something that is barely believable and isn't something they could do themselves"

Martin Brundle



Brundle: Yeah, I agree.

Herbert: Following up on what DC said, it wasn't about Ferrari and having a desire to go there, it was about trying to get into the best team.

Brundle: I wrote a letter to Ferrari when I was in F3 and I asked them if they would consider me. I got a very nice letter back, which was a long way of saying no.

Hill: The rest of us can't write...

Roberts: Looking back, was Michael Schumacher truly the best of your era?

Herbert: Both Martin and I will know what he was like better than the others [Both were team-mates to Schumacher: Brundle in 1992; Herbert in 1994-5], and his drive was amazing. His ability to gather people around him was second to none and once he got people to think in his way, he was very good at producing the goods on track. In my experience, Flavio Briatore [Benetton team boss] was not helpful in any way on my side, but would always agree to whatever Michael asked him for. Flavio said to me the constructors' championship was very important and we had to work together, but when I did okay in practice in Argentina, that changed. Michael asked Flavio to stop me from looking at his telemetry and he agreed. Looking back, I didn't handle it well.

Blundell: Did you feel the team was built around Michael and that was it?

Herbert: Yes, exactly.

Blundell: Because that's how I felt with Mika Häkkinen at McLaren. When I outqualified him at Estoril, I got zero recognition.

Brundle: The team was built around them – and I know, because I was team-mate to both Häkkinen and Schumacher – and that's because they were both ****ers.

Herbert: Absolutely.

Hill: DC would probably agree with me, but at Williams we both got the fair crack. There was no number one.

DC: Frank's attitude was that he wanted you to race. Perhaps he wouldn't mind if you shunted

while you were having a go, I'm sure he liked the fact you crashed into Michael at Silverstone...

Hill: As much as you think that it's tactically better to have a one-driver team, if you were battling against another team, they didn't do it. And I think that's fair – it would be great if everyone did that.

DC: I agree with Martin's point. At the time those guys were tough and I remember writing lengthy emails to Martin explaining about the psychological damage I felt I was suffering at McLaren from Ron, but at the end of the day Mika was just quicker. And if you were running the team, why would you not do that? You need to win, so you'd support the guy who was more likely to succeed.

Herbert: The one thing about Michael is that he would do *anything* to win.

DC: Can I say one final thing: that's something I don't respect. I believe very much in sporting ethics. There are rules and regulations and if you're not prepared to follow those rules you're not a sportsman. I remember Jacques Villeneuve arguing about his driver weight and God had made him smaller, or whatever he believed, and so he thought he should have an advantage, and I thought wouldn't you rather beat him because you were a better driver rather than being beaten because you're so short.

Hill: No offence Johnny!

Tremayne: Who was the best driver then, from your era?

DC: I think Mika.

Hill: I'm sorry but it was Michael Schumacher. I was team-mate to Prost and he's up there with Ayrton obviously. But for a pure, complete racing driver Michael was amazing.

DC: I'd agree with that. As an all-rounder, I'm not sure he was the fastest...

Herbert: His pole record is not great...

Tremayne: But you've just said Mika.

DC: Yes, I think there were guys who were quicker. Mika didn't have the work ethic of Michael but he had an incredible natural talent to go out and turn the lap times in, maybe without realising how he did it.

Blundell: Best racing driver come Sunday afternoon that I've ever competed against in F1? It has to be Senna.

Brundle: Er... Enrique Bernoldi. Was that the guy who held DC up at Monaco?

DC: Enrique Bernoldi, yeah.

Brundle: For me the greatest driver of all time who I raced against was Ayrton Senna – for his God-given gift.

Herbert: For God-given gift, I agree. And he was a racer who wanted to race against the best.

Brundle: He'd have taken you off the road in a heartbeat as well.

Herbert: You say that, but there was a difference; he wouldn't put you in the wall as such. I can say I only remember the Prost incident, am I wrong?

Tremayne: He was always taking people off.

Brundle: Ayrton could cross the line a bit.

Hill: But I think that all Ayrton wanted was equal equipment to prove to everyone he was the best.

DC: A bit like the Jacques thing. Michael, I sense, would be quite happy to have an advantage by having more horsepower or whatever and just taking the win, whereas I was embarrassed if I won races by default because it wasn't a proper win. If I won because I did a good job in that small moment of history, I felt good about it.

Brundle: But let's not forget a lot of great people wanted to follow Michael out of Benetton and into Ferrari, like Ross Brawn and Rory Byrne.

Also, he apologised to me in later years for some of things he did when we were team-mates.

Herbert: When are you going to apologise to me?

Brundle: I was much quicker than you!

Roberts: Who is the quickest among you all?

Hill: I'm easily the quickest... with the answer. There we are, I beat them all.


All: [laughter]

DC: Can't argue with that.

Roberts: And 20 years later, here you are all still in Formula 1.

DC: And we're all earning more than I did in my first year in F1.

Hill: It's like Hotel California: you can check out, but you can never leave...

With that sentiment, the five of them get up and pose together for a group photograph at the back of the Pirelli motorhome. Despite the additional grey hair, the quintet are still laughing and enjoying life as much as they did when they were racing on the limit together. And it's great to see that 20 years on they're still every bit as competitive as they once were... 

"The one thing about Michael is that he would do *anything* to win" **Johnny Herbert**



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21 odd facts about *Silverstone*

WORDS JAMES ATTWOOD

The home of the British Grand Prix has been hosting world championship races since 1950, which means plenty of unusual trivia features in its history...





1. Prost tops the win list...

Jim Clark and Alain Prost are tied for the most British GP wins on five apiece. But while all five of Prost's victories came at Silverstone, Clark took just three wins at the track, collecting his other two victories at Aintree and Brands Hatch. Nigel Mansell is third on the British GP winners list, with four.

2. ...but Clark is the lap leader

Jim Clark led 210 laps of Silverstone over the course of his racing career, more than any other F1 driver. Alberto Ascari – a double British Grand Prix winner at the circuit – is second with 175 laps led, ahead of Alain Prost (159) and Fernando Alonso (155).



3. Silverstone fans love sausages

Some 300,000 people will attend Silverstone over the three days of the British GP – and that means a lot of food and drink will be consumed from the 1,200 catering stalls. If all the sausages eaten over the weekend were laid out end-to-end, they would stretch for 1.08 miles – which goes some way towards explaining how 10,000 litres of tomato ketchup will also be consumed.

4. Button struggles here

Jenson Button has never finished on the podium in a Formula 1 race at Silverstone, and he has never even managed to lead a lap of a grand prix at the track. The last time he led a racing lap here was 10 October 1999, when he took victory in a British Formula 3 event. →



PHOTOS: CHARLES COATES/LAT; STEVEN TEE/LAT; LAT ARCHIVE





5. It's an easy trip for some

Force India will have the shortest factory-to-circuit journey of any of the teams. Their factory entrance is a mere 0.3-mile drive from Silverstone's main gate. Here's how far the trucks for all ten of the teams will have to travel to get to Silverstone (calculated using Google Maps):

Force India

(Silverstone, Northants) 0.3 miles

Mercedes

(Brackley, Northants) 8.5 miles

Red Bull

(Milton Keynes, Bucks) 20.4 miles

Lotus

(Enstone, Oxfordshire) 24.9 miles

Williams

(Grove, Oxfordshire) 40.7 miles

McLaren

(Woking, Surrey) 77.7 miles

Manor Marussia

(Dinnington, Yorkshire) 104 miles

Sauber

(Hinwil, Switzerland) 681 miles

Ferrari

(Maranello, Italy) 1,010 miles

Toro Rosso

(Faenza, Italy) 1,060 miles

6. The Queen is yet to visit

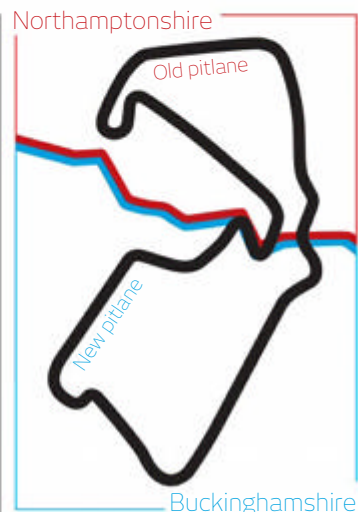
A reigning monarch has visited the British Grand Prix only once: in 1950, King George VI attended the inaugural world championship grand prix. No monarch has since attended a round of the Formula 1 World Championship on British soil (although the Queen was present with her parents in 1950, when she was Princess Elizabeth). Both Prince William and Prince Harry have put in occasional appearances at motorsport events – and have even tried karting on one occasion.

7. Rosberg set a 17-year record

Keke Rosberg took only one pole at Silverstone during his career – and it was a bit special. In 1985 he lapped the then-2.93-mile circuit in 1m 05.591s in his Williams FW10 at an average speed of 160.92mph. It stood as the fastest lap in F1 history for 17 years, until Juan Pablo Montoya eclipsed it at Monza in 2002. Rosberg was helped by his Honda turbo engine producing around 1,300bhp in qualifying spec, although that was offset by his front-left tyre losing pressure due to a slow puncture at the end of the lap.

8. Silverstone is in Buckinghamshire (sort of)

A few years back, there was a minor diplomatic incident when Buckinghamshire officials erected a road sign that proclaimed the county to be 'Home of Silverstone Circuit' – causing outrage among the inhabitants of Northamptonshire. In fact, they're technically *both* right: the Silverstone circuit straddles the two counties, their border cutting right across Village, The Loop and Becketts. However, the track still retains a Northamptonshire postcode.



9. Thursday night will be Madness

The post-British GP concert on Sunday evening is a regular fixture, attended by around 20,000 fans and featuring 'performances' by several current drivers. But the weekend now starts with a concert, too: cult ska band Madness will be kicking off their new tour at Silverstone on Thursday evening. Tickets cost £35 per person or £99 for a family.



10. The teams will race on a WW2 runway

Before the Royal Automobile Club took over RAF Silverstone, it was home to the No. 17 Operational Training Unit, which trained night-bomber crews with the Vickers Wellington during World War II. While the first iteration of the GP track used in 1948 featured several runways, the event switched to the perimeter roads for the following years. The 2010 extension reintroduced a blast down one of the runways using the national circuit's back straight, which was renamed the Wellington Straight as a nod to the track's past.

11. A farmer designed the track

After the RAF vacated the site in 1947, the site was used as a farm and storage facility before the RAC bought a one-year lease from the War Ministry for 1948. Ex-farmer James Wilson Brown was tasked with designing a circuit for that year's inaugural grand prix. The track ran along the perimeter roads and central runways, with hay bales and ropes used to protect the piggery and crops from wayward cars.

12. The best British year was '65

No matter what Hamilton, Button and Stevens manage at Silverstone this year, they won't be able to emulate the achievements of the home talent in the 1965 race. That was the year Brits filled the top five positions in the race, with Jim Clark leading home Graham Hill, John Surtees, Mike Spence and Jackie Stewart.

13. Pole position doesn't guarantee a win

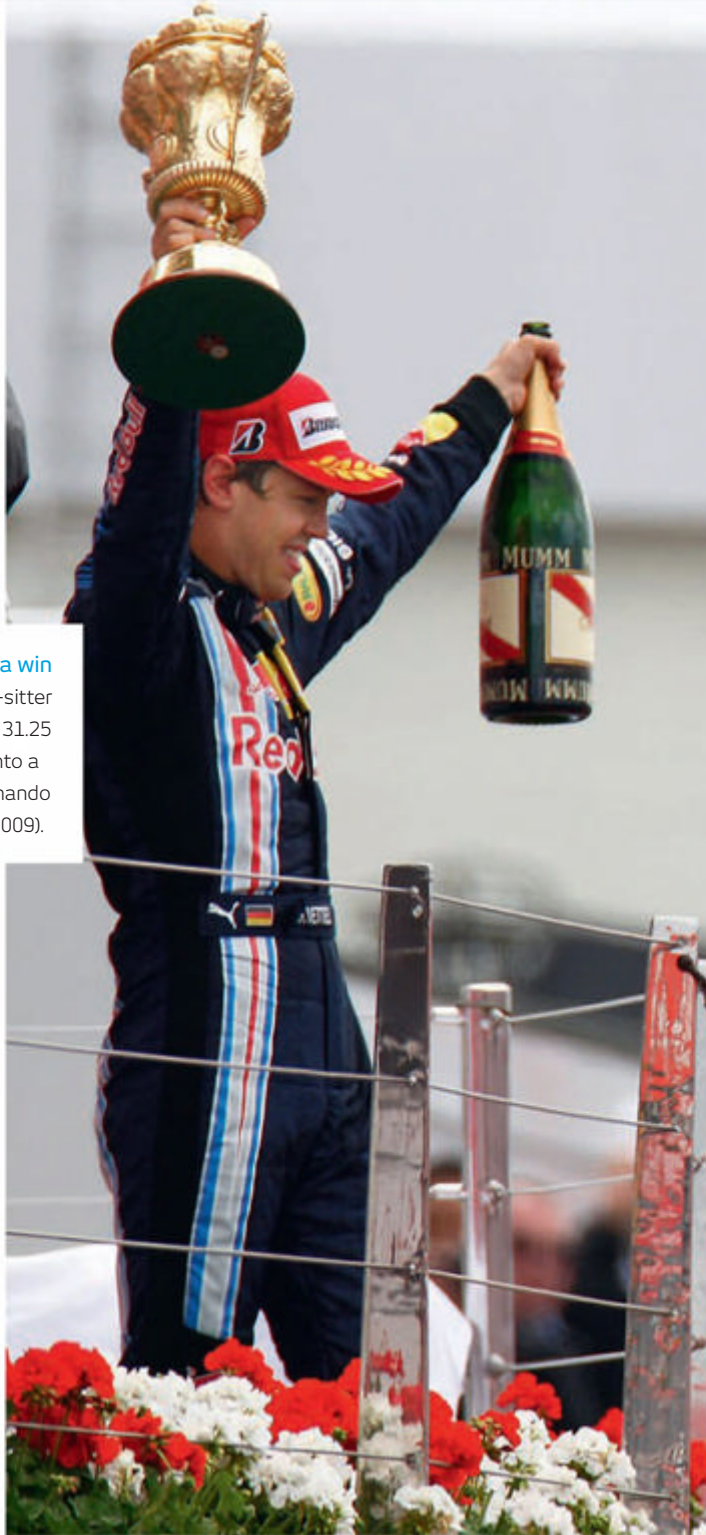
In 48 British GPs at Silverstone, the pole-sitter has won 15 times – a conversion rate of 31.25 per cent. And pole has been converted into a win only twice in the past ten years (Fernando Alonso in 2006 and Sebastian Vettel in 2009).

14. You can walk on the circuit

The Silverstone circuit has undergone a number of substantial alterations over the years, and that means it's possible for visitors to walk on a piece of history without actually invading the race track (take note, Neil Horan). The 'Bridge' section of the track was bypassed by the new loop in 2010. It has now been discontinued and is used as a spectator access area. And if you go searching behind the Maggotts/Becketts grandstand, it's possible to spot a bit of kerbing from the original Becketts.

15. Moss scored the closest win

The closest finish in British GP history was in 1955, when Stirling Moss led home Juan Manuel Fangio by 0.2 seconds. Many believed the Argentine had gifted his Mercedes team-mate the win. The next closest finish was in 2013, when Mercedes' Nico Rosberg held off Red Bull's Mark Webber by 0.765s in a race afflicted by a spate of Pirelli tyre failures.



16. It's the world's busiest airport

Silverstone Heliport, which is located within the circuit, is registered with the Civil Aviation Authority as an official airport, which is useful for rich dignitaries who can't be bothered to drive there. On each grand prix weekend there are more than 4,000 helicopter movements at the heliport, making it the busiest airport in the world. In 1999, Silverstone Heliport set a world record of 4,200 aircraft movements in one single day – an achievement that required the services of 24 air traffic controllers using six radio frequencies.

17. There's a school with a view

Stowe corner is named due to its proximity to the prestigious 92-year-old Stowe School a few miles away. With that in mind, it shouldn't be long before a corner is renamed 'Silverstone University Technical College'. The new facility, which specialises in high-performance engineering courses for 14- to 19-year-old students, is located on the outside of the old pit straights. That means some of its classrooms have perhaps the best – and most distracting – view of any school in the country.

18. Mansell-mania peaked here

Nigel Mansell has always had a flair for the dramatic, and this was particularly the case at his home race. His finest hour came at the 1987 British Grand Prix, when he was forced to pit for fresh tyres due to a vibration, gifting Williams team-mate Nelson Piquet a big lead. Undeterred, Mansell hunted him down and overtook with a brilliant dummy as they headed into Stowe to snatch the win.


19. You can camp at the track

Around 28,000 fans are expected to fill campsites surrounding Silverstone for the race – and the most discerning campers can be found at the F1 Racing Fan Village in Whittlebury Park. Sponsored by Yas Marina, the site features entertainment, free WiFi, a large-screen TV and a pub quiz hosted by Sky Sports F1's David Croft. Plus it's very close to Whittlebury Hall, where several drivers and teams stay during the weekend (although we can't promise they'll turn up to the pub quiz).

20. Alonso's record doesn't count

The quickest lap of the current 3.6-mile grand prix circuit at Silverstone in a race is 1m 30.874s, set by Fernando Alonso in 2010. The FIA, however, doesn't recognise his lap time as a record. That's because both the pits and start line moved ahead of the 2011 race. While the actual track layout and distance are identical, the FIA still class it as a modified circuit, so Mark Webber's 1m 33.401secs from 2013 is held to be the record.

21. Silverstone has hosted the European Grand Prix twice

Brands Hatch hosted the first 'modern' European Grand Prix in 1983, but between 1950 and 1977 the race was an honorific title given to one of the national grands prix on the calendar. The British Grand Prix at Silverstone was twice given the 'European' tag: in 1950 and '77. 





BRUNDLE FEELS THE FORCE



Nearly 19 years after he last raced a Formula 1 car, **Martin Brundle** was given the chance to test a 2015 Force India at Silverstone – and it didn't go as smoothly as he'd hoped. *F1 Racing* was there to get the full low-down on how to drive a modern F1 machine

WORDS JAMES ROBERTS PHOTOS SAM BLOXHAM/LAT



The broken nosecone of the Force India VJM08, (left) after Brundle put it into a half-spin and the car struck a wall

THE FIRST INDICATION THAT SOMETHING IS WRONG IS THE SUDDEN SILENCE.

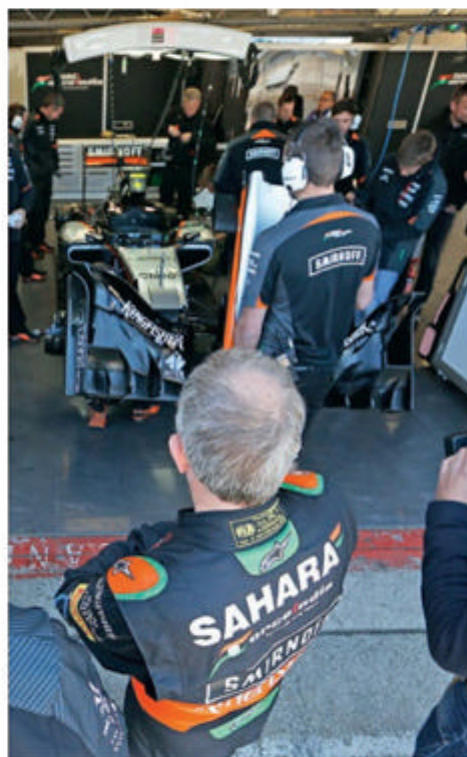
During a normal test session, the air is constantly filled with the crackle of an engine exhaust note. But now there is an alarming silence – and a van marked ‘incident vehicle’ is trundling down the Silverstone pitlane.

Nobody is exactly sure what’s happened, but Sky Sports TV commentator and former F1 racer Martin Brundle has stopped circulating in a 2015-spec Force India and has not returned to the pits. The scope of the problem is not immediately apparent: it’s not clear if it’s a straightforward technical problem or whether he’s crashed heavily.

News filters through that he’s okay and has had a half-spin, breaking the VJM08’s front wing on a wall in the process. Within a few minutes he’s back in the garage – shortly before the car is returned on a flat-bed trailer – and a crowd forms around him trying to establish what has happened. The team’s race drivers, Sergio Pérez and Nico Hülkenberg, listen in as he discusses the damage done to the front of the car.

“Take it out of my salary. That’s what the drivers say when they crash, don’t they?” he says, smiling nervously. Then he remarks to Sergio: “You were five years old the last time I crashed a Formula 1 car...”

Since he went airborne – at the wheel of a Jordan at the second corner of the 1996



Australian GP – a lot has changed within the confines of a grand prix car. In recent years there’s been the switch to hybrid, turbocharged 1.6-litre V6 engines, with electronic brake bias control, DRS, *eight* gears, brake-by-wire, ERS and a multitude

of steering wheel electronic functions to master. Brundle admits he’s never been as challenged as he has been today. Think modern day F1 cars are easy to drive? Think again.



“TAKE IT OUT OF MY SALARY. THAT’S WHAT THE DRIVERS SAY WHEN THEY CRASH, DON’T THEY?” **MARTIN BRUNDLE**

It's a typical spring morning at Silverstone: bright and sunny, but chilly. There is just one garage in use in the old pitlane today. Force India are using up one of their filming days, which are offered to every team to give them chance to obtain moving and still pictures for promotional purposes. Running is limited to just 100km, to stop the day becoming a true test, and Pirelli provide a couple of sets of tyres of an unknown compound. On this occasion, Force India are using the National

configuration at Silverstone, so at Becketts the track turns right onto the Wellington Straight, past the BRDC Clubhouse, around Luffield and past the old pits. At around 1.6 miles in length, it means that only 37 laps are permitted today to stay safely within the 100km (62 mile) mark. It's self-policed, but the FIA could ask to see all the data if it felt the rules had been breached.

Despite the lack of direct competition, a Formula 1 outing is still strictly run to clockwork

precision. At exactly 09:00 hours, the Mercedes engine in the back of the Force India is being brought up to temperature, ready for Brundle's installation lap. Martin enters the garage in Force India overalls, carrying his instantly recognizable white and red helmet. For the rest of the day he'll alternate between both regular race drivers' helmets for the team's promotional needs. He's here with a full production unit from Sky Sports F1, to film a series of features on various aspects of driving a 2015-spec F1 car, which will be broadcast over the coming races. As a result, the VJM08 is fitted with a number of GoPro cameras – which will prove to be something of a problem as the day progresses.

Brundle, 55, is strapped into the cockpit and grips the steering in anticipation of the turbocharged power he's set to unleash with his right foot. With hundreds of functions available to him on the steering wheel, he admits that he's been studying a crib sheet with all the controls listed on it: a bit of late-night homework to get up to speed with the requirements of a modern-day F1 car. He has also been training for the past three months, although just before he steps into the car he utters something a current driver →



Almost 19 years since he last raced in F1, and after three months of intensive training, 55-year-old Sky Sports F1 commentator Martin Brundle gets his first taste of modern F1 turbo power

BRUNDLE'S MASTERCLASS

How tricky is it to try procedures current drivers take for granted?



Using the Drag Reduction System (DRS)

"I topped 200mph on the short straight and I was doing 190mph when I opened the DRS in the rear wing. It was the first time I'd used it and it felt like a very strong tailwind. The car gathers speed and you need another gear. It's like a lovely push in the back; there is no step. You hit the button and it's not a sudden thrust, it's more like a sailing boat when you pick up the wind in the sails. I opened it through Woodcote and felt the back end was starting to get a little bit flighty through there."

Getting a clutch bite-point find

"This is quite complicated. It's a case of rubbing your belly and patting your head at the same time, while counting to 1,000 in multiples of 13. I didn't get it right at the start because I was in first gear and you have to begin that process from neutral. The bite-point find is violent when it takes over. When you're sitting in the car it feels aggressive."

The perfect start

"There is more driver judgement in a start than I realised. You have one clutch that is right on the cusp of biting, which you hold. There is a torque map to carry for the first lap; you've got certain revs to hold. Then you dump the first clutch and start to pull away. The car sounds awful – it sounds like you're slipping the clutch, but that's the right way to do it. And then you start to feed the next clutch in. Now, inevitably, you start to give it a lot of throttle, at which point you light up the rear tyres. So you need urgent restraint at the start. I can see why drivers get it wrong."

Coming in for a tyre change

"You enter the pitlane, hit the torque map, then the pitlane speed limiter and have the two clutches (operated by paddles behind the steering wheel) in two different positions. Then, you hold the steering wheel straight, hold your foot on the brake and start reading what's going on around you. The car is so stiff you can feel all the work going on with the tyres coming on and off. It's easy to forget something as simple as putting the throttle on to leave – and it's over in seconds."

wouldn't normally say: "I'm regretting eating that sausage sandwich this morning..."

Over the next few hours of the morning session, Brundle is in and out of the pits, blasting the Force India around Silverstone. The cold temperatures, in combination with the short track configuration, make it hard to get the tyre pressures and brakes into a decent operating window, but he's enjoying himself.

"I just feel so at home sitting in the car, looking over the top surface of the monocoque. It's a wonderful feeling. It's you, the car and the track," he enthuses. "It reminds me of the first time I drove a Tyrrell around here in 1983 on a cold, crisp, perfect Silverstone day."

Brundle immediately gets into the meticulous details of his experience as he talks about the throttle response of these new turbocharged engines in comparison to the previous-generation normally aspirated 2.4-litre V8s. In particular, he mentions the travel length of the throttle pedal: it's currently 65mm and some teams now have as much as 75mm. When he was racing, he says his preferred pedal length was 47mm, while some were as short as 28mm.

"There is a lot of throttle movement going on, but the delivery is so linear that you don't ever get the massive feeling of boost that you would on an older turbocharged machine," he says. "You can only tell it's a turbo because when you lift off you hear the turbine whirling and sucking and it has a lot of torque coming off the corners."

"But I'm surprised at how well the car operates. You turn the steering wheel and it instantly responds; it's so drivable. Of all the modern cars I've driven in recent years, they're all finessed to a point where making the car function is not that difficult." Until, that is, you're asked to do more than just drive the car...

Since he broke his ankles in practice for the 1984 Dallas Grand Prix, Brundle's left foot hasn't been particularly strong, and throughout his career he braked with his right foot. But now his right foot is held on the throttle pedal by a stirrup, which means he's forced into braking with his left. While braking, he was also trying

Brundle finds the linear delivery of the longer throttle means the 1.6-litre V6s lack the kick of their turbo predecessors

to change the bias with a rotary switch on the steering wheel. He accidentally turned it the wrong way and locked up the rears. By switching it the other way, he locked the fronts on the following lap. It's one of a multitude of functions now available to the modern F1 driver and gave Brundle a greater insight into the way the likes of Lewis Hamilton and colleagues operate.

"When you watch Lewis dialling up different brake biases between corners while he's on a qualifying lap, I now get how effective that is," Brundle notes. "He dances with the buttons, which is odd because it's not a mechanical

"I'M SURPRISED AT HOW WELL THE CAR OPERATES. YOU TURN THE STEERING WHEEL AND IT INSTANTLY RESPONDS; IT'S SO DRIVABLE" **MARTIN BRUNDLE**



change; it's a change of electrical percentage. I can't imagine doing that while driving wheel to wheel with someone else, and then being told to return to a default mode engine setting.

"That's why these cars are harder to drive. You never used to have to think about any of that. Your focus was on the track, your competitor and the strategy, and you had all the time in the world to focus on the main challenge of driving an F1 car on the limit. Now, you have to manage all these systems as well. It's very close to overload.

"Perhaps it's the same old story. Those drivers who use less of their capacity to race the car have

more capacity to make the most of the tools, whether that was Senna in an active McLaren or Schumacher with his differential settings."

The need to understand how you can manage the controls of your car to your advantage in combination with being cautious on the throttle mean it's easy to make a mistake, especially if you're running on a very worn set of Pirellis.

"I spoke to a number of drivers before today, the likes of Valtteri Bottas and Jenson Button, and they all said to me: 'Be careful with the throttle.' And they're right – that's why the throttle travel has doubled since my day."

Not only that, but sensitive aerodynamics play a critical role in the balance of a current F1 car. Overseeing the Force India's running today is Oliver Knighton, the team's test engineer, who doubles up as a strategist at race weekends. Also watching are two old hands. One is former Williams engineer Tom McCullough, and the other is Force India's long-time team manager, now sporting director, Andy Stevenson. The latter recalls Brundle driving for the Silverstone-based team, in their Jordan guise, back in 1996.

"In that year I remember Martin was tough to work with," says Stevenson. "He would put ➔

Brundle's tried several F1 cars since he stopped racing. Here are three of his favourites...



The McLaren MP4-23 (2008)

"This was just stunning. It stuck to the track from the beginning to the end of the lap. It was *the* perfect racing car. It gave you unbelievable confidence from the amount of downforce it had and you couldn't get the throttle down fast and hard enough."



The Red Bull RB7 (2011)

"I drove this in the rain at Silverstone along with Mark Webber. It had the blown diffuser, a 2.4-litre V8 normally aspirated engine and extraordinary traction – you could really floor it. I couldn't believe how much speed I could carry in the pouring rain and still have so much grip."



The Lotus 98T (1986)

"I drove Ayrton Senna's Lotus turbo last year and the throttle was like a switch: there was nothing and then there was *everything*. In that car it felt as if you were sitting on the front axle – like you were riding a motorbike with almost nothing between you."

a lot of demands on us because of his professionalism and meticulous attention to detail. It also didn't help that he hated that car..."

McCullough spots the GoPro cameras attached to the Force India, one deep in the front wing, the other on the rear. "Be careful," he warns. "And he was right," says Martin afterwards. "I should have listened to wise old Tom."

As the front wing, floor and rear wing are interrelated in terms of airflow, any additional

era. With the blown diffuser you could floor the throttle and drive it out of the corner. You can't do that now and you have to creep up to the grip levels. I really respect drivers following a Safety Car period when the tyre pressures are low, or half-worn or in damp conditions. I can really understand the challenges they face.

"The main thing from today is the amount of shifting with eight gears. There's a short rev range and I was short shifting to dull the power



devices play havoc with the balance of the car and the GoPro in the valley of the front wing – in combination with Brundle's right foot – quickly takes the car around into a half spin while exiting Brooklands, resulting in tens of thousands of pounds worth of damage. The GoPro camera is damaged, too.

"I was just starting to push a little bit harder and once you've injected the rears with battery and engine power and you have all that energy going through the system, it's very easy to light up the rear tyres," says Brundle. "I can see why drivers spin so easily now because you've sent that power down the system and you can't stop it. So I turned into the slide and it kept sliding. In a way, while it was a bit embarrassing crashing into the nose, I'm actually glad I did it. I understand what is going on a lot more.

"You can spin on every lap and any lap; I think in the last years of the normally aspirated engine it was hard to do that. There is a surplus of torque over grip now and added to everything going on with the steering wheel, these cars are much more mentally challenging. I can now see a skill that I didn't see before in the 2.4-litre


Brundle with Force India sporting director Andy Stevenson, an old colleague from his Jordan racing days

and every time I needed to do anything else I was shifting as well. Constantly."

All too quickly, the 37 laps are over and Brundle's running is at

an end. But not before he's played with features such as the DRS, and performed a clutch bite-point find (see sidebar, p80). You sense he would have preferred a few long runs, rather than these short blasts. He was sufficiently committed into Copse for one Force India mechanic to joke: "He's quick. We should sign him up."

Not many retired drivers get the chance to return to F1 machinery, and this was a full-blown contemporary F1 car, driven at full chat on part of a grand prix circuit. The off proved he wasn't holding back, and he can always deny it was him: "The only saving grace from the shunt was that I was wearing Hülkenberg's crash helmet, so it looks like *he's* crashed," quips Brundle.

Racing drivers. You just can't keep that competitive spirit sealed up, no matter what era they're racing in... 



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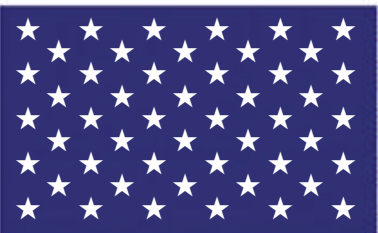




REVIVING THE AMERICAN DREAM



The Haas F1 team (left to right): team principal Günther Steiner; chief operating officer Joe Custer; and chief marketing officer Adam Jacobs



The new Haas F1 Team is the latest outfit from the USA with ambitions to break into the sport. *F1 Racing* ventured deep into the heart of NASCAR territory to visit the team's North Carolina home and find out why their bosses believe an innovative approach is the key to success

WORDS DIETER RENCKEN
PICTURES STEVEN TEE/LAT

Think Formula 1 and the USA, and it's a spotted tale. True, American drivers Phil Hill and Mario Andretti won world championships in 1961 and 1978 respectively, but the latter's race win in the 1978 Dutch Grand Prix remains the last for a US racer. In terms of constructors, Dan Gurney's beautiful Eagle won a single grand prix (1967), as did Penske's PC4 nine years later – but that is about the extent of contributions made by the Land of the Automobile to the pinnacle of motorsport.

Indeed, when questioned about US motorsport, folk instinctively think 800 left-hand turns, steep banking, stock-car racing, the six-car 2005 US GP and US F1 – the *Born in the USA* outfit that optimistically flew star-spangled banners outside its Charlotte, North Carolina base, yet bombed spectacularly before reaching the 2010 grid.

Ironically, though, it was US F1's demise that has provided the inspiration for the Haas F1 Team, the new American outfit that has been granted an entrant licence to hit the grand prix trail in 2016. Günther Steiner, the former technical director of Ford's World Rally Championship squad and

the Jaguar Racing F1 team – who also established Red Bull's now-defunct NASCAR operation – was one of US F1's disillusioned contractors. During US F1's dying days US-naturalised Italian Steiner crisscrossed the Atlantic in an attempt to salvage the American dream by merging the team with the similarly ill-fated HRT operation, in the process grasping the be-all and end-all of how *not* to launch a new F1 squad.

"The essential bit I learnt is that F1 is very difficult," Steiner tells

F1 Racing during our visit to the Haas F1 Team's facility in Kannapolis, a satellite town of Charlotte, North Carolina. "If you try to do it like people did 20 years ago, starting out, making a car and going racing, it's very difficult; almost impossible."

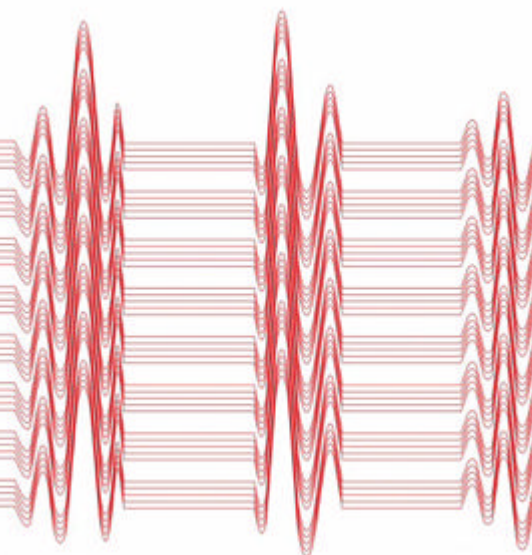
In fact, of the four outfits to take up the low-cost challenge envisaged by former FIA president Max Mosley in 2009, none survived unscathed: US F1 was stillborn; HRT failed after three years and two ownership changes; Caterham (formerly Lotus) plunged into liquidation last year after a chaotic management reshuffle; and Manor Marussia (formerly Marussia and Virgin), currently on its third owners, narrowly avoided administration. Tellingly, in more than 250 starts between the quartet, the only points-scoring finish was

a ninth place for Marussia's Jules Bianchi in last year's Monaco Grand Prix.

"There is not only the proof of US F1... all other teams that started off like this ended up the same way, it simply took longer," says Steiner. "You need to be a multi-national to afford a turn-key operation, and even Toyota failed to win a race in almost ten years."

Over three years, the butcher's son from Italy's German-speaking south Tirol region formulated plans to enter F1 in an achievable fashion, honing them and covering all bases as discussions raged back and forth in F1 circles about third and/or customer cars, listed parts, and co-constructed (core) cars. Steiner canvassed FIA opinion and approached Ferrari about running their third car or satellite team should regulations so permit.

All done, he approached Joe Custer, Gene Haas's motorsport manager and Chief Operating Officer of Stewart Haas Racing (SHR), the ultra-successful NASCAR Sprint Cup team co-owned by machine tool magnate Haas and triple NASCAR champion driver Tony Stewart. Haas, whose Haas Automation firm is among the world's biggest CNC machine suppliers, ➔





The new 140,000 square foot Haas F1 headquarters at 4001 Haas Way, Kannapolis sits alongside and mirrors the Nascar setup at 6001 Haas Way





"WE WILL MAKE THE CHASSIS OR MONOCOQUE, AND EVERYTHING OUTSIDE THE CAR"

GÜNTHER STEINER

also owns the state-of-the-art Windshear windtunnel. Being into CNC machinery – as used by Ferrari – is certainly no impediment to team ownership, even at F1 level.

Haas Automation is wholly owned by Gene, and boasts revenue in excess of \$1bn per annum generated mainly in the US and Europe – and it is targeting F1's emerging markets for future growth. Privately held US companies are not obliged to publish financial results, but sources maintain Haas could bankroll his F1 operation *ad infinitum* out of petty cash reserves.

Custer and Steiner met at a Morton's steakhouse in Charlotte, the centre of NASCAR's North Carolina heartland, three years ago, when Steiner sold his concept to the hard-nosed businessman. Once convinced, Custer escalated the proposal to Haas, based in California.

"Gene's been interested in F1 much longer than I have on the competition side," explains Custer, a native Californian who attended the United States Grand Prix West at Long Beach on several occasions in the 1980s. "It's long been on his mind. He enjoys open-wheel racing.

"When I started chatting with Günther, we seemed to have similar philosophies. The approach we take to racing is a bit different in our NASCAR operations as well, and that is what we envision in F1. Günther shared that philosophy, and wasn't combative to some of our ideas. We found we had a lot in common."

Haas, who supplied tooling to US F1, admits this piqued his interest: "It goes back to US F1; we looked at US F1 founder Ken Anderson [an ex-SHR contractor]. That was interesting, and we followed it more and more.

"We looked at the easiest way to enter F1, then shortly afterwards Günther came along with a couple of concepts, but unfortunately none of them really worked. We talked about customer cars and different engine packages for different levels of racing. When we started, it was something that was supposed to be easy to do, with a single car, a customer car.

"That didn't pan out. So Joe and I kept going back and forth, 'Can we do it this way? Can we do it that way?' And Günther was pretty persistent: 'Okay, let's try this' and 'Let's try that' until we had something different that could work for Haas F1."

The Haas approach is different for an F1 team, but mirrors Stewart-Haas Racing's NASCAR setup (see panel, p88). That team is the archetypical sub-assembly operation, buying chassis frames and engines (built to spec) from fellow NASCAR competitor Hendrick Motorsports, before SHR "adds value", as Custer puts it. Haas has adapted this model for F1.

Before examining the nuts and bolts, does the Haas way enable SHR to compete successfully? Absolutely: On the day *F1 Racing* flew into

Charlotte, SHR drivers Kurt Busch and Kevin Harvick – the reigning Sprint Cup champion – scored a one-two finish in the Toyota Owners 400 Sprint Cup race at Richmond in neighbouring Virginia. Hendrick's Jimmie Johnson finished third.

While studying Formula 1's sporting regulations Steiner recognised the substantial leeway that is provided by the "Listed Parts" appendix – those components for which they need to own the intellectual property in order to be classed as constructors – and formulated his definitive business plan around Ferrari power units and as many components as could be bought in.

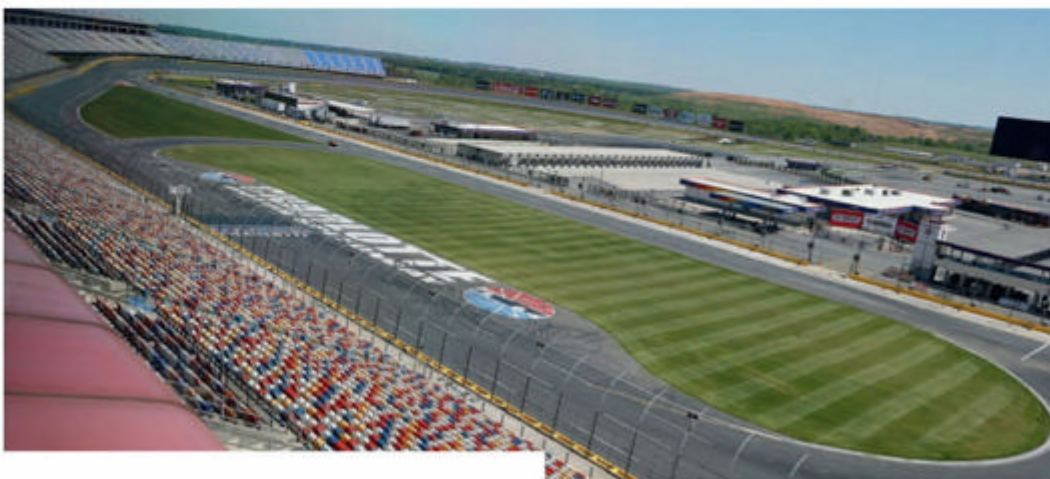
"Apart from the complete power unit and transmission, we get all suspension from Ferrari, all non-listed parts we are getting from Ferrari," says Steiner. "So you can look at Appendix 6 and say 'This is what the Haas guys get from Ferrari.'

"The things we will make are the chassis or monocoque, and what are called 'wet surfaces', everything outside the car, including radiators, wings and part of the exhaust tailpipe."

Although Charlotte – which is to NASCAR what the UK's 'Motorsport Valley' is to F1 – provides rich seams of racing expertise and offers a superb motorsport infrastructure (witness Windshear, plus seven-poster rig shops on seemingly every corner), Steiner recognises that Formula 1-specific knowledge is currently thin on the ground. ➔



Günther Steiner (top) and Joe Custer (below), hatched a plan whereby the F1 team would become a sub-assembly operation, buying suspension and other parts from Ferrari



To counter that, Haas F1 struck a deal with Italian race-car constructor Dallara to provide engineering and networking expertise, with the long-term plan being to shift car design and construction to 4001 Haas Way, Kannapolis, where a bespoke 140,000 square foot double-decker headquarters equal in size to one-and-a-half rugby fields has been built. SHR is situated next door, at 6001 Haas Way.

Dallara, the Parma-based Italian company, which is the world's largest proprietary producer of race cars, engineered HRT's cars during the team's early days – and is well known to Steiner, both through his Italian motorsport career and those attempts at engineering a merger between HRT and US F1. Moreover, that experience taught Steiner the importance of retaining control over the project, so the Haas setup involves Rob Taylor, a former design engineer at McLaren and Red Bull Racing – where he worked with Steiner – being installed as chief designer, with Dallara's project engineers reporting through him.

"We have 170 people, with 70 at Dallara," explains Steiner. "They work solely for us. They are contracted,

Why less is more for Gene Haas in NASCAR

Gene Haas has owned a NASCAR Sprint Cup team since 2003, but it wasn't until he gave away ownership of half of it that it started to find success.

Having initially sponsored leading NASCAR team Hendrick Motorsports, Haas set up the single-car Haas CNC Racing team for 2003, using Hendrick chassis and engines. They had little success, but the turning point came in 2009, when Haas handed a stake in the team to Sprint Cup champion Tony Stewart. With Stewart heading the driver line-up of a two-car team, more sponsorship and an increased customer deal with Hendrick, the renamed Stewart Haas Racing's fortunes instantly improved. Stewart took four wins that year, and went on to win his third drivers' title in 2011.

SHR has continued to grow and now fields four cars, including one for Danica Patrick. Kevin Harvick joined for 2014, and won the team's second Sprint Cup drivers' title in his first season with them.

James Attwood

but instead of setting up our own design office and infrastructure, we made a deal with Dallara. The engineers are managed by us – Taylor manages them. They have their own project manager, a Dallara guy, but technically they are managed by us."

For Steiner, the choice of Dallara as technical partner was a no-brainer: "There are not many people out there who can help you, with expertise, with that infrastructure. The expertise, maybe you find one guy, but he hasn't got people around him, he hasn't got a building, he hasn't got computer tools, everything. So it was an obvious choice, then we started to talk. It took us about six months to get to a contract."

Despite Haas owning the Windshear windtunnel, Haas will use Ferrari's windtunnel. That's partly because the Maranello facility is so close to Dallara's Parma base, but also because Windshear is designed to test full-size NASCAR behemoths at 200mph, and would require costly, time-consuming adaptation to cater to F1's 60 per cent scale-model regulations. That could change in the future though. "We're ready for if and when the F1 project needs us," Windshear general manager Brian Nelson tells *F1 Racing*.

This suggests Haas could become Ferrari's 'B-team', beholden to Maranello. But Steiner insists that's not true: "B-team is a definition I don't understand. Some say Haas is a junior team, some say it's a B-team. I don't

know the definition. Ferrari are a good partner, which helps us get into F1.

"We didn't speak about drivers with them. There's no plan to be their B-team, and do whatever they want. Our cars will not just be yellow Ferraris, they will look different because their bodywork will be different and the chassis will be different." ➔

"FERRARI ARE A GOOD PARTNER, BUT THERE IS NO PLAN TO BE THEIR B-TEAM AND DO WHATEVER THEY WANT" **GÜNTHER STEINER**



The CNC machines in the workshop facility at Haas F1. Gene Haas's company Haas Automation is one of the world's biggest CNC machine suppliers

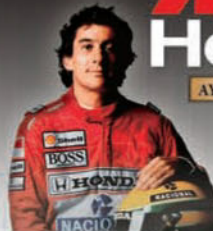
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The pristine Formula 1 operation at Kannapolis will produce machined parts and pit equipment

"THE AIM IS KEEPING THE RISK LOW OF SCREWING SOMETHING UP. IF YOU GET TOO SHARP, YOU CUT YOURSELF"


GÜNTHER STEINER



Co-ordinating Kannapolis, where machined parts and pit equipment are produced, Maranello and its politics and Parma presents formidable challenges

for a man totally consumed by establishing the first successful US F1 operation in almost 50 years. But, wait, there's also Banbury, 20 miles west of Silverstone. Late last year, Haas acquired the facility – previously the home of Marussia – as a European race team base that would house the virtually new (ex-Marussia) supercomputer, which is capable of churning out complex computational fluid dynamics calculations at lightning speeds.

Steiner, who shuttles to Europe every fortnight, admits that the logistics and management challenges of leading a group of some 200 people scattered across four global locations are not easy. He has installed the latest in video conferencing facilities to ease the process, and says: "It's in the people, the right people in the right places," adding, "I bought into it, and now I do it. I cannot just set it up, then leave it alone."

So what are the team's aims as they look to 2016? "Keeping the risk low of screwing something up. If you get too sharp, you cut yourself..." 





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Marcus Ericsson

The Sauber racer brushes off those 'pay driver' accusations and discusses the traditional Swedish delights of Volvos and Ikea meatballs...

WORDS JAMES ROBERTS PORTRAITS CHARLES COATES/LAT

Marcus Ericsson beams cheerily when we meet outside Sauber's hospitality unit. His debut year with Caterham ended when financial ruin put paid to the little Oxfordshire team's dreams, so he offered his services to Sauber. Despite a number of drivers very publicly battling it out for the Swiss team's two 2015 race seats, Sauber were more than happy to take on both Ericsson and his sponsors, and the young Swede scored his first world championship points with them at the 2015 season opener in Melbourne.

Fast forward a couple of races and here we are, armed with a pack of cards featuring your questions. Without delay, he turns over the first one and starts by tackling the tricky situation in which he found himself at Caterham last year...

How tough was it to be at Caterham when the financial situation was quite dire?

Andrew Phillips, USA

It was tough. The financial situation didn't affect me that much through the season until the point where they closed down and I missed the last few races. The hardest part was to be with a team

where we were so far off the rest of the grid that we really only had Marussia to fight with.

So for me, as a driver, it was difficult to show what I was capable of. Even if I did a perfect qualifying or race, it was very difficult for anyone to notice it because I was so far behind.

How does it feel to drive the Sauber compared to last year's Caterham?

Jennifer Morehouse, Canada

It's different. It's not one specific part, it's the whole package, the whole car: it's a step up. In speed, in corners, it's better in general. Also, Sauber have been around for a long time. I don't want to say bad things about Caterham because everyone there tried really hard, but the experience and structure here is a lot better.

As a young rising star, what do you feel is the youngest age a driver should enter F1?

Daniel Jones, UK

Difficult question. It's not easy to say as everyone is very different. Max Verstappen has come into F1 very young, but he has done a very good job

so far. But for me, when I was 17, I would not have been ready as I learnt a lot in the junior categories with different teams and cars. My experiences helped me as a driver, so it's hard to give a specific age because everyone is different.

You were commentating for Swedish TV at last year's US GP. How was it to experience F1 from the other side?

Mike Atkinson, Australia

I was quite frustrated because I had been driving all year and then to go to Austin and not drive was a strange feeling. But the Sauber deal happened quickly, and by Saturday it was done. That meant I could go into the commentary box knowing I *would* drive in 2015 and I could enjoy it. If I was commentating without knowing what would happen, it would have been hard.

Nico Hülkenberg is racing at Le Mans this year. Would you be tempted to try it?

Stephen Higgins, UK

I think every racing driver would like to do Le Mans at least once in their career. *When is* →



Marcus Ericsson

GRANCO DO BRASIL

ber F1 T

YOU ASK THE QUESTIONS

difficult to say. I think that with F1 it's already a very busy schedule, so I'm sure it's very busy for him – flat-out all the time. But I need to do it once. At the moment I'm too busy with Sauber.

At what age did you start racing and how did you end up being a Formula 1 driver? Was it based on ability or sponsorship?

Omar Cavazos, USA

I started karting when I was nine. I went to a kart track with my dad and just had a go. I was quick straight away and the guy who owned the place was a racing driver from Sweden called Fredrik Eklblom and he told my dad that I should do proper karting as I was really special.

When I was 15, I got picked up by this Swedish talent programme run by [former racers] Kenny Bräck and Eje Elgh – they helped me to find sponsors, so a lot of things have had to happen for me to become an F1 driver. But I had to work really hard for it from day one.

Jeremy Clarkson – yay or nay?

Nigel Messenger, UK

To be fair I haven't watched that much *Top Gear*. But the times I have watched it, it's been good fun because obviously he's a great character.

F1R: Is it broadcast in Sweden?

ME: I'm not sure if it is. When I've watched it, it's been when I've been in the UK. I wouldn't say I follow it that closely, to be honest.

Is the food in Ikea anything like real Swedish cuisine?

Matthew Gannon, UK

It is a bit. When I living in Japan and racing in F3 in 2009, I went to Ikea every other week to eat, because Japanese food is so different.

F1R: What did you order?

ME: The Swedish meatballs with cranberry sauce and potatoes. In Sweden it's even better.

Your brother is racing karts. What tips are you giving him?

Cian McLeod, Ireland

My youngest brother, Hampus, is only 12 and he's doing quite well. He finished third in the Swedish junior karting championship last year and I'm trying to help him as much as I can. When I'm home and he's racing, I go to watch him and give him advice on driving: different lines and stuff. He seems to listen.

If there was a Swedish GP, where would you want it? Would you prefer a city race or would you like a new track to be built?

Maja Tyrob, Sweden

In Sweden today, the tracks aren't up to standard. There has not been a lot of money put



When you first dreamed of becoming an F1 driver, who inspired you? Swedish F1 heroes Ronnie Peterson and Stefan Johansson, or someone else?

Alexandre Carvalho, Brazil

When I started watching F1, Michael Schumacher [below left] inspired me. He was in the Ferrari doing amazing stuff. But the more I got into it, the more I started looking at Swedish F1 history. Ronnie [below centre] is a legend He's a hero for me, but also Stefan [below right]: he was very good and successful, too.



into them, which is a shame, so the dream of a Swedish GP is far away. But it would be amazing, and a street race in Stockholm would be great.

How surprised were you when Caterham reappeared at Abu Dhabi last year?

Paul Sparks, UK

I was surprised – I didn't think it would happen. By that time I'd already ended my contract with

them and was focused on Sauber for this season. It was a great achievement to make the last race, but a shame it's all come to an end.

Outside of F1, what are your hobbies?

Heath Richards, New Zealand

I have one big hobby and that's ice hockey. I'm a huge fan and I watch my local team Örebro HK [who play in the top-tier Swedish Hockey League] as much as I can.

Some people say you look like Joffrey from *Game of Thrones*. Do you feel as ruthless as him out on the race track?

Elizabeth Emery, UK

[Laughs] Yes, I do watch *Game of Thrones* and if I'm honest I don't like him. But it's not the first time that someone has suggested I look like him. I hope I'm not as ruthless and as evil as him...

How do you feel about being referred to as a 'pay driver'?

Matthew Karshis, USA

I don't feel much about it. I think I've shown my skills behind the wheel in winning junior categories and equalling Caterham's best result from last year – and recently getting Sauber into Q3. I think that says it all.

Why have you chosen number nine as your racing number?

Max Rexmo, Sweden

I don't have a good answer. Everyone has a great story behind their number – but I don't. Nine sounded good. But there is no story. Sorry.

Is Kenny Bräck involved in your career any more?

Hakan Olausson, Sweden

No – Eje Elgh is my manager now. Both of them started this project with me when I was 15, but Kenny is not involved, which is a bit of a shame.

What went through your mind when it looked as if Giedo van der Garde could take your race seat in Australia?

Sarah Mogford, UK

It was a strange situation, but I tried to focus on myself. I was there to drive. It was my focus and that's what I was trying to keep my mind on.

What do you wish you'd known about the world of F1 before you became a driver?

Victoria Palmer, UK

[Long pause] I don't know. You can never prepare yourself fully for being an F1 driver. Everything changes. Not only the driving – your whole life. But I enjoy every part of the job and wouldn't change it for anything. →

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What was the first car you owned?

Jamie Sloan-Patterson, UK

The first car I bought when I was 18 was a Volvo 740 from 1990 – the same year I was born. It was dark red, rear-wheel drive: lots of fun on ice on the roads of Sweden in the winter. It was a nice car. It was very cheap and old [laughs].

When I saw your stunning drive at Knockhill in Formula BMW, I knew you would get to F1. Did you ever doubt it?

Duncan Finlayson, UK

That's nice to hear. It was the final race of the BMW UK championship in 2007 and I won both events there. Did I have any doubts about getting to F1? Yes, of course. Even though I had a great first year in cars and won the championship, it's a long way to F1 and few drivers make it. Some drivers who are very good and talented never make it to F1. So until I signed my contract to

drive in the sport, I still had doubts. Throughout your career, the motivation gets bigger and you work harder every day to make it happen.

Do you also believe that the 2014 Caterham looked like a sweeping brush?

Giorgos Zouppouris, Cyprus

[Laughs] I never thought of that, but maybe it did. It wasn't the prettiest car on the grid.

Is this year's Sauber good enough to get you onto the podium?

Eric Liepa, Latvia

First we've got to continue getting in the points, as we have so far. At the moment, to get a podium, we'd need help from others. But we've been positively surprised by the package this year. The Ferrari engine is strong and it's a step up from last year. We'll keep on pushing. In racing you never know what will happen next.

There has been talk of revamping the F1 rules, and bringing in 1,000bhp engines. Do you think the current cars require a major overhaul?

Unnatee Gidithuri, India

I enjoy the cars we have today. They are difficult to drive with all the torque, the top speeds are high and the acceleration is even better than the V8s. So I don't think power is an issue and they are not too easy to drive as some suggest.

But always in F1 you need to look at ways to make it better. If that means more powerful engines, I won't say no. F1 gets criticism for the way the cars are but I don't agree with that; it's really good fun and the racing is, too. If you look back ten years, the racing was nowhere near as good as it is today. We need to remember that.

If F1 could return to any former circuit, which one would you want it to be?

William Dunstan, Canada

[There's a long pause, so F1 Racing decides to prompt a response]

F1R: The Nordschleife?

ME: That would be a dream.

[F1 Racing's photographer Charles Coates chimes in with a suggestion]

CC: Brands Hatch?

ME: Yes, Brands Hatch is one of my favourite tracks, the circuit there. The fast corners... it's a proper old-school track. Those circuits are really good fun to drive – so it would be one of those.

How did you feel after scoring your first points in F1 at the Australian Grand Prix?

Jessica Kelsey, UK

It felt great for the whole team, to have both cars finish in the points with Felipe Nasr fifth and myself eighth. It's one thing to get into F1, but then you want to score those first points to prove that you've achieved something. It's something I want to do again. 🏁

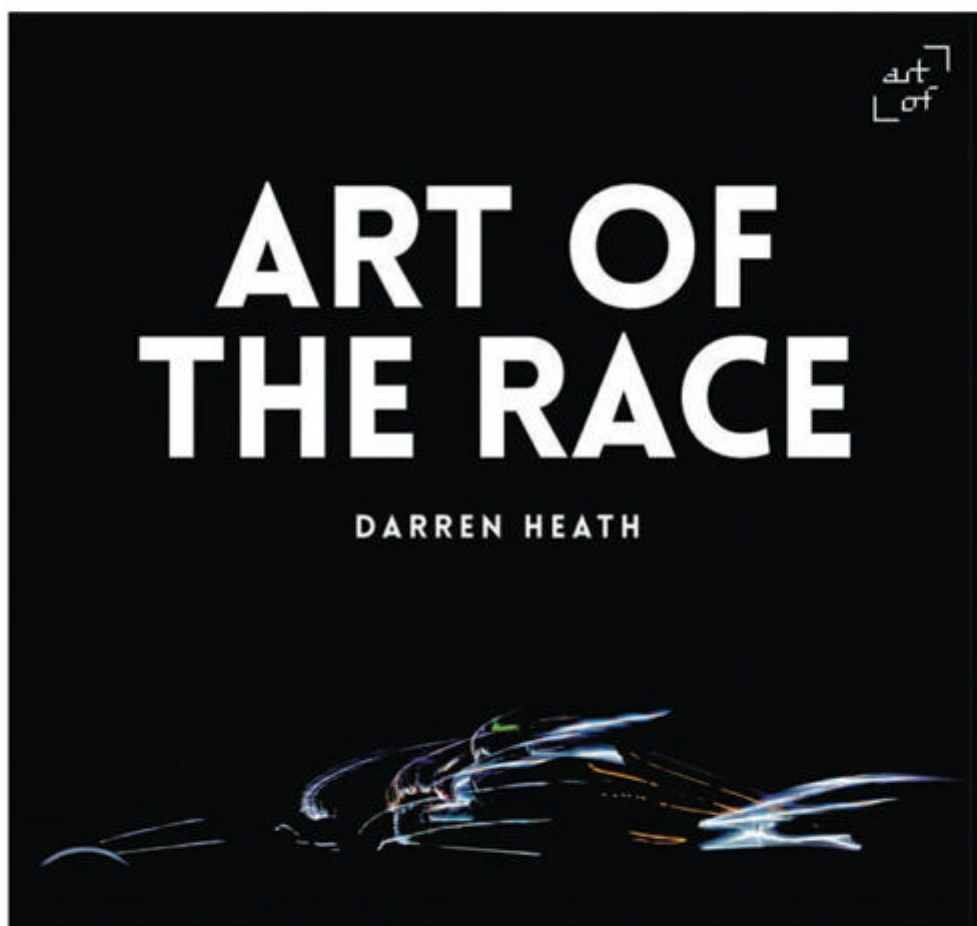
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THE START OF A NEW CHAPTER

As former president of the FIA
Max Mosley prepares for the
release of his autobiography, he
talks to Maurice Hamilton about his
extraordinary and varied career

WORDS
MAURICE HAMILTON
PORTRAITS
ANDREW FERRARO

Max Mosley: author. It's yet another title for a man with an impressive CV: son of Sir Oswald Mosley and Diana Mitford; barrister; racing driver; F1 team owner; F1 prime mover; close associate of Bernie Ecclestone; president of the FIA; driving force behind the life-saving Euro NCAP; scourge of scurrilous newspapers and their unscrupulous methods.

It hardly needs saying that a Mosley autobiography makes compelling reading. But deciding to go ahead with it is one thing; writing it is quite another, even for someone of Mosley's intellect and eloquence.

"It was really hard work," says Mosley. "How people produce a whole succession of books is just beyond me. If I'd known how much work this was going to be, I'd probably never have done it – but I'm very glad I did.

"Nobody concerned with running motorsport in the past has actually written about it from their point of view. Indeed, this also applies to sport generally: the people behind, say, the Olympics or FIFA, have never recorded their thoughts. It's interesting to see any sport from the point of view of the person who has to try and make the rules."

Mosley's rule-making was based on experience gained as a competitor, entrant, administrator and, initially, as an unexpected convert to motorsport thanks to having been given free tickets to attend a race meeting at Silverstone. →





"I was mildly curious but, had I not been given the tickets, I'd probably never have gone to a motor race. I was standing on the outside of Woodcote at Silverstone in its old form and the minute I saw the Formula Junior race come into sight, flat-out under what was the old Daily Express bridge and into Woodcote, I simply thought: 'Oh yes!'"

"It was the speed. That's always impressed me; even now. It's the almost violent speed, which is why I disagree with Bernie about noise. I think if you're there, it's the speed. If you're not there, noise doesn't really make much difference when watching on television."

Typically, having been impressed by what he saw that day, Mosley was determined to be a part of it. Club racing was followed by Formula 2 (the 1960s equivalent of GP2) and competing on classic tracks in Europe against the top names. That led to an epiphany at Zolder when Max was overtaken by Jochen Rindt after the F2 champion had been delayed at the start.

"I hadn't done very much before going into F2 because a season's club racing probably meant about 15 hours of driving competitively," recalls Mosley. "When I got to my first F2 race in 1968, I was in no way ready to compete at that level. Nowadays, you wouldn't be allowed to do that."

"During a race at Zolder, an incident had forced Rindt to start from the back. He caught and passed me going through what were then two very fast right-handers. He came round the outside and I could see his hands working the wheel, doing what came naturally to him. He was in another league. That's when I began to suspect I didn't have the talent to get to the very top. I was big enough to understand what racing was about and I'm very glad I did it, but there would have been no point in going on. It's just as dangerous in tenth place as it is in first place."

There would be hazards of a different kind in 1969 when Mosley, along with three others, formed March, a racing car company with extremely ambitious plans. As if building, entering and selling cars for F1 was not enough, March also announced plans to make cars ready for F2, F3 and Can-Am sportscar racing. In an extraordinary debut, two March-Fords occupied the front row of the first Grand Prix of 1970 in South Africa, a March 701 entered by Ken Tyrrell and driven by Jackie Stewart going on to win in Spain. But, beneath the surface, Mosley was paddling to keep the business afloat.

"Starting March Engineering in the way we did was unwise," recalls Mosley. "We started a capital-intensive business with virtually no money. That's the sort of thing you do in your 20s but, when →

"RINDT PASSED
ME AT ZOLDER
AND THAT'S
WHEN I BEGAN
TO SUSPECT I
DIDN'T HAVE
THE TALENT TO
GET TO THE TOP"



After deciding he wasn't cut out to be a racing driver, Mosley set up March Engineering with three others. Their first car, the March 701, enjoyed immediate success and was driven to its maiden F1 victory by Jackie Stewart at the 1970 Spanish GP (above)

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Mosley with Brabham team owner Bernie Ecclestone in 1977. Between them, they would take on and beat Jean-Marie Balestre's FISA and change the face of Formula 1



"IF BALESTRE HAD HELD ON FOR ANOTHER THREE WEEKS, THAT WOULD HAVE BEEN IT... WE WERE CLOSE TO SURRENDER"

you get a bit more sense, you don't. It was so close to going bust several times and it must be said, as related in the book, that if Walter Hayes [of the Ford Motor Company] hadn't told us to raise the price of a 701 rolling chassis from £6,000 to £9,000, we'd have been finished within the year."

The involvement with F1 had brought Mosley into contact with Ecclestone, who then owned Brabham and was beginning to scratch the surface of F1's huge financial potential. The rise of the Formula One Constructors' Association was deeply opposed by Jean-Marie Balestre, president of the sport's governing body. Having relinquished his interest in March, Mosley relished the confrontation.

It became a game of bluff, culminating in FOCA running a non-championship Grand Prix in South Africa at the beginning of 1981. To all intents and purposes, the televised race was a success. In reality, the FOCA teams were on their knees.

"It really was that bad," says Mosley. "If Balestre had just held on for another three weeks, that would have been it; he would have been able to dictate terms. We were very close to unconditional surrender but we were fortunate that we had South Africa and Bernie – as only he could – had tyres we could use. Another stroke of luck was that Long Beach was next, and having a race in the United States forced Renault [a non-FOCA team and Balestre supporter] to say they had to race there. That was it. Balestre's stance was undermined. Looking back, it's entertaining and it's fun but, at the time, it was alarming because you never knew you were going to win and there were so many jobs at stake."

The FIA's position had changed by the time Mosley became president in 1991. When he reflects on that era, one of his most taxing periods was the aftermath of the 1994 San Marino Grand Prix.

"Dealing with the fallout from the deaths of Roland Ratzenberger and Ayrton Senna was difficult," says Mosley. "But it turned into something very positive with regard to safety improvements.

"Indianapolis in 2005 [when problems with the Michelin tyres meant only six cars raced] was also difficult although, looking back now, it was blindingly obvious what to do even though, at the time, everyone's calling you up saying: 'You've got to put in a chicane; you've got to do this; you've got to do that; it's a disaster.' What I did [refusing to change the track or racing circumstances] was completely right."


The Indianapolis incident was one of a number that indicated Mosley and Ecclestone were not as hand-in-glove as popular opinion claimed.

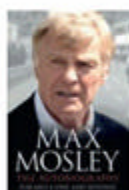
"Indeed not," says Mosley. "In the FOCA days, we had a good routine and, after discussion, generally agreed on what to do. When I became president, Bernie understood perfectly well that sometimes what's in the interest of the FIA is not in Bernie's interest. There were conflicts but they were very seldom public – although they are now in the book."

Aside from putting his energy into writing, Mosley has kept a watching brief on his successor as FIA president, and the accompanying criticism.

"I'm aware it's being alleged that Jean [Todt] is not doing much in F1," says Mosley. "To be fair, I remember saying to him before he was elected – and he agreeing – that motorsport is important, particularly from the safety point of view, but you can work all you like in F1 and rallies and so on, and maybe you will save one life every year maybe."

"On the roads, 3000 people are dying worldwide. Every day. The FIA president is in a better position to do something about that than anyone. If you could make even a tenth of one per cent difference, three people every day – not one person every year – that should be the least you do."

"What really matters to the FIA is road safety, because it's the biggest element killing people between the ages of 15 and 24. Jean took that on board. He's devoting his energy to that and probably feels: let F1 get on with it. They ought to be able to run the thing without me interfering." 



Max Mosley: The Autobiography, Formula 1 and beyond

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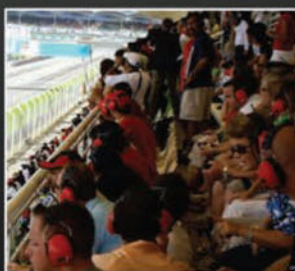


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Lewis bounces back

After team-mate Nico Rosberg inherited the win from him in Monaco, Lewis Hamilton makes a triumphant return to the top step of the podium in Montréal

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A Safety Car and an ill-timed pitstop hand Hamilton's win to Rosberg



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Why do so very few racers make the switch from two wheels to four? Murray mulls over the matter



RACE DEBRIEF by Stuart Codling

Monaco Grand Prix

24.05.2015 / Monte Carlo



Lewis left speechless after a late rewrite

Hamilton had the race under control until a strategic blunder under the Safety Car changed everything

Expensive boats bob in the harbour. The glitterati and the wannabes party until dawn. The movers and shakers cruise the Formula 1 paddock, shaping futures and fortunes. And the occupant of pole position wins the race. The Monaco Grand Prix is steeped in tradition; almost unshakably so.

The film-makers who gather each year for the festival just up the road in Cannes, though, will be crushingly familiar with the notion of the last-minute rewrite. For 64 of Monaco's 78 laps, Lewis Hamilton was firmly in control of the race, give or take some uncertainty over brake temperatures. He had qualified on pole position here for the first time since he raced in GP2 in 2006; he had controlled the pace when necessary, opened a gap when possible, and was sitting on a seemingly unassailable lead when Max Verstappen's battle with Romain Grosjean ended with the Toro Rosso crashing into the barrier at Ste Dévote.

Verstappen's performance had been among the highlights of a soporific opening two-thirds of the race. From ninth on the grid he had done everything right: running on the new Pirelli supersoft tyres like the rest of the top ten, he got away to a good start, so as not to fall behind those starting on the soft tyre who would not pit until later in the race. He quickly passed the struggling Lotus of Pastor Maldonado, and by the time he pitted on lap 29 he had built up enough of a gap – the total pitstop delta being in the region of 20s – not to emerge behind tenth-placed Fernando Alonso's McLaren, the leader of those who had started on the softs.

All that good work was undone, however, when a problem with the right-rear wheel brought the total time he spent in the pitlane to more than 40 seconds, bringing him out in 13th place behind the understeering Williams of Valtteri Bottas. Alonso, meanwhile, was able to pit and serve a five-second penalty for making

opening-lap contact with Nico Hülkenberg and still emerge in tenth place.

Points were still on the table for Verstappen, though, after Alonso retired and Sauber's Felipe Nasr pitted out of the way; he made a second stop for fresh supersofts on lap 46 and dropped just one place, falling behind team-mate Carlos Sainz in the overall order but cleverly hitching on to Sebastian Vettel's coat-tails as the Ferrari cut through traffic. With Sainz and Bottas out of the way, only Grosjean's Lotus stood between Verstappen and a world championship point.

Grosjean, forewarned by his pitwall, let Vettel through but kept the Toro Rosso behind – until Verstappen made a move at Ste Dévote, hit Grosjean's right rear, and speared into the tyre wall at speed. A sore Verstappen would later accuse Grosjean of braking early for the corner. The stewards, led by Tom Kristensen, believed otherwise and gave Verstappen a five-place grid drop for the next race, plus two penalty points.

Hamilton had a 21-second lead as the 'Virtual Safety Car' sign was displayed for the first time in F1, then quickly withdrawn in favour of the real thing. By the time Hamilton peeled into the pits, under instruction from the pitwall, he had caught the Safety Car and that lead was more like 16s – not enough to stay in front. He duly emerged behind a somewhat surprised Nico Rosberg and Sebastian Vettel and stayed there until the chequered flag.

For Rosberg, the last-minute change of script delivered him a third Monaco Grand Prix victory, placing him in a pantheon of greats that includes Ayrton Senna and Graham Hill. But for the Mercedes bigwigs, self-flagellation, not celebration, was the order of the day. Niki Lauda, never one to sugarcoat the pill, fulminated: "This was unacceptable. To bring Lewis in was wrong."

"It was very treacherous out there on cold tyres," said Rosberg as he ducked and dived in post-race interviews, reading the almost funereal atmosphere perfectly.

"We got the calculation wrong," said Toto Wolff, almost fighting for air amid a swarm of microphones during the post-race media inquisition in the Mercedes motorhome. Were this edifice to be floating in the adjoining harbour like Red Bull's gin palace, you felt it might have capsized given the weight of humanity gathered around Mercedes' head of motorsport.

"There was the potential risk of Sebastian switching tyres... You have to follow the data... The numbers just added up... The algorithm was wrong..."

It's true that tyre temperatures had been a problem all weekend – Vettel likened the sensation of driving behind the Safety Car to swimming with weights attached to your limbs – but several drivers, including Red Bull's Daniel Ricciardo, did swap to new supersofts for that final phase. Ricciardo looked racey after the change but did not profit.

"To be honest, it happened so fast I don't even remember," said a palpably downbeat Hamilton afterwards, parrying the questions as they came in a rush. Were you confident in the pit call? What discussions did you have with the team at the time? Did you know the gap between you and Nico? How does this make you feel? Will you have 100 per cent confidence in the team's strategic calls in the future? Did the Virtual Safety Car followed by the real Safety Car add to the confusion? Sullenly looking downwards and fidgeting with the sheer awkwardness of the situation, Lewis engaged with the interrogation minimally.

The battle for the 2015 world championship, whose outcome had seemed at the outset to be as predictable as a Hollywood blockbuster, now has added drama. 🏆

The story of the race

V Pole-sitter Hamilton gets the jump on Mercedes team-mate Rosberg at the start. Job done, surely...

MONTE CARLO



> A hard-charging Max Verstappen loses time with a slow pitstop when he brings his Toro Rosso in on lap 30



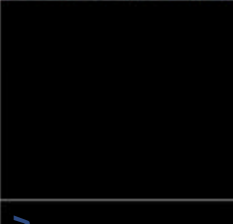
> Hamilton makes his only planned stop on lap 39, emerging well clear of Rosberg



< Fernando Alonso retires his McLaren from ninth place with a gearbox failure on lap 42



< Verstappen tries to pass Grosjean at Ste Devote on lap 66 but the pair clash, bringing out the Safety Car



> Hamilton stops under the Safety Car on lap 66, emerging behind Rosberg and Vettel



V At the restart on lap 71, Hamilton is unable to challenge Vettel despite fresher tyres

> Rosberg celebrates his third consecutive Monaco win, while Hamilton is left to rue his team's error





















MAIN PHOTO: ALASTAIR STALEY/LAT. ILLUSTRATION: ALAN ELDREDGE. INSETS: GLENN DUNBAR/LAT; STEVEN TEE/LAT

Monaco Grand Prix stats

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

THE GRID

	1. HAMILTON MERCEDES 1min 15.098secs Q3
2. ROSBERG MERCEDES 1min 15.440secs Q3	
	3. VETTEL FERRARI 1min 15.849secs Q3
4. RICCIARDO RED BULL 1min 16.041secs Q3	
	5. KVIYAT RED BULL 1min 16.182secs Q3
6. RÄIKKÖNEN FERRARI 1min 16.427secs Q3	
	7. PÉREZ FORCE INDIA 1min 16.808secs Q3
8. MALDONADO LOTUS 1min 16.946secs Q3	
	9. VERSTAPPEN TORO ROSSO 1min 16.957secs Q3
10. BUTTON McLAREN 1min 17.093secs Q2	
	11. HÜLKENBERG FORCE INDIA 1min 17.193secs Q2
12. MASSA WILLIAMS 1min 17.278secs Q2	
	13. ALONSO McLAREN 1min 26.632secs Q2
14. NASR SAUBER 1min 18.101secs Q1	
	15. GROSJEAN* LOTUS 1min 17.007secs Q2
16. BOTTAS WILLIAMS 1min 18.434secs Q1	
	17. ERICSSON SAUBER 1min 18.513secs Q1
18. STEVENS MANOR 1min 20.655secs Q1	
	19. MERHI MANOR 1min 20.904secs Q1
20. SAINZ** TORO ROSSO 1min 16.931secs Q3	

* Five-place grid penalty for replacement gearbox
** Required to start from pitlane for failing to stop for weight check

THE RACE



FASTEST LAP



Daniel Ricciardo, lap 74, 1min 18.063secs

THE RESULTS (78 LAPS)

1st	Nico Rosberg Mercedes	1h 49m 18.420s
2nd	Sebastian Vettel Ferrari	+4.486s
3rd	Lewis Hamilton Mercedes	+6.053s
4th	Daniil Kvyat Red Bull	+11.965s
5th	Daniel Ricciardo Red Bull	+13.608s
6th	Kimi Räikkönen Ferrari	+14.345s
7th	Sergio Pérez Force India	+15.013s
8th	Jenson Button McLaren	+16.063s
9th	Felipe Nasr Sauber	+23.626s
10th	Carlos Sainz Toro Rosso	+25.056s
11th	Nico Hülkenberg Force India	+26.232s
12th	Romain Grosjean Lotus	+28.415s
13th	Marcus Ericsson Sauber	+31.159s
14th	Valtteri Bottas Williams	+45.789s
15th	Felipe Massa Williams	+1 lap
16th	Roberto Merhi Manor	+2 laps
17th	Will Stevens Manor	+2 laps

Retirements

Max Verstappen	Toro Rosso	62 laps – accident
Fernando Alonso	McLaren	41 laps – gearbox
Pastor Maldonado	Lotus	5 laps – brakes

THROUGH SPEED TRAP (QUALIFYING)



Fastest: Felipe Massa, 207.66mph

Slowest: Roberto Merhi, 197.53mph

TYRE COMPOUNDS USED



Supersoft Soft Intermediate Wet

CLIMATE

Sunny

19°C

TRACK TEMP

40°C

FASTEST PITSTOP

Kimi Räikkönen, 24.177secs (entry to exit)

DRIVERS' STANDINGS

1st	Lewis Hamilton Mercedes	126pts
2nd	Nico Rosberg Mercedes	116pts
3rd	Sebastian Vettel Ferrari	98pts
4th	Kimi Räikkönen Ferrari	60pts
5th	Valtteri Bottas Williams	42pts
6th	Felipe Massa Williams	39pts
7th	Daniel Ricciardo Red Bull	35pts
8th	Daniil Kvyat Red Bull	17pts
9th	Felipe Nasr Sauber	16pts
10th	Romain Grosjean Lotus	16pts
11th	Sergio Pérez Force India	11pts
12th	Carlos Sainz Toro Rosso	9pts
13th	Nico Hülkenberg Force India	6pts
14th	Max Verstappen Toro Rosso	6pts
15th	Marcus Ericsson Sauber	5pts
16th	Jenson Button McLaren	4pts
17th	Fernando Alonso McLaren	0pts
18th	Roberto Merhi Manor	0pts
19th	Will Stevens Manor	0pts
20th	Pastor Maldonado Lotus	0pts
21st	Kevin Magnussen McLaren	0pts

CONSTRUCTORS' STANDINGS

1st	Mercedes	242pts	9th	McLaren	4pts
2nd	Ferrari	158pts	10th	Manor	0pts
3rd	Williams	81pts			
4th	Red Bull	52pts			
5th	Sauber	21pts			
6th	Force India	17pts			
7th	Lotus	16pts			
8th	Toro Rosso	15pts			



For comprehensive F1 statistics visit www.forix.com



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Stay connected with the latest news, or watch the highlights on your mobile device with our free WiFi service, provided by title sponsors **Yas Marina Circuit**

YasTV

The Giant Screen courtesy of **Yas Marina Circuit** and **#AbuDhabiGP** will keep you in touch with everything that's going on, plus you can post your thoughts on the Twitterwall

YasSPA NEW FOR 2015

An area in which to get ready with all the tools you need to curl or straighten your hair and apply your make-up before joining us for the evening's entertainment. Free treatments include manicures, massage, facials and face painting.

YasGAMES ZONE NEW FOR 2015

Try the new-generation sim with Oculus Rift and drive around the **Yas Marina Circuit**. Play giant garden games such as Connect Four, Jenga, draughts and many more.

YasCAFE NEW FOR 2015

Grab your free hot drink and pastry on your way to the circuit from our Airstream Café. We'll even give you an ice lolly to cool you down on your return. (while stocks last)

Dinner & Rockaoke night NEW FOR 2015

Join F1 Racing and David Brabham for a buffet dinner and star in your own version of a classic with the help of a rock band. Book now by calling **01327 850 027** – tickets are selling fast!

Beer tent

The beer tent is the social centre of the Fan Village, and will feature live music on both the Friday and Saturday evenings

Competitions

There are chances to win fantastic prizes throughout your stay, including watches, champagne and tickets to races. And one very special golden-ticket winner will win flights, accommodation and tickets to the **#AbuDhabiGP**, courtesy of **Yas Marina Circuit**

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RACE DEBRIEF

by James Roberts

Canadian Grand Prix

07.06.2015 / Montréal



Mercedes score on the power play

Lewis Hamilton and the Silver Arrows dominate at a circuit that favours engine strength above all else

If you needed any evidence that the competitive order of Formula 1 is currently dominated by engines, then the 2015 edition of the Canadian GP provided plenty. The Circuit Gilles Villeneuve is characterised by three long straights that favour not only those units with a power advantage, but the most fuel-efficient, too.

Comfortably ahead of the opposition were the two works Mercedes, Lewis Hamilton taking victory over the 70 laps by just 2.285s from teammate Nico Rosberg. They were half a lap ahead of the rest, the charge led by Williams' Valtteri Bottas – running with a Mercedes engine.

Looking at the speed-trap figures, the real extent of the performance edge for the engines built at Mercedes AMG High Performance Powertrains in Brixworth is clear to see. Romain Grosjean's Lotus-Mercedes topped the list at 211.58mph, followed by a Williams, a Force India and both works cars before you got to Kimi Räikkönen's Ferrari in eighth. Towards the

bottom of the speed-trap figures were Fernando Alonso's McLaren-Honda and the Red Bull-Renault of Daniel Ricciardo. Both were 8mph slower at the end of the straights: a world away in F1 terms. Ricciardo, 12 months ago a popular winner here, rolled across the line in a lowly 13th, proof that in the intervening period the Mercedes cars have extended their performance and the Ferrari runners have leapfrogged Renault.

Sitting next to the shore of the Olympic rowing strip carved out of the mighty St Lawrence Seaway, Red Bull team boss Christian Horner reflected on the disproportional performance across the field.

"It's just a different race," he said. "You've got a Force India and a Lotus that haven't been so high up since Melbourne. The power unit influence is highlighted more than anywhere here and that's unfortunate for us. The emphasis on power unit over chassis and driver is significant and very difficult to override."

It was perhaps pertinent that, on Friday, the top four teams met to discuss the future direction of F1, and enquired about the early findings of *F1 Racing's* fan survey to justify some of the changes they want to make to the cars and engines. With a primetime audience tuned in across the Atlantic, rarely does the Canadian GP disappoint, but afterwards few could remember a race here so lacking in spectacle.

A durable Pirelli soft tyre meant that everyone apart from Ferrari went for a one-stop strategy. Thankfully there was interest in the progress of both Felipe Massa and Sebastian Vettel who battled through the field after engine problems had relegated them to 15th and 18th on the grid. But the lack of a Safety Car meant both fuel and brakes were being tested to the limit. Drivers spent much of the afternoon being told by their engineers to nurse their machinery.

"If you're a fan watching at home you don't want to hear engineers telling their drivers to lift

and coast to save fuel," added Horner. "You want to see drivers going flat-out racing each other. It's something we need to react to."

One driver who reacted badly to being asked to save fuel was McLaren's Fernando Alonso. Despite a stellar start from 13th, he was obdurate when Vettel tried to storm past him in his Ferrari. When the instruction came from the McLaren pitwall to save fuel, the first public signs of his frustration emerged. The root of his ire was, of course, his engine.

"I don't want [to]," he snapped over the radio. "Already I have big problems now, driving with this and looking like amateurs. So I'd like to race [now] and then concentrate on fuel."

In the end it wasn't necessary, he was forced to stop with an engine failure after 44 laps – his third retirement in a row. Ten laps later his team-mate Jenson Button was also told to stop his car.

During Saturday's McLaren media briefing, Honda's head honcho Yasuhisa Arai was looking fairly uncomfortable as he was put under journalistic scrutiny with regard to when the problems with his power units will be resolved.


In qualifying Button had used a fifth turbo charger and a fifth MGU-H. As a result, a ten-place grid penalty was imposed and, because it was the first time a fifth power-unit element had been used, a further five-place penalty was given. Because Button had already qualified at the rear, that 15-place penalty could not be served, so he had to take a drive-through penalty in the first three laps. Not only is it difficult to explain to the casual viewer what's going on, it doesn't make the sport look too clever. Further grid penalties will create ongoing confusion.

While it might have looked routine up front, fuel was also a concern for the leading Mercedes duo, as well as brakes. During the middle of the race Rosberg was told by his engineer Tony Ross: "Brake wear is now critical so manage it for the next ten laps before going to attack Lewis."

But as team boss Toto Wolff admitted after the race, Rosberg was unable to mount a challenge as his pace faded in the closing stages. Sadly for the viewers, we were denied a grandstand finish.

"Brakes were always an issue and when he started to push towards the end of the race he missed his braking point once and realised that unless Lewis made a mistake it would be hard to pass him in the last couple of laps," said Wolff.

Despite the small gap between the pair, Lewis was faultless and never really troubled. After the misery of Monaco, it was good to see that joyous post-race demeanour return.

The Canadian GP is always a popular race, and as the bumper crowd made their way into Montréal's bars and restaurants, all the talk that evening was of the current state of F1. There's no doubt. Change is coming. 

The story of the race

V Lewis Hamilton leads away from pole ahead of team-mate Nico Rosberg and Ferrari's Kimi Räikkönen



MONTREAL



> Having started 18th, Vettel is the first to pit on lap 7, while running in 13th place



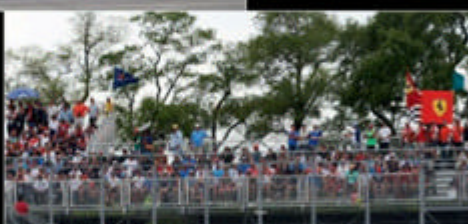
< On lap 19, Vettel touches Alonso as they do battle for 15th place



< Räikkönen pits for fresh rubber on lap 27 and then spins on his out-lap



> Williams driver Bottas pits one lap later, moving up into third



< Lewis pits on lap 29, while Rosberg stops a lap later. Both switch from the supersoft to the soft tyre



< On lap 50, Romain Grosjean hits the Manor of Will Stevens and is handed a penalty for doing so



> Lewis Hamilton completes his 70th lap in the lead and wins the Canadian GP from team-mate Rosberg























MAIN PHOTO: STEVE ETHINGTON/LAT; ILLUSTRATION: ALAN ELDREDGE; INSETS: ALASTAIR STALEY/LAT; STEVE ETHINGTON/LAT; GLENN DUNBAR/LAT; STEVEN TEE/LAT

Canadian Grand Prix stats

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

THE GRID

	1. HAMILTON MERCEDES 1min 14.393secs Q3		2. ROSBERG MERCEDES 1min 14.702secs Q3
	3. RÄIKKÖNEN FERRARI 1min 15.014secs Q3		4. BOTTAS WILLIAMS 1min 15.102secs Q3
	5. GROSJEAN LOTUS 1min 15.194secs Q3		6. MALDONADO LOTUS 1min 15.329secs Q3
	7. HÜLKENBERG FORCE INDIA 1min 15.614secs Q3		8. KVIAT RED BULL 1min 16.079secs Q3
	9. RICCIARDO RED BULL 1min 16.114secs Q3		10. PÉREZ FORCE INDIA 1min 16.827secs Q3
	11. SAINZ TORO ROSSO 1min 16.042secs Q2		12. ERICSSON SAUBER 1min 16.262secs Q2
	13. ALONSO MCLAREN 1min 16.276secs Q2		14. NASR SAUBER 1min 16.620secs Q2
	15. MASSA WILLIAMS 1min 17.886secs Q1		16. MERHI MANOR 1min 19.133secs Q1
	17. STEVENS MANOR 1min 19.157secs Q1		18. VETTEL* FERRARI 1min 17.344secs Q1
	19. VERSTAPPEN** TORO ROSSO 1min 16.245secs Q2		20. BUTTON*** MCLAREN NO TIME IN Q1

* Five-place grid penalty for overtaking under red flags
 ** Five-place grid penalty for causing a collision (Monaco GP) and ten-place grid penalty for first use of fifth power unit element
 *** 15-place grid penalty for first use of fifth power unit elements. Permitted to start by stewards

THE RACE



THE RESULTS (70 LAPS)

1st	Lewis Hamilton Mercedes	1h 31m 53.145s
2nd	Nico Rosberg Mercedes	+2.285s
3rd	Valtteri Bottas Williams	+40.666s
4th	Kimi Räikkönen Ferrari	+45.625s
5th	Sebastian Vettel Ferrari	+49.903s
6th	Felipe Massa Williams	+56.381s
7th	Pastor Maldonado Lotus	+66.664s
8th	Nico Hülkenberg Force India	+1 lap
9th	Daniil Kvyat Red Bull	+1 lap
10th	Romain Grosjean Lotus	+1 lap*
11th	Sergio Pérez Force India	+1 lap
12th	Carlos Sainz Toro Rosso	+1 lap
13th	Daniel Ricciardo Red Bull	+1 lap
14th	Marcus Ericsson Sauber	+1 lap
15th	Max Verstappen Toro Rosso	+1 lap
16th	Felipe Nasr Sauber	+2 laps
17th	Will Stevens Manor	+4 laps

* Includes in-race time penalties

Retirements

Roberto Merhi Manor	57 laps – driveshaft
Jenson Button McLaren	54 laps – exhaust
Fernando Alonso McLaren	44 laps – exhaust

THROUGH SPEED TRAP (QUALIFYING)



Fastest: Romain Grosjean, 211.58mph



Slowest: Felipe Massa, 195.92mph

TYRE COMPOUNDS USED



Supersoft



Soft



Intermediate



Wet

CLIMATE

Sunny

22°C

TRACK TEMP

40°C

FASTEST LAP



Kimi Räikkönen, lap 42, 1min 16.987secs



FASTEST PITSTOP

Nico Rosberg, 23.321secs (entry to exit)

DRIVERS' STANDINGS

1st	Lewis Hamilton Mercedes	151pts
2nd	Nico Rosberg Mercedes	134pts
3rd	Sebastian Vettel Ferrari	108pts
4th	Kimi Räikkönen Ferrari	72pts
5th	Valtteri Bottas Williams	57pts
6th	Felipe Massa Williams	47pts
7th	Daniel Ricciardo Red Bull	35pts
8th	Daniil Kvyat Red Bull	19pts
9th	Romain Grosjean Lotus	17pts
10th	Felipe Nasr Sauber	16pts
11th	Sergio Pérez Force India	11pts
12th	Nico Hülkenberg Force India	10pts
13th	Carlos Sainz Toro Rosso	9pts
14th	Max Verstappen Toro Rosso	6pts
15th	Pastor Maldonado Lotus	6pts
16th	Marcus Ericsson Sauber	5pts
17th	Jenson Button McLaren	4pts
18th	Fernando Alonso McLaren	0pts
19th	Roberto Merhi Manor	0pts
20th	Will Stevens Manor	0pts
21st	Kevin Magnussen McLaren	0pts

CONSTRUCTORS' STANDINGS

1st	Mercedes	285pts	9th	McLaren	4pts
2nd	Ferrari	180pts	10th	Manor	0pts
3rd	Williams	104pts			
4th	Red Bull	54pts			
5th	Lotus	23pts			
6th	Sauber	21pts			
7th	Force India	21pts			
8th	Toro Rosso	15pts			



For comprehensive F1 statistics visit www.forix.com



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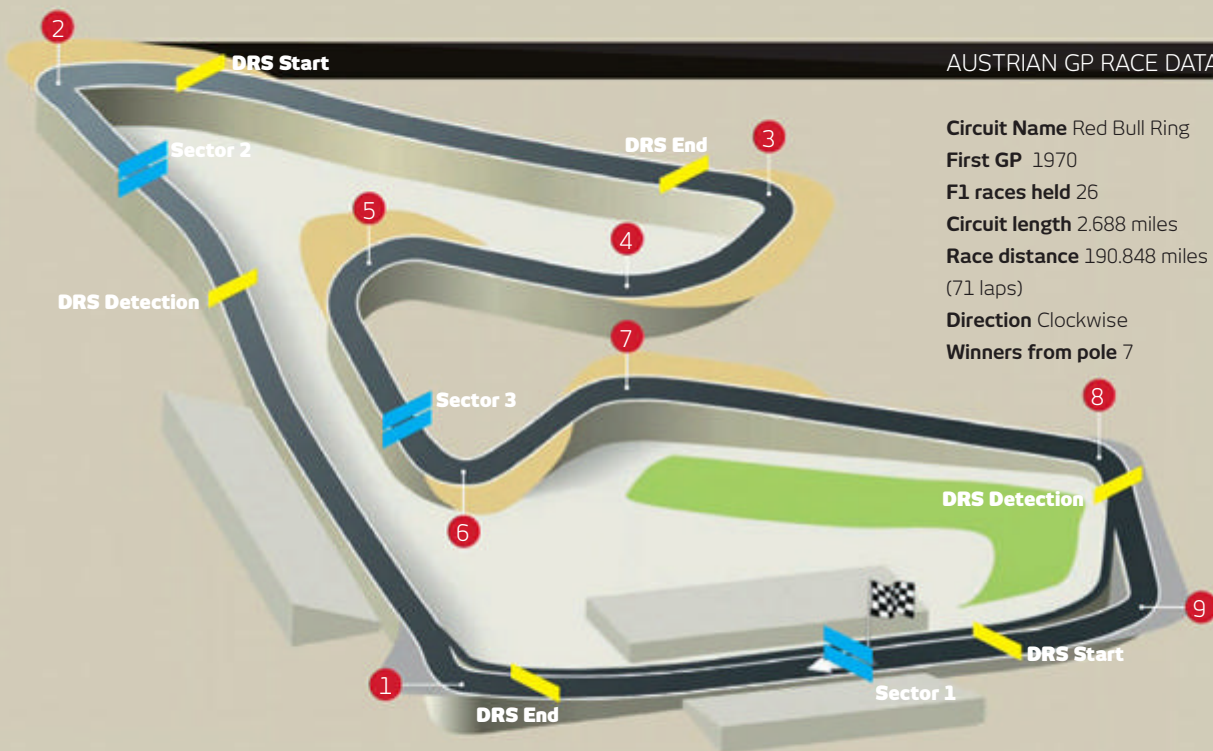
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The Austrian GP preview

Round 8 / 19-21 June 2015 / Red Bull Ring, Spielberg



AUSTRIAN GP RACE DATA

Circuit Name Red Bull Ring
First GP 1970
F1 races held 26
Circuit length 2.688 miles
Race distance 190.848 miles
 (71 laps)
Direction Clockwise
Winners from pole 7

TV TIMETABLE (UK TIME)

Friday 19 June
Practice 1 09:00-10:30
Practice 2 13:00-14:30
Saturday 20 June
Practice 3 10:00-11:00
Qualifying 13:00-14:00
Sunday 21 June
Race 13:00
Live coverage
 Sky Sports F1
Highlights BBC

RACE NOTES: A GRIPPING ALPINE ADVENTURE

Fans were delighted to see Austria return to the calendar, and it's a race that's capable of presenting quite a few surprises

The Red Bull Ring's return to the F1 calendar in 2014 was a big hit, with the event proving hugely popular with both fans and teams. And while the circuit isn't a patch on the old Österreichring, its mix of long straights, tight turns and varied elevation is a recipe for great racing.

With a focus on mechanical grip, the short circuit doesn't always play to the strengths of the top teams. Last year, Williams locked out the front row ahead of the dominant Mercedes squad. And while the Merces hit back in the race, the opposition was much closer than at most other tracks.

One team unlikely to experience a change in form here will be Red Bull, who had their worst outing of 2014 at their home race, thanks to the circuit characteristics favouring engine power over aerodynamics. **F1**



Red Bull will be hoping for better results at a track that bears their name

PACE NOTES: THE KEYS TO SUCCESS

In the middle

The best overtaking opportunities are the first two turns, but mastering the winding middle section of the track is vital to the lap time. Good traction and stability under braking are key.

Watch the weather

While last year's event was held in beautiful Styrian sunshine, the weather in the Alps can be unpredictable, throwing a strategy curveball.

Testing tyres

The prevalence of sharp corners puts a focus on mechanical grip, through the tyres, rather than aerodynamics. That, in turn, increases tyre wear.

Key corner

The track's second turn, Remus, is an uphill right-hander at the end of the longest straight – making for a very enticing overtaking opportunity.

WHAT HAPPENED IN LAST YEAR'S RACE...?

Winner Nico Rosberg
Margin of victory 1.932 secs
Fastest lap 1m 12.142s, S Pérez
Safety Cars 0
Race leaders 5
Pitstops 41
Overtakes 41

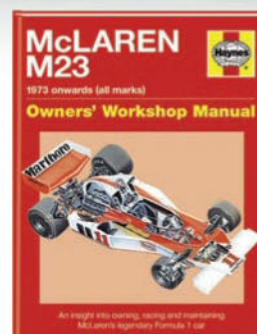
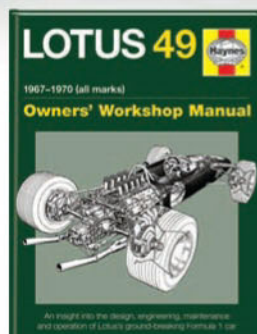
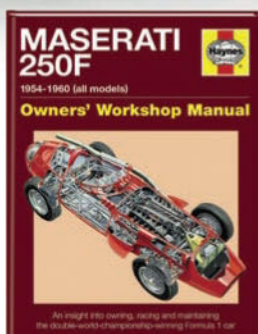
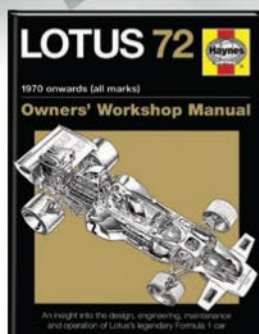


The Williams duo of Felipe Massa and Valtteri Bottas shocked in qualifying by locking out the front row. But Mercedes drivers Nico Rosberg and Lewis Hamilton hit back in the race to claim a one-two. Rosberg took the lead after the first stops while Hamilton, who had started down the order after an off in qualifying, vaulted Bottas on his second stop.

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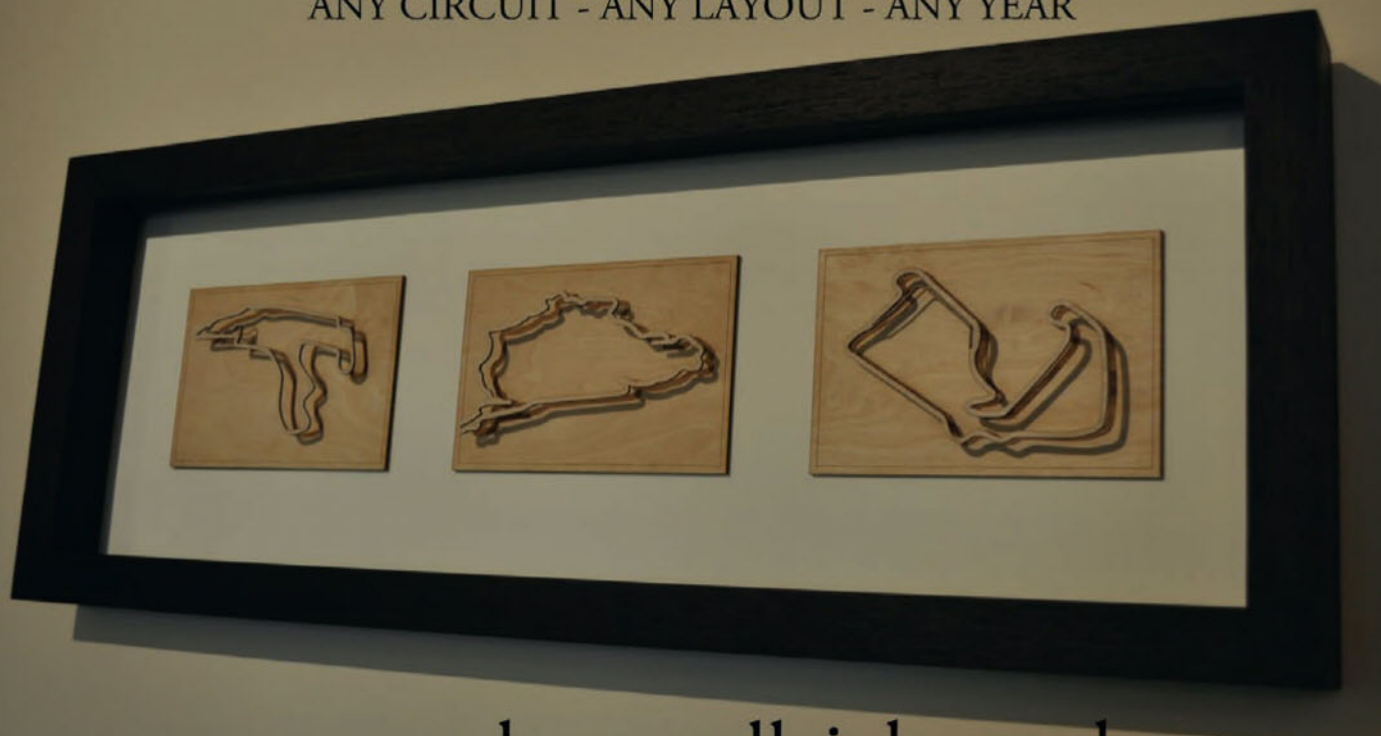


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The British GP preview

Round 9 / 3-5 July 2015 / Silverstone, Northamptonshire



BRITISH GP RACE DATA

Circuit Name Silverstone Grand Prix Circuit
First GP 1950
F1 races held 48
Circuit length 3.660 miles
Race distance 190.262 miles (52 laps)
Direction Clockwise
Winners from pole 16

TV TIMETABLE (UK TIME)

Thursday 3 July
Practice 1 10:00-11:30
Practice 2 14:00-15:30
Saturday 4 July
Practice 3 10:00-11:00
Qualifying 13:00-14:00
Sunday 5 July
Race 13:00
Live coverage BBC and Sky Sports F1

RACE NOTES: FAST AND FURIOUS AT THE BIRTHPLACE OF F1

Even the notoriously fickle British summertime can't deter the enthusiastic home crowd at this exhilarating classic

Sixty-five years after it hosted the first ever Formula 1 World Championship event, Silverstone remains one of the most popular races of the season. The track is always packed with spectators and being the home race for most of the teams adds extra motivation for them to do well.

The circuit is one of F1's toughest challenges, dominated by high-speed corners and flat-out straights that demand strong aerodynamics and engines, and can punish tyres. Added to this challenge is the generally unpredictable weather (hello, British summer), including Silverstone's notorious gusting, swirling winds.

Fernando Alonso and home hero Lewis Hamilton are the most successful of the current drivers here, with two wins apiece. By contrast, Jenson Button tends to struggle here – he's never even led a lap at Silverstone. **F1**



Lewis Hamilton celebrates his second victory at his home race in 2014

PACE NOTES: THE KEYS TO SUCCESS

Winds of change

It can get a bit gusty at Silverstone, which affects braking points and can unsettle the car, particularly through high-speed corners.

Keep your balance

With so many high-speed corners, the key to a quick lap is an aerodynamically stable car that can make rapid direction changes.

Tough on tyres

An abrasive surface and high-speed corners combine to cause high tyre wear, so Pirelli will bring harder compounds to the race.

Key corner

Alright, Maggotts-Becketts-Chapel is four corners, but the flowing sequence is a big challenge. Drivers need precision to maintain momentum, and it's a test of the stability of their cars.

WHAT HAPPENED IN LAST YEAR'S RACE...?

Winner Lewis Hamilton
Margin of victory 30.135 secs
Fastest lap 1m 37.176s, L Hamilton
Safety Cars 1
Race leaders 2
Pitstops 24
Overtakes 40



Lewis Hamilton felt he'd disappointed his British fans after a tactical mistake in qualifying left him starting from sixth on the grid. But he made amends, battling through the order and pressuring leader Nico Rosberg before taking his second home win. Valtteri Bottas was perhaps even more impressive, storming from 14th on the grid to second.

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STAR LETTER



As custodian of the sport, Ecclestone has a responsibility to keep fans informed

F1 needs greater transparency

It was interesting to see that Bernie Ecclestone was your cover personality in the June issue of *F1 Racing* – just as the FIFA scandal was emerging.

F1's decision-makers need to be transparent about their reasons for the awarding, or non-awarding, of races across the globe. Bids should be assessed on key criteria and the results of decisions released to the public. Yes, there are commercial interests to consider, but the cash value of each bid should not be the overriding factor. F1 would obtain public confidence if environmental and ethical considerations were brought to the fore.

Bernie is a custodian of the sport and the image and heritage of F1 must be best served to ensure F1 has a recognisable identity and connection to the spectators. Give the fans a say in which venues should be given priority status on the calendar in order to maintain the quality of the show.

Without these measures the sport could further lose its appeal and the commercial viability may diminish completely. Who is the winner then?

Adrian King,
Northamptonshire, UK



STAR PRIZE

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Bring F1 and GP2 closer

As the sport does some soul-searching about its future direction, here is a suggestion: why not make GP2 more like F1?

One of the biggest problems for F1 teams is that there is a huge jump in investment from other racing series to F1 (prohibitive high entry costs) and nowhere to go if the team struggles (high exit costs). The solution is to run GP2 as a scaled-down version of F1, giving teams a stepping stone up to F1, with a safety net below should they need to step back.

This scaling down could be achieved through some of the measures already discussed – strict budget controls, more durable tyres, and certain common parts – beginning with a common rear wing. Teams could also use existing F1 engines, tuned down to last twice as long as their F1 counterparts. This has the added bonus of increasing revenue for engine manufacturers.

While this needs to be part of a bigger solution, I think better use of GP2 is a good and necessary step.

Daniel Stafford,
Oxford, UK

Variables add spice

I read with interest the proposed rule changes for 2017, and have to admit that some of them caused me to raise an eyebrow.

To me it's relatively simple: there simply aren't enough variables to spice up the racing. We should be looking to introduce as many variables as possible, ie refuelling, different tyre manufacturers, giving the teams free rein in more areas of the car to experiment.

A cost cap on engines would force economy to become a prime part of the build process and would, in

turn, likely lead to engine failures, which would have us all on the edge of our seats wondering if our favourite driver will make it to the end. Who can forget the late '90s when it was always up in the air till the last few minutes? Remember Häkkinen breaking down on the last lap? Or Hill's Arrows packing up with three laps to go?

So come on boffins, throw a bit more into the mix. Don't make it simpler, but keep the costs down. That's the way forward!

Ryan Cooper,
By email

Pay TV is killing F1

I started watching F1 in 2007 and it is obvious why its popularity is declining: the switch to pay TV.

Britain started shared coverage in 2012, and although there was a drop in viewers, F1's income increased greatly and the wealthier audience demographic was maintained to keep the sponsors happy – so they rolled out the pay TV model worldwide.

But their reasoning was flawed, as Britain was already a compromised market. Sky had previously forced many into subscribing to watch other popular sports, so adding a free Formula 1 channel for them did not affect the overall figures drastically and as long as the money was coming in, who cared about the perceived casual BBC viewer?

The UK fan base is so big that the wealthier fans signed up and the disgruntled poorer ones just 'put up and shut up'. We continued to watch live races and highlights to keep up with the season's events, but losing the excitement of following every race live has inevitably led to a loss of interest.

And, the rest of the world, unlike us, just turned off when the pay TV model was applied to them. Consequently there has been a rapid loss of interest in the sport.

It's only subscribing to your magazine that has kept my interest up. I almost cancelled it after a year, when the BBC lost full live

coverage of the season. Thankfully your excellent content saved me.

But here we are, three years on, with people scratching their heads and searching for answers with surveys, when all that is needed is a U-turn on TV rights.

I fear F1 will go the way of other sports in the UK that pay TV has taken over, such as golf and cricket, which are suffering greatly in terms of participants and followers. Football is always the exception and cannot be used as a model to follow, since it is the 'poor man's sport' that everyone can play anywhere in the world, as long as someone has a ball.

So no matter what is jiggled, changed, brought in or taken out with regard to the racing and the cars, if F1 wants to stop its declining popularity, it must ensure it is freely available to watch worldwide.

Edward Cowling,
Northampton, UK

Put safety before spectacle

I was very disappointed that the best idea put forward in recent weeks to improve the racing in F1 was refuelling. It seems people have forgotten that a significant reason for it being banned was safety.

Too many times we saw drivers driving off, without clearance from their team, taking the fuel rig with them. This usually resulted in pitcrews being dragged along or fuel being left in the pitlane.

Let us also not forget what happened to Jos Verstappen in Hockenheim in 1994. Just a small

spill of fuel onto the car and a great fireball resulted.

Have we really reached a point, after so many attempts to improve safety, where the risks of harm should now be disregarded in order to improve the spectacle?

Fortunately, at the time of writing, it does seem that there is minimal support for the return of refuelling. I'm glad.

Harry Conroy,
By email

WEC is F1's equal

I am a long-time fan of both WEC and F1. I read Katie Cooke's email to your June letters page in which she said "F1 is the pinnacle of the sport" – and I think she's missed the point. WEC has gorgeous-looking high-tech cars, tight racing (any of three different teams' cars can win after six hours) and engine noise.

It's different and it doesn't want to be F1, but it's really exciting racing not far off the pace of F1.

And why does Fernando Alonso want to race at Le Mans? Because it's all done there in the dark – real dark, not floodlit. Maybe he can drive a McLaren there next year?

Andy Graham,
By email

Correction: Apologies to Nico Rosberg and all his fans for our error in the Spanish GP results in last month's issue of the magazine. We knew that Nico won the race but word blindness caused us all to miss the elementary error at the top of the results table.



The Porsche 919, driven by Timo Bernhard, Mark Webber and Brendon Hartley, contesting the second round of the 2015 FIA WEC championship at Spa

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THE END OF AN EMPIRE?

After years of domination, Red Bull are struggling in 2015. So what went wrong, and how can they fix it?

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- > On track with Romain Grosjean – in a very sideways Lotus

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MURRAY WALKER



UNLESS I'M VERY MUCH MISTAKEN...

"I've been wondering anew why so few successful bikers have failed to also make their mark on car racing..."

This thought came to mind following the recent death of the great motorcycle champion Geoff Duke. His efforts to switch to cars failed despite a promising attempt. Yet several bike racers *have* made the switch in the past.

My all-time hero, Tazio Nuvolari, started his career on bikes in the 1920s. He was a top man in Italy before mixing two wheels and four and becoming a grand prix and sportscar superstar for Bugatti, Maserati, Alfa Romeo, Ferrari and Auto Union. One of his major rivals on bikes and in cars was his fellow Italian, the enigmatic

Achille Varzi, their fabled rivalry raging from the 1920s until after World War II.


Both their brilliant careers lasted for more than 20 years, but that of the German genius Bernd Rosemeyer was tragically brief. As a star rider for the German NSU and DKW motorcycle firms, Rosemeyer was recruited to drive the hard-to-handle, rear-engined Auto Union in 1935. Despite never having driven a racing car before, he took to it like a duck to water. A succession of brilliant wins against the might of Mercedes followed in 1936 and '37 before his

genius was tragically terminated with a fatal crash during a land-speed record attempt.

So what about the post-war years? Well, a few have tried but only three men have truly made it to the top. Foremost among those who never quite got there for one reason or another were Duke, who failed to hit it off with Aston Martin; Giacomo Agostini; Mike Hailwood, whose promising F1 career was terminated by a leg injury; Barry Sheene; and Valentino Rossi, who has impressively tested several times for Ferrari but, preferring bikes, decided not to switch.

The three ex-bikers who reached the pinnacle of motorsport by becoming F1 world champion? Alberto Ascari, for Ferrari in 1952 and '53; John Surtees, multiple motorcycle champion for MV and the only one also to become an F1 champion (for Ferrari in 1964); and our own Damon Hill, who became a Formula 1 world champion for Williams in 1996, having started out on bikes.

Now for the difficult bit. Why haven't more bike racers tried to switch to four wheels and, of those who did, why haven't more succeeded? After all, there's more money to be made from cars. I suspect that there is a variety of reasons. One is that there are major differences between racing cars and bikes, and being good at one doesn't necessarily mean you'll be good at the other. Another is that, generally speaking, by the time you've clawed your way to the top of the ultra-competitive motorcycle world you'll be too old to make a successful transition to cars. And a third reason is undoubtedly that, in today's world of pay drivers, it is just too expensive an investment for an unpredictable return, even if you can afford to try.

Is that it then? No more car-stars who were once bikers? I hope not. For starters how about today's *wunderkind*, Spain's Marc Marquez who, at 22, is already a quadruple world champion with money, talent and youth on his side? John Surtees left bikes for cars when Count Agusta, the boss of MV, refused to let him ride his own Norton bikes in races where MV weren't competing. John being John, he upped and left to become even greater, in touring cars, in sportscars, in single-seaters and as a constructor. Maybe Marquez will get bored with winning for Honda and want to try something new. Pie in the sky? Maybe, but it's an intriguing thought. 



"John Surtees upped and left MV to become even greater in touring cars, in sportscars, in single-seaters and as a constructor"



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START-UP BY JAMES ATTWOOD

Welcome to our *F1 Racing Pro* supplement



Is Formula 1 a sport or a business? It's a question that's regularly asked – usually by those who are being critical of the sport – but it's one that's essentially redundant: F1 is *both*.

The sport of Formula 1, in which 20 drivers representing ten teams race 19 times a year, is the engine that powers the business of F1; an industry that has now spread far beyond building and operating racing cars. That F1 business is as fast-paced, competitive and interesting as the on-track action, which is why we've put together this special *F1 Racing Pro* supplement to explore some of the people and firms that are at the heart of it.

For years, the primary business model of a Formula 1 team was built around sticking a company's logo on the side of a racing car in return for a cheque. And while sponsorship remains an important part of F1's source of finance – as our

cover star Zak Brown so eloquently explains on page ten – expansion into new areas has opened up a plethora of alternate revenue streams.

The leading teams are no longer mere racing car constructors, but high-end engineering firms, employing thousands of people and generating turnover measured in the billions of pounds. And teams are leveraging their sporting heritage and technical expertise to expand into new markets, as demonstrated by McLaren's burgeoning road-car division, which *Autocar's* Steve Cropley investigates on page 24.

Of course the growth of the F1 business hasn't been entirely smooth. The expansion into new markets has involved the sport of F1 in a number of political issues (explored by Dieter Rencken on p30), and forced established European venues to re-evaluate their business models, as Silverstone's Patrick Allen explains on page 34.

As the business of Formula 1 continues to grow it will create challenges for the sporting side, and those involved in the industry have a responsibility to safeguard the sport of Formula 1. After all, it's both a business *and* a sport – and each aspect is dependent on the other to thrive.

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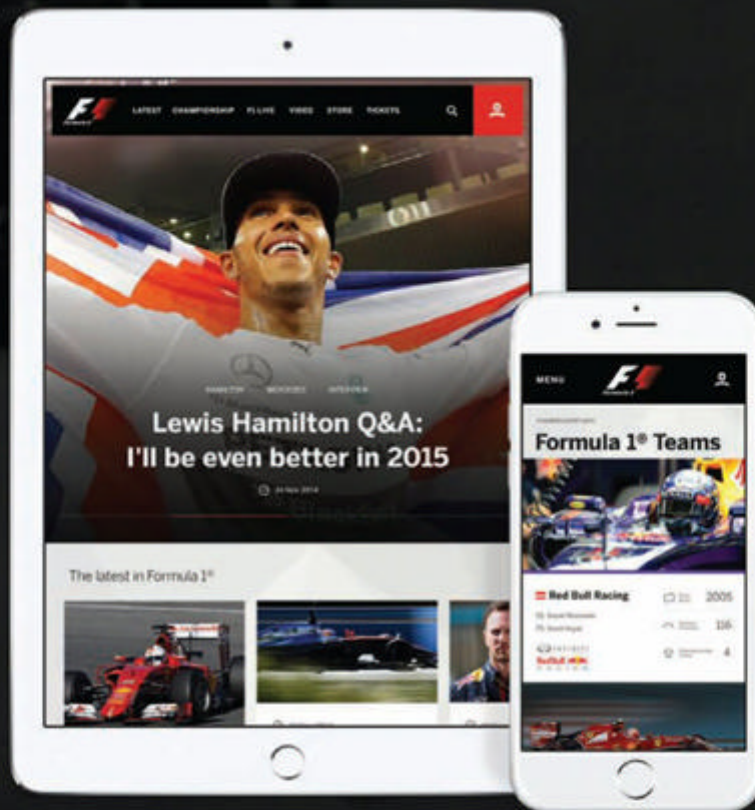


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INSIDER "F1 IS STILL A RETAIL BUSINESS"

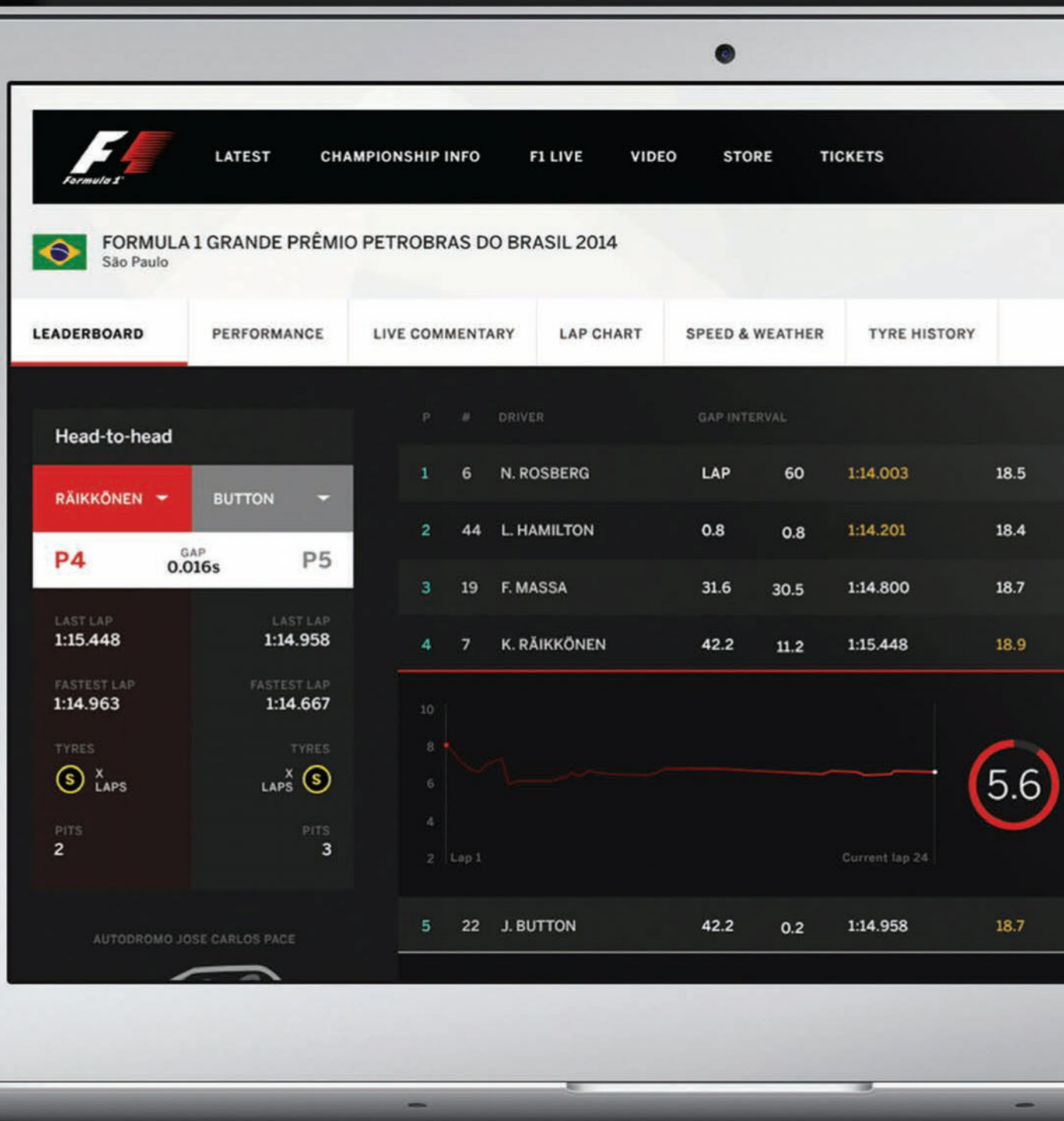
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WILLIAMS: NO CONCERN OVER F1'S COMMERCIAL ENVIRONMENT



Publicly listed Williams recently announced losses in their 2014 financial results. But despite numerous teams facing financial difficulties, Williams Group CEO Mike O'Driscoll has refused to blame the sport's commercial environment.

Williams Grand Prix Holdings PLC reported 2014 revenues of £90.2m (2013: £130.4m), with an overall loss for the group of £34.3m (2013: £11.9m profit). When the results were revealed, O'Driscoll insisted they were a one-off, and has now given *F1 Racing Pro* details on how the team aims to turn around those finances.

"Our performance declined for a decade, from 2004 to 2013. The years 2011, 2012 and 2013 were very poor, and the financial results we saw in 2014 were the direct result of Williams's own poor performance and are not a reflection at all on the health of F1," he said "It also shows what we had to dig ourselves out of. We had to make the decision to invest, and we have invested in the team and in Williams Advanced Engineering to rebuild the company."

Team shares of F1's revenues are paid a year in arrears – thus 2013 earnings were paid in 2014 – so despite finishing third in 2014, the latest financial results reflect the team's 2013 on-track results, when they finished ninth.



"In 2014 we were able to move up to third place, despite operating on less than half the budget than, say, five teams out there," O'Driscoll explained. "We think we've made a real step forward, and we can continue to make progress. In many ways the past 18 months have been a watershed period for Williams as we transitioned after a decade of decline. We're expecting better years ahead, on and off track."

Earnings were also hit by F1's inequitable revenue structure, which meant Ferrari earned double Williams' take of £50m for 2014, despite Ferrari finishing behind them in fourth.

"The overall sponsorship market remains extraordinarily competitive, and we always have to remember that we are competing, not just for our share of revenue that's coming into Formula 1, but the Formula 1 teams are competing with all the other spaces in the market place that are demanding sponsorship, too," concluded O'Driscoll.

Despite representations made to commercial rights holder Formula One Management – a subsidiary of venture fund CVC Capital Partners – following the administrations of Marussia and Caterham and the severe financial difficulties faced by at least three other teams, the structure is unlikely to be amended before 2020.

Martini activation

With merchandising areas at circuits at a premium and restricted to ticket holders, Martini have activated their title sponsorship of Williams by placing festive 'Terrazzas' in tourist areas to promote the partnership to a wider audience. The inaugural Terrazza was opened in Barcelona's port area during the Spanish GP, and the concept will now be extended to other venues.

Ferrari IPO boost

The resurgence of Ferrari's Formula 1 team should bolster their plans to break away from their parent company Fiat Chrysler Automobiles and list shares. Ferrari chairman Sergio Marchionne is planning to sell around 10 per cent of Ferrari in an IPO later this year, and Reuters have reported that he is aiming for a valuation of around €10billion.



Dennis on sponsorship

McLaren boss Ron Dennis believes the days of big-spending title sponsors in F1 are history, saying: "Title sponsorship doesn't exist any more as a concept. No company will come in and give you that kind of money. What you do is cut it up into bite-sized pieces, so you get a range of companies with similar philosophies to join you on the car."

Innovation prize

Tata Communications, official connectivity provider to FOM, have launched their 2015 Connectivity Innovation Prize to reward creativity and innovation, with a prize of \$50,000.

PIRELLI OPPOSE FREE TYRE CHOICE

Chairman of Pirelli, Marco Tronchetti Provera has criticised plans by the F1 Strategy Group to allow teams free choice of the four tyre compounds from 2016 onwards.

The idea was part of a proposed series of innovations to improve racing, but Provera cites safety concerns for his opposition. Speaking in Monaco, he said: “That absolutely must not happen. The responsibility to choose has to remain in our hands because we don’t want our tyres to be used improperly.”

Pirelli showcased a GP2 car running on 18-inch tyres in Monaco, and Provera said the firm was open to running any tyre size F1 wants. He also said they were happy to continue as a sole supplier or with open competition, but pushed for more testing to be allowed.

MICHELIN LAY OUT CONDITIONS FOR FORMULA 1 RETURN

With Formula 1’s tyre supply tender up for renewal in 2017, French company Michelin, who last participated in the sport between 2000 and 2008, have now admitted that they are evaluating a possible return to F1.

When Michelin quit the sport in 2008 it was partly because they were opposed to the concept of being sole tyre supplier, having competed against Bridgestone during their last stint in F1. But motorsport director Pascal Couasnon said the company was now “open to supply tyres in a monopoly regime with a sole supplier”, as in MotoGP, where it will take over from Bridgestone as sole tyre supplier in 2016.

Couasnon has listed several conditions that must be met for the firm to submit a tender. “Tyres must become a technical object again, not just a tool to do a more or less spectacular show. Michelin has put forward some precise conditions in order to return to F1,” he said. “We want low-profile 18-inch tyres, which we already use in Formula E, and soon in another series.

“If F1 wants to consider our proposals we are here, fully open, with a strong will to return. If, instead, the prospects are to keep things as they are now, then thanks, but we aren’t interested.”



Bernie Ecclestone is lukewarm about Michelin’s return, telling *Autosport*: “All Michelin would do is make a rock-hard tyre that you could put on in January and take off in December because they don’t want to be in a position where they can be criticised.”

Pirelli currently spend upwards of £30m annually on ‘bridge and board’ advertising, including title sponsorship of a number of races, while Michelin’s preferred policy is to concentrate its budget on development.

TICKET RUSH FOR RETURNING MEXICAN GRAND PRIX

The returning Mexican GP has already proved a success. Circuit officials report that tickets for the event have sold out, and hospitality packages are also going fast. But while tickets for November’s event in Mexico City are being sold by touts for 30 times face value, other events are finding race promotion has become increasingly unpredictable.

As *F1 Racing Pro* closed for press, the Red Bull Ring were reporting a reduction in interest in tickets for July’s Austrian GP. The event returned to the schedule last year and proved incredibly popular. It also looked set to benefit from the cancellation of the nearby German GP.

While Silverstone braces for a full house for the British GP and sales for the Australian GP were within one per cent of last year’s attendance, Malaysian GP attendance was estimated to be



down 30 per cent on 2014. Attendance was also down at the Spanish GP, yet Monaco was again within ten per cent of capacity, despite local hotels inflating prices by up to 500 per cent.

• Read Silverstone chief Patrick Allen’s thoughts on how circuits can better appeal to fans, on p34

NEW PARTNERS FOR LOTUS

Lotus have signed a ‘global collaborative marketing partnership’ with musician and producer Pharrell Williams. The deal, which started with Lotus running branding for Williams’ projects in Monaco, will operate across various media platforms.

Lotus F1 chairman Gerard Lopez said: “It is exciting for Lotus F1 Team to be working with Pharrell on a number of initiatives which will come into the public domain in the fullness of time.”

Lotus have also agreed a deal with high-end wearable tech firm Senturion.

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"F1 HAS MANAGED NOT ONLY TO SURVIVE, BUT TO THRIVE THROUGH CONSTANT EVOLUTION"

F

ormula 1 has, over its 65-year history, established itself as one of the world's biggest and most-watched sports. Despite a deluge of negative headlines and shrinking TV audience ratings in certain markets, it continues to offer global marketing appeal at competitive rates.

For irrefutable proof of F1's success in attracting global brands as commercial partners, look no further than the first corner of the opening lap of any of the 19 races staged between March and November: a backdrop mosaic of blue-chip logos, ferociously punctuated by the most advanced cars on the planet, driven by sporting icons who thrive on adrenaline.

Rolex, Emirates, Pirelli, UBS, Shell, DHL and Johnnie Walker feature at the heart of the action, and do so for lap after lap after lap for two hours on alternate Sundays in exotic locations: Melbourne, Monaco, Montréal and Mexico City; Sakhir, Shanghai, Singapore and São Paulo.

And such exposure is not just limited to bridges and hoardings, for the cars themselves are mobile billboards bedecked in war colours representing virtually every product category from clothing (Boss), freight/logistics (UPS) and fuels/lubricants (Esso, Shell, Petronas etc) to consumer electronics (Bose, Casio), energy drinks (Red Bull) and alcohol (Martini).

Indeed, both lists are far from exhaustive, and such is the flexibility of F1's rate cards that a paddock saying has it that "If it's legal, it's F1 marketable." And the number of marketing and sponsorship agencies regularly working the paddock provide ample proof of F1's pull, be it trackside, in suites or on-car.

"For us, it's F1's global reach – we're a global brand," says Sandy Mayo, Martini's senior global category director, who spearheaded the brand's recent return to the sport in 2014 as Williams



BUSINESS INSIDER

DIETER RENCKEN

title sponsor. "We're very strong in Europe at the moment, but we're expanding globally. F1 has the reach that we need, it's got the audience that we need, it's got the dynamism and the aspirational nature. It's a perfect fit for us."

For a company like Petronas, a major part of F1's attraction – branding opportunities aside – is that its prescribed fuels are similar to those found in the tanks of family saloons. Meanwhile, the swing to downsized hybrid engines that consume around 30 per cent of the fuel for the same speed/distance as was used by their V8 predecessors, mirrors motor industry trends.

"Your road car could run our F1 fuel," says Chan Ming Yau, fuel technology manager for Petronas. "The ingredients are the same, only the mix is different." Never was the phrase 'Win on Sunday; sell on Monday' truer, for all F1's automotive partners.

So how has what was once a minority sport, followed mainly by the grease-gun brigade, transformed itself into one of the world's leading


The F1 paddock's leading financial journalist on why the sport has continuing appeal to global sponsors

sports properties, one beaming hi-def visuals into plush lounges and corner saloons alike via satellite and cable, and in the process attracting 500 million unique viewers annually?

It has done so primarily by transforming what was television's death hour – Sunday's post-lunch doze period – into entertaining viewing, and then maintaining cross-demographic interest by promoting rivalries. Think Senna-Prost, Mansell-Piquet, Schumacher-Hill, Vettel-Alonso, and, lately, Hamilton-Rosberg. Consider the 'needle' in those feuds, and then realise Formula One Group CEO Bernie Ecclestone's strategy harks back to the 1980s...

F1's tsar has, of course, tinkered with the formula over the years, at various times chasing US dollars, Asian currencies, petro-dollars and Russian roubles in his quest to grow the sport's footprint, pitching it at increasingly aspirational audiences – many of them corporate.

The concept that has served F1 so well over the years remains in situ, which is both a blessing and a curse in a rapidly changing digital landscape. Aware that ratings are dipping, Ecclestone has embraced subscription TV and has approved the establishment of a content department. Whether that can at least arrest the slide is moot: it proves that Formula 1 is serious about transforming itself.

Folk speak glibly of F1's 'DNA', but this race series has managed not only to survive, but to thrive through constant evolution. That alone makes it an attractive global platform, one with no direct peer in a crowded market place. 

THE
POWER
OF
POSITIVE
THINKING

WORDS ANTHONY ROWLINSON PORTRAITS THOMAS BUTLER

As one of the leading commercial figures operating in F1, **Zak Brown** – recently appointed group CEO of CSM Sport & Entertainment – has plenty to say about the sport's future direction and his role within it



“FORMULA 1 DELIVERS, EVEN DOWN. IT IS STILL MASSIVELY REACH AND IS TRULY GLOBAL

Anyone who finds themselves feeling a little down about the state of Formula 1 should get a shot of Zak Brown. Like a double espresso, he'll wake you up, bring you to your senses, snap you out of your torpor and set you straight.

He thinks – and speaks – logically, directly and with a savvy that cuts through so much of the unnecessary bluster and obfuscation that can en-fog the F1 paddock.

On first acquaintance, you might make the mistake of thinking you're listening to a gunslinger shooting straight from the hip, on account of his fast-patter delivery and hard-wired West Coast tones. But don't be fooled: having worked in and around motorsport over three decades, Zak, 43, is no dilettante. So when he does pull the trigger, he tends to fire with deadly accuracy.

Consider these few gems from our recent interview time with him:

“We've turned F1 into an engineers' arms race. And I'm not sure that's what the fans want. They want to know it's the most sophisticated form of sport – but it is sport...”

...or: “Formula 1? Let's start with the positive: it's a mega sport that's massive and its problems can all be fixed...”

...or: “I never went to college, so my ‘college education’ was surrounding myself with smarter people than myself and asking them questions and advice and taking that on board.”

Evidently, then, a smart individual, well on the pace of his chosen field of competition.

Already this year, as group CEO of CSM Sport & Entertainment, Brown has had close involvement in bringing five new sponsors to F1 (Epson, Bose, Qualcomm, Hisense and Cheniere) and he's hungry for more – still restlessly ambitious despite having made enough from the sale of JMI, the sports-marketing agency he

TIMELINE

Born 7 November 1971

Place of birth Los Angeles, USA

2015

Named group chief executive officer of CSM Sport & Entertainment and executive chairman of JMI

2013

JMI is acquired by CSM; Brown is named group chief business development officer

2009

Co-founds United Autosports racing team, continues racing in sportscars and historic events

1999-2000

Races in American Le Mans Series

1995

Founds Just Marketing International (JMI) while racing in Indy Lights

1991-1995

Races in single-seaters, including British Formula 3

founded, to sail carefree around the world for a year or ten, should he so choose.

But that's not Zak Brown's style: he's intense, though with an easy-going charm, and intent on building businesses in and beyond F1.

“Formula 1,” he asserts, “delivers, even though ratings are down. It is still massively popular. It has great reach and is truly global, so for the likes of Martini and Unilever, who want global reach, it has an audience that consumes and pays attention to the sponsorship.”

Brown is far from blinkered or deluded about the challenges facing F1, such as the spiralling cost to teams of achieving front-running competitiveness, or the tripartite governance structure (FIA-FOM-F1 Strategy Group) that seems to stymie constructive debate over its future. Yet he remains resolutely positive as to the inherent worth of F1 and the environment it offers for vibrant commercial activity.

“It's not an *easy* environment right now,” he says, “but it is definitely still a *good* environment. Our new partners this year all love being in F1 and Martini is a happy camper, so is UBS – F1 is working great for them. They've just announced record profits and I would like to think that their Formula 1 involvement has contributed to that.”

Such insights, Brown insists, have been hard won and result from far more knock-backs than lucky breaks: “I've had a lot of down days, but you've just got to get right back up on that horse – view rejection as a learning experience.”

Maybe, though, they also result from an optimistic world view – an outlook that sees opportunities rather than one burdened with woe and a nostalgic, perhaps naive, yearning for a simpler time. Like it or not, F1 in the 21st Century is big business.

“For me,” he says, with a twinkle of self-mockery, “a trip to Wal-Mart is not a shopping trip, it's a commercial adventure. I unfortunately have this disease that means when I go into a supermarket I tend to look at products, not thinking ‘I'll eat that or wear that’, but instead: ‘Ooh, would they be interested in sponsoring...?’ I'm absolutely immersed in my business.”

No surprise, then, that over the past decade Brown and his JMI agency became F1's leading procurers of sponsorship. Nor is it any wonder that such a commercially sharp operator as Brown sold JMI to CSM. Eighteen months on, CSM offered Brown the role of group CEO.

Although he's both a self-confessed petrolhead and a former racer (his yen for sponsorship procurement was born of a young buck's desire

THOUGH RATINGS ARE Y POPULAR. IT HAS GREAT



to fund his habit), Brown's new role requires him to take a view beyond the paddock, to transfer skills honed in one sporting arena to others.

"I have a real job now," he laments, "and I sit in meetings all day long. But it's really exciting. We have 900 people, 12 agencies and 25 offices in 16 countries, so it's quite big. What we haven't done yet is to get them working together in a very complementary fashion. In racing terms, we have run an engine shop, a suspension shop and a chassis shop, but we have actually never bolted

the whole car together. So now we have to make the perfect racing machine."

It's noticeable, though not surprising, that Brown uses racing terminology when reaching for an analogy. But he's confident of applying his skills and method to a new challenge.

"I'm out of my comfort zone being involved in other sports that I wasn't born and raised around," he admits. "But I don't think I need to become an expert in these other sports. I need great leaders and management people who are


experts in their respective fields, so I don't think I need to become a tennis historian and expert. But I'm taking so much on I do feel like I'm drinking from the fire-hose, right now."

The core demands are identical: sponsorship, marketing and building brands around sport. "It's all the same," he says, "although I have to understand how tennis is a little bit different from motor racing, cricket and rugby. But it's the same in principle: using brands in sport and trying to provide leadership and focus and giving everyone the tools they need."

Brown is speaking about the business he runs – one that relies on proximity to the sports around which it operates to thrive commercially. But what if, as some have suggested, Brown is the right man to take the next step and actually *run* one of these sports – rather than exist in a co-dependent relationship with it?

Yes, it's the 'Are you the next Bernie?' question – one that Brown has heard many times before and one from which he does not shy away. While he's careful not to be seen as positioning himself in any kind of 'successor' role, there's no doubt he's thought hard about how the sport might better look after itself, for the benefit of all those who operate in and around it.

"I think I'm a big contributor to the sport," he says. "I voice my opinions and hopefully they come across in a productive manner. The healthier F1 is, the healthier it is for everybody. So we as an industry need to think more about fans, reduce costs so that you don't have to be a manufacturer to compete and get to a business model where every F1 team can be profitable. That way, maybe we can all get what we want."

A visionary view or just sound, commercially driven common sense? Maybe it's time for F1 to wake up and smell the coffee... 

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F1

POWER LIST

In a sport of millionaires and billionaires, who are the big players and who is merely stalking around the fringes? We analyse the influence of the sport's key movers and shakers to rank its 20 most powerful figures

WORDS STUART CODLING

For so many of Formula 1's millions of global viewers, the sport is an absolute monarchy presided over by one man: Bernard Charles Ecclestone. You need only watch the media scramble to attention the moment he sets foot outside his paddock eyrie to understand the aura of power he projects.

Yet the notion of *power* means many things. It does not necessarily go hand in hand with outright wealth, although wealth certainly is one of the foundations of power. F1's path is shaped by the actions

and influence of a small group of kingpins, not all necessarily following the same agenda, and as the game plays out, we can often see who is genuinely influential and who is merely making a noise. Even Ecclestone does not always get his way as a genuinely absolute ruler would; now more than ever, F1 is a sport with wheels within wheels.

So that, then, is how we have defined our F1 power list: not by prominence or wealth, but by pre-eminence, tracing the patterns of who actually has the power to shape the future of the sport.



PRINCE ALBERT OF MONACO
GRIMALDI FAMILY

In an era of austerity and tighter corporate compliance, Monaco, the jewel in Formula 1's crown, is still the place where deals are done. As head of the ruling Grimaldi family, it is Prince Albert who has the ultimate say over the Principality's involvement with the sport.



TAKAHIRO HACHIGO
HONDA

Former engineer Hachigo replaces Takanobu Ito as CEO this June, deciding just how long-term Honda's commitment to F1 will be.



BOB FERNLEY
FORCE INDIA

The deputy team principal is a disruptive influence, via his seat on F1's strategy group, in defending Force India's position against the CCB teams.



ZAK BROWN

CSM SPORT & ENTERTAINMENT

The group CEO is often tipped as the next Bernie Ecclestone – not that he has publicly thrown his hat into that ring yet – and is among the sport's pre-eminent dealmakers outside FOM, bringing in new sponsors even in recent lean years.



CHARLIE WHITING

FIA

As race director and technical delegate, Whiting has a hands-on role encompassing both race operation matters and technical adjudication, and is a key influence on F1 outside the commercial sphere. And ultimately, he pushes the button to start the races...

15

CARLOS GHOSN RENAULT

Credited with turning an ailing Renault's fortunes around, chairman and CEO Ghosn takes a hard-nosed approach to F1, seeing the sport purely as a marketing and engineering showcase for his company, which must deliver return on investment. His clout helped push through the change to the hybrid engine formula, and while Renault have struggled to deliver a competitive package, it is Ghosn who will decide whether the company remains in F1 or not – and his view will not be tainted by fandom.





CHRISTIAN HORNER

RED BULL RACING

The team principal may be close to Bernie Ecclestone, but his calls to revert to V8 engines and for windtunnel use to be banned have proved futile.



KAI-UWE WITTERSTEIN

SHELL

The global sponsorships manager holds the purse strings of F1's biggest-spending oil company, with clients including Ferrari and the Belgian GP.



MAURIZIO ARRIVABENE

SCUDERIA FERRARI

Being Ferrari's team principal always carries clout, but Arrivabene's predecessor Marco Mattiacci was an outsider who didn't respect some of F1's diplomatic ground rules. Thus the former Philip Morris exec was hired by Sergio Marchionne to provide a velvet glove for the iron fist.



MARCO TRONCHETTI PROVERA

PIRELLI

The 67-year-old chairman and CEO is currently superintending a landmark €7billion takeover of Pirelli by the China National Chemical Corporation.



TOTO WOLFF

MERCEDES-BENZ

Merc's head of motorsport has fingers in so many pies that he's having to withdraw digits from some of them – including his Williams shareholding.



JEAN TODT

FIA

As president of the sport's governing body, Todt wields a great deal of theoretical power, but, unlike his autocratic predecessor Max Mosley, he keeps a low profile. He also chooses his battles in F1 carefully – backing down on cost-cap plans in 2014, for instance, in the face of widespread opposition from F1 stakeholders.



PETER BRABECK-LETMATHE

DELTA TOPCO

The chairman of the group that owns the Formula One Group is not a racing man in the traditional sense, but his influence cannot be underestimated.



RON DENNIS

MCLAREN TECHNOLOGY GROUP

Though he is locked in a battle for control of his own company with some of the shareholders, CEO and chairman Dennis is far from marginalised.



SACHA WOODWARD-HILL

FOM

The Formula One Group's chief counsel holds over 30 board appointments in F1 and is seen as a potential successor to Ecclestone.



DIETRICH MATESCHITZ

RED BULL

As ultimate owner of two teams and promoter of the Austrian GP, the soft drinks magnate's influence is writ large upon the sport at every level.



4

DIETER ZETSCHÉ

DAIMLER AG

Group chairman Zetsche brought Mercedes back to F1 as a constructor and has kept them there despite challenges from shareholders. But he's no romantic: Mercedes offered to front part of the fee for the German GP this year, but when no one else would stand up, Zetsche let it die.



3

SERGIO MARCHIONNE

FIAT CHRYSLER
AUTOMOBILES

The boss of Ferrari's parent company demonstrated his power last year with a swathe of hirings and firings aimed at re-establishing the brand to pre-eminence, and also by successfully challenging the FIA over loopholes in its engine rules.

2

BERNIE ECCLESTONE

FOM

He may be, in effect, an employee, but he is one described by his own boss in court as "difficult to manage". Ecclestone is FOM CEO, the sport's ringmaster and commercial architect, and he has sold the business time and time again, while still remaining in overall charge of it. Underestimate him at your peril.





PHOTO: CHARLES COATES/LAT

DONALD MACKENZIE

CHAIRMAN, CVC CAPITAL PARTNERS

While Bernie Ecclestone is the public face of F1's ruling regime, he is answerable to Mackenzie and the voracious venture capitalist fund that owns Formula One Management as well as managing over £35 billion in investments globally. Mackenzie and Ecclestone are very much cut from the same cloth: ruthless, relentless, workaholic, deal-driven,

and parsimonious – despite being incredibly wealthy. For them, the value of the prize is almost secondary to winning the game.


CVC paid more than £1 billion to buy the sport's commercial rights holder via loans leveraged against future profits. And while Ecclestone continues to bring home the commercial bacon it has generated returns on that investment of around 40 per cent. Whether the

sport's other stakeholders are comfortable with the methods by which those returns are obtained is accordingly by the by.

Some would argue against us ranking Mackenzie higher than Ecclestone, given that Ecclestone's success, power and status make it impossible for him to be fired.

But to take that stance is to be blind to Mackenzie's desired endgame: taking Formula 1 public.

Whatever troubles the sport may find itself in, it remains one of CVC's most profitable businesses. All venture capitalists divest eventually, and while global economic circumstances have delayed plans to float the sport on several occasions now, it is going to happen.

Until it does, it is Mackenzie's own choice to let Bernie carry on playing with his train set. 

DRIVING BUSINESS TO GET AHEAD ON-TRACK

How Avanade is driving the digital transformation of Williams Martini Racing

In the world of Grand Prix racing speed is critical. That's why Williams Martini Racing has joined forces with Avanade to drive the transformation of its IT platform to support engineers to make instant, data-driven decisions.

Through a new digital workplace, the team can improve efficiencies and productivity to enable Williams Martini Racing to gain a competitive advantage over the opposition. Claire Pagano, IT Program Manager for Williams Martini Racing, says the whole business is being optimised digitally: "We have 70 projects mapped out across the next three years that the team is keen for Avanade to drive forward. That includes how to optimise the process for the race engineers."

"We have 70 projects mapped out that we're keen for Avanade to drive"

Claire Pagano, IT Program Manager at Williams Martini Racing

Split-second decisions

One of the innovations Avanade has developed in partnership with Williams Martini Racing is a tyre-optimisation app to enable race engineers to make decisions based on data rather than instinct. The app receives data from the Williams trackside WISDOM server that collects real-time information from the sensors on both Felipe Massa's and Valtteri Bottas's FW37 race cars. In combination with weather information and GPS data, the data allows engineers to better understand the tyres' performance to help them make the best strategic decisions during a race environment. "It's very rewarding to see something delivered to the track that is going to add performance to the car," adds Pagano.

Fan engagement

But it isn't just the engineers at a race weekend, the factory processes or the overall business that is benefitting from Avanade's digital transformation of Williams Martini Racing. The fans are also at the forefront of the company's objectives. The redevelopment of the team's website – www.williamsf1.com/racing – has enabled more dynamic content to

improve fan engagement. It has also created a fresh, elegant design to communicate the Williams Martini Racing brand and has been optimised for a variety of digital platforms, including mobiles and tablets.

Driving the team forward

Together Avanade and Williams Martini Racing combine innovation and expertise to optimise technology investments for the benefit of both companies, and the importance of the digital space is critical to the overall success of the team. "One of the things I want to achieve is to show the huge contribution the IT Group brings to the rest of the company," says Graeme Hackland, IT Director at Williams Martini Racing. "The partnership with Avanade is helping us with that goal. We've been able to improve workflow: for example, where someone was handling data with hundreds of pieces of paper, he now has an electronic system to provide him with an instant report." It's that increased productivity that will make all the difference in split-second decisions for the competitive advantage on the track. Avanade and Williams Martini Racing: a data-driven digital transformation.





FROM RACETRACK TO ROAD:

MCLAREN'S SUPR

The multiple world champions have cleverly used their F1 heritage and racing-technology expertise to develop a successful road-car arm

WORDS STEVE CROPLEY PICTURES STAN PAPIOR, STUART PRICE & MCLAREN



ERRCAR SUCCESS

Exactly when McLaren became a proper road-car company isn't clear. It depends how you count: they've had as many as four separate shots at it. But the one certainty is that they've always set out to build a close relationship between their road cars and racers.

Towards the end of the 1960s, there had been talk of creating a McLaren road-going sportscar, its design influenced by the tiny company's almost unbeatable aluminium-monocoque Can-Am cars. A prototype was built, the M6GT, in which Bruce McLaren commuted to work and race weekends. The idea was to produce 250 of them, but plans failed to come to fruition after Bruce was tragically killed at Goodwood in 1970.

Two decades later, they set out, via a newly founded division called McLaren Cars, to produce a supercar – the legendary F1, a machine that would put every other high-performance car in the world back in its box.

To do it, they drew in a huge amount of race theory – starting with the immense know-how of their designer Gordon Murray, whose F1 racing cars (some of them McLarens) had already won more than 50 world championship races and delivered nine world championships.

The F1 put the driver in the middle with a passenger on either side to the rear, and used advanced construction methods, materials and aerodynamics. It was incredibly light at around 1,100kg, especially given the 627bhp available from its 6.1-litre, BMW-derived V12 engine. These figures rendered its performance (0-100mph in 6.3 seconds) unassailable by rival supercars for more than a decade, until the

Bugatti Veyron came along with its 16 cylinders, 8.0 litres, four turbochargers and 987bhp. But that car was much bigger – and *much* heavier.

The McLaren F1 was acknowledged everywhere as a *tour de force*. It still sells at several multiples of its original £650,000 price tag, but only 106 cars were built because the appetite for 'hypercars' among the super-rich had yet to develop. Even before the F1 reached its final production days in 1998, many members of the creative team had moved on to create the Mercedes-Benz SLR McLaren, a front-engined supercar once again involving high-tech construction methods, whose final assembly plant would become part of Ron Dennis's extraordinary new Technology Centre.

However, the careful naming of the 2003 model, and greater attempts to involve its German performance arm, AMG, indicated that Mercedes – 40 per cent owner of McLaren at the time and a major sponsor of the F1 team – were already showing signs of loosening their ties. The car stayed in production for six years, but it was good rather than great (in the sense the F1 had been great) and had styling that was unfortunately similar to Mercedes' much cheaper sportscar models, the SL and SLK.

By the time Mercedes announced they were killing the SLR in 2008 (while various special editions were still being devised to clear out

the last cars), it had become clear that the partners would not co-operate again, and that if McLaren wanted to keep building road-going supercars (which they did), they would have to find another way. And so began what McLaren-watchers now know as the modern era.

The shape of the company and the layout of their first product, the awkwardly named MP4-12C, were swiftly decided. Ron Dennis announced that the new McLaren would not be a single car, but an all-new car company set up to produce an all-new range of cars that would collectively sell up to 4,000 units a year.

Every McLaren would be a high performance car; every one would be based on a revolutionary one-piece carbon fibre-tub (a vital technology drawn from F1); and even the highest-performing models would have a comparatively small and ultra-light 3.8-litre twin-turbocharged V8, →

**“DENNIS ANNOUNCED
THAT THE NEW
McLAREN WOULD NOT
BE A SINGLE CAR,
BUT AN ALL-NEW CAR
COMPANY SET UP TO
PRODUCE AN ALL-NEW
RANGE OF CARS THAT
WOULD SELL UP TO
4,000 UNITS A YEAR”**





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FROM HERE WE CHANGE THE WORLD



**“McLAREN’S
TECHNOLOGY AND
SOUND FINANCIAL
BACKING GAVE IT A
GREAT CHANCE OF
REACHING ITS GOALS.
I FELT THAT NOT BEING
PART OF SUCH A GREAT
PROJECT WOULD BE
A CRYING SHAME”**

**MIKE FLEWITT, McLAREN
AUTOMOTIVE CEO**

unique to McLaren, leading a trend towards downsized, force-fed engines that even Ferrari and Porsche were slower to adopt.

The 12C, as it soon became known, was revealed in final form in September 2009. A March 2010 press launch spoke of “The Launch of a New Car Company” and the first production 12Cs appeared to considerable acclaim in mid-2011. There were embarrassing teething troubles, notably with an ambitious own-design infotainment system, but no one doubted the 12C’s performance and road ability. You had only to note Ferrari’s concern at having their nearest equivalent – the 458 Italia – compared with the 12C to know it had been well targeted.

After a period of management upheaval, Mike Flewitt joined the company as chief operating officer. A former engineer greatly experienced in car production and factory procedure, he was recruited to deal with the annoying teething troubles that were blighting what otherwise had the makings of a world-beating operation. The degree of his success is apparent in the fact that he became CEO a year later. Flewitt’s comments on his reasons for joining McLaren show the clarity of mind for which he is widely admired. “I did my due diligence,” he says, “and it was clear McLaren’s technology and sound financial backing gave it a great chance of reaching its goals. I’ve been a passionate car enthusiast all my life and felt that not being part of such a great project would be a crying shame.”

In recent days, the McLaren 12C has turned into a three-car range (675LT, 650S, and 650S Spider), the company has revealed, and sold out

its magnificent, million-pound hybrid-powered P1 to a clientele strictly limited to 375 buyers. Most recently it took the wraps off its 570S and 540C models – still with a race-inspired, mid-mounted twin-turbo V8 in a carbon chassis.

When that so-called entry-level model (designed to take on the most expensive of Porsche’s 911 range, the £150,000 Turbo S) hits showrooms late this year, McLaren will have revealed the entire three-tier family into which all future models will fit: Sports Series for the 570S and offshoots, Super Series for the 650S and derivatives, and Ultimate Series for cars in the P1 bracket. Flewitt talks of making 4,000 McLarens a year when the market is mature. That’s around half Ferrari’s volume and less than 20 per cent of Porsche’s, not counting the German firm’s saloons and SUVs. With this gameplan, Flewitt insists McLaren Automotive will be handsomely profitable.

McLaren are also focusing solely on sportscars to exploit their racing heritage. So would they ever consider making an SUV, a model style so fashionable that even Bentley, Rolls-Royce and Lamborghini are adopting it? “We have no such plans,” says Flewitt crisply. “We’re totally committed to making sportscars. Ask me in ten years’ time and the answer might be different – but I doubt it.” **FI**

Steve Croyley is the editor-in-chief of Autocar



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60 FIGURE

Founded as Bruce McLaren Motor Racing Ltd in 1963, the McLaren Technology Group has achieved incredible growth over 52 years. Here we chart the breadth of the Group's various companies

£18.8M

The pre-tax profits of the McLaren Technology Group in 2013
– the last full-year figures available

FIFTY-SEVEN THOUSAND

The size in square metres of the McLaren Production Centre extension, which was recently approved by Woking Council

—106—

McLaren F1s – the company's first road car – were built between 1992 and 1998

1947

The year McLaren Technology Group chief executive and chairman Ron Dennis was born

FIVE

The number of venues in which McLaren subsidiary Absolute Taste run cafes or restaurants, in addition to supplying food to the McLaren F1 team at races and the staff at the McLaren Technology Centre

17

Every 17 minutes, McLaren Racing produce some form of upgrade to their F1 car

9



The number of 747 jumbo jets that would fit in the shell of the McLaren Technology Centre

2

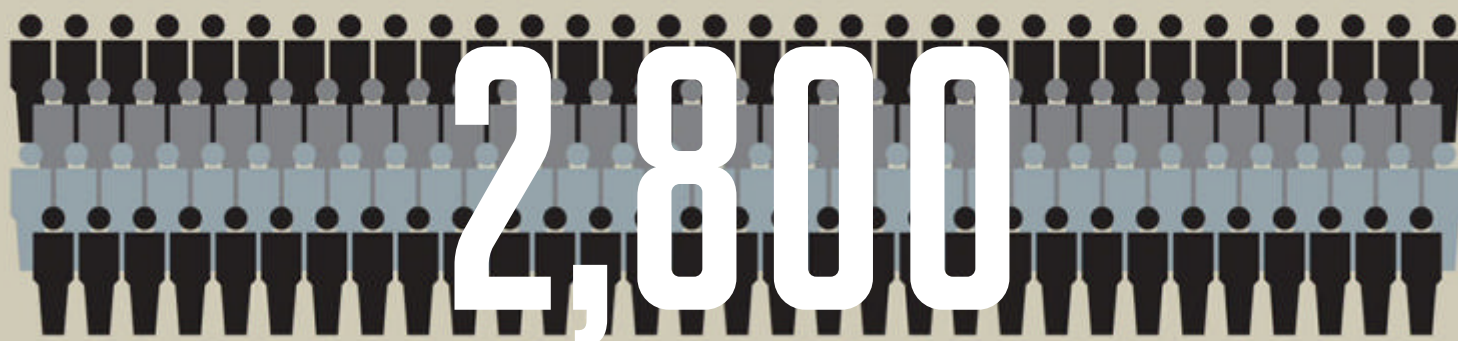


The number of Queen's Awards for Enterprise McLaren Electronic Systems have won: one in 2009 for Innovation and one in 2013 for International Trade

17

The number of gold medals won at the 2012 and 2014 Olympics to which McLaren contributed, including development of Lizzy Yarnold's winning Skeleton bob

2,800



people are employed by McLaren in Woking

2008

The year that McLaren started supplying the standard Electronic Control Units (ECUs) to all Formula 1 teams

20%

The percentage by which McLaren Applied Technology's Specialized S-Works+ McLaren Venge bike was lighter than the standard model

VIEWPOINT

FORMULA 1
VISITS KYALAMI
IN THE FACE OF
INTERNATIONAL
PROTESTS AGAINST
APARTHEID

SOUTH AFRICA 1985



THE SPORT
STAGES ITS
FIRST RACE
TO BE HELD
BEHIND THE
IRON CURTAIN

HUNGARY 1986



SHANGHAI
HOLDS ITS FIRST
RACE, DESPITE
CONCERN OVER
CHINA'S HUMAN
RIGHTS RECORD

CHINA 2004



IS THERE ANYWHERE



F1 RETURNS TO
THE KINGDOM
A YEAR AFTER
PROTESTS FORCE
THE GP OFF THE
CALENDAR

BAHRAIN 2012



SOCHI MADE ITS
F1 DEBUT TO A
BACKDROP OF
ESCALATING TENSION
BETWEEN RUSSIA
AND UKRAINE

RUSSIA 2014



PHOTOS: STEVE ETHERINGTON/LAT; CHARLES COATES/LAT ARCHIVE

E F1 WON'T RACE?

The recent expansion of the calendar has pushed F1 into regions embroiled in social and political controversy. But should the sport be apolitical and drive into new markets, or does it have a responsibility to address such issues? **Dieter Rencken** offers his opinion

There are two ways of viewing Formula 1's global creep. Either it is a world championship, and thus should be present on every continent. Or it is a cultural event, and races should be staged only where fan bases are appreciative.

Neither of those viewpoints is definitively right or wrong, and commercial rights holder FOM's trick is to balance geo-politics and emotion to provide the optimum solution for

all concerned parties, taking into account fan base, local interest and those with commercial considerations, including facilities, hosting fees and sponsor/partner requirements.

However, this simplistic view disregards a crucial factor: television and digital media transcend borders and boundaries regardless of politics. Fans with no intention of setting foot in certain territories for whatever reasons continue tuning in, often at unsociable hours, to follow their favourite sport.

In fact, as Bahrain proved last year, if the action is scintillating, fans remain rapt regardless of any controversy surrounding the host country. Russia's TV ratings, meanwhile, dropped with the spectacle, and were greatly reduced by the time Vladimir Putin arrived mid-way through 2014's most torpid race.

For F1's global audience, spectacle beats politics. And where eyeballs go, marketers follow. Did Petronas, the Malaysian-owned fuel company who are Mercedes' title →

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CLAIRE WILLIAMS



sponsors, snub Russia’s inaugural grand prix, where Mercedes clinched their maiden constructors’ title, in sympathy with sister company Malaysian Airlines following the MH17 tragedy? No – Petronas hailed the achievement as “momentous”, and celebrated in Sochi.

Before that race, deputy team principal Claire Williams expressed widely held paddock sympathies when asked about the situation. “What’s going on in Russia and that part of the world at the moment is of huge concern,” said the politics graduate, “but we’ve always said that as a sport we try to disengage from taking a political angle on these things. The FIA is the governing body of our sport; they issue a calendar, and we take our direction from them.”

Tune into the Chinese round, and it is evident that not a single brand covers its logos, nor are sponsors expected to do so when F1 debuts in Azerbaijan next year – if the race is staged at all, for the oil-dependent state is suffering through a combination of low energy prices and costs of hosting this June’s inaugural European Games.

The Economist reported that this burden had forced Azerbaijan to prop up its currency

From right: Jean Todt, Bernie Ecclestone, Vladimir Putin and the King of Bahrain, Hamad bin Isa Al Khalifa, at the 2014 Russian GP. Viewers switched off due to dull racing – not the political situation

and delay civil servant salaries. This raises the question: if the European Olympic Committee’s new multi-sport event (and the Eurovision Song Contest) can be held in countries with reported human rights issues, why should F1 steer clear? Equally, if football can play in Qatar or cricket in Zimbabwe, why block F1 from visiting any country with sufficient interest in the sport to establish Grade-A circuits and pay the fees?

Not once in F1’s 65-year history has a race been boycotted for political reasons. The closest it came was at the 1985 South African GP, due to the government’s apartheid policy. The race was held with a depleted grid, with drivers offering excuses such as “stomach virus”. Renault withdrew both their cars in protest, yet continued to sell road cars in South Africa, while French driver Jacques Laffite summed up the situation by saying: “I wanted to race, there was apartheid, but it was better to go and


make it better for [people]. I was against a boycott, and Amnesty International was against me because my declaration was not what they wanted. I think the Ministry of Sport wrote letters to all [French] sportsmen to not [compete] in South Africa – tennis, rugby – but I was not okay with that.”

The race was removed from the calendar in 1986, and although it returned twice during the 1990s, that was under the old regime, and a post-apartheid South Africa has yet to host a grand prix. Indeed, Africa remains the only inhabited continent without an F1 round – for economic, not political reasons.

So which country replaced South Africa? Hungary – then under Soviet-influenced rule...

Intriguingly, in recent years it has been economics rather than politics that have scuppered F1’s push into new territories: of ten new venues announced over the past decade, five have fallen away due to astronomical hosting fees and a dearth of fan interest, with the remainder said to have pushed for reduced fees before committing to extended contracts.

In agreeing to calendar slots, FOM, beholden to teams to provide the best deals, places economic realities above all else. But it is the FIA that ratifies the fixture list – and it is required by its statutes to remain apolitical, and to treat all member states equally. The FIA has a mandate to grow motorsport globally, and with F1 being its premier championship, it has a responsibility to spread the word. And what right is vested in those sitting in 8 Place de la Concorde, to judge political ideologies, unless, of course, F1 personnel are placed in danger by conflict, as was potentially the case in Bahrain in 2011?

Ultimately, this most capitalist of sports will always follow the dollar. And as long as its global popularity holds, commercial interests will follow suit – regardless of surface protestation. 

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Silverstone Circuit's managing director on why it's crucial to look beyond motor racing to operate as a successful business

BUSINESS INSIDER

PATRICK ALLEN

Since I came in to run Silverstone, I've realised that it's no different to managing any other retail business. The people who pay for tickets to the British Grand Prix are no different to those who buy products off the supermarket shelf. So I have set up the business in a similar way to how I was running the Co-Op Group – it's all about cash margins.

The previous Silverstone regime had a mentality whereby they were looking at the margins on everything they sold. But what's the point of making 200 per cent on a product when you sell only three units? Suppose I create a new fizzy drink – let's call it Allen Hypertonic – when I take it to the supermarket, the first question they would ask me is where they should put it on the shelves. I'd suggest they take Coca-Cola off and place my product there. I'd give them a higher percentage than, say, the 15 per cent they get from Coca-Cola – but they would never do it because they can sell ten million cans of Coca-Cola a day compared to the three cans they would sell of Allen Hypertonic.

It's exactly the same with selling tickets for the British Grand Prix at Silverstone. When I saw the price was £230, I thought that was madness. I reduced the price to £99 as a special offer, and we managed to sell 6,000 in one day. Yet Silverstone had sold only 2,900 of the same type of ticket in the past seven months. The reason we created the £99 offer was to get a barometer of what the price should be for next year, and I now know it's £99 to come in just on the Sunday, and

£120 for a weekend ticket. As a result of those deals, in April we were 27 per cent up on ticket sales and 20 per cent up on revenue compared with the previous year.


Next year we're going to apply the same pricing structure that we used with MotoGP. So after this year's Formula 1 grand prix, we'll put out half-price tickets. Prices will rise in October, again in January and then again in April. By June, the tickets will be back to full price again.

There is a lot of talk at the moment about European circuits losing their place on the F1 calendar because of financial problems. I think what they are doing wrong is running their businesses purely as motor-racing circuits – that's where they find themselves in trouble. At Silverstone we're not competing against Brands Hatch: we're competing against other hotel groups or entertainment venues. We see ourselves as a retail event management business. We're good at moving large numbers of people around, we're good at organising, good at traffic and good at people management. We put the

customer at the heart of our business – not the product – and now we're looking to diversify into other businesses.

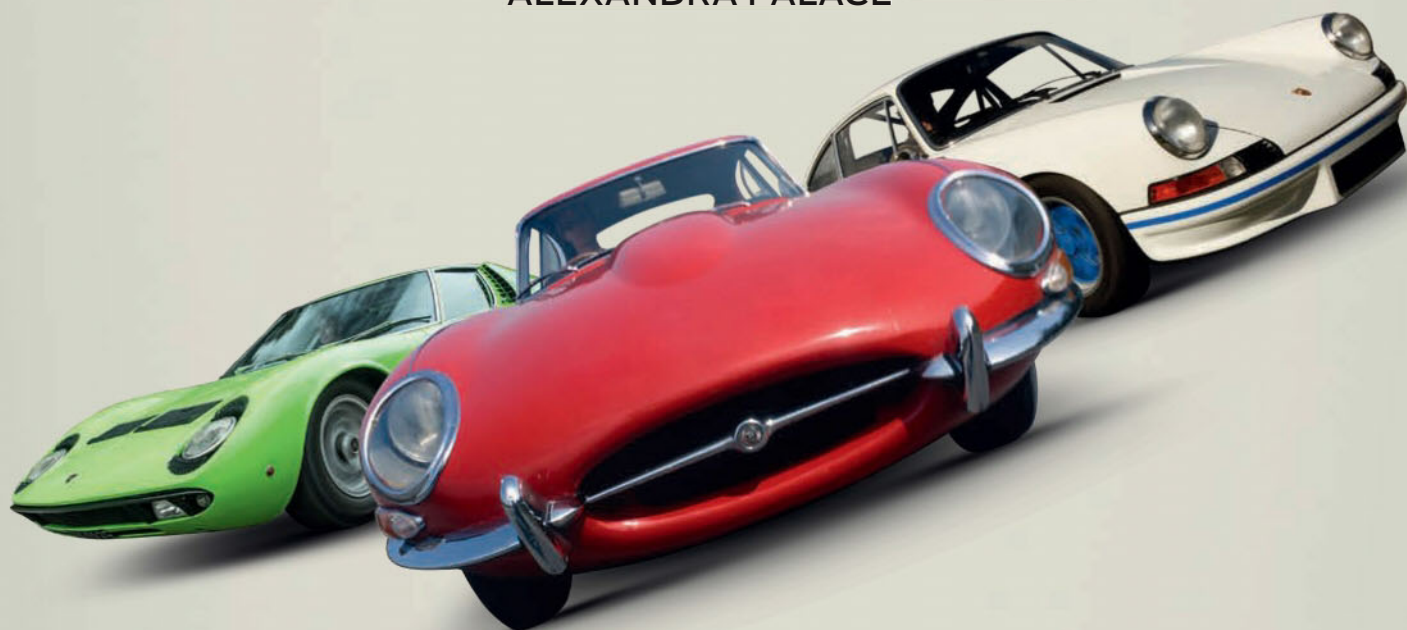
For example, we can transform the venue into a cinema, a food exhibition, a rock concert – all sorts of different things beyond a racing circuit. On the Wellington Straight, we have erected a stand that can double up as a big screen for hosting drive-in movies. Dead space around the venue is being optimised for a different type of entertainment. During the FIA World Endurance Championship event, we turned our conference and banqueting halls into fan zones. We put on films for the kids and had food and merchandise stalls, driving experiences and simulators.

Recently we hosted a conference and exhibition for 2,000 people. If we did that every week, we would go from being a £2million business to a £10million business. If we then lost money on hosting the grand prix, you could almost write it off as a marketing cost for the other aspects of the business.

It's important to link all these parts of the group together to stop the grand prix becoming commercially unviable, as has happened at other European tracks. What else do Hockenheim or Monza offer beyond hosting motor racing? If I defined my business as a piece of black stuff that cars run round and that's all we do, we'd be out of business. I think that's what's happened with other European tracks and they will continue to suffer unless they change their business model. As a result, I'm dedicated to making the business at Silverstone a success to protect the long-term future of the grand prix. 



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