



FERRARI: SCHUMI'S MONACO WINNER IN PICTURES

F1 RACING NOVEMBER 2017 NUMBER 261

LOOK WHO'S TALKING: NICO ROSBERG

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CONTENTS

NOVEMBER 2017

SECTOR 1

- 6** **IGNITION**
How champions are made
- 8** **PARADES**
The very best F1 photography
- 18** **F1 INSIDER**
Expert opinion and analysis
- 24** **RACER'S EDGE**
Peter Windsor on cars with soul
- 26** **THIS F1 LIFE**
Pat Symonds on the need for greater clarity in F1 rule-making
- 31** **POWER PLAY**
Dieter Rencken on why McLaren don't make their own engines

THE LONG INTERVIEW

A little under 12 months ago, Rosberg signed with the world championship and then miraculously abandoned it. How did it all go wrong before he'd even called up to sign the 10-year contract? We speak to the 2016 world champion about what went wrong, how he's coping, and how he's looking forward to the 2017 season.

THIS IS NICO ROSBERG

32

COVER STORY
NICO ROSBERG

MCLAREN HONDA TO RENT

MCLAREN HONDA

SPLIT WITH HONDA WHO THEN SUPPLY ENGINES TO

TORO ROSSO

WHO THEN SUPPLY ENGINES TO

RENAULT MCLAREN

TO RE-SIGN

WHO RELEASE CARLOS SAINZ

WHO MOVES TO

ALONSO...

58

McRENAULT

SECTOR 3

- 96** **SUBSCRIBE**
Get three issues of F1R for just £1
- 99** **INBOX**
What's on your mind this month
- 100** **RACE REPORTS**
The Singapore, Malaysian and Japanese GPs
- 106** **GP PREVIEWS**
The US, Mexican and Brazilian GPs
- 110** **TRAVEL GUIDE**
Our guide to visiting Monaco
- 112** **F1 UPGRADES**
Must-have gear
- 114** **ME AND MY LID**
Fernando Alonso's design inspiration

HOW THAT WAS A CAR

THE FERRARI F2001

Record-breaking Schumi's final set to go under the hammer at Sotheby's

68

NOW THAT WAS A CAR

IT COULD BE YOU!

Get the chance to ride an authentic 1:2 scale F1 car, now you can drive to the F1 Grand Prix programme and test your skills during Stuart Galloway's first-hand experience.

82

COULD YOU HANDLE EAU ROUGE?

SECTOR 2

- 32** **THE NICO ROSBERG INTERVIEW**
The 2016 world champion talks about the mental training that helped bring him title glory
- 42** **HALO: SAINT OR SINNER**
This device could save lives, but its 2018 introduction is controversial
- 50** **YOU ASK THE QUESTIONS**
Williams' Lance Stroll on dealing with his critics and a lack of testing
- 58** **THE McRENAULT SAGA**
As McLaren ditch Honda for Renault, we examine the ripple effect through the rest of the sport
- 66** **THE HARDEST JOB IN F1**
Honda F1 chief Yusuke Hasegawa on tough times with McLaren and a fresh start with Toro Rosso
- 68** **NOW THAT WAS A CAR**
Michael Schumacher's classic Ferrari F2001 goes under the hammer
- 72** **MEET PIERRE GASLY**
Daniil Kvyat's replacement at Toro Rosso on his sudden promotion
- 74** **STOFFEL VANDOOORNE**
The McLaren ace takes Peter Windsor for a spin in a 570GT
- 82** **AN F1 RACER FOR A DAY**
We take a ride in a two-seater Formula 1 car, with F1 Experiences
- 88** **A CHAT WITH TAVO HELLMUND**
Meet the man responsible for the expansion of F1 in the Americas
- 91** **SUITED AND BOOTED**
Behind the scenes at Apinestars, we discover the science behind their fire-resistant race wear



Anthony Rowlinson

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The turn of the screw

We've been here before: those periods in an F1 season when the champion-elect hits his groove and leaves his rivals whimpering at the roadside, with nothing better to show for their efforts than a covering of road dust. Michael Schumacher did it routinely in the noughties; Sebastian Vettel closed out 2013 with ten wins from 11 races. And that's pretty much how it looks for Lewis Hamilton right now, despite the valiant efforts of Seb, Ferrari and, latterly, Red Bull's Max Verstappen, to stand strong in the face of the Hamilton-Mercedes tsunami.

The stats tell their own story: since the August break, Lewis has won four from five, dropping only seven points from a maximum 125 with his P2 finish in Malaysia. In the same period, Vettel has taken only a second, a third, a fourth and two DNFs. Don't forget that he left the Hungaroring in July having fronted a Ferrari one-two as Mercedes struggled for pace. And he led the world championship all the way from Melbourne to Spa, until Lewis finally edged ahead at Monza.

It's remarkable how Ferrari's title campaign has imploded – and I say that without glee, for I'd like nothing more than to see Lewis and Seb lining up on the front row in Abu Dhabi for an all-or-nothing showdown. But the Scuderia have come up against a finely tuned winning machine, battle-hardened after four consecutive seasons of domination.

Yes, Mercedes' Wo8, is "a diva", highly strung with performance flat spots Ferrari have exploited. On tracks requiring high levels of low-speed downforce, such as Monaco, the Hungaroring and Marina Bay, the SF70H has been the weapon of choice. But when the Wo8 flies, it *flies*. And the same could be said of Lewis himself. A global megastar, yet sometimes not *quite* 'at the races', he is now on a plane beyond that of his peers. His driving has been pitch-perfect and he has found a degree of harmony with himself, his car and his team that he has perhaps never experienced before.

The wellspring of his state of grace? The absence of his quick-but-needily former team-mate Nico Rosberg, who beat Lewis to the title last year using every trick in the book. As Nico admits this month in our interview on p32, he had to "mess with [Lewis's] head" to beat Hamilton, and his method underpinned a carefully crafted strategy. Like a partner in a long relationship, he knew what buttons to push to get a rise out of his 'other half'.

None of that applies now for Lewis, who seems to be winning in an almost beatific state. Although as our dear chum Murray Walker once noted, in F1, "anything can happen – and it probably will".

It's not over till the diva sings...

Anthony Rowlinson
Editorial director

Contributors



DEAN & EMMA WRIGHT
Recent Motorsport Network recruits Dean and Emma do more than just 3D animation – check out their illustrations on p42



ANDREW FERRARO
He's making waves in the commercial world with his portraiture – turn to p74 to see what Andrew did with Stoffel Vandoorne



JUSTIN HYNES
As a regular contributor to FIA Auto magazine, Justin was just the man to get the inside line on the controversial 'halo' device (p42)



MALCOLM GRIFFITHS
We sent 'Malcy' to the Merc Museum in Stuttgart to shoot our cover feature – an interview with Nico Rosberg (p32)

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Three into two

I'm convinced this will be the defining moment of the 2017 F1 season: the three-way shunt between Max Verstappen and the Ferrari duo of Sebastian Vettel and Kimi Räikkönen.

This shot captures the aftermath of the moment the two Ferraris pincered Verstappen. Already the cars are travelling at such speed that simple contact triggers a chain reaction that wipes out these

three and dooms a fast-starting Fernando Alonso (car 14).

Alonso thinks he's avoided the shunt, but the wreckage catches up with him at Turn 1. It's an illustration of the savage amounts of kinetic energy unleashed during the start of a Formula 1 grand prix.

Almost out of shot – you can just see his left-hand tyres – is the eventual winner. Lewis was lucky, but brilliant.



Photographer

LAT IMAGES: Lorenzo Bellanca

Where Marina Bay, Singapore

When 8.03pm, Sunday
17 September 2017

Details Canon EOS-1DX MkII,
600mm lens, 1/1000sec @ F4.5



Turn right, look left

I always try to find a corner where you can see the drivers are really on the limit, and where it's possible to capture this in a single image. This is Turn 3 in Singapore, shot from a photographers' tower to give it an elevated angle. There's the bonus of some background colour that blurs nicely, thanks to the slow shutter speed, which also emphasises the flat-out nature of qualifying.

What makes this shot of Carlos Sainz more unusual is that you can see his head – and, thanks to the clear visor, his eyes – looking towards the big screen on his left. That's real skill: going flat-out, but with enough mental bandwidth to check what his rivals are doing.



Photographer

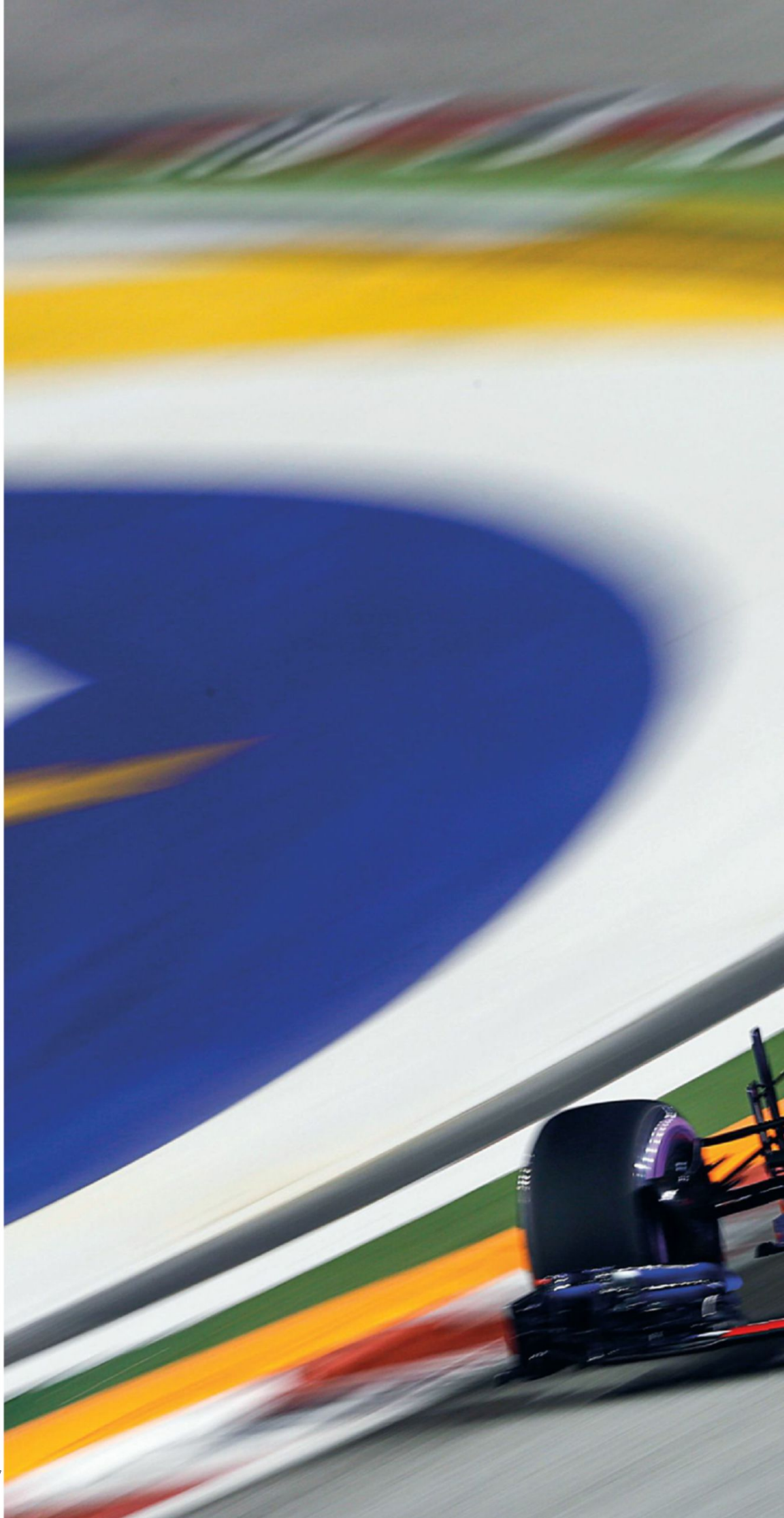


LAT IMAGES Andy Hone

Where Marina Bay, Singapore

When 6.28pm, Saturday
16 September 2017

Details Canon EOS-1DX,
500mm lens, 1/25th @ F11





The light's fantastic

Singapore isn't the only night race on the calendar now, but its artificial lighting remains state-of-the-art. While it's a challenge to shoot, it's also an opportunity to create unusual and distinctive effects.

I positioned myself at the entrance of the Haas team's garage at the beginning of the qualifying session to shoot Kevin Magnussen peeling out into the pitlane. Using a slow shutter speed helped to create this striking effect, full of energy and colour blurring together to create a dramatic image. You've got the green of the Haas brake coolers, the purple of the big TV screen and the white smear of pitlane lights, all contrasting nicely with the car.



Photographer



LAT IMAGES: Andy Hone

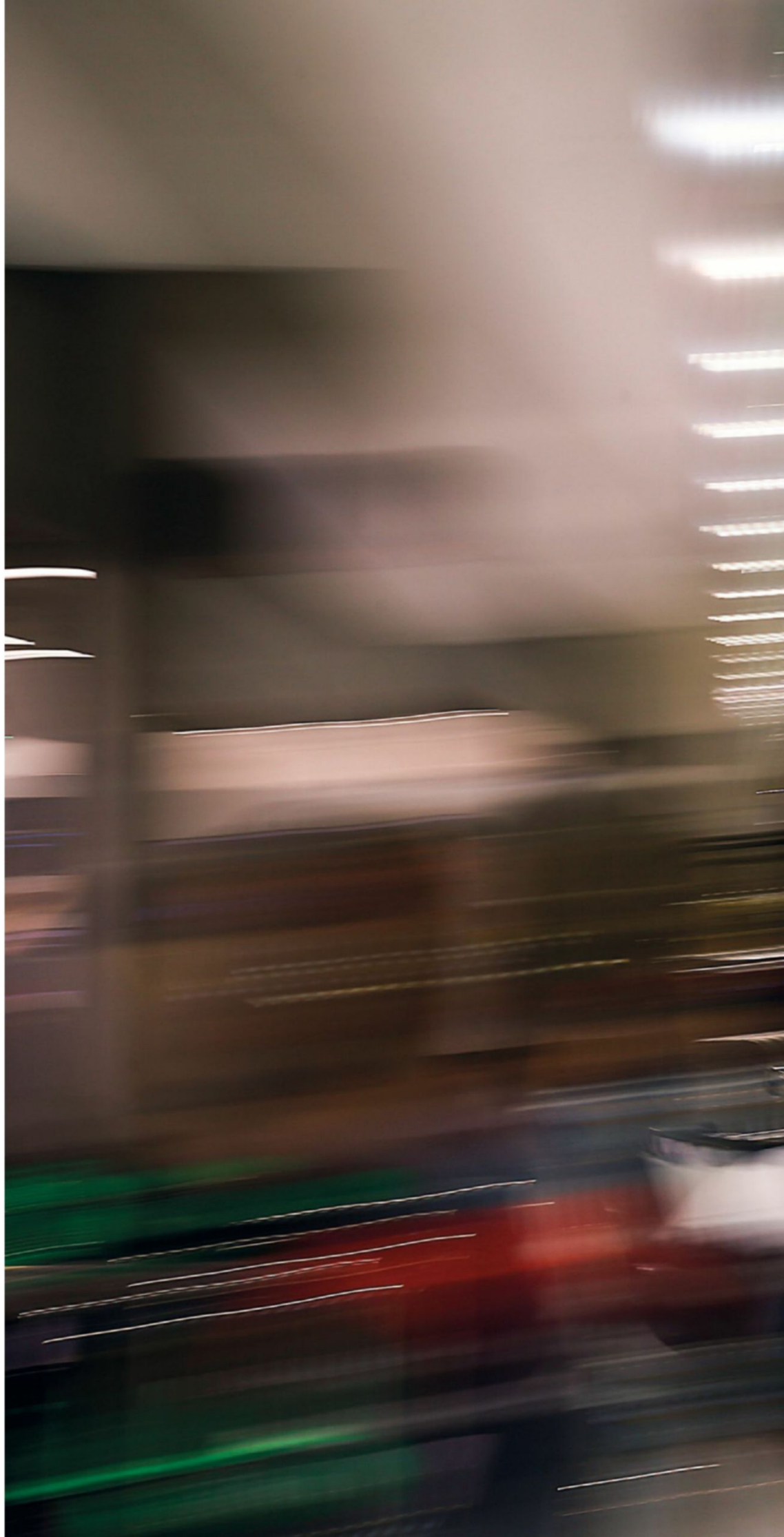
Where Marina Bay, Singapore

When 6pm, Saturday

16 September 2017

Details Canon EOS-1DX,

35mm lens, 1/5th @ F8









The origin of symmetry

Since this year's Spanish GP, race organisers have directed the top three qualifiers to stop on the main straight, rather than in parc fermé, so the TV interviews are broadcast simultaneously to fans in the grandstands as well as those at home. This has created an opportunity for much more visually engaging imagery; previously, drivers would just wave from the garage.

I spent the session in the pitlane and came onto the track with the TV crew. This picture works because there's the symmetry of Sebastian framed between the lights and the circuit fencing, with the two Red Bulls on either side; Seb standing on his car is a bonus.



Photographer

 LAT IMAGES: Steven Tee

Where Marina Bay, Singapore

When 10.03pm, Saturday
16 September 2017

Details Canon EOS-1DX MkII,
35mm lens, 1/500th @ F4

F1 PARADE

Smashing puntings

You can usually rely on there being some drama at Turn 1 in Singapore, so for the start I picked out a spot in the photographers' tower that's part of the main grandstand. My plan was to shoot with a wider lens than normal to capture the illuminated Singapore signage in frame as well as the start, so I was on a 70-200mm zoom.

Then, as the chaos unfolded, I followed the Ferraris and

Red Bulls all the way through their shunt, so I also captured Fernando Alonso's exit after they hit him – when he appeared in my viewfinder he was already well off the ground.

It was a real shame because he was up to third and potentially on for his best result of the year. You can understand why he took out his frustration on the wall in his private room back at the McLaren hospitality area!



Photographer

LAT IMAGES: Steven Tee

Where Marina Bay, Singapore

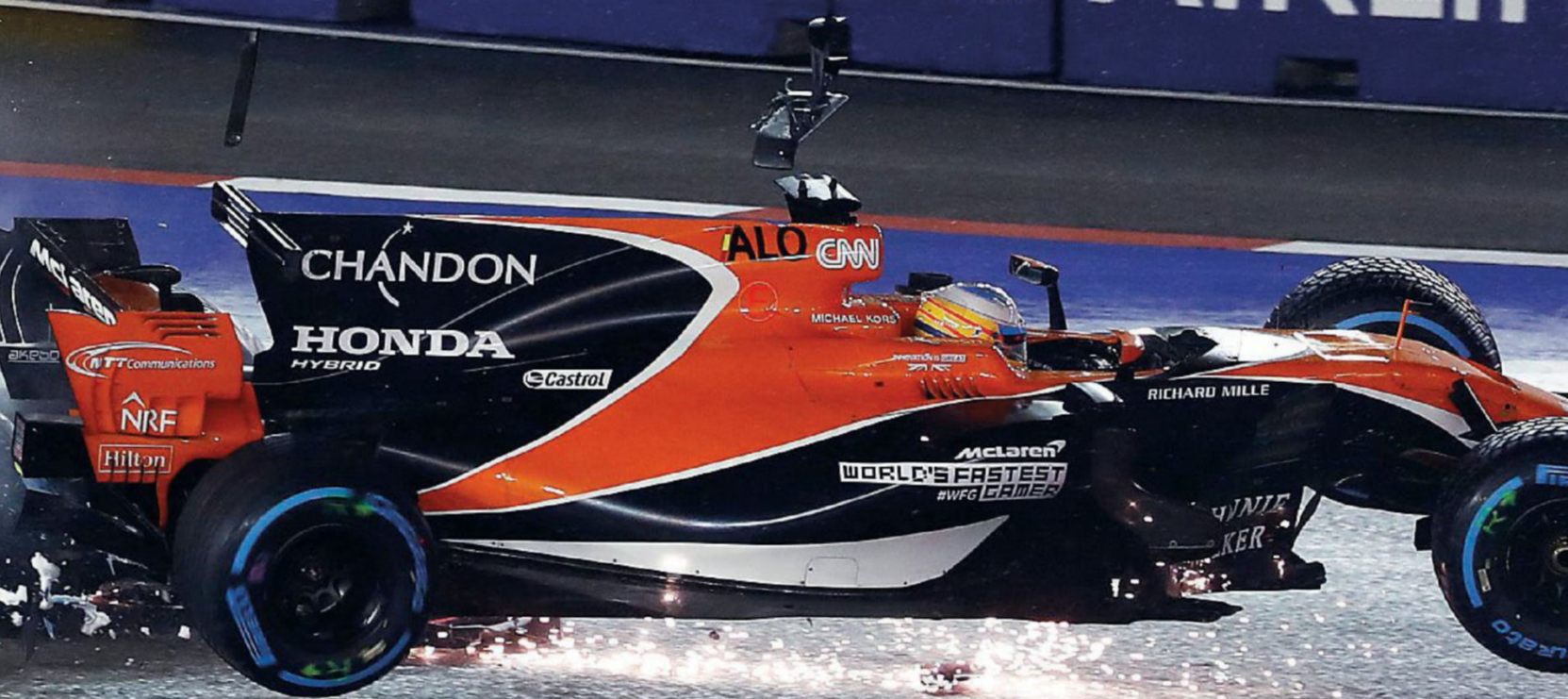
When 8.03pm, Sunday

17 September 2017

Details Canon EOS-1DX MKII,
200mm lens, 1/1000sec @ F4



SINGAPORE AIRLINES





Kubica was fourth-fastest at the Hungaroring test in August, but it wasn't enough to convince Renault

WHO WILL GIVE KUBICA A CHANCE?

01

US founding father and 18th-century polymath Benjamin Franklin is credited with saying “out of adversity comes opportunity”, and it’s an adage that Williams are finding applies to their 2018 driver search.

It has been a tough year for Williams as it becomes increasingly clear that the promise of 2014-15, when they finished third in the constructors’ championship for two years running, was in large part due to the huge advantage the Mercedes engine had over its rivals early in the hybrid era, rather than because of any great leap forward in the Williams chassis-design department.



He’s been passed over by Renault, but Williams are keen and now Robert Kubica has two more tests lined up with them

Williams were already aware of this last season, which is why they jumped at the chance to sign Paddy Lowe from Mercedes as chief technical officer last winter. Now Lowe is ensconced as a shareholder and board member, the team are questioning all aspects of their operation. They effectively wrote off development on this year’s car early on after bad breaks in the first few races meant they lost a lot of ground to Force India – and then it became clear the car’s performance meant they were unlikely to catch up.

Better, Williams felt, to focus on changes to car design for 2018, under Lowe and new chief aerodynamicist Dirk de Beer, than chase performance on a flawed design when fourth in the constructors’ standings was already out of reach. So with design of a re-imagined car well under way for 2018, focus shifted to the driver line-up and the realisation that they needed to do better than Felipe Massa as a partner for 18-year-old rookie, Lance Stroll.

Palmer's Renault exit most likely spells the end of his F1 career. So why did Renault get rid of him?

Williams are committed to Stroll for two more years, even though the money he pays decreases with each passing season of his contract. The problem is, while there have been flashes of promise, Stroll has generally lagged well behind Massa for pace. At the time of writing, Stroll was on average just over 0.4s a lap off Massa in qualifying, and Williams are well aware that Massa was on average 0.5s slower than Fernando Alonso at Ferrari. At his best, Massa is as fast as anyone, but he's currently struggling to achieve that level of performance.

In short, Williams are giving away a lot of potential performance on the driver front and are concerned that they cannot get away with that for much longer without it damaging the image, performance, and, therefore, the income of the team. They don't have a lot of options, but there is one they are *very* excited about: Robert Kubica.

Renault passed on their former driver, despite three promising tests over the summer, in favour of loaning Carlos Sainz from Red Bull. They felt there were still "unanswered questions" about whether Kubica, 32, was ready to make a return to F1 seven years after the horrific rally accident that left him with only partial movement in his right arm.

But Williams feel that if Kubica can come even close to his previous formidable best, then he might be a very attractive option, not just on track, but in terms of the huge PR boost the team would get from facilitating his much-longed-for return to F1. Subsequently, they have planned two further tests for Kubica, in the gap between the Japanese and US Grands Prix: one at Silverstone and one at the Hungaroring. The idea of the Silverstone test is for Kubica to familiarise himself with a relatively recent (2014) car and the team. Then, in Hungary, reserve driver Paul Di Resta will drive one day as a benchmark and Kubica the other.

Williams are giving little away. Lowe admits the Kubica-Di Resta test will happen, but says no information about it will be made public and insists "that doesn't mean they are the only drivers under consideration – we're considering quite a large range, of which they are only two possibilities".

He adds: "Felipe is very much in the frame, very, very high on our list of possibilities, but we owe it to ourselves to take a look around and see what could be the best option for the team going forwards. You've probably seen a number of names that are floating around that we're looking at, but, honestly, the range is almost unlimited.

FELIPE IS VERY MUCH IN THE FRAME, VERY, VERY HIGH ON OUR LIST OF POSSIBILITIES, BUT WE OWE IT TO OURSELVES TO TAKE A LOOK AROUND... HONESTLY, THE RANGE IS ALMOST UNLIMITED



Paddy Lowe's focus for 2018 is improving both Williams' chassis design and their driver line-up

Ferrari's predicted late-season resurgence hasn't quite gone to plan

We will consider all ideas. We're not in a hurry to do so, and we'll just make sure we land the best line-up we can."

The Kubica test is not a 'shoot-out' against Di Resta. Di Resta has only a very remote chance of a race seat, even if he comes out on top. Williams feel that his current reserve role is perfect for him, and would prefer to stick with Massa if that was where the choice lay. Insiders say that if Kubica can prove to the team that he is capable of a return, there is a strong possibility he will be signed for 2018. If not, Massa will most likely be retained.

For Kubica, this could be his last chance to make a return. Nico Rosberg, now part of his management team, was at the Japanese GP as a pundit for Sky, and was talking him up, saying the Renault test had proved that he was 100 per cent ready. But that is far from clear. If it were the case, surely Renault would have taken him on – after all, certain members of the team tried very hard to do everything they could to make it happen, given his impressive performance when he used to race for them. But this time they were not convinced it would work.

Renault won't say why, but it seems they felt Kubica was not quite quick or strong enough to drive in F1 in the current cars. They also didn't want to be caught without options by leaving things too late and, as Rosberg points out, matters were complicated by the McLaren-Renault-Toro Rosso-Honda-Sainz mega-deal, which you can read about on p58. Williams, though, can afford to take their time. Massa is keen to stay on and has said that a test in a 2014 car is not sufficient evaluation for Kubica. His chances of staying on depend on whether Williams agree.

Otherwise, Williams' list is perhaps not as long as Lowe suggests. Pascal Wehrlein might have been considered, but his age – he is 23 in October – is a problem because Williams title sponsor, alcoholic drinks brand Martini, requires at least one of their drivers to be 25. So, in reality, Kubica versus Massa it is.

PALMED OFF

One driver not in the frame at Williams is Jolyon Palmer, whose F1 career looks to have ended, following the Japanese GP. Renault had been looking to replace Palmer for some time, and have succeeded in securing Carlos Sainz for the final races of 2017 ahead of his first full season with them in 2018. Before Japan, Renault finally cracked the resolve of Palmer and his father Jonathan, who had previously refused their pay-off offer.

Perhaps understandably, Palmer had grown increasingly sensitive as questions about his future mounted while he failed to match up to team-mate Nico Hülkenberg. After what he'd hoped was a turning point when he finished sixth in Singapore, Palmer insisted he "knew he could do it". But the team did not agree. ▶

The statistics were damning. His average qualifying deficit to Hülkenberg was more than 0.6s. On only five occasions in 16 races did Palmer manage to get within half a second of the German over one lap. On ten occasions, the gap was more than 0.7s. Pre-Japan, Hülkenberg had scored 34 points and Palmer eight.

In Palmer's defence, he was affected at some races by reliability issues, and the constant rumours about his future would have affected his performance as well. From the moment Renault gave Kubica a second test after what



He'd hoped his P6 finish in Singapore would be a turning point, but Jolyon Palmer failed to convince Renault of his promise



“FORMULA 1 IS A BRUTAL ENVIRONMENT IN WHICH ONLY THE BEST AND TOUGHEST SURVIVE. PALMER WAS GIVEN HIS CHANCE AND CAME UP LACKING... HIS PERFORMANCE WAS NOT DOING THE JOB. RENAULT ALSO WANTED A HEAD START ON 2018 WITH SAINZ”

was initially a one-off in a 2012 car at Valencia in June, Palmer must have known his days were numbered.

But Formula 1 is a brutal environment in which only the best and toughest survive. Palmer was given his chance and was found lacking. Renault's enthusiasm for getting rid of him was due in part to a desire to maximise their championship position, plus Palmer's performance simply was not doing the job. They also wanted a head start on 2018 with Sainz.

In severing Palmer's contract with four races to go, Renault demonstrated a ruthlessness that was indicative of their determination to return to competitiveness and become title contenders by 2020. This is becoming apparent in other areas, too. The team have recruited former FIA technical head Marcin Budkowski as their new executive director – a move that has angered their rivals since, until he resigned from the FIA in late September, Budkowski had access to intimate details of all their 2018 technical plans.

The teams' ire is not directed at Budkowski, 40, for taking an opportunity that makes him right-hand man to Renault Sport Racing MD Cyril Abiteboul, nor at Renault for recruiting a highly rated engineer who had previously worked for Ferrari and McLaren. But they are aghast at the fact that he was on only three months' notice at the FIA. Renault duly made a compromise offer that would double Budkowski's gardening leave, letting him join the team at the start of April, in the hope of "making everyone comfortable", as Abiteboul puts it.

That has not yet been finalised but the teams will likely have to accept it. As Mercedes technical director James Allison says: "If an FIA employee leaves and rejoins a team, then you would wish, I think, to have a somewhat longer notice period than three months. I think everyone, on the FIA side and the teams' side would say that but... this isn't the situation today and I guess we'll all just swallow it and get on with it." ▶

LAT IMAGES: GLENN DUNBAR; CHARLES COATES; SAM BLOXHAM

F1 DIGEST THE MONTH'S BIG STORIES AT A GLANCE

- 15.09.17** McLaren confirm Renault deal for 2018: Honda go to Toro Rosso; Carlos Sainz to Renault
- 20.09.17** Veteran engine builder John Nicholson dies, aged 75
- 21.09.17** Formula 1 demonstration rules changed to allow current cars



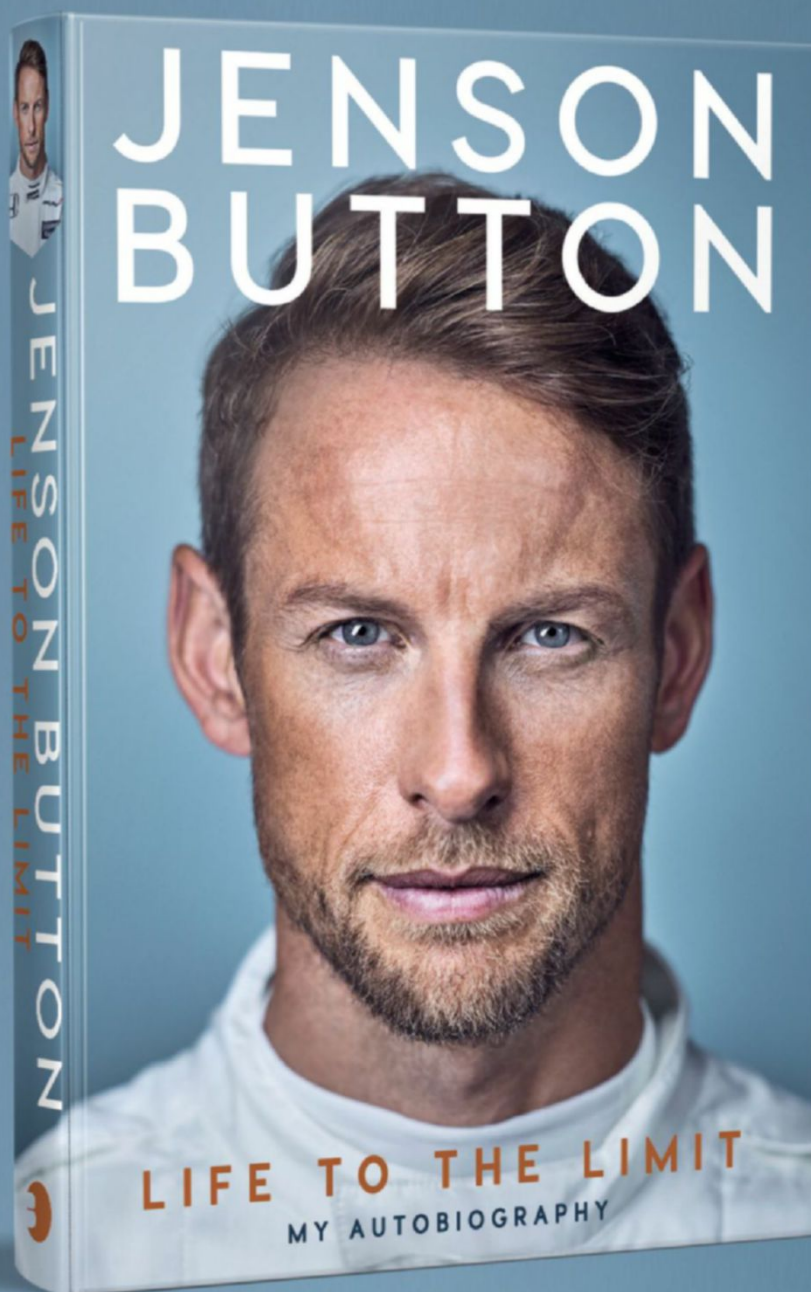
- 25.09.17** Aston Martin announce their Red Bull title sponsorship for 2018
- 26.09.17** FIA F1 technical chief Marcin Budkowski resigns
- 01.10.17** Pierre Gasly makes F1 debut at Toro Rosso replacing Daniil Kvyat



- 03.10.17** Haas seek compensation for drain-cover damage at Sepang
- 03.10.17** Williams to evaluate Robert Kubica for potential 2018 race seat
- 07.10.17** Renault confirm early transfer of Carlos Sainz to Renault from US GP onwards



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PRANCING HORSE HOBbled

03 Ruthlessness and its consequences have played a major role in the remarkable twists and turns in the title fight between Lewis Hamilton and Sebastian Vettel during the three Asian races. The protagonists went to Singapore with even Mercedes expecting a Vettel victory at Marina Bay and for Seb to regain the championship lead.

But when Vettel crashed out after spearing across the track at the start while trying to defend from Max Verstappen, the complexion of the championship changed. And, since then, the momentum has been with Hamilton.

In Malaysia and Japan, Ferrari were at fault. At Sepang, identical failures in the manifold between the compressor and engine, first in Vettel's car in qualifying, and then in Räikkönen's on the grid, let Hamilton extend his lead at a race where Mercedes had only the third-fastest car.

And then in Japan came what may prove to be the decisive blow. Another engine problem – this time a spark plug – led to Vettel's retirement after four stuttering laps. Hamilton, with four wins and a P2 in five races since the summer break, goes into the final four races with a 59-point lead.

Ferrari's season has imploded in just six weeks. Vettel said it felt "bitter" but spoke of "protecting" the team. This sort of thing wore

down Alonso after five bathetic seasons at Maranello, so it will be interesting to see the response this time.

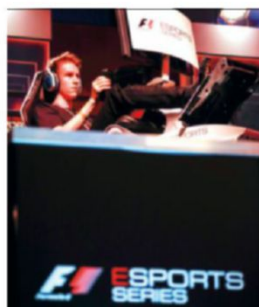
Hamilton's fourth title is surely now in the bag, but Vettel and Ferrari could yet delay it if they can get their act back together. Mercedes have been fearing the Mexican GP for some time and are uneasy about Brazil and Abu Dhabi, too.

As for Alonso, his future is undecided; a new McLaren contract unsigned. But it's thought he will commit before Austin, making the US GP critical on all levels.

Ferrari engine issues in both Malaysia and Japan have eroded Sebastian Vettel's title hopes



FERRARI'S SEASON HAS IMPLoded IN JUST SIX WEEKS... THIS SORT OF THING WORE DOWN ALONSO AFTER FIVE BATHETIC SEASONS AT MARANELLO



F1'S VIRTUAL GREATS COMPETE

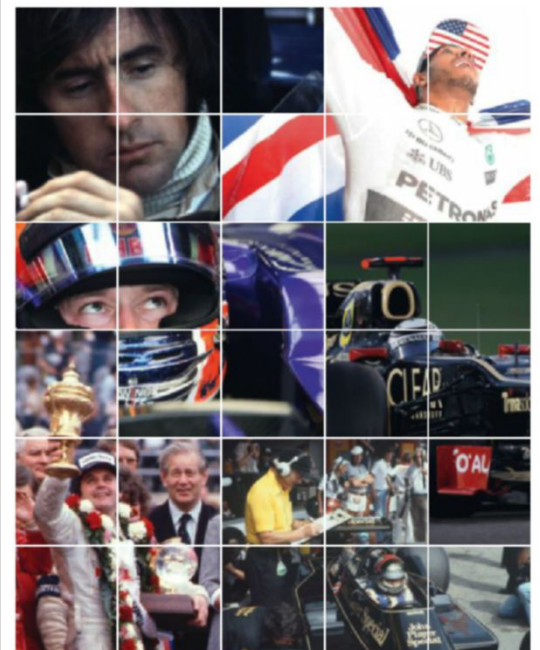
The 20 drivers who will contest the F1 ESports Series grand final have been determined at an entertaining live semi-final at the Gfinity Arena in London. Forty qualifiers, who earned a place through an online competition that drew more than 60,000 entries, competed in eight heats, with the highest scorers securing a place at Abu Dhabi, where the first F1 ESports World Championship will play out ahead of the Grand Prix.



F1 MASTERMIND

Your chosen specialised subject: the world's greatest sport

- Q1** Jackie Stewart led over 50 per cent of the grands prix that he started – true or false?
- Q2** Lewis Hamilton has won four out of the five GPs held at the Circuit of The Americas, but how many times has he set pole for this US race?
- Q3** The first Swedish Grand Prix at Anderstorp took place in 1973. On how many occasions did it run?
- Q4** Where did Daniil Kvyat come closest to a win, finishing second behind Sebastian Vettel?
- Q5** In which year did Kimi Räikkönen secure his only Abu Dhabi Grand Prix victory?
- Q6** Pierre Gasly's promotion means that there are now three Frenchman on the grid. How many were there on the last French GP grid in 2008?
- Q7** One year, four months and 16 days. Which current driver does this statistic relate to?
- Q8** Who won the most F1 races during their career: Alan Jones, Mark Webber or Jack Brabham?
- Q9** Who was the last driver to start a race for Hesketh, at the 1978 South African GP?
- Q10** How many constructors' championships did Lotus win, and when was the last of them?



1 True, it's 51.5% 2 Once 3 Six times 4 Hungary (2015) 5 2012 6 One: Sebastian Bourdais 7 Max Verstappen and the time between his first and second wins 8 Brabham (14), Jones (12), Webber (9) 9 Eddie Cheever 10 Seven and 1978

LAT IMAGES: CHARLES COATES; STEVEN TEE

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THE RACER'S EDGE

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element analysis and data-driven development are the hardware; the true software is the people who use these tools, and the people who organise the people. This is Binotto: he may or may not be an engineering genius. What we *do* know is that he is a real person who listens, recognises his weaknesses and isn't afraid to delegate.

Thus the SF70H.

The Mercedes W08, by contrast, is a bit edgy, which is no surprise because Paddy Lowe was replaced last autumn, for no reason, by James Allison. Paddy is a sort of English Binotto: a quietly spoken racer who likes to encourage the right people to focus on the right job at the right time. The consistent speed and success of the

Mercedes W05/06/07, and its engine, told us all we needed to know about Paddy's system. Now that the technical team has been changed fundamentally, however, the car is more of a 'diva', as Toto Wolff recently described her. Should we be surprised? Swapping Paddy for James Allison is a bit like buying a Cartier when you already own a Rolex. It's one thing to *need* something; it's another to want something merely because it's new, or different, or better for the ego. If something or someone is doing their duty, then replacing it or them for no reason is contrary to natural order. It doesn't matter if James is the equal of – or is superior to – Paddy Lowe. It was the *act* that was the problem, not the people it involved.

Red Bull. Here's an interesting one. You'd think that a planetful of money spent by a drinks magnate would probably be bad for karma. So let's clear up that point: this isn't about karma or any of that happy-clappy stuff. This is about the natural progression and order of things, about rights and duties, about discipline. Red Bull are a tightly run race team financed by one man with a passion and that can only be a good thing. Dietrich Mateschitz's ownership also embraces long-term, undying commitment, which is another hugely important element. Thus the Red Bull chassis, year-in, year-out, is quick and drivable: it's only the engines that in recent times have been a problem.

Similarly, superficial criticism could be made of Vijay Mallya, but the same responses apply. Sahara Force India are a mini-Red Bull, and it shows in the character of the

WHY AN F1 CAR IS MORE THAN JUST A MACHINE

Racing cars have souls; of course they do. Just ask Lewis Hamilton. He'll talk to his baby in the closing laps of any given race, urging her on, exhorting her not to break and patting her on the nose afterwards in parc fermé. Or ask Sebastian Vettel. He names his cars as you or I would name a Labrador. He has feelings for them and they, I suspect, have feelings for him.

So let's have none of that stuff about objects or animals being soul-less because they feel no sense of right or wrong. Somehow we're all connected. Mineral-animal-human. The growth of the soul is an onward-going thing in both this life and the next. That's the purpose of existence. Which brings me back to Formula 1 cars. Just look at them: they're living, sweating, smoking, screaming, groaning personifications of the people who build them. Some are fast; others are faster still. And it isn't just by chance.

To wit, take the current Ferrari SF70H, a car born of a regrouped team of engineers eager to prove that a harmonious, joint effort is more than equal to the presence of an overseas star designer.



Lewis Hamilton pats his trusty steed in parc fermé in Shanghai. He understands that cars have souls

Mattia Binotto wasn't exactly headline news when he was running the engine department in Maranello, and many were the doomsayers when he was appointed as technical director for the Scuderia's 2017 project and beyond.

Clearly, though, someone high up at Ferrari – and I suspect it was probably Maurizio Arrivabene – was following their gut instincts when they gave promotion to a man who, by the usual standards of Formula 1, runs a low ego combined with a surprising propensity to listen to others. The result is the SF70H: probably the year's best F1 car, given the obvious superiority of the Mercedes engine in terms of outright power.

Within an F1 world coloured by instant results, rival technical departments, a baying media and relentless schedules, it's almost impossible to remain human, let alone constructive, within a huge group of people pressured into creating next year's winning car. Computer Aided Design, finite



Arrivabene put his faith in Binotto, a man skilled at pulling a team together, and the harmonious result is the Ferrari SF70H, the best car of 2017



car. Everything in that team happens for the right, logical reason; everyone pushes in the same direction. The car is a gem, within the confines of the budget within which the team operates, and they silently accept the powertrain package from Mercedes. There is no need for worry about PUs. The soul of the team is fine.

Williams, by contrast, are a team punching and pushing in about five different directions. Paddy Lowe is there now, which means that the long-term future should be bright, provided he is given a reasonable amount of space, but in the short term the situation is complex. Just like the car. Williams in their championship years were as simple as Frank and Patrick. Nothing more, nothing less. The soul of the team then was lit in neon; now, under layers of distractions, egos and fears, that same soul lies dormant, awaiting rebirth.

Then we have McLaren, a team who have tried to design a super-soul with money and superficial structure but forgot that true progress is actually created by *people*. Instead of the big lake by the boulevard, for example, McLaren should have built a better windtunnel and created an engine facility for

Honda. Nor should they have let go of engineers such as Paddy Lowe and Phil Prew. McLaren's future path won't be defined only by new engine deals with Renault or perhaps Cosworth. It will be defined by the new management team's ability to make up for what was lost.

It goes on. Haas are an off-the-peg team tweaked by a decent tailor. The soul of the team is young and lacks vital ingredients: the car flashes pace, then takes two steps backwards. Sauber, potentially a Swiss Williams, changed forever when Peter Sauber cashed in at BMW. As Saubers reborn, the cars have never been the

same (although I suspect Frédéric Vasseur will change all of that). Despite the uni-directional commitment of Franz Tost, Toro Rosso have been a team without a real cause, and it has shown in their cars, which are beautifully designed but curiously ineffective. Honda, though, will give them some direction.

Renault, the antithesis of McLaren, are making progress thanks to many of the people who have remained loyal over the years and are doing so without spending Mercedes money. The cars, as a result, are proving to be increasingly competitive.



It's because they have souls, you see. Real souls.

“ F1 CARS ARE LIVING, SWEATING, SMOKING, SCREAMING, GROANING PERSONIFICATIONS OF THE PEOPLE WHO BUILD THEM. SOME ARE FAST; OTHERS ARE FASTER STILL ”



THIS F1 LIFE

PAT SYMONDS

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Later came a couple of interesting developments. The first was the tuned mass damper employed by Renault in 2005 and subsequently banned. This was a re-engineering of a very old concept. Around the same time, Malcolm Smith at Cambridge University conceived and developed a concept known as an inerter. This was an amazing piece of original thinking: a conventional damper provides a damping force that is proportional to the velocity of the suspension deflection, while in contrast the inerter provides an additional force that is proportional to the acceleration seen across the suspension. This may sound trivial, but it allowed control that had previously only been available with active suspensions.

The inerter is still commonplace in F1, but it had been supplemented with ever-increasing complexities of hydraulic logic applied to the systems. The essence of these was to use the movement of the suspension to displace fluid through a series of orifices. The way these work is complex, but can be thought of as the conjoined double syringes you might use to dispense epoxy adhesives. If you squeeze these gently, equal volumes of hardener and resin are dispensed. Try to displace the plunger more rapidly and the more viscous resin will restrict the flow.

This is analogous to an actuator full of oil connected to the suspension with two flow paths out of it, one through a small orifice and one through a large one. If we displace the suspension slowly, as may happen when aerodynamic load compresses the suspension of an accelerating vehicle, then the flow out of the two orifices will be equal. Compress it more quickly, for example in a braking event, and the flow will favour the large orifice. If we now feed these two flows into a control valve we have countless possibilities to use this differential flow. An example might be to pilot an additional valve that might alter roll stiffness at one end of the car. It's not an easy concept to explain, and nor does it lead to an easy system to implement, but if done successfully it can be pretty powerful in improving the performance of the vehicle.

These developments have led to four separate technical directives being issued this year by the FIA to restrict potential in this area and promote more simple ▶

F1'S RULES SHOULD STRIVE FOR CLARITY

It's not often that technical arguments are so long-lived in Formula 1, but this year two subjects have had a longevity beyond the norm. In the past disputes have been settled quickly or, at worst, brought before the FIA International Court of Appeal by way of a challenge to a decision of the stewards. The latter action involves a route that might take a little longer, but provides an authoritative finality to the matter.

The first of the two disputes concerned suspension. Before this season started, the FIA had decided to clamp down on the ever-growing complexities of suspension systems that were supposed to be passive. The genesis of this goes all the way back to 1993 when the FIA declared that the active suspension systems then in use were being designed with the primary purpose of augmenting the cars' aerodynamic performance rather than providing insulation from the undulations of the track surface. As such, they could be considered moving aerodynamic devices, a concept embodied in the regulations and specifically disallowed.



Mercedes and Ferrari have found complex solutions to the clampdown on supposedly passive suspension

The problem is that in any walk of life knowledge cannot be 'un-learned' and, very often, if the simple and logical route to a solution is removed for whatever reason, protagonists of the art will find an alternative that will undoubtedly be more complex. And so it was with these suspension systems. Initially the concentration was on complex hydraulic damper valving and relatively simple non-linear stiffness features that gave some additional platform control over and above that which had been employed by the teams in earlier years.

NANKANG TYRES



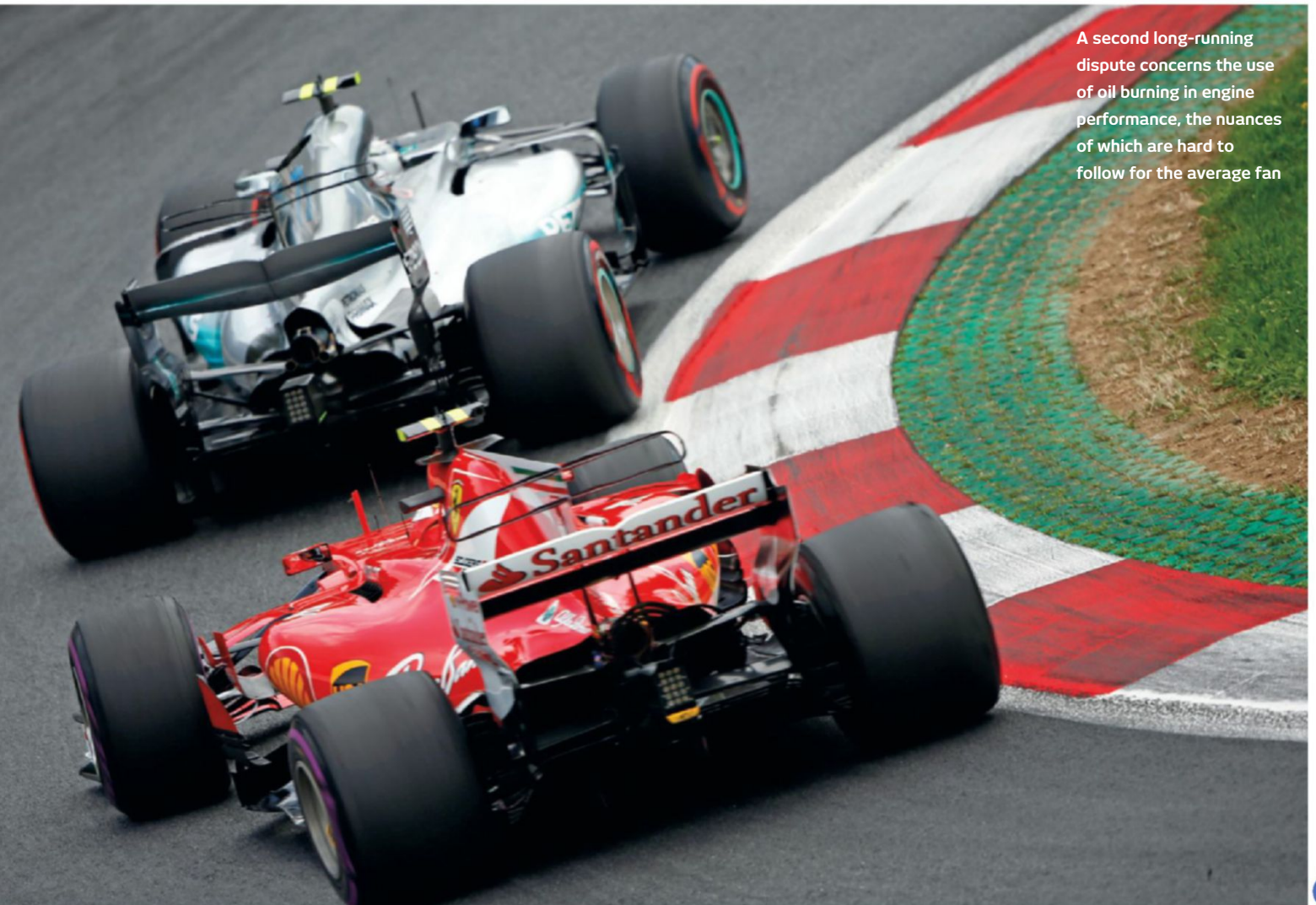
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A second long-running dispute concerns the use of oil burning in engine performance, the nuances of which are hard to follow for the average fan

LAT IMAGES: ANDY HONE

“THE REAL TEST FOR FUTURE REGULATION IS FOR TECHNICAL EXCELLENCE TO BE UNDERSTANDABLE AND AVAILABLE RATHER THAN COMPLEX AND IRRELEVANT”

and conventional suspensions. The introduction of these clarifications are thought to be part of the reason for the equalisation of performance between Ferrari and Mercedes in 2017.

The second long-running saga is that of oil burning. The modern Formula 1 engine is unusual in that its performance is limited by the amount of fuel introduced to it. For many years the limitation of race engine performance has been the breathing of the engine and hence the amount of air that can be introduced.

Now engine oil as we know it is not the ideal fuel for any engine, but formulating an oil that has certain volatile additives that either add chemical

energy to the combustion process, or, more likely, limit the propensity for uncontrolled combustion, allows more power to be extracted.

Introducing this oil into the combustion chamber is a difficult process and it's unlikely it is done by flow past the piston rings. Far more likely is that it is done by allowing oil-laden crankcase gases to enter the engine air inlet via the crankcase breather, or by allowing the controlled leakage of oil through the compressor side of the turbocharger bearing into the inlet tract. Either way, in a sport in which incremental improvement is the key to success, such small enhancements make all the difference.

Again, the FIA has taken a dim view of this line of development. It goes against the grain of putting a fuel-flow limit in place. Further technical directives have been issued to rein in the practice by limiting the oil that can be burned to an amount that may be considered reasonable for a racing engine. They further define what

constitutes an oil, the primary purposes of which should be for lubrication and cooling.

The technicalities of these two disputed areas are unlikely to be of much interest to the majority of the sport's fans. So it's here that F1 must define its objectives. F1 sets itself apart from the plethora of controlled single-supply formulae by insisting that entrants be constructors and allowing technical excellence to be a performance differentiator. The real test for future regulation is to let this remain the case, but for technical excellence to be understandable and available rather than overly complex, irrelevant and in the custody of the secret society that F1 engineers are so keen to promote. 📌



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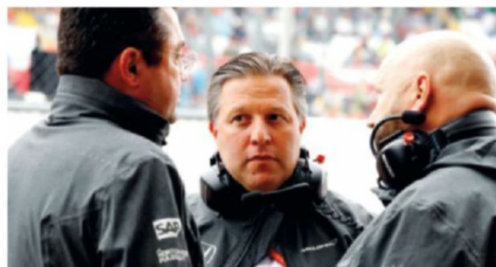
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IN FORMULA 1, INDEPENDENCE ISN'T EASY

Have you ever found yourself wondering why McLaren don't build their own engines, especially after three ruinous seasons with Honda? We've covered the death of that relationship in detail on p58, so I won't rake over it here, save to say that the subject of McLaren "growing their own" came up in a debate with the team's executive director, Zak Brown, over their Honda/Renault conundrum.

Brown conceded that such a project was a remote possibility post-2020, but made a good point: even sister company McLaren Automotive don't build their own engines. Their delectable sportscars are pushed along by engines supplied by automotive engineering consultancy Ricardo, albeit engineered to McLaren's spec and, in the case of the hybrids, with considerable input from McLaren Applied Technologies.

It would be better, said Brown, for F1 to attract independent engine suppliers able to service numerous teams, much as Cosworth did. Brown's caveat was that any such engine would need to be competitive, as were Cosworth's offerings from the 1970s through to the 1990s, with which teams



Zak Brown accepts a home-grown engine could help McLaren – but it wouldn't happen pre-2021

such as Lotus, Williams and McLaren won races and titles. In other words, not like the makeweight ones used by the 'new' teams of 2010, engineered for a budget cap that never came into force.

The need for future power units to be affordable was not mentioned, for the FIA has recently imposed engine price caps on current suppliers. Contracts reduced by £1m for this year will decrease by a further £3m in 2018, and future regulations will stipulate further cost reductions.

All well and good, but such clauses could dissuade engine suppliers from entering F1, or even cause current manufacturers to reconsider their engagements. That's because income from customer teams lets them offset development and manufacturing costs. A basic law of F1 is that every action has an opposite and equal reaction: every million-pound reduction means upping budgets.

Independent team bosses argue that F1 should adopt less complex technologies to reduce costs

– by, for example, dropping heat energy recovery systems, and/or specifying simplified bi-turbo engines with basic KERS boost. But this argument overlooks a crucial point: manufacturers compete in F1 to demonstrate their mastery of hi-tech on a global platform. Remove that and Honda, Mercedes and Renault could exit, and the likes of Porsche or Audi might be dissuaded from joining the fray.

The tightrope the sport's regulator must walk as it gears up for new-generation power units, is to ensure costs are realistically reduced, while ensuring F1 retains sufficient technologies to keep Honda, Mercedes, Renault and Ferrari *and* attracts newcomers.

Let us imagine, then, that either Cosworth or Ilmor consider taking up the challenge. For starters, budget caps militate against them by reducing income, whereas manufacturers can absorb such knocks and write off losses to global exposure. What use, though, is such publicity to independents, who have to focus on the bottom line? And, more pertinently, who would provide initial funding?

Would independent teams be prepared to stump up the full amounts three years early? If paddock gossip is any guide, some of their number seem unable to settle engine bills in arrears, yet speak wistfully of entrepreneurs taking £100m punts on their long-term creditworthiness...

True, both Cosworth and Ilmor have produced title-winning engines, but that was when they were manufacturer-backed. Cosworth were bankrolled by Ford; Ilmor by Mercedes, who ultimately bought the operation and rebranded it Mercedes-Benz High Performance Powertrains. The current Ilmor company was founded by Mario Ilien, a partner in the original Ilmor operation, and now a true independent.

Cosworth's legendary DFV shared elements with the road-going Ford BDA engine, which reduced development costs while providing road-relevance. In addition, it could be adapted to Le Mans-winning spec (the DFL) and be turbocharged for CART (DFX) – all of which helped defray costs. None of that is conceivable today.

In the 1980s, McLaren went the other way: they commissioned Porsche to deliver a V6 engine to their specification. The result was three drivers' and two constructors' titles. The bottom line is that no purely independent engine has won a title since Repco in 1966/7, while the last such grand prix-winning engine was the Weslake that powered Dan Gurney's Eagle in 1967.

The moral is clear: F1 should encourage independent engine suppliers, but it cannot afford to alienate its motor manufacturers.

THE LONG INTERVIEW

A little under 12 months ago Nico Rosberg won the world championship and then abruptly announced his departure from the sport before he'd even collected his trophy. He's been somewhat elusive ever since, but now, speaking exclusively to *F1 Racing*, Rosberg explains how he "messed with Lewis's head", why he's been largely absent from the Formula 1 scene – and what's coming next...

THIS IS NICO
ROSBERG

INTERVIEW STUART COOLING
PORTRAITS MALCOLM GRIFFITHS





W

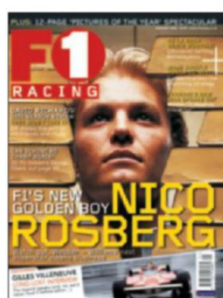
ith more than a hint of reverence, Nico Rosberg reaches out to touch his championship-winning W07 Hybrid affectionately on the nose, then turns to regard the grand sweep that is the cavernous concrete inner sanctum of the Mercedes-Benz Museum. Here, like pinned butterflies in a

natural-history exhibit, but on a grander scale, the racing cars attached to the banked wall bear silent testament to an evolutionary line – in this case, one that stretches from chain-driven pre-war leviathans such as the 1909 Blitzen Benz to the latest hybrid Formula 1 machinery.

A large red crane stands ready to hoist Nico's title-winner onto its final resting place – but not before its operators have posed for a selfie with both him and it. He obliges with the same easy charm that defused many a sticky moment during his driving career, as last year when he led a potentially hostile Monza crowd in an impromptu sing-along – *in Italian* – having led a Mercedes one-two that pegged their beloved Ferraris into third and fourth places.

He quit motor racing, seemingly without a backward glance, announcing his immediate retirement on the eve of collecting his championship trophy via the contemporary medium of choice for such communications: a video posted online. “For 25 years my dream was very clear,” he said. “It was to win the world championship. I’ve achieved that now and I wanted to thank you [the fans] for your part in it, because you kept me motivated, kept me pushing. But this year has been extremely tough as well. I gave it everything I had, I didn’t leave a stone unturned. And I’m not willing to do that again. And so, yeah, I’ve decided to call it a day – to stop racing.”

Our January '06 front cover marked Nico's arrival in F1. Back then he was better known as the son of Keke and still had much to prove



Over the course of 67 seconds we had the briefest of insights into the sacrifices – the sheer wretched effort – required not only to win the Formula 1 world championship, but to do so with one of the sport's most intense and gifted competitors as your team-mate in equal machinery. “I hope I’ll see you again some time soon,” he said as a sign-off. And, with that, he by and large vanished from the scene, barring a few guest appearances at grands prix and a continuing trickle of lifestyle images on his immaculately curated social media feeds.

Perhaps he needed some time to ruminate on the magnitude of his achievement and to throw himself back into the responsibilities he'd had to set aside in his push to achieve that goal – fatherhood, for example.

The Nico we meet today exudes happiness, as if he has long since cast off the pressures that used to hound him. After one final diversion to walk-and-talk around the 1955 ex-Stirling Moss/Denis Jenkinson Mercedes 300 SLR for a video clip, he bounds over and pulls up a chair.

F1 Racing: Can we just say you look very happy – well, as happy as someone can be after a day of dealing with people like us.

Nico Rosberg: Yeah, but it's different. I don't *have* to be here today. It's not part of my job – I wanted to come. It's completely free choice, so it's a pleasure to speak to you. [He offers a cheeky grin.] For me it's a special day. Before this place was built, I used to come here with Lewis [Hamilton] for Stars & Cars [Mercedes' annual motorsport celebration, held in the nearby stadium] because we were in the Mercedes Junior Programme. Mika Häkkinen and David Coulthard were the heroes; we were the young dudes looking up to them, seeing all the Silver Arrows history, cars, everything, and Mika's '98 title-winning car joining the ranks. And now mine gets the next spot. Unbelievable.

F1R: You've been a little bit elusive, apart from a few things on social media. What is the life of a world champion like?

NR: It's very exciting. There's a lot going on. I have a lot of other passions in life, there's no problems there. So I'm watching the racing because I love it, and I'm enjoying it. Then, something that I've been very interested in, is the way cars now are going to change our planet, with electric mobility, autonomous cars and then mobility drones. This is right around the corner. So I'm really looking into that, getting to know a lot of fascinating people, companies, startups and all that. So I'm enjoying the business angle.

Family-wise it's an intense time because we're expecting our second child [his daughter, Naila, was born shortly after this interview took place] so that's taking quite a big chunk of my attention. I'm supporting Vivian a lot because our little one, Alaïa, is a bit out of control. She's into her 'terrible twos'.

So that's probably the two pillars at the moment. It's an exciting exploration period. I'm just very happy and loving it – and the freedom that I have over my calendar now. Of course it was awesome to be an F1 driver and I feel very, very



It was a long hard slog, but his mind training gave him the edge, and Nico finally got to hold the F1 drivers' championship trophy aloft

lucky to have been able to do that, but it's an intense life. Your calendar is set by someone else for you, the whole season and everything. So it's a different lifestyle now. It's just very free and I can go where I want, do whatever I want. And I'm liking that. It feels great.

It's clear from his expression that he's very sincere about loving the control he now has over his own destiny. Let's explore how clean the break was when he decided to quit, and how difficult he found the decision.

F1R: It's very interesting, what you said about there being lots of things you're passionate about, because for some people in Formula 1 the sport is the only thing they're interested in. It's what they live for and they find it very difficult to walk away.

NR: That's true, yeah, for many people. But it doesn't have to be a bad thing if you have a strong passion. For me, it's nice that I have other passions I can enjoy just as much as racing. Where it's a challenge as well, I can have that same thrill I had in racing – not exactly the same, but the way I do it, you know, still full-attack and wanting to win.

F1R: Do you see your business interests as moving away from motorsport, or are they complementary? Because your dad got involved in driver management, didn't he?

NR: It all depends. I love racing, but it doesn't have to be tomorrow. I will keep that door open. As I said, I love coming to races just to watch them, and I love watching the racing on TV. Young drivers, for example, I'll keep my eyes open for, because it's an opportunity also for me to re-live the emotions of winning through someone else. [Weeks after this interview, Nico announced that he would be joining Robert Kubica's management team, to help with Kubica's F1 comeback]

Nico's second cover shoot in August '06 passed into F1R folklore as former editor Matt Bishop and McLaren's Jo Ramirez held back the Monaco traffic for photographer Matthew Stylianou



F1R: You made it into F1 at the relatively early age of 20, but you got into a team [Williams] who weren't necessarily going to win, before you moved to Mercedes. Was there ever a time in your career when the world championship seemed out of reach or very distant on the horizon?

NR: For sure. All the time it was out of reach and in the distance, and not a reality. Up until four races from the end of last season when I was 33 points in the lead! Against Lewis it was always going to be tough because he's such a great racer.

F1R: You've been quite open about how you changed your approach for 2016, that there were a lot of mental exercises, and that it was quite draining.

NR: [Quick as a shot!] I didn't say 'draining'. 'Intense' maybe. But it was massive.

F1R: Intense, then. Did that inform your decision to retire at the end of the year? And did you tell anyone else beforehand? When Jackie Stewart decided to retire in 1973, he made up his mind well in advance, but didn't even tell his wife because he didn't want her to be counting down the races in case anything happened before then.

NR: Well I can fully understand that. I didn't make my mind up, but I had thought about it and I didn't tell anybody.

F1R: So when did you decide?

NR: On the grid in Abu Dhabi, before the race. I was trying to apply all my meditation skills, but nothing worked. What worked was the realisation that this might be my last race! I was like, 'Oh damn, okay, let's go and enjoy the driving – it might be the last time!' That clarified all the stress. ▶



F1R: How much did you enjoy that? Because at the end of that race you did look very, very drained, and it looked as if it was a race that had gone on about ten laps too long for you.

NR: No, I don't understand why you would say that, because of course the race was massively intense, but by the time you saw me I don't think I would have been looking drained because it was an absolute emotional thrill that I'd never experienced in my life before. For sure [he laughs] there were some tears, but that was just an emotional overflow of excitement. It was one of the most beautiful moments in my life. I wasn't drained.

F1R: Perhaps 'relieved' would have been a better word for it.

NR: Why 'relieved'? I wouldn't say that that word applies either. No, it was the excitement of achieving my childhood dream. 'Relief' is like you've been scared of something or whatever, you know? This wasn't about fear, it was the positive thrill of having grabbed what I'd been aiming for.

We seem to have hit a vein of defensiveness, so perhaps it's time for a change of direction. It's a popular maxim in the paddock that you don't leave F1 – it leaves you. Let's test that.

F1R: How personally difficult for you was it to then make the decision to quit – and to follow it through? Because a lot of people find it very hard to retire. Look at Michael Schumacher.

NR: Yeah, through my mental training I've learned that for me it's important to follow my instincts. I've learned to listen to my instincts more and more, because I think it's a very powerful indication of what you should be doing – and of what you want to do. So that's one thing. And I followed my instincts in this case by stopping.

It's also about change, and putting yourself in unusual, difficult circumstances. That's where you grow as a human being, you know? So I've learned to push myself into those situations, because I know that they are going to be amazing for my growth as a human being. And I'm experiencing that now, definitely. For over 20 years, every day was about racing, everything was planned, everything was just about winning the next race. That's how I did it, as a total life dedication. There were no compromises: it was 110 per cent of the life goes into winning the next race.

And now that's gone, so it takes a lot of adapting, but it's an exciting period. And, as I said, exploring different avenues, and meeting people where you then discover interesting new thoughts on everything.

F1R: Mario Andretti said when he retired he got really ill, and his doctor said, "Basically your body thinks that you're dead."

NR: Exactly. There are so many stories like that, and I can understand. It takes a lot of... what it comes down to is discipline. You need to understand that, because as a racing driver discipline was forced on me, almost, because I knew where I needed to be to win the world championship. But now



**FOR OVER 20 YEARS,
EVERY DAY WAS ABOUT
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WAS JUST ABOUT WINNING
THE NEXT RACE.
THAT'S HOW I DID IT...
AND NOW THAT'S GONE**



By June 2013 Nico had proved himself at Mercedes, but now had a new challenge on his hands in the shape of Lewis Hamilton...



it's a completely freestyle life, it also takes discipline to keep a healthy lifestyle and to keep happy. And that, I've learned, is not easy. My mental training helps a lot. I used to get up at eight o'clock in the morning to go running, so I do it now as well. It's about keeping the rhythm going.

F1R: Also, you don't want to be one of those world champions who turns up and can't fit in their overalls!

NR: [Laughs] No, no! I've put on a couple of kilos, but that's going to be a life-long fight anyway.

Now that we've abandoned the issue of post-Abu Dhabi semantics, let's broach another defining characteristic of Nico's career – the corrosive effect of his rivalry with Lewis Hamilton on their friendship.

F1R: Has your relationship changed with other people in F1 now that

you're no longer competing against them, particularly Lewis, because that relationship had a few bumps?

NR: I'm sure it will... [He takes a long, thoughtful pause as he carefully constructs a response before saying it.] Yes, because I'm not a competitor any more.

You win in any way you know, so it takes a bit of time to get used to that, or to get used to that thought, but I think with time it will change. And I can see that already with a couple of the drivers, because they don't see me as opposition any more, which I'm not, and I never will be again.

Is this a tacit admission that he sometimes knowingly overstepped the mark in combat, as with the 'mistake' in qualifying at Monaco in 2015 and various other comings-together with Hamilton on-track, and that he didn't relish having to do it?

F1R: Has retirement changed your perspective on the sport, for instance when you're watching on TV and you see the body language? Particularly things like the drivers' parade where you see them hiding away with their headphones on, not interacting with each other?

NR: Oh, I was aware of all that when I was involved...

Something in the tone of his voice, and the way he allows his sentence to trail off, suggests to us that Nico is keen to embrace a change of subject. We're not fishing for dirt here, so let's oblige him.

F1R: With the change in F1's ownership, was there any thought in your mind that perhaps you were missing out on an opportunity to be in at the start of something big...? ▶





NR: No, I never had any thoughts or worries of missing out, because for me it was: 'I have accomplished everything.' There was nothing to miss out on. For me, it felt like exactly the right moment to move on, and for my life now it's good that I have this massive high behind me, you know? It's carrying me into my new life.

F1R: That's a great way of looking at it, because Damon Hill said that when he became world champion, and achieved what he'd been aiming for, he didn't know what to do next. And you seem to have got that worked out.

NR: No, I'm not that far. It's just been ten months, it's a life change. It's not like I have everything 100 per cent worked out. So I'm exploring, I'm having fun, but do I have everything worked out? Not quite yet, no.

F1R: As the son of a world champion, when you were younger it seemed as if motor racing was the life mapped out for you. I met you when you were 13 or 14 and already Lewis's team-mate, at the Margutti Trophy in Parma. Neither of you won, and Lewis took it really badly, but you seemed to put the defeat behind you immediately. I assumed that maybe you didn't want success as badly as Lewis did, so you've basically spent the past 20 years proving people like me wrong. Do you feel that people may have underestimated you because you're the son of a world champion...?

NR: When I was growing up, I learned that there will always be two different opinions. There are always going to be the people who think that you're doing a great job and there are always going to be those who doubt it. That's also how I learned to cope with that – it never was a focus in my mind anyway. Of course, though, there was a lot of prejudice – no, prejudgements... what's the word?

Our October '15 cover focused on the rivalry between Lewis and Nico that had come to frame F1's narrative



F1R: Preconceptions.

NR: Preconceptions. It's amazing – I grew up in a wealthy background and my dad is a Formula 1 world champion, so it's unbelievable how many people I've had to convince that I actually am quite a normal guy who's dedicated his life to the mission of becoming world champion.

F1R: A lot of them would have written that you were a wanker if you hadn't!

NR: [Laughing] We've already covered that base, I think!

F1R: Just to elaborate on the subject of proving yourself, how tough was it to move into Mercedes, which was basically Michael Schumacher's team when he made his comeback?

NR: Yeah, it made for some difficult moments of course, because he comes in and it's like God walking through the door. Really. Every time he walked in, all the engineers – metaphorically speaking – stopped what they were doing and admired him.

And then the first strategy meetings. Only Michael is addressed. I'm sitting right next to him and I'm hardly looked at, even if I was sixth on the grid and he's 12th. It was those moments that were tough to digest initially. I hadn't even won a race when I drove for Mercedes. And he was a seven-time world champion, so you can imagine the difference there.

But I'm thankful because the team allowed me to gain respect, and they were open-minded enough to really discover 'Okay, this guy actually knows how to drive a race car, and he's not that dumb' [he laughs again]. So I was able to grow nicely in the team and I'm thankful for that. And then of course Lewis came in. By that time I'd won only one race [China 2012] and he was the big world champion, the future superstar or whatever. So again I had that situation, with both him and the team being British, where it felt as if I had to establish myself and gain the respect from everybody again, and find a strong position in the team as well. But again there, I feel that they really allowed me to do that and I was able to come to a level with Lewis, even in the team internally, which was a great feeling and great to see.

F1R: You make a very interesting point, because Nelson Piquet told us that when he was at Williams he felt he wasn't getting equal treatment, because he was a foreigner in a British team and he had a British team-mate. Was that just an impression that you had, one that you subsequently dismissed?

NR: Of course there is that. The Brits are for the Brits and the Germans are for the Germans. For sure there is that. But I really didn't see that in the team. They were very supportive of me – everybody throughout the whole factory. So that made it all the more special. ▶

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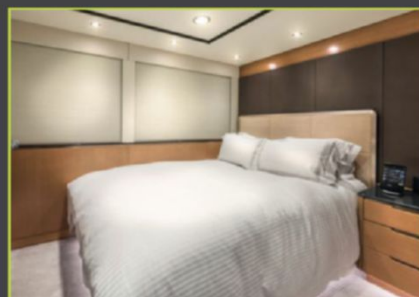
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In February I went by just to do a lap of the factory, just to say one more thank you, because I hadn't gone to see them after my retirement. I wanted to show that I appreciated everything they've done for me.

F1R: Will you carry on being an ambassador for Mercedes?

NR: I don't see it as a long-term thing. It's not a passion, really. I guess you can understand...

There's a twinkle in his eyes as he laughs again. Yes indeed, drivers really don't enjoy the demands of being tethered to a marketing campaign.

F1R: Well, as you said, you've got plenty of other irons in the fire. What about the F1 side?

NR: That's going to be – how do you say it nicely? – it's nice to still be a part of the Mercedes family and the team, but at the moment I don't see it as a long-term solution for me. Today, this is me coming personally – it's my day, I could be on the beach if I wanted to, and I'm not being paid to be here – I want to be here because it's special to see my car come into the legendary position.

That said, Nico has done a lot more than watch his car being mounted on a wall today – earlier, he did an extensive meet-'n'-greet with fans on the Mercedes campus.

F1R: So you've vacated your position at Mercedes – and it's been very interesting to see that when Valtteri Bottas occupied it, he made a point of retaining your core team. Most new people, when they come in to a new team, they want to install their own people...

NR: But I think he was smarter than that, because those people are pretty damn good. It was a clever move not to try to change anything there.

F1R: Is F1 such a marginal-gains sport now that you have to pay attention to small details like that?

NR: Every single detail counts. Look, in the summer break last year I decided to stop cycling because the leg muscles are among the heaviest things on your body. I lost 1kg as a result that August. We came back, and three races later it was the Japanese Grand Prix. One kilo of body weight is 0.04 of a second per lap when the car is at the weight limit. I was on pole at Suzuka by 0.03 seconds.

My smaller leg muscles got me on pole, and that messed with Lewis's head, so he messed up the start. I finished first, he finished third, and I had the points lead that I needed to be able to cruise home with second places.

F1R: Sir Chris Hoy could have told you that cycling can make your legs quite chunky.



“

IT'S NICE TO STILL BE A PART OF THE MERCEDES FAMILY AND THE TEAM, BUT AT THE MOMENT I DON'T SEE IT AS A LONG-TERM SOLUTION FOR ME. TODAY, THIS IS ME COMING PERSONALLY – IT'S MY DAY

”

January 2017 and job done: after an intense fight for the title Nico achieved his dream at the season finale and announced his retirement days later



NR: I met him recently, yeah, he still has legs like that! Unbelievable. So I asked him for some advice on how to build up my leg muscles again.

F1R: Well you can now, can't you?

NR: I am doing it, for sure, big time.

F1R: He's been racing cars recently. Did he ask for any tips?

NR: Ha ha! No, he didn't.

Nico has kindly opted to take a later flight back to Nice so as to squeeze *F1 Racing* into today's busy agenda but, even so, it's wise not to gamble on the Stuttgart traffic, so we wrap up the interview on this note of levity. He pauses to scan through the photos – “Thanks. Nice work!” – gives a final glance around the banked wall of motoring greats, thanks us once again, and bids us farewell.

He's off to continue the next chapter of his life – a narrative that exists, it seems, only in outline form at the moment. But he's dug deep to win before – beating Michael Schumacher, and transforming himself into a more-than-unstoppable force to overcome the immovable object of racing excellence that is Lewis Hamilton – so whatever lies ahead, don't bet against him excelling at it. 🏁

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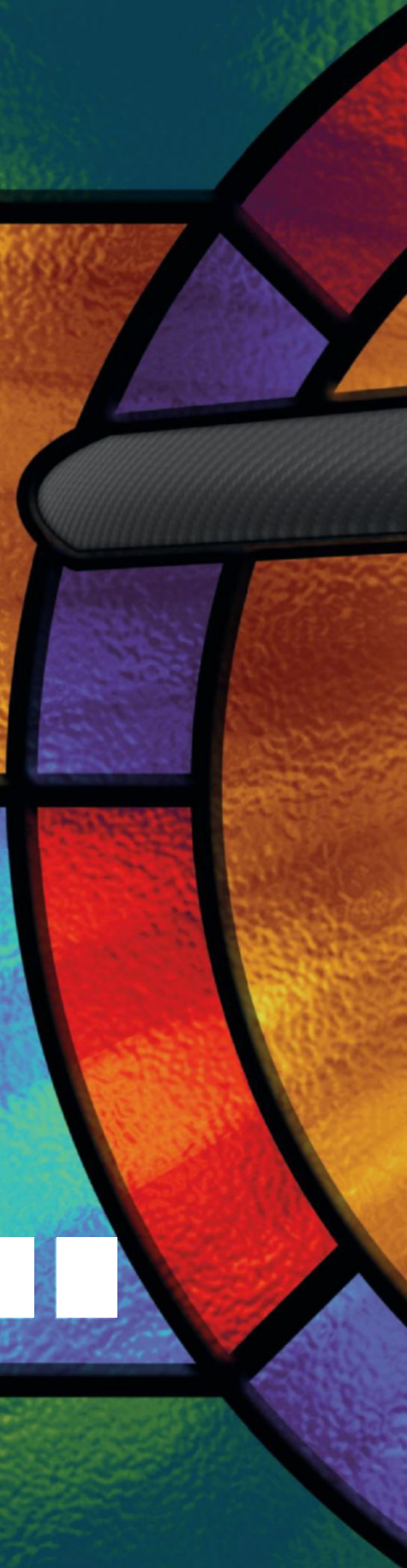
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THE

HALO:

SAINT...





...OR SINNER?

A divisive dilution of the very DNA of Formula 1, or the natural next step in a long line of safety improvements? Whatever your opinion, one thing's for sure: the halo is definitely on its way. So what does it mean for the sport? *F1 Racing* talks to those dealing with the arrival of the holy roll hoop

WORDS JUSTIN HYNES ILLUSTRATIONS EMMA & DEAN WRIGHT

Minutes after the FIA announced, last July, its decision to mandate the use of the halo head-protection device for 2018, the Twittersphere went into meltdown.

Amid the looping memes of Luke Skywalker howling disbelief into the ether and repeated images of flip-flops pasted onto chassis tops, fans also verbally vented their fury. "F1 feels the need to do something for the sake of doing something," read one. "Can we ban the FIA for bringing the sport into disrepute?" fumed another. Many more simply responded via the pithy hashtag #fuckhalo.

Dotted amongst the splenetic outpourings, however, were a number of more accepting opinions, with a few voices insisting that driver safety had to be the paramount concern. "I consider myself an F1 purist but nothing should get in the way of driver safety," wrote one fan – admittedly a somewhat lonely voice.

Beyond the paddock gates, the debate over whether the halo casts out the very demon ▶





**“WE PLAYED
THE ‘WHAT-IF’
SCENARIO”**

**“WE LOOKED TO SEE IF THE
RESULTS WERE POSITIVE,
NEGATIVE OR NEUTRAL”**

**“THE NUMBER OF CASES IN
WHICH THE HALO WOULD HAVE
HELPED WAS OVERWHELMING”**

that makes Formula 1 so fascinating – namely inherent risk and a heroic disregard of it – continues to rage. Inside the sport, however, the mood has shifted, with active antipathy turning gradually to stoic acceptance, or, in the case of those charged with implementing the system, a sense of urgency as the clock ticks toward 2018 and chassis design remains stalled while standards are defined.

Haas racer Romain Grosjean is one driver whose unwavering opposition was very evident right from the system's first trials. When the mandate was handed down to bring in the halo, he was quick to lament the decision, saying: “It is a sad day for Formula 1.”

Three months on, and while he is still spiritually opposed to the halo, his antagonism has given way to tolerance. “It's coming and we have to deal with it,” he says. “I'm still not a huge fan of it philosophically, although it is hard to say so, because I know that the FIA is pushing to improve safety and what we have seen them do since Senna's death in 1994, is amazing. Think

of the crash I had at the 2015 Russian GP, or the one Carlos Sainz had during practice at the same race, for example. We now see the driver escape the car, jump out and race the next day.”

Much of the growing acceptance of the need for additional head protection stems from the lengths the FIA have gone to in revealing the research behind development of the device and the rationale behind choosing the halo, with drivers and the media being given guided tours of the FIA safety department's findings.

“We went quite extreme in looking at a wide range of devices,” says FIA safety director and deputy race director Laurent Mekies of the research. “We looked at a roll-bar in front of the car, a roll-bar on top of the car, full canopy testing and the first halo and shield designs. The programme started off with more than ten families of device being studied.”

Fundamental to those studies was Henry Surtees' fatal accident during a 2009 Formula 2 race at Brands Hatch. Surtees died following a high-speed impact with a detached wheel. The

response from the FIA safety department was to seek a solution that would protect the driver against the impact of a 20kg wheel travelling at a speed of 140mph.

The project wasn't limited only to the specifics of the Surtees incident, however. A broad spectrum of cases from a variety of different series were examined, with three distinct impact patterns being investigated: car-to-car; car-to-environment; and finally, external-object impacts of the kind seen in Felipe Massa's incident at the Hungaroring in 2009, and also the fatal accident involving IndyCar's Justin Wilson at Pocono Raceway in 2015.

“In each of the cases, we started off by looking at the real-life accident and then asked what would have happened had the halo been fitted,” says Mekies. “Then we played the ‘what-if’ scenario. We fitted the halo and simulated the accident itself, but we also looked around it – 5cm above, 10cm above, to the right, the left and so forth. We were looking to see whether the results were positive, neutral or negative,



The aeroscreen (above) championed by Red Bull and the shield (below) tested by Ferrari, have both lost out to the halo (left) which will make its debut at the 2018 Australian GP

and the number of cases in which the halo would have helped was overwhelming.”

In the case of car-to-car impacts, of the seven incidents tested, six generated a positive or generally positive result for the halo, and only one was neutral. In car-to-environment cases, another seven incidents were examined, with four positive, two positive on balance, and one neutral. “In no instance,” says Mekies, “did the halo make matters worse.”

But there were still concerns that the device would be ineffective in deflecting smaller objects, such as the spring that flew off Rubens Barrichello’s car and struck Felipe Massa. Mekies is accepting of the criticism but stresses that while imperfect, the device still goes some way towards mitigation and that advances have been made in that area via other safety developments.

“Looking at Felipe Massa’s accident, we made a big step with helmet standards and the Zylon panel on the visor in order to deal with small objects,” he says. “We know that our protection against small objects has stepped up – and there

is another step coming in 2019. We also played the game of throwing millions of small objects at the halo from different angles. Statistically, with a structure in front of the drivers, protection is increased. The figure is not spectacular, but it is an improvement. It became clear that the overall results of the analysis give us little possibility to not push on with the halo.”

So far, so good. But a number of competing systems were also coming into play, specifically the aeroscreen developed by Red Bull and tested by Daniel Ricciardo at the 2016 Russian Grand Prix, and the similar shield device that was tested by Sebastian Vettel at this year’s British GP.

The aeroscreen, Mekies admits, was “a very nice and elegant solution”, but one that fell by the wayside due to a range of issues. “When we tested it, it did not fully pass the weight test,” he says. “That element could have been made to work with more time, but it also came with a whole family of additional issues – fogging, dirt, oil, rain. There were a lot of things that needed to be resolved.”

Despite its shortcomings, aesthetically the aeroscreen met with a far more positive reaction among fans than the rather unlovely halo. Reaction to the shield was similarly enthusiastic. It’s easy to speculate that the higher fan-approval rating for screens played a part in the decision taken by the F1 Strategy Group and the F1 Commission in April this year to “give priority to the transparent ‘shield’ family of systems”. But whatever the reasoning, the shield wasn’t ready for 2018 implementation, as Vettel discovered.

“It was forward distortion, basically. The curvature was quite extreme at the forward end,” he says. “You might wonder what the difference is between what we see and what a fighter pilot would see. He never looks through the point where the shield begins: that’s where his display or his dashboard is. Because we sit quite low, we look through where the curvature is most extreme and that was the biggest issue – seeing what was coming was not right.”

Mekies, though, says that while the visibility problem was a hurdle, it was not the ultimate ▶

THE INSIDERS' VIEW



ALEX WURZ GPDA chairman



DEREK WARWICK BRDC president

"The halo is a contentious topic, but before readers judge my comments, I must mention the one thing that has been key to everything F1 has developed over the decades, especially with regard to safety, and that is: function first and design afterwards. So any additional head protection is currently in the 'function' phase and not the 'design' phase.

To me, the halo device is not the most aesthetically pleasing object, but aesthetics are subjective. I find sportscars to be more aesthetically pleasing than F1 cars. So my comments are based purely on the function of halo.

Since the days of Jackie Stewart in the 1960s, F1 has done one thing year in and year out, which is to constantly improve the safety of cars and tracks – all without jeopardising performance. This is because everyone is aware that racing has to become safer to be sustainable in the long term, and for it not to be legislated out of existence.

I firmly believe that we have to keep increasing the safety of the cars for the drivers so we can actually keep chasing the one thing that truly matters in F1: performance. If we don't make the cars safer, no promoter, no sponsor and no governing body can accept a higher level of risk. We must improve cars' safety, so we can keep on going faster and keep on exciting people."

"RACING HAS TO BECOME SAFER TO BE SUSTAINABLE"
ALEX WURZ

"Some of the excitement of F1 has been eroded by safety issues over the years. Do we have to do the safety work? Of course, but F1 is about an open-wheel car that's the most difficult car in the world to drive, driven by the best drivers on the planet. Why are the TV viewing figures down?

Because there's not enough overtaking and not enough noise. The sport and its drivers have lost the feeling of gladiators driving racing cars. We need to find a way back to that and soon.

That's not to say F1 isn't any good. When I watched the race in Singapore, you could really see that these

cars are the best in the world, but I feel that gradually we are losing some of the essence of what makes the sport great. We have to be vigilant and make sure we maintain a level of excitement that keeps the fans on board.

Speaking specifically about the halo, I think that F1 as a whole is at fault for its introduction. All of the testing should have conducted behind closed doors. Once it made an appearance, then, for insurance reasons alone, the sport was left with no option but to implement it. Imagine if we had a serious crash and the sport hadn't introduced

an existing solution that could have prevented an injury or fatality: the repercussions would be huge.

We went down a road we never should have gone down and that's because we have not specifically regulated F1 as an open-cockpit formula. It's a difficult balance. We can't make Formula 1 too vanilla. If you make it too bland, we will lose fans. But on the flip side, you have to ask whether the halo device will save lives. The answer is almost certainly 'yes', so, whether we like it or not, it has to be implemented."

"WE CAN'T MAKE FORMULA 1 TOO VANILLA"
DEREK WARWICK



the suppliers that will be homologated. Because of the timeframe and because of the complexity, it is a challenge for all of us. We are fast-tracking things. This is not at all a bureaucratic exercise: we are moving as fast as possible. We will test three suppliers next month [October] and if everything goes as planned those will be homologated.”

There is also the question of whether the device could actually *help* the cars’ performance, which has been suggested. Green is adamant that, in the short term, taking advantage of the 20mm fairing allowed laterally and on top of the device is very unlikely: “Compared to the fundamental aerodynamics working on the car, what we are talking about on the top of the halo is a fraction of what the car is doing,” he says. “Remember that we are still only a year into these regulations; the development curve for the rest of the car is still strong. The halo is not low-hanging fruit as far as car performance is concerned.”

While the engineering race against time is pushing teams, especially the smaller ones, to the limits of their available

cause of the shield’s downfall. “The reality is that what Sebastian complained about is completely normal for an initial prototype,” he says. “That issue was not impossible to solve. The key factor was that the shield was designed to be more integrated into the car than the halo, but with a lower level of protection. Also, the cut-off point for a decision on 2018 had arrived. It was a case of: do we want to go for a more integrated solution but with a lower safety level, or do we want to go for full safety? And, to be honest, the drivers told us the same thing – halo.”

Support isn’t unanimous, however, especially among the younger drivers, with Max Verstappen questioning the device’s validity when other safety developments are already reducing the risks the halo has been designed to cancel out.

“The Virtual Safety Car reduced a lot of risk,” he said in Hungary. “Also, the wheel tethers are quite strong at the moment so I don’t think you will lose a wheel very easily. And when there are parts flying around from the car, the halo is not really going to protect you. I don’t really understand why we need it.”

Verstappen’s lack of comprehension is moot. Committed to a 2018 introduction for head protection, and having rejected the shield post-Silverstone, the FIA mandated the halo for 2018. The decision sparked instant outrage among fans, and caused consternation among

the teams, as Force India technical director Andy Green explains: “It came as a big shock. We were anticipating a shield-type device and we had moved along that route since effectively shelving the halo design early this year. Everybody was focused on the shield and directed towards making that work,” he says.

“Given the fact that it significantly changes the design of your monocoque, this being the item that requires the longest lead time, getting it done in time becomes a real struggle,” he says. “We are still trying to design a monocoque in parallel with the regulations for the halo being fully defined. It’s not a nice position to be in.”

Green’s concern is that a chassis must be designed to the load case stipulated by the FIA, yet the information was made available to teams only in the week of the Singapore Grand Prix, with the regulations surrounding the halo not ratified by the World Motor Sport Council until the week after that.

Mekies is understanding of the task the teams now face. “It is a real technical challenge on all fronts: from a chassis design point of view for the teams; from a chassis homologation point of view – ‘how does the FIA ensure it is satisfied with what the teams have done?’; from a halo certification point of view – ‘how are we going to certify the supplier?’; and finally from a supply point of getting enough halos to the teams from

resource, the weight of evidence produced from the safety research makes the implementation of some form of additional head protection difficult to argue against.

However, while it is hard to deny the cold facts, it is all too easy to dislike the device itself. Emotional engagement is still a huge part of F1’s appeal, and the halo’s unattractive looks continue to provoke a raw negativity not seen with other safety developments, including alternative head-protection devices.

Mekies, though, insists that it’s all still a work in progress. “We are always looking at other systems, as is the case with all safety equipment,” he says. “It’s the same for seatbelts in the car: we introduced a new standard recently, and we will do the same with helmets in the near future. It will be the same with the halo. This is the first attempt, so you would expect it to develop more quickly than, say, helmets, which are well-established. We are working at a thinner central strut, we are looking at better integration with the car, taking into consideration all the feedback from fans and stakeholders. Our priority at the moment is to deliver it, but once it is delivered we will focus on improvements.”

And that, ultimately, may be the saving grace of F1’s saintly secondary roll structure: the moment when fan-friendly form follows undeniable, life-saving function. 🍷

YOU ASK THE QUESTIONS

LANCE STROLL

Is he just a rich rookie or a superstar-in-training? Your questions attempt to get to get under the skin of the Williams young gun, Lance Stroll

WORDS JAMES ROBERTS

PHOTOS  LAT IMAGES: GLENN DUNBAR

At the top of the three-storey Williams is a rooftop terrace that overlooks the paddock. This is where team guests and VIPs mingle with a cocktail and gossip about the latest goings-on in the soap opera world of Formula 1.

Monza is the motorhome's last destination this year, before it reappears in the Barcelona paddock next May. On this sun-blessed Italian afternoon, a handful of guests are lolling in one corner. In another is the team's celebrated chef, Michael Caines, tapping busily away at a laptop. And on a sofa next to the Martini bar sits Williams' rookie racer Lance Stroll. The 18-year-old copped a certain amount of flak during the early parts of his debut season: the opening races were a struggle until he achieved his first points finish at his home race in Montréal. Then came that breakthrough podium in Baku.

Later on this Italian GP weekend, he will qualify on the front row. But prior to that star turn, he's faced with a tougher challenge: a grilling from our readers. The only thing we need be mindful of is the autograph session Stroll must attend in less than half an hour. After that he has to be in central Milan for a drivers' parade. Today's schedule is a tight one. So with one eye on the clock, he reaches for a question card...

Have you adjusted your natural driving technique to get the best out of the Williams this season? And if so, how?

Simon Bentley, UK

Yes I have. First there was the adaptation from F3 to F1, the weight difference and power and especially the tyres. I was braking too late and too hard and I was injecting problems into the car. I had to rein it in. So I started braking earlier and with less

pressure, because when you put so much energy into the brakes you create a lot of temperature in the tyre and the Pirelli is very sensitive, particularly with regards to the surface temperature. So going into a corner you increase the problems you have and lose grip.

Braking lighter and earlier made my life much easier, which meant I could then focus more on my exits. That's very different to F3 where the tyre would accept almost anything. Last year I could brake very deep and slide the car, but I've needed to refine and finesse it compared to what I was doing before.

Also, since Baku, we've altered the setup of the car and, since that point, I've been a lot more comfortable ▶



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driving the car, so, in all, it's really been a combination of adapting myself and also making changes to the car.



“ I KNEW IT WAS ONLY A MATTER OF TIME BEFORE CRITICISM WOULD COME MY WAY. I JUST TRIED TO STAY OUT OF IT AND STAY IN MY BUBBLE AND FOCUS ON MY OWN THING ”

How did you handle critics saying you weren't ready for F1?

Charlotte Davies, UK

I just didn't bother getting involved in all that. I knew the truth. I've won championships in the past and I've got my superlicence points and I've

earned my shot at Formula 1. I knew it was only a matter of time before criticism would come my way. I never got into the mix of what people were saying and the media. I just tried to stay out of it and stay in my bubble and focus on my own thing. The results have turned around and from Canada onwards it's been getting much better.

FJR: For someone who's only 18, that's a good positive mental attitude to have...

LS: I always kept the people who are important close to me and I didn't get involved – I just stayed out of it.



He has the hopes of a nation riding on his shoulders, and Lance proved he could rise to the occasion by scoring his first F1 points in Montréal

Were you surprised by the comments Jacques Villeneuve made about you, or don't you care?

Patrick Six, Belgium

[If, dear reader, you hadn't been paying attention to Villeneuve's recent musings, he said of his young compatriot: "It's one of the worst rookie performances in the history of F1" adding that Stroll's

drives had been "pathetic."]

LS: Who? Who said what? I don't really care.

[The hugely experienced Williams press relations officer Annie Bradshaw suggests to Lance that he tears up that particular question card, and he obliges with glee]

LS: Everyone needs to love everyone, right?

Are you a Gilles Villeneuve fan?

Hass Monsoor, Australia

I am. I am a Gilles Villeneuve fan.

FJR: We did shuffle the cards. It's not deliberate that this question follows the previous one...

LS: [Laughs] He's a bit before my time, but massive respect to him. He was a daredevil of a guy and back in the day it was quite something to be on the limit like he was. Some would say over the limit, but you've got to respect him and I think he goes down in the books as one of the all-time greats.

FJR: Have you read Gerald Donaldson's biography of Gilles? In it there's an anecdote about him free-falling in a helicopter – that's how much of a daredevil he was.

LS: That's taking it to a whole other level.

Are you ready to lead the team if Felipe Massa retires again?

Joseph Cooper, UK

I'm still young and I still have a lot to learn, but I'm building a good relationship with the team at every race and every weekend

I get closer to everyone. I think

there is a lot of potential and I'm looking forward to being with Williams in the future and seeing what we can get out of that. Now, with Paddy Lowe [chief technical officer] being here, and a lot of good people coming into the company, I believe that over the next couple of years there's a lot more to come. I'm ready to be a part of it.

Many new drivers are missing out on the feeder categories for F1, why do you think this is? And what did European F3 teach you as a driver?

Tom Bryan, UK

I don't think it's something that's happening a lot. I missed GP2 or Formula 2, but that was because I had an opportunity to come up to Formula 1 with Williams. I did a really good job in F3 and I had a shot and took it. I don't think that one is any better than the other, I think it's just about timing and

doing what is right for you.

There is nothing wrong with doing F2: everyone has their own path and their own trajectory into Formula 1. That's how it worked out for me. I felt ready and Williams felt I was ready and I had to make the jump eventually. You always start Formula 1 from zero. ▶

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YOU ASK THE QUESTIONS

Are you into any other sports? If so, what?

Josh Goodman, UK

Yes, I play a lot of golf. I'm into mountain biking, skiing, tennis, surfing...

F1R: Where do you surf?

LS: I surf in the Caribbean

– Barbados, on the east coast where the big waves are. But having grown up in Canada by a lake, I also do wakesurfing behind a boat: I've been doing it since I was four. I also like American Football (NFL). I don't play it, but I support the New York Giants and I was there for both the Superbowls they won, in 2008 and 2012.

Backstreet Boys or One Direction?

Przemek Iwaniec, Canada

Who are Backstreet Boys?

F1R: An American boy band.

[Annie Bradshaw once again, vainly, tries to help out: "I've heard the name but I can't tell

you anything about them."]

LS: I'd have to say One Direction because I've never heard of Backstreet Boys.

I'm a fellow Canadian. What is it like to carry the hopes of all Canadians on your shoulders?

Tim Stanfield, Canada

I always notice the Canadian flags waving wherever I'm racing around the world. So it's great to have that support no matter where we go. Be it in Belgium or Australia – I always spot a few of them. And to race in Canada, in

my home town of Montréal, was just amazing.

Where are the best places to go when visiting Canada?

James Potter, UK

There are a lot of beautiful places to visit. Vancouver on the west coast is amazing. Montréal is a great city to see – it's really happening and buzzing. Niagara

Falls is something you should see when you're in Canada. There's a lot to do while you're there.

Which current or past F1 driver do you respect the most?

Patrick O'Neill, UK

Michael Schumacher was my idol. He was the guy I watched

growing up and then there are the guys today, Hamilton, Vettel, Alonso, who are at the top of the sport. They are so good. Every weekend they get the maximum out of what they can achieve. You've got to respect the real champions.

F1R: Did you catch up with your old chum Mick Schumacher in Spa?

LS: I didn't get the chance, no.

F1R: It was great to see him driving Michael's Benetton around the track...

LS: Yeah, I was watching it on the TV. Very cool.



“THE SECOND YEAR I WILL DO THINGS DIFFERENTLY FROM THE FIRST TIME AROUND. DURING EVERY RACE I'M LEARNING”

What is your least favourite track and why?

Pam Berryman, UK

[There follows a very long pause, so we decide to pitch in with a suggestion...]

F1R: China?

LS: No, I really liked China, it's a great track. I would say... Russia. I hate Russia. It's really average. Boring with no high-speed corners. Russia is the worst.

How are you affected by the current restrictions on testing?

Joe Johnston, USA

To be honest, it's just something you have to deal with in a rookie season. When you show up at new tracks, the simulator can only take you so far. It comes down

to you hopping in the car with the limited time you have and making the best of it. The second year I will do things differently from the first time around. During every race I'm learning, especially when conditions change or tyre compounds alter. The race is the time you learn the track the most during a weekend. The simulator helps but at the same time it's just experience. Sometimes it clicks and makes more sense than at other times.



In the current F1 world, what would you say irritates you the most?

Ewelina Mazurek, Poland

The media stuff and the politics can be annoying. There are a lot of rumours that

aren't true that go around the paddock. The amount of time you spend in the car is nothing compared to dealing with the other stuff. It's irritating, but it's part of the sport.



YOU ASK THE QUESTIONS

Next month, Max Verstappen is in the hotseat. For your chance to ask him a question, sign up at: f1racing.com/global-fan-community

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DO YOU HAVE THE ENGINEERING X-FACTOR?

A partnership between INFINITI and Renault Sport Formula One Team is uncovering the best young engineering talent from around the world. Next year you too could win a work placement in Formula One.

As Nico Hülkenberg held the winner's name in an envelope, the ten students looked on nervously.

One of them was about to have their life changed forever. The Renault Sport F1 Team driver had made the trip to INFINITI's global headquarters in Hong Kong to announce the winner of the 2017 INFINITI Engineering Academy Asia-Oceania final.

In a little over a month, the victorious student – Australian Jacob Debono – would be whisked off to the UK to begin his year-long work placement at both the Renault Sport F1 Team in Enstone and INFINITI's Technical Centre in Cranfield (six months at each venue).

Now into its fourth year, thousands of applications from around the world were whittled down to 70 students across seven different regions: US, Canada, Mexico, Europe, Middle East, China and Asia-Oceania. Each region had its own event to find a winner.

The final contest of the year took place in Hong Kong from 17-19th September, where the university students underwent a series of challenges, both written and practical, in which they had to impress the ever-present judges. Think X-Factor, but for brilliant engineering minds, not showbiz wannabes.

"They need to have strong technical knowledge, but we are also looking at how well they perform in a team," says Tommaso Volpe, the Global Director for Motorsport and Performance Projects at INFINITI. "One of the challenges is to build and race a dragster model and to achieve it, they need to work under pressure in a very small time frame."

Other tasks included designing the site of INFINITI's Technical Centre in Cranfield, taking a written examination and undergoing an interview in front of a panel of judges and the boss of the Renault Sport F1 Team, Cyril Abiteboul.

"This is a great programme that



"AS IT'S SUCH A TECHNICAL SPORT, YOU NEED BRIGHT, SMART YOUNG PEOPLE WHO COME WITH FRESH IDEAS – AND YOU HAVE THAT HERE. THAT CAN ULTIMATELY MAKE A DIFFERENCE TO YOUR RESULTS AND ON-TRACK PERFORMANCE."

**NICO HÜLKENBERG,
RENAULT SPORT F1 TEAM DRIVER**

INFINITI have created because it is finding young talent for the future," says Abiteboul.

"We are recruiting a lot at the moment and the fact students get the chance to work both at the Renault Sport F1 Team and at INFINITI is a great way to understand the engineering philosophies across the automotive and F1 industries.

"This project makes a lot of sense from INFINITI," he continues. "It's cost-effective and is a chance to invest in



Nico Hülkenberg stands with the engineering winner Jacob Debono and INFINITI's Tommaso Volpe (above)

people because the talent of today is the performance of tomorrow.”

Of the seven winners last year, a number have been given permanent contracts at either Renault or INFINITI, while the remainder have returned to university to continue their studies.

The INFINITI Engineering Academy started four years ago when just 1,000 students applied for the scheme. This year 12,000 CVs were submitted from

around the world and the academy is expecting an even bigger number of university engineering graduates will apply in 2018.

Having flown to Hong Kong after the Singapore Grand Prix, Germany's Nico Hülkenberg was impressed with the talent and teamwork on display.

“I think the INFINITI Engineering Academy is special and unique for these students to have this opportunity, because



Q&A

Tommaso Volpe,
Global Director for
Motorsport and Performance
Projects at INFINITI

How did the INFINITI Engineering Academy come about?

“The reason we wanted to do this project was for INFINITI to bring to Renault added value as a technical partner, in addition to the expertise we bring with the hybrid technology in the F1 power unit. So we launched the academy in seven regions around the world.”

What do the seven winners get?

“They get work placements at the Renault Sport F1 Team and a further six months at the INFINITI Technical Centre at Cranfield. I don't know of another programme that does this for their students. Automotive and Formula 1 are different playgrounds but engineering principles are the same and we place them in the best field for their profile, so in either vehicle dynamics, electronics or aerodynamics – depending on their skills.”

How has the INFINITI Engineering Academy grown in the past four years?

“The first year we had 1,000 applicants and three winners, the second year we had 2,000 applicants and five winners. In 2017 we've had 12,000 applicants and we have ideas to evolve it further into next year.”

it's not easy to get to Formula 1,” said the Renault Sport F1 Team driver.

“As it's such a technical sport, you need bright, smart young people who come with fresh ideas – and you have that here. That can ultimately make a difference to your results and on-track performance.”

Think you have the engineering X-Factor like Asia-Oceania winner Jacob Debono? Then consider applying for next year's competition...



HOW TO APPLY

If you're a current engineering student and fluent in English then register your interest for the 2018 INFINITI Engineering Academy for the chance to win a year-long work placement at both the Renault Sport F1 Team and at INFINITI's Technical Centre in Cranfield.

For more information visit
academy.infiniti.com

To read more from our Q&A with Tommaso Volpe please visit Autosport.com



MCLAREN-HONDA NO MORE



MCLAREN

SPLIT WITH

HONDA

**WHO THEN
SUPPLY
ENGINES TO**



TORO ROSSO

RENAULT



**WHO THEN
SUPPLY
ENGINES TO**

MCLAREN

TO RE-SIGN



WHO RELEASE CARLOS

SAINZ WHO MOVES TO



ALONSO...



MCLAREN-HONDA NO MORE

...OH WHAT A TANGLED WEB

It's taken six months and protracted negotiations between three engine manufacturers, two drivers and four teams, not to mention a tearful goodbye to \$100m, to annul the doomed marriage between McLaren and Honda.

F1 Racing sifts through the wreckage

WORDS ANDREW BENSON

IN THE END,

it all came down to trust, faith and confidence – or the lack of them. During the three years they spent with Honda as their engine partner, McLaren were “bleeding”, as one senior team member puts it, and they felt they had to extricate themselves from the failed relationship.

Doing so proved more difficult than they could ever have envisaged. A decision initially made in March, when it became abundantly clear just how much trouble Honda were in, finally came to a resolution in September. Six months of negotiations, which involved three engine manufacturers, four teams, and two drivers. And in the end, McLaren have waved goodbye to a net \$100m and swapped the worst engine in Formula 1 for the second worst.

Or third best, to look at it another way.

At the same time, Red Bull have loaned one of their drivers to a rival and Honda have found a place to develop out of the spotlight – only to invite it right back onto themselves, thanks to their improbable claim that they are aiming for the “top three on the grid” with new partner Toro Rosso.

Why did it happen? How did it happen? And what are the prospects for McLaren, Renault, Toro Rosso and their owners Red Bull, Carlos Sainz, and, last but not least, Fernando Alonso?



A MESSY DIVORCE



Heading into 2017, and the third year of their partnership, Honda had promised McLaren they would match the performance of the 2016 Mercedes engine with their new power unit, which was designed to a layout that copies that of the world champions. So when Honda turned up in pre-season testing with an engine that could barely run and less power than they had in the last race of 2016, McLaren made a decision: they had to get Honda some help... or get rid of them.

“The start of pre-season testing was when we realised that we had a big problem,” explains McLaren executive director Zak Brown. “Ninth in the first year is understandable, sixth was an improvement. This year needed to be an improvement on that again, but this year is like year one. That wasn’t going to work.”

The plan was to keep the partnership alive, but ask Honda to take a break from F1 for as long it took for them to be competitive again. In the meantime McLaren would run an unbranded

Merc engine. At the Monaco GP, McLaren’s Mansour Ojjei shook hands on an agreement with Dieter Zetsche, chairman of Daimler, Mercedes’ parent company. Honda said no.

A few days later, a new plan was formulated. McLaren suggested that Honda should accept technical help from Mercedes, as the team believed Ferrari and Renault had already done. Talks took place. An agreement was reached. But then came a delay. Trying to finalise the legal aspects dragged on. There were doubts as to how much the Mercedes F1 side of things really wanted it to happen. Honda became suspicious of the level of willingness to help. Intellectual property issues arose. So, in the end, it collapsed.

All Brown will say is: “They explored a collaboration that ultimately didn’t come together. That was one of the solutions. The different engine manufacturers have helped each other over the years. It was disappointing because it could have been a good solution.” ▶



McLAREN-HONDA NO MORE

McLaren and Honda agreed a series of performance targets for the engine. Each target was missed, in terms of when upgrades were introduced and how effective each upgrade was. Any belief McLaren had that Honda could grow more competitive evaporated altogether.

An interrelated matter in the background was the future of Fernando Alonso. He had lost faith in Honda, and while he insisted publicly that he had given McLaren no ultimatums it was clear where his head was at – he could not face another year of frustration and disappointment. So if McLaren could not jettison Honda, Alonso was almost certainly going to leave, giving them a driver line-up of Stoffel Vandoorne and... well, whom exactly? Certainly not one of the greatest drivers of all time. It was not the deciding factor for McLaren – “We wouldn’t change engine suppliers based on drivers,” says Brown – but it was certainly an influencing factor.

It underlined where McLaren were. Their position in the constructors’ standings was dreadful, and it was losing them prize money. Their performance meant they could not attract sponsors, or top-level drivers, and there was a very real fear that if Honda continued to fail, the Japanese company’s board would simply pull out, leaving McLaren in even more trouble.

Yes, Honda contribute in the region of a net \$100m to McLaren in terms of free engines, sponsorship, and half the drivers’ salaries. But the downside to continuing the relationship was worse. It was “a proper disaster”, according to racing director Eric Boullier, and McLaren felt the future of the team was in very real jeopardy.

“We tried everything we could up to this point to help Honda, to get Honda some help,” Brown says. “They have been doing things a little differently. I am optimistic that they are going to improve, but three years is as much time as you can give a programme without seeing the results that we needed to see, so we felt it was time to make a change.”

Engine-related DNFs have been a constant



THE RENAULT DEAL

Once the Mercedes option was dead, Brown says they did not approach Ferrari because: “Given that we are both in the automotive business, it would be hard to have a McLaren-Ferrari.” So the only option left to McLaren was Renault.


McLaren were keen and so were Renault, but Honda needed persuading to end their contract, and they were not keen, at least initially. Then an ‘out’ appeared. Red Bull were not happy with Renault and were looking for a works engine partner. They saw an opportunity: put Hondas in the Toro Rosso junior team, with a view to putting them in Red Bulls as well in the future.



Honda eventually came to see the positives of starting afresh with a new partner. But then a new complication arose: Renault wanted Carlos Sainz to partner Nico Hülkenberg in 2018 in their works team. Initially, Red Bull did not want to let him go. But then one of the biggest intertwined deals in F1 history came together. McLaren would cut ties with Honda, who would join forces with Toro Rosso, from whom Red Bull would release Sainz on loan to Renault, whose engines, previously slated for Toro Rosso, would go to McLaren, for whom Alonso would then re-sign.



A WIN-WIN FOR EVERYONE. OR IS IT?



Carlos Sainz has left Toro Rosso for Renault as part of this complex deal

MCLAREN



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STAYS IN F1

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GET A STRONGER DRIVER LINE-UP



HONDA

CAN DEVELOP AWAY FROM THE SPOTLIGHT AND

RED BULL

FIND A LONG-TERM SOLUTION TO THEIR ENGINE SUPPLY

This all looked very clever. But after it had been agreed, Renault chucked in a hand grenade. They told Red Bull they would not extend their contract beyond 2018. There are contractual complications that mean this cannot be set in stone yet, but right now it's very likely that

Honda will be supplying both Red Bull teams in 2019. And that might not be so clever of Red Bull after all. An extension of their relationship with Aston Martin, which has just been upgraded to title sponsorship for 2018, is all very well, but they cannot build an F1 engine unless the rules

change significantly for 2021, and, right now, that looks to be extremely unlikely.

Meanwhile, if Honda do not improve significantly, the chances of Daniel Ricciardo staying on at Red Bull are slim. And Max Verstappen will be looking for the exit, too. ►



McLAREN-HONDA NO MORE

Ricciardo is out of contract next year, and there are seats potentially available at Mercedes, Ferrari and Renault, all of whom are interested in him. Verstappen is contracted to Red Bull until 2019, but there are clauses in his contract that mean he might be free at the end of 2018. Even if he is not, his enthusiasm for using a Honda engine in its current state of competitiveness will not be great. Mercedes and Ferrari are both interested in Verstappen, even if partnering him with either Lewis Hamilton or Sebastian Vettel could lead to fireworks.

With their top-line drivers considering leaving the team and a potentially uncompetitive engine, Red Bull could find themselves in 2019 where McLaren are now.

OWNER DIETRICH MATESCHITZ IS AN IMPATIENT MAN. HE IS ALREADY NOT ENAMOURED OF THE CURRENT ENGINES.

Could this threaten Red Bull's future in the sport?

Of course, Honda might improve. Operations officer Katsuhide Moriyama claimed that their target with Toro Rosso was "to fight for the top three at the front of the grid". This caused widespread mirth. One senior figure said: "Toro Rosso wouldn't be in the top three with a Mercedes." Moriyama's remark is seen as reflective of Honda's failure to understand the size of the task facing them.

The complexity of the hybrid engines isn't helping. It's no accident that Honda's updates to the internal combustion engine is often followed by the failure of a part of the hybrid system, as happened to Stoffel Vandoorne at Spa.

Honda are a big company, staffed by clever engineers, but recovery will take time. Insiders say that, realistically, 2019 is the first hope for anything close to competitiveness. And even then there are no guarantees.



WHAT TO EXPECT OF McLAREN-RENAULT?



At McLaren, it's all optimism. The team believe that the Honda engine is 50kW (just under 70bhp) down on a customer Mercedes in race trim, and the Renault about 35-40kW better than the Honda. That's a power hike of around 50bhp, which equates to about 0.8s per lap on an average circuit, around 20 per cent more at Baku, Montréal and Monza, and around 20 per cent less at Monaco, Hungary and Singapore.

That doesn't take into account the fact that Honda have the worst hybrid deployment of all the engines, which negatively affects McLaren's race pace. Comparisons are hard because having more power lets a team run more downforce, since it changes the calculation of what is the best compromise in terms of downforce and drag on a given circuit. And having the Honda engine

means McLaren have to work to a different efficiency ratio from, say, Mercedes.

But, taking all this into account, McLaren's data tells them that their chassis this year is on a par with Red Bull's. So assuming both progress at the same rate over the winter, they should be close in 2018. "I think we are going to have some great racing with Red Bull next year," Brown agrees. "They are a great team, great drivers, they have a good head start on understanding the power unit, but I think we can race them hard."

The rest depends on the progress Renault make in closing the gap to Mercedes and Ferrari over the winter. "Renault have won a lot of races," Brown adds. "We are aware of their plans, we are confident in their plans. These things ebb and flow, right? Ferrari weren't where they are today

12-24 months ago. So while it might seem that Renault is the third best engine, they are not far off. A lot can happen in the off-season. So it would be early to assume they are going to remain the third best engine."

At the time of writing, Alonso had not yet signed a new McLaren contract.

But the big stuff – his salary, for example – was all agreed, leaving only details, and it was considered an inevitability by the team. Publicly, Alonso was insisting he had not yet decided, but it's hard to see what else could happen. So, assuming he does sign, what is it going to feel like to be fighting for podiums and, potentially, wins once again?

"Normality," he says. 🍷



"FERRARI WEREN'T WHERE THEY ARE TODAY 12-24 MONTHS AGO. SO WHILE IT MIGHT SEEM THAT RENAULT IS THE THIRD BEST ENGINE, THEY ARE NOT FAR OFF. SO IT WOULD BE EARLY TO ASSUME THEY ARE GOING TO REMAIN THE THIRD BEST ENGINE" McLAREN'S ZAK BROWN

Andrew Benson is BBC Sport's chief F1 writer



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MCLAREN-HONDA NO MORE



YUSUKE HASEGAWA

The head of Honda's much-maligned engine programme has one of the hardest jobs in the sport – in *any* sport. We asked him what the future holds as Honda switch from McLaren to Toro Rosso

What do you expect from working with Toro Rosso in 2018?

I've never worked with them before, so I don't know the details of how they work. But I have already had a couple of meetings and I have my impressions from the outside. They are a small team but they're very much a genuine racing team.

Will there be less pressure with a smaller team?

Not really! McLaren pushed us very hard, but that's the nature of a racing team. But we also feel huge internal pressure because we carry Honda's name. We need to be much better next year. The pressure is even higher from that point of view.

Do you have the hardest job in Formula 1?

[Laughs] It's not just me. As a team we do a very hard job. It's partly because we started a year later than other engine manufacturers, so we need to catch up and accelerate performance. That makes our job maybe three times harder.

Is it true that Honda insist on recruiting and training their own engineers, rather than buying in external talent?

Most of our engineers are Japanese because we are a Japanese company and our main R&D centre is in Japan. We have no barriers to European or American engineers, but language can make meetings difficult. Communication is the biggest issue. We train our engineers in other languages and in how to transfer their information to people working in other languages, and the most important thing is to become a more global company and to work with all nationalities.

Why have Honda found F1 so much harder than in the past?

Hmm, this is a big question for me as well! One point of difference is that we had no time to prepare before re-entering in 2015. The lack of preparation time made a big difference.

Will Honda ever own a team again?

I don't think so. We currently think we need to concentrate on power-plant development and make that work better.

What was the lowest point of your three years with McLaren?

It's still very difficult! But seriously, our first day of winter testing at Barcelona this year. That was very tough. [Fernando Alonso completed only 29 laps, owing to Honda power unit troubles; Ferrari's Sebastian Vettel completed 99.]

Why were you so bad?

You have to look back over the past three years. In year two, 2016, we showed good progress. But our performance wasn't as good as the top runners' so we had to modify the engine concept. We had to make the engine lighter and lower the centre of gravity. We knew we would struggle with performance after so many changes, but we had to change the concept to try to get close to the level of the top three. Next year will be an update to this concept, not a whole new engine.

What weaknesses have you identified?

We are never satisfied with performance and have to address this in many areas: combustion, squeezing more power from fuel, efficiency, and a higher compression ratio. The difficulty is balancing a higher compression ratio with reliability.

What's it like when Fernando Alonso comes on the radio and says 'my engine is terrible'?

It's unfortunate and sad, but sometimes it's fair. If the engine has a problem, he has a right to be angry. But from a Honda point of view, I have to tell Fernando that I wish he wouldn't do that. Because this is an important activity for the branding of the company. It's not possible to hide our performance, but to save our brand name is very important. I have spoken to Fernando about this. Of course we always need his feedback.

After a bad day at the office, how do you rationalise it?

This is a special job, and I can't just forget it when I go home to my wife and daughter. There is no solution other than to make the engine better, and that keeps me motivated. Technology is very honest. Improve it and you see the result.

“AS A TEAM WE DO A VERY HARD JOB. IT'S PARTLY BECAUSE WE STARTED A YEAR LATER THAN OTHER ENGINE MANUFACTURERS”



NOW
THAT
WAS
A
CAR

No. 63

WORDS DAMIEN SMITH
PICTURES PAWEŁ LITWINSKI

THE FERRARI F2001

Record-breaking Schumi steed, set to go under the hammer at Sotheby's



The Schumacher-Ferrari years: too monotonous to recall with any nostalgic glow or a glorious era of unprecedented car-and-driver Formula 1 dominance that was a privilege to witness? It really does depend on who you talk to. But even those who remember those years between 2000 and 2004 only with a shudder must surely give credit where due. Shock-and-awe Michael Schumacher in his Prancing Horse pomp set the benchmark to which Fernando Alonso, Sebastian Vettel, Lewis Hamilton, Red Bull and Mercedes have all since aspired. Schumi, in perfect partnership with Ross Brawn, Rory Byrne and Jean Todt, changed everything.

It didn't happen overnight. Four increasingly desperate seasons of near-misses and controversy preceded the run of five consecutive drivers' titles. We all wondered what might happen when they hit their stride, before our hopes/fears (delete as applicable) were confirmed with the car shown here. A year earlier, Schumacher had prised the monkey's fingers from his shoulders with that first Ferrari drivers' title. Now, in 2001, he and his red stallion were truly let off the leash.

NOW THAT WAS A CAR

No. 63



THE FERRARI F2001

The F2001 wouldn't be the most dominant Ferrari he'd race, but its significance to Schumi cannot be overstated. This car represented the first time Ferrari had handed him a clear-air performance advantage and, Michael being Michael, he wasn't about to waste it. Over the course of 2001 he'd break Alain Prost's win record of 51, set new points records both for a season and a career, and clinch his fourth world title by August. This was how F1 would be for the foreseeable future.

Chassis F2001 211, in which Schumacher claimed the last of his five Monaco victories and secured his second Ferrari title with victory in Hungary, boasts some provenance. No wonder the buzz is building around its impending auction in November, courtesy of Sotheby's in New York. Even without its coat of Marlboro-influenced high-vis version of Ferrari red, it would still be instantly recognisable as a member of F1's most successful racing car family. A tweak designed to grab back downforce made this the first car to use a Ferrari signature 'droop-snoot' nose thanks to demand for higher mounted front-wing assemblies, while its modest barge boards, swept 'coke-bottle' rear and periscope exhausts



extended a likeness born with the F300 in 1998. Designer Rory Byrne and his engineers had nailed this generation of F1 car, and they knew it. Refining excellence rather than 'eureka' moments of innovation was the objective, so it was no surprise when, by mid-season, it became clear they had clawed back all the downforce the new regs had sought to take away.

They'd even defeated the FIA's desire to keep driver aids such as traction and launch control at bay, using clever (and legal) electronic engine maps that mimicked the behaviour of such systems. By the Spanish GP of 2001, the governing body had raised the white flag: to the dismay of purists, traction and launch control were officially back (although, in effect, they'd never left), a decision that only added smoke to the flames of conspiracy about Ferrari's off-track influence.

Schumacher won in Australia and Malaysia, but Adrian Newey's McLaren MP4-16 hit back with victory for David Coulthard in Brazil, while Williams' Juan Pablo Montoya inspired hope that Schumacher had a new nemesis to shake Ferrari's apparent world order. Montoya's pass on Michael into Turn 1 at Interlagos sparked delirium, then next time out at Imola, the 'other'

Schumacher, Ralf, took a breakthrough win in the Williams FW23. With Michelin back in harness to create a tyre war with Bridgestone, perhaps this wasn't a foregone conclusion after all.

New-found Ferrari consistency, at least for Schumacher, would prove the lie to those hopes. When David Coulthard's launch control spoils his pole and team-mate Mika Häkkinen's Merc engine let go in Monaco, Michael took chassis 211 to victory. Thereafter, the hoped-for title battle lost its bounce. Coulthard gave his best, but Häkkinen was a shadow of the man who'd

defeated Schumi and Ferrari so stylishly through '98 and '99.

Ralf Schumacher won three times for Williams, while Montoya defeated Ferrari on their home turf. It didn't matter. Schumacher and Ferrari were champions again, Michael 58 points clear of runner-up Coulthard, with nine wins from 17 races. As for Rubens Barrichello in the second Ferrari, he was learning the reality of a team centred around a lead driver.

For Schumacher, only Ayrton Senna's pole record of 65 and Juan Manuel Fangio's world title mark of five remained untopped. From here, he'd take the F2001 to one final win at the Australian season-opener of 2002, before Byrne's new car handed him another level of dominance. A record 11 wins and

“THIS CAR REPRESENTED THE FIRST TIME FERRARI HAD HANDED MICHAEL A CLEAR-AIR PERFORMANCE ADVANTAGE”



RACE RECORD

Starts	20
Wins	10
Poles	13
Fastest laps	3
Other podiums	14
Retirements	8
Points	193

SPECIFICATION

Chassis	Moulded carbon-fibre and honeycomb composite
Front and rear suspension	Pushrod activated torsion springs
Wheelbase	4,460mm
Engine	Ferrari Tipo 050 V10
Engine capacity	3000cc
Power	800-900hp @ 18,500rpm
Gearbox	Seven-speed semi-automatic sequential
Tyres	Bridgestone
Weight	600kg
Notable drivers	Michael Schumacher, Rubens Barrichello

finishing first or second in every race bar one let him equal Fangio's title tally by July. At least 2003 would be closer: eight drivers won races and Schumacher's sixth title wasn't clinched until the final round. But the era closed the following season when Schumacher won 11 of the first 12 races. That seventh title and a 91st win capped everything that had come before.

In the context of his 2013 skiing accident, remembering Michael at his awe-inspiring best, in close-to-perfection F1 cars such as this, is entirely correct. The man and the era that came to define him were far from unblemished but, as the years skip by, the resonance of the F2001 211 and her sisters will deepen. It was our privilege to be there. 🇮🇹



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FULL GAS

Toro Rosso rookie Pierre Gasly is the latest in a stellar line-up of speedy French pedallers to reach F1. We caught up with him on his debut in Sepang



In the murk of the Sepang paddock, Pierre Gasly's white cap is illuminated by the glare of a TV camera's spotlight. He's just finished his first day's running at a GP weekend and is the apple of the media's eye. Five days earlier, racing in the Super Formula series at Sugo in northern Japan, he took his third successive podium and then received a life-changing text message. He was told to prepare for his Toro Rosso debut.

Seconds later, on the other side of the world, Daniil Kvyat received a rather less welcome call from Dr Helmut Marko, head of Red Bull's young driver programme, who told Daniil not to bother checking in for his flight to Kuala Lumpur. For the second time in two years, Kvyat found himself demoted.

Fast-forward to Malaysia and Gasly is expressing his delight at being given his F1 debut – although he feels sympathy for his predecessor. "It's not what I wish on someone who is a friend, who I've known for many years," says Gasly. "We raced in karting together in 2009, so it's been a while since I've known him. It's never nice and it's a tough situation for him. He's a talented guy, he's been quick and he's still quick."

The tough-love script of the Red Bull young driver programme dictates that underperformance equals exit. Ahead of Malaysia, Kvyat had scored just four points to team-mate Carlos Sainz's 48. With Sainz Renault-bound, Toro Rosso were keen to assess Gasly against a strong competitor, hence their decision to fast-track him. The plan for the rest of 2017 isn't finalised, but it would be logical for the evaluation to continue before awarding him a full-time 2018 race seat.

PIERRE GASLY CV

Toro Rosso racer

Age 21

Born Rouen, France

2017 Replaces Daniil Kvyat at Toro Rosso for selected races

2017 Japanese Super Formula with Team Mugen. Makes Formula E debut

2016 GP2 champion with Prema, taking four wins

2015 Finishes eighth in GP2 with DAMS. Named as a Red Bull reserve

2014 Joins Arden as a Red Bull Junior in Formula Renault 3.5. Makes GP2 debut at Monza

2013 Formula Renault Eurocup champion with Tech 1 Racing

2012 Formula Renault Eurocup with R-ace GP

2011 Third in French F4

2006-2010 Karting

"All I knew was that I would drive at Sepang and Suzuka," says Gasly. "I've done tests and many laps in the simulator, but I don't know what will happen next year. I need to take everything step by step."

Gasly's Super Formula campaign follows on from his title-winning GP2 season last year. Previously he'd competed in Formula Renault 3.5, where he was second to Sainz in 2014, and was Formula Renault champion in 2013, finishing ahead of Oliver Rowland and Esteban Ocon. Indeed, it was Ocon who inspired him to try racing. Gasly was born in Rouen and Ocon in Évreux, 30 miles to the south, and their parents were friends.

"Yes, we lived half an hour from each other and we've known each other since we were seven," says Gasly.

"It's funny to be racing each other in F1 now because I still remember the days when we were karting together.


"I remember one December when it was snowing heavily. We were only about eight and we did three or four laps, but it was so cold we huddled in the truck to try to get warm. Then we went back out on slicks and did five more laps. At that time we dreamt about F1, but when you're eight the road is still so long. So it's crazy that we're on the same track today, racing F1 cars."

Renault is back as a works team, the French GP returns for 2018 at Paul Ricard, and Gasly looks set to join a roster of French racers that includes Romain Grosjean, Ocon and possibly the Ferrari protégé Charles Leclerc (looking to break into the sport with Sauber). "I think it's amazing for the French people," says Gasly. "I used to race against not only Esteban but also Charles in minikarts, so to imagine we might *all* be racing together in F1 is something very special."

Like Ocon, Gasly is approachable, good-humoured and modest. Quick, too. He qualified one place and 0.156s behind Sainz in P15, and finished the race in 14th, despite a problem with his drinks bottle and backache caused by a loose seat. For a rookie to do so well in the most physically demanding race of the year, surely validates the temporary driver-swap decision. So did it get him the thumbs-up from Dr Marko?

"He was smiling, so that's positive," says Gasly.

For now, that'll do.



His rookie-season results may not show it, but Stoffel Vandoorne was born to be a racing driver. **Peter Windsor** sat alongside 'The Stoff' in McLaren's 570GT to watch him at work

JUST DRIVE

PICTURES
ANDREW
FERRARO



IT'S ALMOST FAMILIAR

but not completely so: the big LED sign. The intimidating gatehouse. The narrow, curving lane next to a lake filled with expensive carp. You daren't study the water for fear of running out of road in front of them all. Then there's the curved-edge structure by Foster and Partners. The glass. The pod lifts. The inward-opening doors. The Boulevard. Bruce's Austin Seven Chummy. And the rest of the Can-Am and F1 cars: orange at first, then red and white, then silver.

You whisper. The occasion, and the building, demands it. For this is the McLaren Technology Centre. And you tread softly, for there, backlit against the lake, sits the McLaren 570GT sportscar, doors up. And you reflect that you saw Bruce drive; you saw Denny win with an M19 and then with an M23. You were there when Emerson and James won in the '70s – and upwards it went. Ayrton and Alain in the gorgeous, Steve Nichols/Neil Oatley McLaren-Hondas. Mika. Lewis in 2008. You know the bloodline. You know the essence of what this part of Surrey, England, is inevitably all about.

Yet nothing compares with this moment. You slide into the leather interior, inhaling the aroma. All of those fluxes flowing into this. This isn't your Lambo or your Ferrari or your Jag or your Aston or even your Porsche. This is a McLaren. And Bruce would love it. Even in plum.

Charlotte Sefton, McLaren's PR and media manager, who is co-ordinating the day, is here to meet us. "I'm afraid Stoffel's a little delayed. He's at the factory – there wasn't a problem with the flight but he's had a couple of meetings that have put back his training session. He's just finishing up now. He'll be another 15 minutes."

"No problem at all. I'll just wait here."

"You're sure? Would you like a coffee or something?"

I decline with a smile. There's nowhere I'd rather be than here, opening doors in my memory with a 570GT. The thought of spilling coffee onto the red leather is about as appetising as being asked to wait outside the office of Bernard Ecclestone, years ago, when you knew he'd caught you doing... something.

"No. I'm fine here. No hurry."

Stoffel eventually arrives, recently showered and wearing a white Michael Kors T-shirt and black trousers.

He has a laugh with Charlotte, and then listens politely as the *F1 Racing* photographers set him up for a selection of portraits and some in-car shots. I snap back from Austria 1974 – the day that Denny ran four different-compound Goodyears on all four wheels – and find a shadowed corner from which to gaze.

Stoff jumps easily into the 570 – feet first and then torso. He listens some more; he smiles; he doesn't say much. Then the starter motor. That thick, constant idle, which is synonymous with supercars.

The 570 slinks its way around the lake. I watch from the terrace, remembering the stories I'd heard about Stoffel a few years ago, before everything was settled, before GP2 even, coming over from Belgium by train with nothing specific to do other than just to be there at the factory, or to snatch the back end of a day training with Rob Wilson. This wasn't a guy who'd spend free Friday nights with his mates in the local: this was a prodigy who relished the discipline and the grinding repetition of his vocation. Even the hassles of the mid-winter commutes from Belgium. This was someone who was born to be a racing driver.



"IT'S ALWAYS SOMETHING WHEN I COME TO THE MTC, ALWAYS EXCITING. YOU SEE THOSE CARS LINED UP AT THE FRONT OF THE BUILDING AND YOU'RE AWARE OF WHAT McLAREN HAVE ACHIEVED"

I JOIN STOFFEL IN THE CAR,

tapping a rubber pad to make the door sail upwards; the window opens a little. I sit first, then drag in my legs, trying to be slick but failing. With seatbelt on, I feel overdressed next to the T-shirt. Stoffel finger-taps out of auto mode, flicks the paddles and steers easily away. How to begin...?

As the Foster building to my left becomes a piece of art, rather than a technology centre, once again, the opening is organically clear:

"So is there – was there – a point when this amazing place can just be... where you work?"

"Not really," Stoffel says, smiling. "It's always something when I come here, always exciting. I see it differently now because it's been a while; I've been with McLaren through their junior programme. I know it well. It's my second home, but I still get this feeling when I arrive. Maybe it's the history. You see those cars lined up at the front of the building and you're aware of what McLaren have achieved. You touch that history the moment you walk in." ▶

Relaxed and at ease despite a rocky start to his rookie season, Stoffel puts the 570GT through its paces



“ I’M A LATE-BRAKER. I’M WORKING ON IT WITH THE ENGINEERS. WHAT YOU DON’T WANT IS TO LET YOUR BRAKING COMPROMISE THE CORNER ENTRY AND THIS IS SOMETHING I’VE SOMETIMES DONE A BIT IN THE PAST ”



MCLAREN 570GT TECH SPEC

Top speed

204mph

Engine

3,799cc twin-turbo V8

Power

562bhp

Torque

600Nm

0-62mph

3.4s

0-124mph

9.8s

MPG

26.6 (combined)

Price

From £154,000

“So you’ve been training this morning?” I ask, switching back to the present.

“Yes. Mainly toning. This afternoon, after lunch, I’ll go for a run in the woods with my trainer and engineer. I love it; there are some beautiful paths here,” he says, pointing to the rich woodland to his right.

“You’re based in Monaco?”

“Yes. Good weather, easy for travel and perfect for cycling. I love cycling – and there’s a kart track not too far away. I still drive karts whenever I can.” And he flies privately – WheelsUp, NetJet – whenever it’s logical for him and two or three of his F1 driver mates to simplify the journey back from an awkward location. Bruce McLaren, too, loved the south of France. He won Monaco in 1962 and thereafter staged a party on the beach at Cap Ferrat on the Monday after every race. Stoffel’s lifestyle is one to which Bruce would have aspired, engineering priorities notwithstanding. Bruce built and engineered race cars to drive them: that was his reason for being; but he also loved to water-ski on golden Monaco mornings.

We’re now out of the MTC and heading along the quiet roads towards Fair Oaks, whence Alan Mann operated not only his aviation business but also Ford GT40s, Ford F3Ls, Falcon Sprints and Mustangs. Stoffel hangs back and then rasps the 570 through the gears, the exhaust note crisp and sharp. I’m interested to know how he

thinks he drives – and how he thinks he has stacked up this year alongside Fernando Alonso.

“I’m a kind of a... a late-braker,” he says, whipping past a slower car before squeezing the brakes with his left foot. He stammers a little, as if he’s embarrassed. I think of all the racing drivers out there who think they’re the latest brakings on the planet, then realise that Stoffel is speaking in a different vein. He doesn’t think that this is a *good* thing: “I’m working on it with the engineers,” he continues. “You always want to brake as late as possible – but ‘possible’ is the thing. What you don’t want is to let your braking compromise the corner entry and I think this is something I’ve sometimes done a bit in the past.”

I’m not surprised, of course – I’m not surprised that Stoffel is being this self-regulatory: he’s too ‘together’ a person, and/or racing driver, to be self-obsessed. It is the F1 fashion for racing drivers to want to appear to be bullet-proof and to dismiss any concept of fallibility, but Stoffel is the counterpoint to such lunacy.

“So you’ve been braking later than Fernando?”

“Sometimes, yes. With Fernando’s telemetry, everything looks normal. He doesn’t have extremes, and this is one of the reasons he is so good at minimising the effects of small mistakes. It’s something I’m working on.”

It’s hard to believe that Stoffel is only part way through his rookie F1 season. He speaks with the self-effacing ►

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Getting to grips with the controls in the luxurious leather interior of McLaren's latest high-performance sports car

calm of a ten-year veteran. And in the context of a torrid year for McLaren-Honda, with engine changes, practice dramas and grid penalties, it's also hard to believe that he has had sufficient good track time from which to draw any conclusions, let alone to be self-critical.

"It's been tough, but it's getting more positive and I've learned a huge amount in a short space of time. When you come into F1 and everything is working okay, it's one thing; when you have to work closely with the team in difficult times, that's another. It was difficult at first, because in my career I'd always been at or near the front. To be working in a different way took some adjustment but I see where we're going now. And I feel very positive."

"Do your parents come to races?"

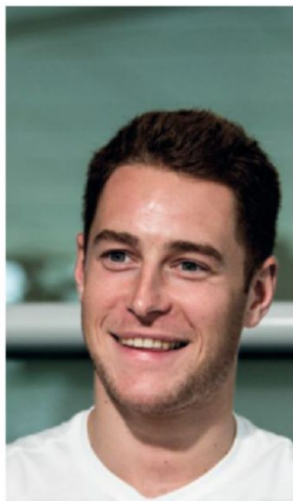
"Sometimes. If my dad comes to a race he goes out on the circuit with his stopwatches and times the cars through his own sectors. He loves it and sometimes his results are quite interesting, although we have most of the data, of course, via GPS and so forth. When they're at a race it's always good to relax with the family in the evening but we never talk racing."

"Super Formula last year," I add, keen to end on an upbeat. "Not easy and you had that win at Suzuka."

"It was great racing. I love Suzuka and I'm really looking forward to getting back there with the F1 car. I also got to love Japanese food. Most F1 races I eat in the Honda motorhome. I'm starting to pick up a few words of Japanese – just enough to make them laugh!"

Speaking of which, it's time for our lunchtime return.

"As you'll be working out later, are you skipping lunch?"



"WHEN YOU COME INTO F1 AND EVERYTHING IS WORKING OKAY, IT'S ONE THING; WHEN YOU HAVE TO WORK CLOSELY WITH THE TEAM IN DIFFICULT TIMES, THAT'S ANOTHER. IT WAS DIFFICULT AT FIRST"

"Ha! No. It's set up at the factory. I'll wait for an hour or so after we've eaten and then we'll be out there."

We're cruising back around the lake. To the right, across the water, I glimpse numerous heads swivelling in the McLaren staff restaurant.

"Thanks Stoffel," I say, as we sit down. "A lot of fun. Here's to... I don't know... the good times to come."

"Definitely. Starting today."

I can sense Bruce smiling, down in the Boulevard, somewhere between his Austin Chummy and the M7C. 🍷

• You can watch Stoffel at the wheel of the McLaren 570GT in episode 20 of *The Flying Lap* on *Motorsport.tv*



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Ever wanted to ride a Formula 1 two-seater? Well, now you can thanks to the F1 Experiences programme. We sent crash-test dummy **Stuart Codling** to find out what it's all about...

PICTURES MARK SUTTON
LAT IMAGES



Ten minutes to zero hour and the rain is hammering off the garage roof. Out in the pitlane, it's splashing into puddles so large they bring to mind Dr Foster's proverbial misadventure on the road to Gloucester. A sky that had been positively azure half an hour ago is now a glowering grey expanse. The capricious microclimate of Spa-Francorchamps has done it again.

That moment when it's quiet on track, so the TV feed cuts to a tight shot of a team operative glumly regarding a huge splodge of green and blue on the weather radar? We're living that now, me and ex-Renault, Toyota and Lotus technical director Mike Gascoyne: him with one headset cup slipped casually off his ear, lips pursed, eyes flicking between the screen and the sodden vista outside; me dressed like an impostor, head to foot in crisply clean flameproof garb – a Nomexed version of Alec Guinness in *The Man in the White Suit*.

If the rain fails to relent, we're going nowhere. *Drapeau rouge*. In a distant corner of my brain a quiet voice is suggesting that, this being Spa-Francorchamps, formerly one of the ▶

most dangerous circuits in the world and still one of the most challenging, scurrying back to the warmth and dryness of the media centre wouldn't be such a terrible outcome.

Around us, the business of Formula 1's unofficial 11th team proceeds just as it would in any of the other ten garages further down the pitlane: uniformed crew tend to the pair of two-seater F1 cars in a space lined with neat tool chests and instrumentation, and the concrete walls are covered with plain white plastic sheeting. If the window dressing of this flagship element of the sport's new 'F1 Experiences' hospitality programme looks authentic, that's because it is – the garage set-up is all ex-Manor.

The cars, too, are authentically F1, unlike, say, the Santander two-seater that was doing the rounds a few years ago, which was a hacked-about Reynard Champ Car chassis. They started life as 1998 Tyrrell 026s. So avert your eyes from the metal wishbones and 1990s aero, and look upon the three-litre Cosworth V10 sitting ahead of the rear wheels. And don't forget to stick your fingers in your ears when they fire it up.

"We could have put a turbo engine in," says team manager Keith Wiggins, another old F1/IndyCar hand. "And actually it would have been cheaper to run, because it wouldn't need rebuilding so often. But the Formula One Group guys were adamant that they wanted the noise..."

Tick-tock of the clock. It's now or never, because in half an hour or so the rest of the afternoon's track programme – Formula 2, GP3 and Porsche Supercup practice and qualifying – gets under way. Paul Stoddart, former Minardi team owner, strides over with a helmet and HANS device in hand. "Better get these on, mate," he says. "You're going out."

There's a flurry of activity in the garage as engine covers are bolted on each car, and it's fingers-in-ears time as the V10s fire up in unison, a wall of sound that almost brings a nostalgic tear to the eye. Today's drivers – Patrick Friesacher and Zsolt Baumgartner, Minardi F1 drivers of mid-2000s yore – are already strapped



in, and with an impatient fusillade of V10 blare and wheelspin they exit the garage for a few sighting laps to assess the conditions.

Ear plugs in, balaclava on and helmet lowered into place, I wait as 'Stoddy' checks the helmet's chin strap for me and attaches the HANS device. Now I certainly look the part (you effect your change in a room within the race truck, walking in as a civilian and out as a racing driver, in a seamless process that readers of a certain age might remember from kids' TV show *Mr Benn*), and in homage to the look that Formula 1 style icon Lewis Hamilton was rocking earlier on today, I've even tucked my fire-retardant underwear into my socks.

We see the two-seaters fly by once on the main straight – well, we see the plume of spray, for the cars go past in the blink of an eye, leaving just noise and unsettled mist in their wake. Then they return, are pushed back into the garage, and as Zsolt cuts the engine the ambient noise of human activity rushes in to fill the void left by the quieted V10. Technicians shine torches into the brake ducts. Wisps of steam rise from the surface of the Pirelli wet-weather rubber. A wooden platform is pushed to the side of the car so that the passenger can embark.

Ah, that'll be me. We've reached the point of no return. Poker face on, eyes betraying no fear, vision letterboxed by the crash helmet, I step



F1 Racing's Stuart Codling is dressed the part, but that expression betrays a hint of apprehension...

"IN A DISTANT CORNER OF MY BRAIN A QUIET VOICE IS SUGGESTING THAT THIS IS SPA-FRANCORCHAMPS, FORMERLY ONE OF THE MOST DANGEROUS CIRCUITS IN THE WORLD"



up and step in. First impressions: this cockpit is *tight*. No wonder the disclaimer form excludes passengers over 88kg. You sit with your legs astride the driver's seat in a pose akin to the birthing stool in *The Handmaid's Tale*.

"You need to get both feet on the footrests," says Stoddart, leaning in to arrange the harness. Easily said, but I can't see where they are, and all I can feel is something slightly squidgy putting up some resistance... ah, that'll be Zsolt's hips. Unseen, a hand grasps my left ankle and ushers the foot to its desired position. Stoddart reaches in again and connects the harness straps, then pulls them as tight as they'll go, so tight that I'm being pulled almost into a foetal crouch in the seat. Then he gives each shoulder strap a further yank. Now, surely, they're as tight as can be.

The engine turns over again and bursts into life, and I can *feel* the chatter of the conrods, crankshaft, pistons, valves, everything, through my back and shoulders. First gear engages with a bang that makes the whole car – and my teeth – rattle. With a tickle of the throttle we depart, Zsolt's elbow digging into my leg as he applies steering lock, and as I turn my head to explore the view – bounded above and below by the helmet's aperture, and ahead by the roll bar – I wonder if the expression on the receding faces of the crew is one of pity or sympathy, or neither.

Zsolt clearly feels that the tyres need some temperature in them, because no sooner has he straightened the car after the right turn for the pitlane exit than he stamps on the throttle. Or at ▶



least that's what it feels like. This is a Formula 1 car – it could have been but a tentative prod. Either way, the engine spools up with a screech, the tyres briefly chirrup in protest, and we burst forwards in the manner of every cliché that's ever been applied to sudden and violent acceleration. All the parts of me that aren't already strapped down are pinned back against the unyielding carbon seat. On my right, the old pits pass by in a blur of colour and spray and, as the downforce builds, the car just ploughs through every puddle with a twitch of grip-and-slip, the engine jabbering angrily as the back wheels spin up and then bite down on asphalt again.

I briefly close my eyes and try not to think of Pierluigi Martini in the 1991 Australian Grand Prix, nor of the mischief of a press-room colleague who an hour ago gleefully announced that he was about to search for “Zsolt Baumgartner crashes” on YouTube. Or, indeed, of Sergio Pérez, who said to me yesterday: “If you have a shunt, it'll be a big one...”

Right now, Ted Kravitz and *F1 Racing's* very own columnist Pat Symonds are providing

punditry live on Sky Sports F1. Kravitz cocks an ear in the direction of all the slipping-and-gripping and opines, “Zsolt Baumgartner's feeling brave today.”

“Not as brave as the guy sitting behind him,” chuckles Pat.

Ah, Pat, the guy in question is having a bit of a failure in that department. I can't see Eau Rouge, but I know it's there, having practiced the racing line on my bicycle – Michael Schumacher-style – last night. Now as we plunge towards it at *grand vitesse* I am like a wrestler pinned to the mat and ready to surrender.

If only there were a way to signal this intent to the driver. But there isn't, so plummeting downhill to Eau Rouge we go... mercifully and circumspectly he lifts, which in a racing car with downforce feels like a sharp application of brake. Then we're through, carefully avoiding the wet kerbs, and he's back on the accelerator for the surge uphill through Raidillon. Craning my neck, all I can see is sky and spray, and then, as the gradient tails off, the proximity of the walls as they scroll past in a blur.

We twitch and shimmy our way around Les Combes and Malmedy, and I can feel the weight transfer within the car – at low speeds it's clearly a handful. Zsolt wants to go quicker and build some downforce assistance, accelerating towards the downhill double-right at Rivage, but it's still too slippery and he brings the car to heel again, then repeatedly prods the throttle as we round the bend, eliciting just a touch of a slide. He negotiates the nameless left-hander without touching either kerb and gets on the gas again, downhill all the way to Pouhon. A cautious lift on the entry slows us down just enough for me to be able to focus on the Max Verstappen fans on the other side of the barrier, waving flags and beer cans in encouragement.

Confident now that the pilot is pressing on, but not suicidally so, I relax my grip on the seat shell, unstiffen my shoulders and allow myself to be thrown about. What we're missing in sheer G-forces through not going at full tilt, we're gaining in the feel of an F1 car tippy-toeing its way through hazardous conditions. You imagine a single-seater to be super-stiff, but when you're



It might not be visible from the passenger seat, but there's no mistaking the plunge down to Eau Rouge



NOW YOU CAN HAVE AN F1 RIDE, TOO...

“
IF YOU HAVE A SHUNT, IT'LL BE A BIG ONE
”

SERGIO PÉREZ'S WORDS OF ENCOURAGEMENT TO F1 RACING'S STUART CODLING

belted into place and inertia is doing its best to rearrange your internal organs, you experience those same forces sending the car into pitch, yaw and lean as it negotiates the majestic roller coaster that is Spa.

And what a feeling it is! Zsolt is still pressing on, taking a wide line into La Source, which both gives him a better drive out of the corner on less puddled asphalt – *and* annoys the hell out of *F1 Racing* photographer Lorenzo Bellanca, who's been waiting there in the rain since the F1 practice session ended. One last flat-out spurt down the hill, back wheels flailing and gripping again through the puddles, another lift (phew) at Eau Rouge, and then we're climbing again. Zsolt tries different lines through Les Combes, Malmedy, Rivage and Pouhon, seeking out the driest lines and the greatest speed. The car plays along all the way to Blanchimont, whereupon it yellow-cards him with a mighty twitch. I catch an elbow on the leg as he corrects it, and then we cruise back into the pitlane, elation tempered with a touch of relief.

Very soon, *you'll* be able to do this. As a late addition to the weekend bill under the sport's new management, it's been the province of VIPs and competition winners so far this season. But in the fullness of time the intention is to make more timeslots available and give more people the opportunity to try it. Over the winter, Gascoyne and his team are going to redesign the cars to give them a more contemporary look and revise the roll-hoop arrangement to give the passenger more of a forward view.

It certainly won't be cheap, but this really is a once-in-a-lifetime experience. Just make sure you only eat a light lunch beforehand. 🍴

One of the tenets of F1 under its new ownership is to make the sport more fan-friendly. But, inevitably, the more money you're willing to spend, the closer you can get. 'Formula 1 Experiences' was launched this year and is a high-end package that offers the best tickets, top hotels and Paddock Club hospitality.

The benefits extend to behind-the-scenes tours of the F1 paddock, meet 'n' greets with current and former F1 drivers, pitlane walks and a ride in the two-seater car.

For many years the former Minardi boss Paul Stoddart ran the two-seater experience with his ex-drivers during the weekend of the Australian Grand Prix. That has been scooped up to form part of the F1 Experience package and now takes place at most of the tracks across the calendar. Depending on the package and grand prix you want to buy for, prices range from £1,200-£6,500.

• For more information, visit f1experiences.com



STAR OF THE WEST

WORDS JAMES ROBERTS

PORTRAIT  LAT IMAGES: LORENZO BELLANCA

Ex-racer Tavo Hellmund was the driving force behind the return of Formula 1 to North America and Mexico – and now he’s looking to expand operations to Las Vegas, Miami and New York

Two of the most popular races on the F1 calendar owe their existence to one man. Austin resident Tavo Hellmund provided the impetus for the US GP’s return in 2012 at the new Circuit of The Americas, and he engineered the revival of the Mexican GP two years ago as well.

It’s perhaps no surprise that Hellmund, 51, became a race promoter: he’s following in the footsteps of his father, who himself promoted the Mexican GP in the 1980s. During this time Hellmund Jr met Bernie Ecclestone, and when Tavo left school in the US he came to the UK and became a ‘gopher’ for the Brabham F1 team – sweeping the floor and making the tea.

Anyone who spent any time with that team in the early 1980s will know that its staff included a core group of people who are high up in F1 today: FIA race director Charlie Whiting and key FOM lieutenants Alan Woollard and Eddie Baker. So Hellmund has no shortage of contacts when it comes to organising grands prix.

Before he set up his promotions business, Full Throttle Productions, Hellmund had set his sights on a racing career. He competed in Vauxhall Lotus and Formula 3 in the mid-1990s before returning to the US to race in NASCAR. “Then, in about 2005, I called Bernie with an idea...” he recalls. The US GP was, at that time, being held at the Indianapolis Motor Speedway, but the race, according to Hellmund, “would always play second fiddle to the Indy 500.”

Hellmund was aware of a mechanism known as the Texan Major Events Trust Fund, created by the local government to help pay for sporting events that would offer a return-on-investment

CV

TAVO*HELLMUND

Formula 1 race promoter

Age 51

2011-2015 Pulls together Mexican GP revival

2005-2012 Masterminds F1’s US return in Austin

2005-2008 Promoter of Texas Racefest, voted best NASCAR/USAC event

2003 Establishes Full Throttle Productions

1997-2004 NASCAR Grand National Division

1995-6 Formula 3

1991-4 Formula Ford 1600 / Vauxhall Jr

1985-1990 BA in psychology from St Edward’s University, Texas

1983-4 Assistant at Brabham F1 team

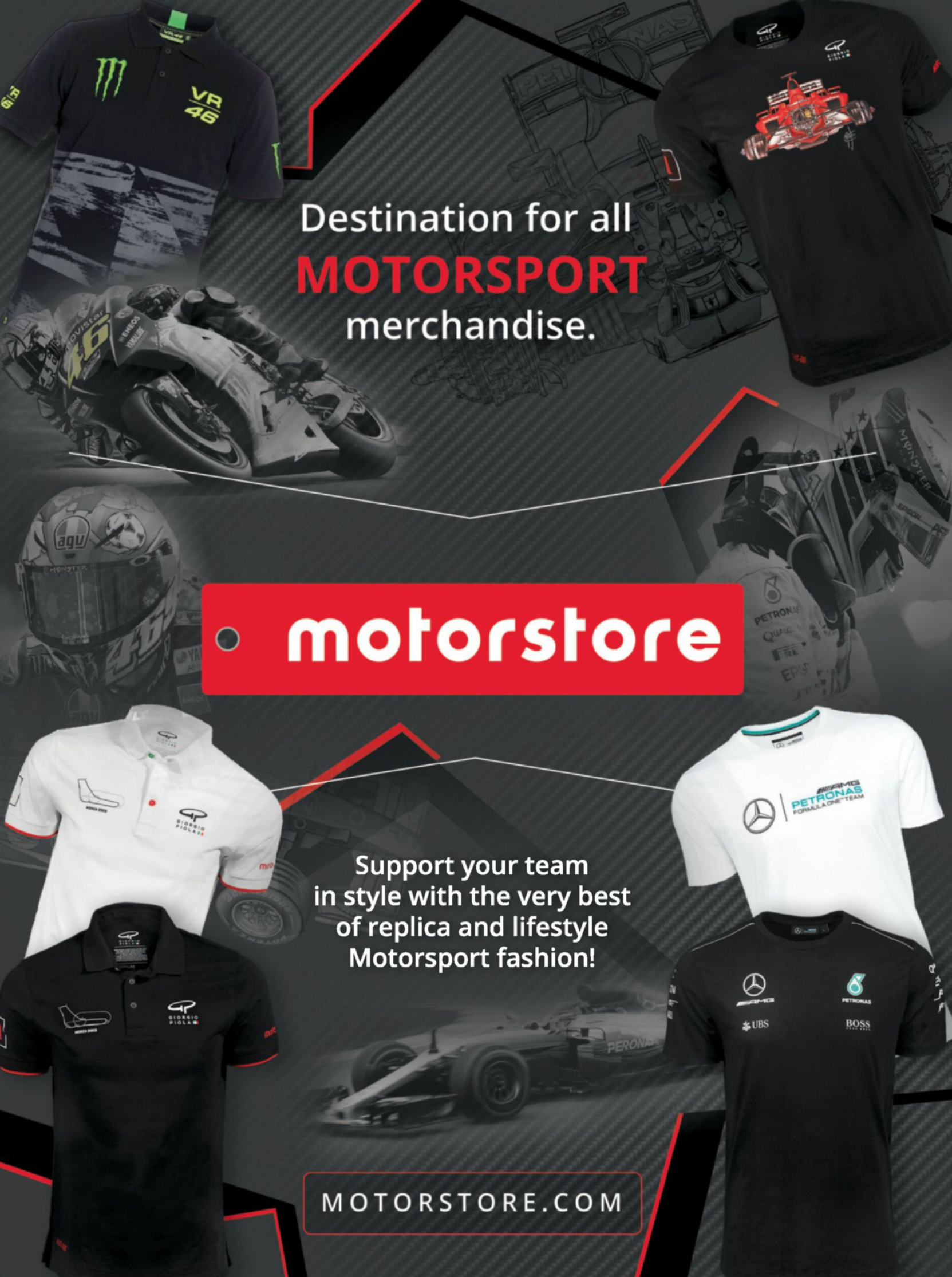
benefit for the local economy. So by the time the latest iteration of the US GP was announced in 2010, Hellmund had already spent years cultivating lobbyists to get F1 to Texas, and had been able to pull together the necessary investors to make the race a reality.

After Austin came Mexico, and then, last winter, it emerged that Hellmund was one of the potential buyers of the Manor F1 team. Unfortunately he wasn’t able to secure a deal, and ultimately the team had to close.

“If [former owner] Stephen Fitzpatrick had taken our offer earlier, it might have worked,” says Hellmund. “They agreed to our terms in late December, but it was too late. I felt bad for the 200 employees because I think there was potential there. It was a shame, but really, what needs to happen is a better distribution of income and a reduction in costs. That’s what any team needs if it’s to have a chance in F1.”

Hellmund is now focusing on future F1 venues. “I’m working on a couple of potential events, in a new city in the Americas, but it’s still early,” he confirms. “I’ve spoken with Chase Carey and he knows I’m a believer in the F1 project – I have been for 40 years and I’m here to help. Austin is safe, but out of the cities that have been publicly mentioned, New York, Las Vegas and Miami, I’m sure one of them will join the calendar in 2019. But there’s a difference between potential and real race venues.”

And having turned a field in the outskirts of Austin into the venue for a much-cherished grand prix, Hellmund is certainly someone who knows the difference.



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SUITED AND BOOTED

Formula 1 drivers once raced in shirts and cloth caps. Now they take it for granted that their clothing can withstand temperatures of up to 650°C.

F1 Racing visits the Alpinestars factory to see the science behind this everyday miracle

WORDS JAMES ROBERTS PHOTOS  LAT IMAGES : LORENZO BELLANCA





For a long time, fire was an F1 driver's greatest enemy. One of the most persistent arguments against introducing seatbelts was the view that it was better to be thrown out of the cockpit in an impact than to be trapped within a flaming car.

Tireless work by the FIA and clothing manufacturers eventually produced a solution that's now so closely woven into the fabric of motor racing that you'd be forgiven for forgetting it's even there. But make no mistake, a racing driver's suit, boots, underwear and gloves are designed to save lives, and the FIA documentation outlining the standards they have to meet (number 8856-2000 if you want to look it up) extends to a staggering 76 pages.

There can be no short cuts and no risks. Racing a car with 105kg of highly combustible fuel located right behind your spine warrants every precaution. The FIA stipulates that a driver's overalls must undergo both a fire and a heat-resistance test, each occupying an 11-second time frame. That dovetails with the mandatory extraction test: the maximum time a driver has to evacuate the cockpit.

Key to all this is Nomex, a fire-resistant, lightweight

Modern racesuits are made from fire-resistant Nomex (below) and are subjected to rigorous tear-tests (top right) and flame tests (bottom right)

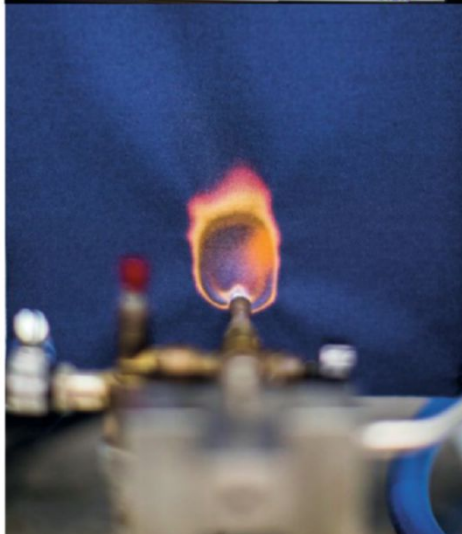


artificial fibre used in every element of a driver's protective gear. The same material is used by firefighters and is also worn by the US military.

Alpinestars are one of a select group of manufacturers who produce apparel that complies with the regulations, and our recent visit to their laboratory in Asolo, at the foot of the Dolomites in the north of Italy, revealed not only the rigour of their testing processes, but also an associated challenge: making the finished items as light and comfortable as possible.

"There is a mesh middle and inner layer that is less structured than the outer later and provides breathability and comfort; the outer layer gives the suit its form and strength," explains Alpinestars' communications director Jeremy Appleton. "Everything we produce undergoes a rigorous fire and heat test."

The company perform the tests themselves, but to even higher levels than the regulations demand. At the laboratory, we watch as a patch of racesuit material is subjected to a naked flame at a temperature of 650°C. The fabric holds out for an incredible 30 seconds with almost no damage to the middle and inner layers. Similarly, a heat test ensures that in a 1,000°C flame, the temperature recorded on the other side of the material does not increase by more than 24°C in 11 seconds. Once again, the sample comfortably conforms to the required standard. It's just as



“A MECHANICAL LEG FITTED WITH A SUPERMONO SHOE SIMULATES A STEPPING MOTION. IN TOTAL, IT WILL TAKE 100,000 STEPS, OR AROUND 31 MILES”



well: this is the sort of thing that could make the difference between life and death.

There's another safety aspect to race overalls that's not entirely obvious. The shoulder epaulettes aren't there as a fashion statement. If a driver is unconscious, they provide a vital function, allowing marshals to grip them to pull the driver clear of the car. For this reason, the material must not rip when pulled, so there is a further FIA test to ensure structural rigidity under a significant force. The epaulettes are required to withstand a force of 300 Newtons,



but in the Asolo lab the samples resist tearing at double the required force: 600N.

On the same site as the Alpinestars laboratory is the factory where the boots, gloves, overalls and underwear are made. Here, 120 technicians and craftsmen work on the latest designs and equipment, not only for F1 but also for the many other racing disciplines Alpinestars supply, such as MotoGP, NASCAR and motocross.

CAD (computer aided design) is used by the designers to draw items such as the all-in-one Supermono shoe in 2D and 3D, and ▶

ALPINESTARS FAST FACTS

The company was founded in 1963 by an Italian leather craftsman by the name of Sante Mazzarolo



Past champions, including Michael Schumacher, Fernando Alonso, Kimi Räikkönen and Jenson Button, have all played an integral role in developing Alpinestars products

A Nomex Alpinestars racesuit can withstand a 650°C naked flame for up to 30 seconds with minimal damage



The company's name is derived from the English translation of the Italian mountain flower stella alpina, which is better known as edelweiss

The first motorcycle boot was produced by Alpinestars in 1965. It featured a steel shin protector and a buckle instead of laces



Brazilian racer Christian Fittipaldi was the first F1 driver to wear Alpinestars apparel, back in 1993



the computers are linked up to an automated cutting machine. This enables a great degree of customisation: over three hours, plus another hour for the bonding process to cure and cool, they run out a bespoke set of *F1 Racing Supermono* shoes to demonstrate the process.

At the cutting machine, kangaroo leather (which is lighter than cowhide) is bonded with Nomex and stitched together. The leather is then glued to the sole, which is made from lightweight treated rubber for grip and flexibility. Every aspect of the shoe is continually refined and improved to reduce weight. Even the Velcro strap has had holes drilled into it to save a few grams.

Alpinestars currently provide protective gear for half the F1 teams – Williams, Renault, Toro Rosso, Haas and Force India. On our visit we see early drawings for a new set of overalls for Sergio Pérez, the arm of a Kevin Magnussen racesuit being stitched together, and a set of race boots being made for Romain Grosjean.

Factory staff tend to know which driver is about to be signed to which team before anyone else does, since a driver's overalls are created ahead of a team's launch or test. "Yes, we often do," confirms Appleton, with a smile, "but we obviously have a strict protocol in terms of confidentiality."

Trackside technicians from across the range of sports in which Alpinestars' athletes compete feed back their findings to the R&D team every Monday in a process aimed at improving products. "That could be adjusting the shape or size of the shoe for the pedal box design, or for comfort," explains Appleton. "All the time we're trying to balance the breathability of our products, while bringing down weight."



The staff at the Alpinestars factory guide FIR through the process of making a pair of bespoke kangaroo hide and Nomex Supermono shoes

The factory also contains machinery to test for wear. In one corner, a mechanical leg fitted with a Supermono shoe simulates a stepping motion. In total, it will take 100,000 steps, or around 31 miles, although this can be increased to 155 miles over many days. Technicians will look for the point at which the shoe starts to deteriorate, be that in the stitching or in the leather, and then refine the design or construction process to counter any weaknesses.

The company has come a long way since it was founded in 1963 by shoemaker Sante Mazzarolo.



He began by developing protective footwear for motocross, expanded into motorcycling and skiing boots, and by 1993 made his initial foray into Formula 1 when Minardi's Christian Fittipaldi became the first driver to wear Alpinestars gear at races. Alpinestars has since grown to employ 650 people worldwide, with offices in Los Angeles and Tokyo.

The name of the company is the English translation of the flower *stella alpina*, better known as 'edelweiss', the highest flowering plant in the Alps. Each spring, climbers would



compete to find the first flowering edelweiss. "It's a suitable metaphor for our company today in that we still meet the challenge of being first to achieve the highest standards," says Appleton.

To the casual observer it might seem as if Nomex-based racesuits have barely changed since the material was first introduced. Nothing could be further from the truth. Like every other aspect of F1 safety, apparel is undergoing a continuous process of improvement in which established standards are regularly challenged and boundaries explored. 📌

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FINISHING STRAIGHT



Carlos Sainz has impressed at Toro Rosso and won the Renault drive many hoped would go to Robert Kubica

LAT IMAGES - GLENN DUNBAR; SAM BLOXHAM *CONTENTS SUBJECT TO CHANGE.

Give Kubica another chance

While I am happy that Carlos Sainz is finally getting a chance at an up-and-coming team like Renault, I'm concerned about what this means for Robert Kubica.

Renault have been hasty and short-sighted with this move.

Robert deserves another shot at F1 and Renault were the perfect team to give him that. Yes, Sainz is younger and more proven in current F1 cars, but just think of the goodwill Renault would have created by bringing back Robert. Surely a marketing dream – and the right thing to do by Robert.

Even if the strain of competing in an entire season turned out to be more than Robert could physically handle, that wouldn't be the end of the world for Renault. There are

always quality drivers out there for top teams to scoop up. I sincerely hope another team gives Robert his shot and shows Renault that patience *does* pay off.

Jim Facto
Austin, USA

Get out there, Maurizio!

It was embarrassing to see Maurizio Arrivabene hiding from a microphone-wielding Mark Webber on the Singapore grid. It was such a promising start to his career as Ferrari team principal when he sat in the stands with the fans and talked about how to engage. The pressure at Maranello must have got to him, as he's been actively avoiding the media ever since.

The team need someone to stand up and speak for them, to celebrate

the highs, praise the achievements of their team members, explain the mistakes and give hope to the fans in tougher times. Sergio Marchionne's occasional 'laggard' comment does not come even close.

Maurizio could do worse than look at the example of Toto Wolff, who fronts up to the press even when his drivers have crashed into each other. Ferrari deserve better.

Alison Walpole
By email

Well worth the wait

Having been a follower of F1 since the heyday of my local hero Eddie Irvine, I've finally made it to my first race – at Monza. The whole experience was even better than I expected and the atmosphere was unbelievable. We went onto the

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track after the race and on towards the podium, and were transported to another world as music and ticker tape filled the air.

One stand-out moment was Sir Jackie Stewart standing and signing autographs for ages – he understands how it works. I also got to meet Johnny Herbert, who was so nice and a real gentleman.

My friend was happy with the Hammy win, and F1 was the winner for me on for my 40th birthday weekend. Let's hope it doesn't take me as long to get to my next race!

Geoff Wilson
Northern Ireland

Spot the difference

F1 should introduce IndyCar-style spotters for each driver in the light of the events that unfolded at the start of the Singapore GP. The spotter plays a key role as they tell their driver their position on track and who else is around them.

Haas F1 Team used spotters just for the 2017 Azerbaijan GP, and if they'd been used at the Singapore GP it's unlikely that there would have been such first-lap chaos.

Ben Johnston,
Dublin, Ireland

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HEAVENS OPEN FOR HAMILTON

Lewis said he'd need "a miracle" to win this race from fifth on the grid. That's exactly what he got



Since its 2008 debut, the Singapore Grand Prix has never failed to offer something special. This year would prove no different, thanks to a pre-race rain shower and a multi-car first-lap shunt that tipped a closely balanced drivers' championship dramatically in Lewis Hamilton's favour. Post-Singapore, the 2017 title looks like his to lose.

QUALIFYING

Seb Vettel was a driver fully in the zone on Singapore Saturday. His Ferrari SF70H had been

reconfigured overnight after a scrappy Friday, thanks to a trackside engineering all-nighter and live simulator sessions at Maranello with Ferrari protégé Charles Leclerc at the controls. But even then, Seb came oh-so-close to blowing it.

On his second and final Q3 run, gunning for pole against a brace of fired-up and fast Red Bulls, he was maybe just a touch too quick through T19 and – bang! – his left-front whacked hard into the wall. But he got away with it to post a stunning pole time of 1:39.491s, almost 0.3s faster than his

nearest challenger Max Verstappen, and more than 3s better than last year's pole set by Nico Rosberg.

His only true rival, Lewis Hamilton, languished in fifth, having posted a lap some 0.7s slower at 1m 40.126s. Team-mate Valtteri Bottas, alongside him in sixth, was a further 0.7s down, confirming the team's fears that this simply would not be their track. Red Bull, though, had cutting-edge pace and it was a surprise that Vettel pipped them for pole, since Ferrari had looked out of the hunt on Friday.

Even so, Ricciardo reckoned the long-run pace of the RB13 would make him a contender, while Verstappen, too, was characteristically resolute: "We've been a bit down on power all weekend," he said, "but hopefully that won't be a problem when I'm in the lead and I can just cruise home."

“BOTH OF THE FERRARIS MISJUDGED THE AMOUNT OF SPACE THEY NEEDED... I'M HAPPY THAT THE THREE OF US RETIRED, SO IT'S NOT ONLY ME” **MAX VERSTAPPEN**

RACE

For about two seconds at the start of the 2017 Singapore GP, the form card looked good. A so-so getaway on a damp track for Vettel, from pole; a Räikkönen flier, from fourth. Both reds on the march into Turn 1, with Vettel looking to impose himself on an interloping Max Verstappen (challenging from P2), via his characteristic sweep across the bows from right to left.

Without Kimi's mega-launch, Vettel's tactic would probably have succeeded as a rude-but-legal assertion of pole-sitter's rights. He and Max would likely have gone into the left-hander of T1 more or less side by side, whereafter Vettel should have edged ahead into the right sweep of T2, giving him the lead and line into T3.

Trouble was, Räikkönen's catapult had created a three-into-two scenario: Vettel's diagonal had ushered Verstappen to the left and Räikkönen was already ahead of Max and almost neck and neck with Seb. Kimi was occupying track real estate on the far left of the track, right beside the pitwall. There was nowhere for Verstappen to go, but Max wasn't going to back out... why should he? Contact!

Verstappen's front-left clipped the right flank of Räikkönen's Ferrari, flipping it instantaneously into Vettel's right sidepod. Vettel's Ferrari continued briefly, despite carrying pieces of front wing from Räikkönen's car, but his moment in the spotlight would last only two more corners. He spun his



The first-lap collision took out Verstappen and Alonso (left) and Vettel (above), clearing the way for a Lewis Hamilton miracle victory (below)



SF70H into the wall between Turns 2 and 3, retiring just moments later.

Behind Vettel, Max and Kimi had bounced apart after their initial contact but they collected each other again, whereafter their broken machines speared towards a helpless Alonso, who'd launched brilliantly from P8 to momentarily hold third, as he took a wide entry into T1. But as Fernando began to round the corner, one broken Red Bull and one broken Ferrari were drawn towards him as if by magnetic attraction. His McLaren was launched and spun through a mid-air pirouette, although, remarkably, the damage was insufficient to force instant retirement. He continued, at the tail of the field, before being called in by his crew on lap 8.

All of this T1 carnage prompted a stewards' enquiry, the outcome of which was that "no driver was wholly or predominantly to blame". Verstappen saw it differently, however: "Both of the Ferraris misjudged the amount of space they needed and I couldn't move because they started to squeeze me between their tyres," he said. "I'm happy that the three of us retired, so it's not only me."

A Safety Car period was inevitable, but racing resumed after three laps with Hamilton leading from Ricciardo. With both Ferraris and one Red Bull out, and in the slip-slidey conditions Lewis adores, a race that had promised to be a Ferrari field day suddenly presented an open goal for Lewis.

Would he, though, be able to meet the challenge of Ricciardo, whose RB13 had been the most consistently quick pre-race performer? In short, yes, despite two more Safety Car periods and race-long pressure from the Red Bull that never allowed Hamilton to relax.

His modest winning margin of 4.5s belied the wheel-perfect nature of his performance and the sheer command of his answers to every question Ricciardo posed. On lap 32, for example, Dan set what was then the fastest lap of the race: 1:50.994s. But a lap later, Lewis slapped him down with a 1:49.453s. And so it went on. Hamilton was able to extend his lead to more than ten seconds before a third Safety Car, triggered by Ericsson spinning on the Anderson Bridge. Even after that advantage had been erased, Lewis set about rebuilding it with remorseless resolve, once released. His first flying lap after the restart was a stunning 1:47.133, almost two seconds better than Ricciardo could manage.

And while Hamilton was doubtless very fortunate to see three of his major rivals eliminated on the first lap, he bossed every second of the race thereafter to take his seventh win of the season and his 60th victory overall. He left Singapore with 263 points, 28 clear of Vettel, and suddenly looked very much in command of the 2017 drivers' championship.



1st	Lewis Hamilton Mercedes	2h 03m 23.544s
2nd	Daniel Ricciardo Red Bull	+4.507s
3rd	Valtteri Bottas Mercedes	+8.800s
4th	Carlos Sainz Toro Rosso	+22.822s
5th	Sergio Pérez Force India	+25.359s
6th	Jolyon Palmer Renault	+27.259s
7th	Stoffel Vandoorne McLaren	+30.388s
8th	Lance Stroll Williams	+41.696s
9th	Romain Grosjean Haas	+43.282s
10th	Esteban Ocon Force India	+44.795s
11th	Felipe Massa Williams	+46.536s
12th	Pascal Wehrlein Sauber	+2 laps

Retirements

Kevin Magnussen Haas	50 laps - power unit
Nico Hülkenberg Renault	48 laps - oil leak
Marcus Ericsson Sauber	35 laps - spin
Daniil Kvyat Toro Rosso	10 laps - spin
Fernando Alonso McLaren	8 laps - accident
Sebastian Vettel Ferrari	0 laps - accident
Max Verstappen Red Bull	0 laps - accident
Kimi Räikkönen Ferrari	0 laps - accident

FASTEST LAP



Lewis Hamilton,
1min 45.008s on lap 55

FASTEST PITSTOP

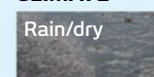


Lewis Hamilton,
28.466s (entry to exit)

TYRE COMPOUNDS USED



CLIMATE



AIR TEMP



TRACK TEMP



DRIVERS' STANDINGS

1 Hamilton	263pts	12 Stroll	28pts
2 Vettel	235pts	13 Grosjean	26pts
3 Bottas	212pts	14 Magnussen	11pts
4 Ricciardo	162pts	15 Alonso	10pts
5 Räikkönen	138pts	16 Palmer	8pts
6 Verstappen	68pts	17 Vandoorne	7pts
7 Pérez	68pts	18 Wehrlein	5pts
8 Ocon	56pts	19 Kvyat	4pts
9 Sainz	48pts	Ericsson, Giovinazzi,	
10 Hülkenberg	34pts	Di Resta, Button	0pts
11 Massa	31pts		

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RACE DEBRIEF MALAYSIAN GP

FINISHING STRAIGHT

'MAD MAX' HITS BACK

Another Ferrari implosion opened the door for Max Verstappen to claim his second grand prix victory



After a season that has been marred by tremendous misfortune, by no means all of it self-inflicted, Max Verstappen secured his second grand prix victory in emphatic style at what looks to be the last ever Malaysian Grand Prix. He took the lead on lap four, scything past pole-setter Lewis Hamilton at Turn 1, and was never threatened at the head of the field thereafter.

His Red Bull team-mate Daniel Ricciardo lost ground on the opening lap and had to settle for third place, behind a struggling Hamilton. Following Ricciardo was the sole Ferrari of Sebastian Vettel, who had secured fourth, having started last on the grid thanks to an engine problem on Saturday.

QUALIFYING

After a strong Friday, the problems for Ferrari began in the dying moments of FP3 on Saturday lunchtime. A suspected electrical fault forced Vettel to cruise back to the pits stuck in second gear. Ferrari decided to change his engine to avoid a repeat for qualifying, but given the complexities of the power unit, it was a race against time to get his SF70H ready in just two hours.

It was a great effort for him to exit the pits, but on his Q1 installation lap he immediately knew something was wrong and radioed back saying: "It feels like I have no turbo." Attempts to fix what turned out to be a fractured air intake came to

no avail and Vettel was resigned to shaking his mechanics' hands, while the remainder of qualifying continued without him. He would start 19 places behind rival Hamilton.

Another stellar lap in Q3 netted Lewis his landmark 70th pole in F1, against the run of form: Mercedes had been 0.5s off the front-running pace during practice. His closest challenger was the second Ferrari of Kimi Räikkönen, who would probably have eclipsed the Mercedes if he hadn't drifted wide at the final corner. The finishing margin between the pair was just 0.045s.

A similar gap split the two Red Bulls on row two, Verstappen ahead of Ricciardo, and then Valtteri Bottas. Force India's Esteban Ocon was sixth on Saturday evening, outqualifying team-mate Sergio Pérez in P9 and just ahead of McLaren's Stoffel Vandoorne. It was the Belgian's best F1 qualifying performance to date and he was 0.122s quicker than team-mate Fernando Alonso, who was having an off-weekend, in tenth.

Making his Formula 1 debut was French rookie Pierre Gasly at Toro Rosso, and from a qualifying perspective he did a creditable job. He lined up 15th and one place on the grid behind his team-mate, Carlos Sainz, just 0.156 seconds adrift.

RACE

As the field lined up, the second Ferrari was missing from the front row. Räikkönen had mentioned a lack of power on his way to the grid and retired with a similar problem to that which had afflicted Vettel in qualifying. Hamilton was clean away at the start, with Verstappen and Bottas directly behind him. Ricciardo struggled on a part of the track that was still damp after earlier rain, and lost out to the second Mercedes.

Up front, Verstappen quickly asserted his authority, passing Hamilton into T1 on lap 4. From there, he wasn't threatened again at the head of the field. His Red Bull team-mate had suffered from that slow getaway and spent eight laps cooped up behind Bottas's Merc. Once past, he didn't have the pace to chase Hamilton and his race would be to fend off Vettel for the final podium position.

The lone Ferrari started on the soft tyre and was short-fuelled, running an alternative strategy to the rest of the field. Vettel then made up six places on the opening lap (seven, if you include the place gained through his team-mate's misfortune) and had advanced another seven positions by lap 13.

By lap 32, Vettel was running fourth, 13.7s behind Ricciardo, and had started to eat into his lead. Ten laps later Vettel set a new lap record for Sepang and closed the gap to 5.1s. Between laps 43 and 46, the margin reduced from 3.6s to 2.2s to 0.9s, and that was when he had a look at passing.

RESULTS ROUND 15

SEPANG / 01.10.17 / 56 LAPS



Engine woes for Vettel and Räikkönen ruin Ferrari's weekend (top); Hamilton gets away cleanly from pole (above left) but Red Bull pressure Mercedes (above) with Verstappen edging into the lead on lap 4 (below)



1st	Max Verstappen	Red Bull	1h 30m 01.290s
2nd	Lewis Hamilton	Mercedes	+12.770s
3rd	Daniel Ricciardo	Red Bull	+22.519s
4th	Sebastian Vettel	Ferrari	+37.362s
5th	Valtteri Bottas	Mercedes	+56.021s
6th	Sergio Pérez	Force India	+78.630s
7th	Stoffel Vandoorne	McLaren	+1 lap
8th	Lance Stroll	Williams	+1 lap
9th	Felipe Massa	Williams	+1 lap
10th	Esteban Ocon	Force India	+1 lap
11th	Fernando Alonso	McLaren	+1 lap
12th	Kevin Magnussen	Haas	+1 lap
13th	Romain Grosjean	Haas	+1 lap
14th	Pierre Gasly	Toro Rosso	+1 lap
15th	Jolyon Palmer	Renault	+1 lap
16th	Nico Hülkenberg	Renault	+1 lap
17th	Pascal Wehrlein	Sauber	+1 lap
18th	Marcus Ericsson	Sauber	+2 laps

Retirements

Carlos Sainz	Toro Rosso	29 laps - electrics
Kimi Räikkönen	Ferrari	DNS - battery

FASTEST LAP



Sebastian Vettel,
1min 34.080s on lap 41

FASTEST PITSTOP



Lewis Hamilton,
23.489s (entry to exit)

TYRE COMPOUNDS USED



CLIMATE	AIR TEMP	TRACK TEMP
Cloudy	30°C	37°C

DRIVERS' STANDINGS

1	Hamilton	281pts	12	Stroll	32pts
2	Vettel	247pts	13	Grosjean	26pts
3	Bottas	222pts	14	Vandoorne	13pts
4	Ricciardo	177pts	15	Magnussen	11pts
5	Räikkönen	138pts	16	Alonso	10pts
6	Verstappen	93pts	17	Palmer	8 pts
7	Pérez	76pts	18	Wehrlein	5pts
8	Ocon	57pts	19	Kvyat	4pts
9	Sainz	48pts		Ericsson, Giovinazzi,	
10	Hülkenberg	34pts		Gasly, Di Resta,	
11	Massa	33pts		Button,	0pts

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“AT FERRARI AND MERCEDES, THERE WERE FURROWED BROWS... FERRARI MUST IMPROVE THEIR RELIABILITY, WHILE MERCEDES NEED TO SORT OUT THE DEFICIENCIES IN THE W08”

“The plan was to keep him behind,” said Ricciardo afterwards. “I saw Seb coming, so I closed the door, which didn’t seem overaggressive from my side. I expected him to keep coming and to attack at the end, but I guess he killed his tyres.”

In the end, Vettel had to settle for fourth, lifting and coasting to the flag to save fuel. But his bad luck continued on the slow-down lap. As he pulled alongside Lance Stroll’s Williams, the pair made contact, which ripped the left-rear off the Ferrari. It was a bizarre end to a troubled weekend.

There were no such concerns for Verstappen, who crossed the line to take the second win of his career, to the joy of his orange-clad Dutch fans.

There was good cheer at the Red Bull hospitality unit after the race, but at Ferrari and Mercedes there were furrowed brows. Neither were particularly proud of their weekend’s work; Ferrari must improve their reliability, while Mercedes need to sort out the deficiencies in the W08.

“It’s not a lame duck,” said Mercedes team boss Toto Wolff afterwards. “Let’s not forget it’s the car leading the drivers’ and constructors’ championship, but there are times when it underperforms, and we need to understand why.”

When asked whether he was worried about Ferrari’s pace, with five races to go, Wolff added: “I’m always worried.”



RACE DEBRIEF JAPANESE GP

FINISHING STRAIGHT

AN UNEXPECTED WIN FOR LEWIS

The tension was electric, but then Lewis Hamilton's biggest rival found he wasn't firing on all cylinders...



Lewis Hamilton moved a step closer to becoming a four-time world champion with his victory at the Japanese Grand Prix, as Ferrari fell into disarray for the third weekend in succession. As a result of Sebastian Vettel's retirement, Hamilton made a net gain of 25 points, putting him 59 ahead with only a further 100 still up for grabs.

The late-season Asian leg of this year's title battle has been a disaster for Ferrari. Vettel cruised into it just three points down and was looking forward to venues that played to his car's strengths. Yet he somehow came away having

picked up just 12 points in three races. At Suzuka, a spark-plug failure on the way to the grid meant he plummeted through the field before parking up.

QUALIFYING

Throughout this season, the Mercedes W08 has been a tricky beast to tame, and team principal Toto Wolff has repeatedly described the machine as "a bit of a diva". In the heat and humidity of Malaysia it had proved particularly truculent, and both Mercedes drivers had struggled to find the car's sweet spot.

But in the cooler temperatures of Suzuka in qualifying, Hamilton found the perfect balance to smash the opposition. It was his first pole position at the legendary track and the 71st of his career. With the Mercedes engine settings ramped up to a 'quali-spec' mode, no one was in the same league.

"Every single time I have struggled here, it's because I've been trying to find the right balance," said Hamilton. "This is the first car I have felt has been underneath me all weekend. My knowledge of it is better than it was before. Let's hope she's not stubborn tomorrow."

Vettel joined Hamilton on the front row, once Valtteri Bottas had been handed a five-place grid penalty for a replacement gearbox. Behind them were the two Red Bulls, both drivers disappointed to be a full second behind Hamilton's Mercedes.

Bottas's grid penalty put him between the two Force Indias. He'd recorded his best Q2 time on the soft rubber, setting himself up for an alternative tyre strategy in the race, since many of the cars around him would be starting on the supersofts. Ferrari's Kimi Räikkönen did the same, for he was also in receipt of a five-place grid penalty, having damaged his gearbox with an off into the barriers at Degner 2 in Saturday morning practice.

Jolyon Palmer was stranded in P18 on the grid, in what would be his final outing for Renault. A few hours after qualifying, it was announced that Carlos Sainz would take his seat from Austin.

RACE

Friday's gloomy washout was rendered a distant memory by Sunday's warm sunshine. As the track

VERSTAPPEN REMAINED A HOVERING THREAT AS BOTTAS - WHO ENJOYED A SHORT STINT IN THE LEAD BY DINT OF HIS LATE-PITTING STRATEGY - UNWITTINGLY HELD UP HIS TEAM-MATE

temperatures nudged towards 46°C, there was concern that the Mercedes 'diva' might struggle in comparison with the Red Bulls. And once away in the lead, Hamilton was cautious throughout the race. His closest challenger was Max Verstappen, who had nailed his team-mate Daniel Ricciardo in the run down to Turn 1 and was quickly past Vettel's Ferrari at the hairpin, aware that something was amiss with the red car.

"I saw in my mirrors that Max had done a big lunge into Turn 11, so from then I was just trying to manage the pace, manage the tyres," said

LAT IMAGES: LORENZO BELLANCA; ANDY HONE; GLENN DUNBAR; STEVE ETHERINGTON; CHARLES COATES; OTHER PHOTO: SUTTON IMAGES.

SUZUKA / 08.10.17 / 53 LAPS

RESULTS ROUND 16



Despite starting from P2, Vettel struggled from the start (right) and retired with a faulty spark plug on lap 4 (above). Lewis managed to hold off Verstappen (below) to take the win



Hamilton. "It was the hottest the track had been all weekend – so it was really crucial, knowing the Red Bulls would be very quick in the race."

On the opening lap, Carlos Sainz had drifted wide between Turns 5 and 6 and subsequently spun into the barriers, requiring an appearance by the Safety Car to tidy away his Toro Rosso. It was an underwhelming end to his career with this team, which possibly elicited a smirk from Palmer as he passed by in his Renault.

The first of the leaders to make their one and only stop for fresh rubber was Verstappen, who dived into the pitlane on lap 21, followed a lap later by Hamilton, who also switched onto the soft tyre. Red Bull team boss Christian Horner later revealed that a blister had formed on Verstappen's front-left tyre and was starting to widen and deepen as the race entered the latter stages. As a result, Verstappen was forced to drop his pace and thereafter maintained a three-second gap to Hamilton, remaining a hovering threat as Bottas – who enjoyed a short stint in the lead by

dint of his late-pitting strategy – unwittingly held up his team-mate.

The closing stages revolved around two key battles. Fernando Alonso was hunting down Massa for the final points position, while Verstappen began a final charge on Hamilton that gained greater impetus thanks to a Virtual Safety Car period – Williams' Lance Stroll was beached at Turn 4 after a mechanical failure pitched him off. There were just four laps left when the VSC came to an end, but Hamilton had lost grip as his tyre temperatures faded away.

Alonso was desperate to hunt down Massa, and despite warnings from the stewards for ignoring blue flags (he subsequently picked up two penalty points), he was unhelpful to the leaders, finally moving over for Hamilton at the hairpin but giving nothing to Verstappen.

It was just enough to give Hamilton the breathing room he needed and he crossed the line clear of Verstappen and third-placed Ricciardo, having managed the race perfectly.



1st	Lewis Hamilton Mercedes	1h 27m 31.194s
2nd	Max Verstappen Red Bull	+1.211s
3rd	Daniel Ricciardo Red Bull	+9.679s
4th	Valtteri Bottas Mercedes	+10.580s
5th	Kimi Räikkönen Ferrari	+32.622s
6th	Esteban Ocon Force India	+67.788s
7th	Sergio Pérez Force India	+71.424s
8th	Kevin Magnussen Haas	+88.953s
9th	Romain Grosjean Haas	+89.883s
10th	Felipe Massa Williams	+1 lap
11th	Fernando Alonso McLaren	+1 lap
12th	Jolyon Palmer Renault	+1 lap
13th	Pierre Gasly Toro Rosso	+1 lap
14th	Stoffel Vandoorne McLaren	+1 lap
15th	Pascal Wehrlein Sauber	+2 laps

Retirements

Lance Stroll Williams	45 laps – suspension
Nico Hülkenberg Renault	40 laps – DRS
Marcus Ericsson Sauber	7 laps – spin
Sebastian Vettel Ferrari	4 laps – spark plug
Carlos Sainz Toro Rosso	0 laps – spin

FASTEST LAP



Valtteri Bottas,
1min 33.144s on lap 50

FASTEST PITSTOP



Max Verstappen,
22.620s (entry to exit)

TYRE COMPOUNDS USED



CLIMATE	AIR TEMP	TRACK TEMP
Sunny	27°C	39°C

DRIVERS' STANDINGS

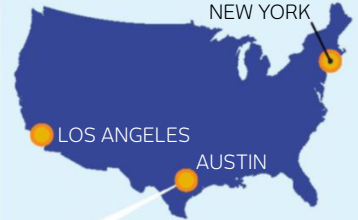
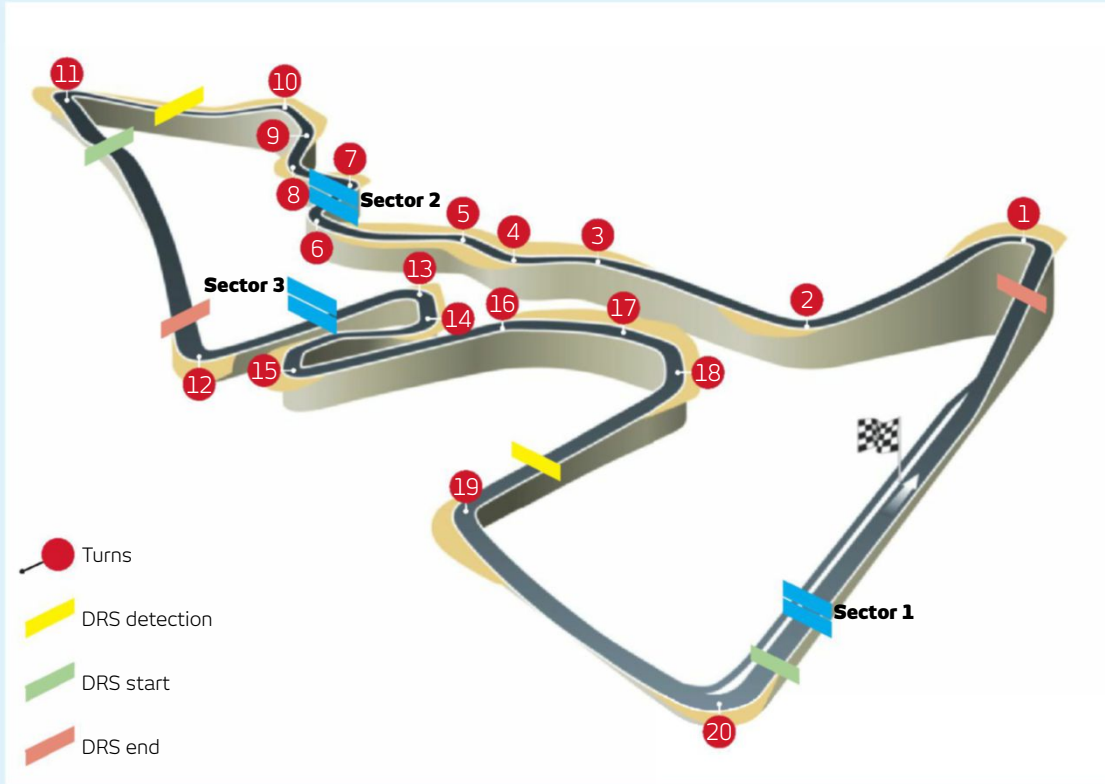
1 Hamilton	306pts	12 Stroll	32pts
2 Vettel	247pts	13 Grosjean	28pts
3 Bottas	234pts	14 Magnussen	15pts
4 Ricciardo	192pts	15 Vandoorne	13pts
5 Räikkönen	148pts	16 Alonso	10pts
6 Verstappen	111pts	17 Palmer	8 pts
7 Pérez	82pts	18 Wehrlein	5pts
8 Ocon	65pts	19 Kvyat	4pts
9 Sainz	48pts	Ericsson, Giovinazzi,	
10 Hülkenberg	34pts	Gasly, Button,	
11 Massa	34pts	Di Resta	0pts

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FINISHING STRAIGHT

THE US GP



RACE DATA

- Circuit name** Circuit of The Americas
- First GP** 2012
- Number of laps** 56
- Circuit length** 3.426 miles
- Race distance** 191.634 miles
- Lap record** 1m 39.347s
Sebastian Vettel (2012)
- F1 races held** 5
- Winners from pole** 2
- Tyres** Ultrasoft, supersoft, soft

TV TIMETABLE (UK TIME)

- Friday 20 October**
- Practice 1** 16:00-17:30
- Practice 2** 20:00-21:30
- Saturday 21 October**
- Practice 3** 17:00-18:00
- Qualifying** 22:00-11:00
- Sunday 22 October**
- Race** 20:00
- Live coverage** Sky Sports F1 & Channel 4

THE MAIN EVENT

Given the Texan love of a fanfare, it's something of a surprise that the Circuit of The Americas is so understated. While other new F1 venues have sought to make a statement with flamboyant architecture, CoTA concentrates on the important stuff – namely exciting corners, fast changes of direction and a couple of on-the-ragged-edge overtaking zones. You can ditch the fake pagoda bridges and stick to the cinder-block strip-mall aesthetic when you have that.

Not that the race weekend lacks razzmatazz: It's got cheerleaders, brass bands, busy grandstands, and celebrities galore. We could probably do without Saturday's schedule being fiddled around to accommodate Justin Timberlake, but there's no doubting the commitment of the US GP's organisers to making a success of their grand prix. And at least this year we'll be spared the phenomenon of traffic jams leading *in* to the circuit *after* qualifying as everyone queues up for the Taylor Swift concert.

CLASSIC RACE: 2012

For F1's first outing here, hard Pirellis, low temperatures and raw asphalt combined to ensure F1 did a passable impression of Bambi on ice. The high-speed changes of direction and low grip made for compelling racing, with CoTA's homage to the Adelaide Hairpin and Hockenheim's stadium section proving just as compelling as its take on Maggotts, Becketts and Chapel.

Lewis Hamilton took his final win for McLaren after battling with Red Bull's Sebastian Vettel, while Fernando



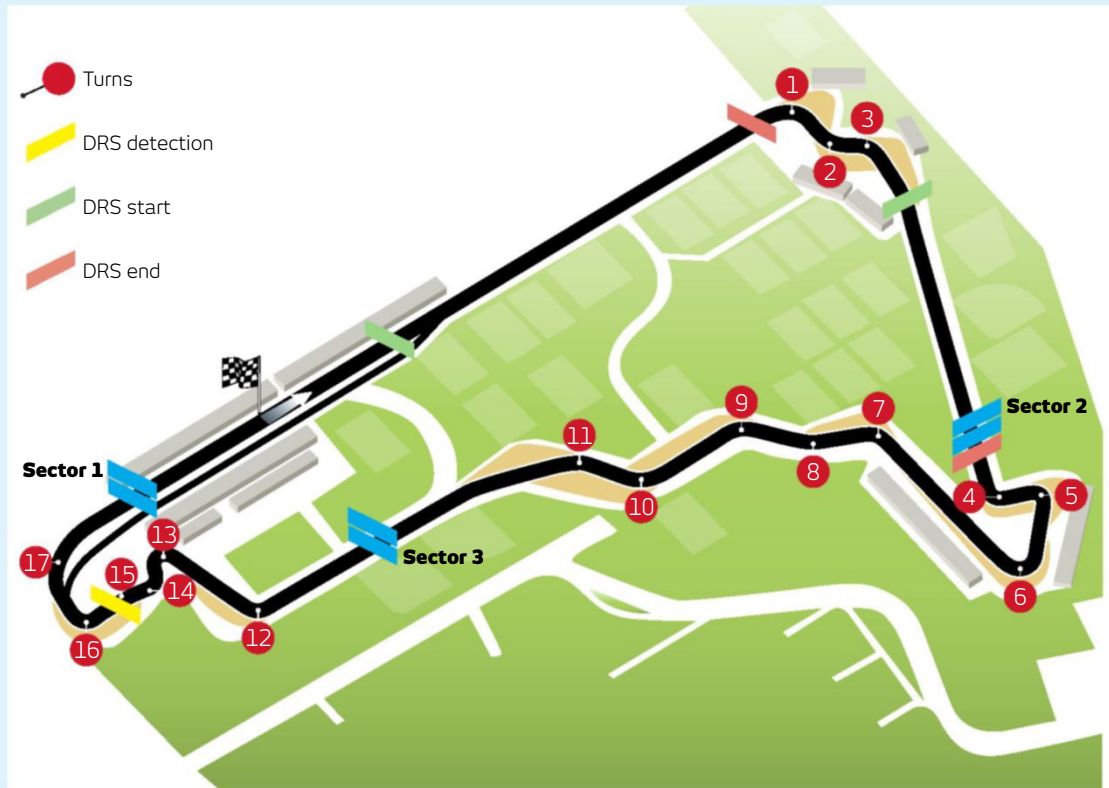
Alonso dragged a less-than-competitive Ferrari to the podium to ensure a title showdown with Vettel at the final race in Brazil.

THE LAST FIVE WINNERS HERE...

2016	2015	2014	2013	2012
Lewis Hamilton Mercedes	Lewis Hamilton Mercedes	Lewis Hamilton Mercedes	Sebastian Vettel Red Bull	Lewis Hamilton McLaren



THE MEXICAN GP



RACE DATA

- Circuit name** Autódromo Hermanos Rodríguez
- First GP** 1963
- Number of laps** 71
- Circuit length** 2.674 miles
- Race distance** 189.738 miles
- Lap record** 1m 20.521s
Nico Rosberg (2015)
- F1 races held** 17
- Winners from pole** 9 (2 from 2 on the track's latest iteration)
- Tyres** Ultrasoft, supersoft, soft

THE MAIN EVENT



The third age of the Mexican Grand Prix arrived in 2015, with a cut-down and de-fanged circuit. Gone was the fearsome banked Peraltada, sacrificed on an altar of safety, and what remains is a little... vanilla. Fortunately, the Mexican GP makes up for that with a terrific atmosphere – especially in the Foro Sol stadium section, where the noise generated by the enthusiastic crowd is truly staggering.

It's surprising anyone has the energy to make so much noise in the thin Mexico City air. The Autódromo is 2,200m above sea-level, which, with a normally aspirated engine would mean 22 per cent less power. But with the modern hybrids, it simply means working the turbo harder. Less air does, however, mean less drag and the highest speeds of the year without the use of Monza-spec skinny wings. That leads to some frantic braking at the end of the straight, which means things can get spicy towards the end of the race since less air also means less cooling...

CLASSIC RACE: 1964

Last year's race had an interesting mix of accident, incident, championship manoeuvres and ill-judged profanity, but, like its predecessor, never really ignited as a contest at the very front. For real drama, we need to go back to the 1964 title decider in which drivers from three teams went into the race with a chance of glory.

Jim Clark had started on pole and led all the way, but on lap 64 of 65 his engine seized, dashing his title hopes. Now Graham Hill was limping towards the title, but on the final lap the Ferrari pitwall managed to convey a message



to Lorenzo Bandini that he should slow down to let John Surtees past. Bandini understood, his team-mate swept by and took the title, while Dan Gurney won the race.

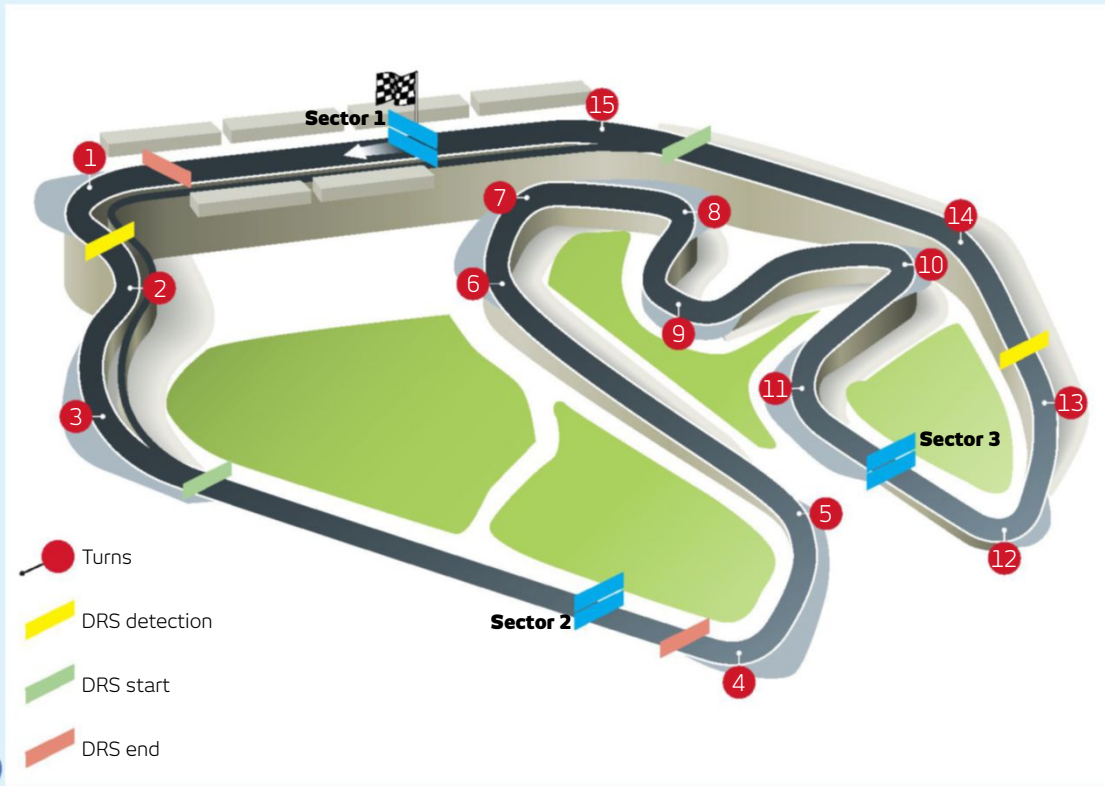
THE LAST FIVE WINNERS HERE...

				
2016	2015	1992	1991	1990
Lewis Hamilton Mercedes	Nico Rosberg Mercedes	Nigel Mansell Williams	Riccardo Patrese Williams	Alain Prost Ferrari



FINISHING STRAIGHT

THE BRAZILIAN GP



RACE DATA

Circuit name Autódromo José Carlos Pace
First GP 1973
Number of laps 71
Circuit length 2.677 miles
Race distance 190.083 miles
Lap record 1m 11.473s
 Juan Pablo Montoya (2004)
F1 races held 34
Winners from pole 14
Tyres Supersoft, soft, medium

TV TIMETABLE (UK TIME)

Friday 10 November
Practice 1 12:00-13:30
Practice 2 16:00-17:30
Saturday 11 November
Practice 3 13:00-14:00
Qualifying 16:00-17:00
Sunday 12 November
Race 16:00
Live coverage Sky Sports F1
Highlights Channel 4

LAT IMAGES: ANDY HONE; CHARLES COATES; GLENN DUNBAR; ANDREW FERRARO.

THE MAIN EVENT



The perfect racing circuit consists of a hillside with everything that doesn't look like a racing circuit cut away. Interlagos fits this brief admirably: set in a natural bowl, this tiny, twisting circuit has hosted some of the most memorable grands prix in recent history.

It's been helped by three things. First, the weather and the circuit owners' frankly inept attempts at coping with it. Second, the layout: Interlagos is the antidote to the argument that F1 cars can't overtake – they can given a decent run at it. The long run up the hill from Junção over the start/finish line, which then plunges into the downhill, off-camber heavy braking zone for the Senna S, is tailor-made for exciting Formula 1 – and it never fails to deliver.

Last but not least, since switching to a regular slot at the tail end of the season, Interlagos is where F1 championships are very often decided – and the narrow track, the capricious weather and the huge, raucously enthusiastic crowd make it the perfect venue for that.

CLASSIC RACE: 2012

This race had absolutely everything. Heavy showers, all four tyre compounds in play, and drama and skill by the bucketload. Nico Hülkenberg could have won; Lewis Hamilton could have won; Jenson Button *did* win.

Seb Vettel was chasing a third title and Fernando Alonso was trying to stop him. Vettel got stuck in the midfield and suffered a collision. Dead last, facing the wrong way, a hole in the sidepod, and a broken radio. Game on. He battled back to P4 and took the title.



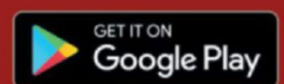
THE LAST FIVE WINNERS HERE...

2016	2015	2014	2013	2012
Lewis Hamilton	Nico Rosberg	Nico Rosberg	Sebastian Vettel	Jenson Button
Mercedes	Mercedes	Mercedes	Red Bull	McLaren

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THE MONACO GRAND PRIX

Circuit de Monaco, Monte Carlo; 24-27 May 2018



The world's greatest street circuit

LAT IMAGES; GLENN DUNBAR; OTHER PHOTOS: SHUTTERSTOCK.

WHY VISIT?

The French Riviera is world famous for its splendour and elegance. A renowned beauty spot for over a century, this magnificent ribbon of coastline has become the definition of European refinement. Home to both Nice and Monaco, which are just 25 minutes apart by rail, the south-east corner of France is more than deserving of its reputation as the perfect holiday destination. And it's also the host of the jewel in Formula 1's crown, the Monaco Grand Prix, which takes place at the end of May.

The Circuit de Monaco is arguably the toughest of all the F1 tracks to master. This

narrow belt of asphalt winds its way through the streets of Monte Carlo, and is lined with unrelenting Armco steel just waiting to punish even the tiniest of mistakes.

The action, uniquely for races on the F1 calendar, begins early on a Thursday morning as drivers set about familiarising themselves with the low grip levels and try to push the limits of adhesion. As the track rubbers in, the times start to tumble, and whether you're watching trackside or on TV, a Formula 1 car threading its way around the streets of the Principality is a thrilling sight to behold.

WHAT TO SEE

Musée Océanographique de Monaco

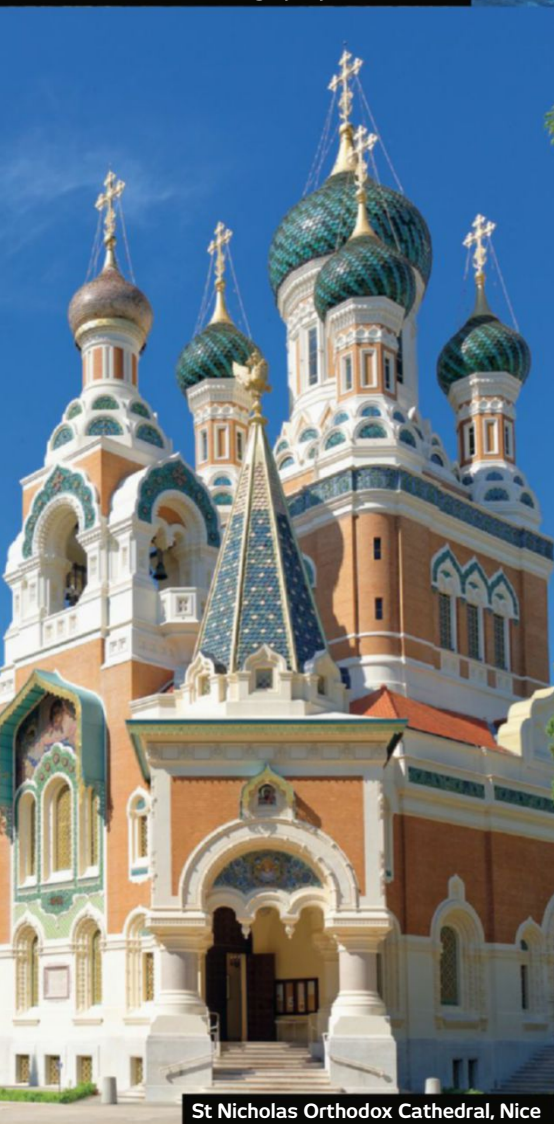
Rising from the cliffs on the coast, this world-class museum of marine sciences was extensively renovated in 2010. It's packed with installations, exhibitions and activities, while its basement aquarium contains 4,000 species of fish from across the planet.

Casino de Monte-Carlo

Opened in 1863, this famous casino is a historic playground for the aristocracy of Europe. Open to sightseers until lunchtime, it is well worth a look inside to see the spectacular *belle époque*



Musée Océanographique de Monaco



St Nicholas Orthodox Cathedral, Nice



Casino de Monte-Carlo



Cathédrale de Monaco

THOMAS COOK SPORT BREAK DETAILS

GP ticket and three-night breaks from £999pp*

YOUR BOOKING INCLUDES:

- Return flights from London/Manchester to Nice
- Return airport transfers to your hotel by coach
- A great choice of hotel accommodation with breakfast provided daily
- Friday night welcome drinks reception or a drinks voucher if arriving after 8pm
- Race day (Sunday) general admission ticket
- Return race day (Sunday) circuit transfers
- A merchandise pack with sun cream, poncho, pen, bag, ear plugs, ticket lanyard and wallet
- Service charges, taxes and ATOL protection

WHERE TO STAY

NH Hotel Nice

This hotel is in the east, a 15-minute walk from the historic old town, with the centre and coast a short tram ride away. There are great views across the city from the rooftop pool and bar.

Hotel Aston La Scala, Nice

Situated in the old town, this hotel offers views out over the Promenade du Paillon. It's just a short five-minute stroll down to the beach, making this the ideal spot for exploring Nice.

Ibis Nice Centre Gare

The Ibis is close to the train station, making it perfect for exploring the wider area. The modern art museum, opera house and national theatre are all just a ten-minute tram ride away.

HOSPITALITY OPTIONS

Pay a little extra and you can tailor your F1 experience to include one of these options:

- **The Thomas Cook Sport Terrace** offers a relaxed atmosphere and views of the paddock from the top of the Stars 'n' Bars restaurant.
- **The Beau Rivage trackside option** offers guests an open bar and views from the balcony overlooking the straight.
- **Caravelles** is the ultimate F1 experience. There are superior views from above the grid allowing you to see more than 75 per cent of the track. Gourmet food and an open bar are provided.

*Pricing correct at time of press

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FAST FACTS

Currency £1 = €1.13

Timezone GMT or BST +1

Plug type Type F

Weather 19°C / sunny

Flight time London to Nice: 2 hours
Manchester to Nice: 2hrs 20m

Kelly, the American film star who ended her Hollywood career to move to Monaco and marry its monarch, Prince Rainier III.

The Cars Collection of H.S.H. the Prince of Monaco

Home to more than 100 classic and legendary cars from around the world, this fleet once formed the private collection of Prince Rainier III. Now housed in a five-storey museum that is open to the public from 10am-6pm daily, the collection is a must for F1 fans since it includes William Grover-Williams' Bugatti Type 35, which won the first Monaco GP in 1929.

St Nicholas Orthodox Cathedral, Nice

This spectacular five-domed building, which opened in 1912, is the largest Eastern Orthodox cathedral in western Europe, and was the subject of a 70-year wrangle over its ownership between the French and the Russians.

architecture that featured prominently in the James Bond films *Never Say Never Again* and *GoldenEye*. For those wanting to play at the gaming tables, you must be suited and booted from mid-afternoon onwards.

Cathédrale de Monaco

Built between 1875 and 1903, the Cathédrale Notre-Dame-Immaculée stands on the site of the original 1252 parish church in Monaco. It's home to *Les Petits Chanteurs de Monaco*, who sing at each Sunday Mass at 10am between September and June. Visitors can also see the grave of Grace



F1 UPGRADES

Enhance the F1 experience with the latest must-have products



RENAULT SPORT LAYSHAFT AND GEAR LAMP

Price £439

www.mementoexclusives.com

Function always leads form in Formula 1. But when precision-engineered racing car parts have been finished with, their aesthetic qualities can be put to new uses.

This stylish lamp forms part of a new collection from

Renault Sport F1 Heritage, with a base created from a genuine, race-used gear ratio set on carbon fibre anchoring a layshaft stem.

The parts have all been sourced from Renault F1 cars that raced between 2002 and 2010. Their provenance is ensured by unique parts identification numbers, supported by an official team certificate of authenticity.

CODEMASTERS

F1 2017 GAME

PS4, Xbox One & PC

Price From £49.99

www.formula1-game.com



F1's official video game evolves year on year. The annual updates are always worth getting so you can have current driver/team combinations and new circuits to race on, but this time the team at Codemasters have excelled themselves.

We took Fernando Alonso's Honda-powered McLaren for a spin around the floodlit Singapore Marina Bay street circuit, and although we were able to keep up with the field around the twisty course, when they pulled away on the straights we found ourselves crying out loud: "No power!"

The game's producers have taken their cue from other racing simulators such as *rFactor* and *Project Cars*, and now you can adjust the AI settings to a figure between 0-110. So if you find the 'expert' setting too

easy, but 'legend' too hard, you can configure the game exactly to your liking. We found it dialled in perfectly with a Logitech G29 steering wheel and pedals.

There's some great detail, too. On the final lap in Singapore, the firework display lights up the Tarmac, and if your engineer is speaking to you from the pits, his voice crackles as you pass under bridges.

As well as the usual career modes and time trials, you can now take on a challenge that ranks you on a global leaderboard. Get to the top and you'll be invited to take part in the new official Formula 1 eSports world championship.

And we haven't even mentioned the slew of classic machinery you can drive. Now's your chance to take Mansell's FW14B or Senna's 1991 McLaren MP4/6 for a spin.





T-LAB EXPERIMENTAL
SEUL LES BRAVES
SPA-FRANCORCHAMPS
T-SHIRT

Price £27
www.t-lab.eu

The latest from one of our favourite producers of cool racing garb, this T-shirt pays homage to Belgium's beloved grand prix circuit

in the Ardennes: Spa-Francorchamps.

The printed logo, 'seul les braves', translates as 'only the brave', while the stylish track imagery is a three-colour screenprint onto dark grey 100 per cent cotton. The T-shirt won't fade through regular washes, and is available in small, medium, large and extra-large sizes.

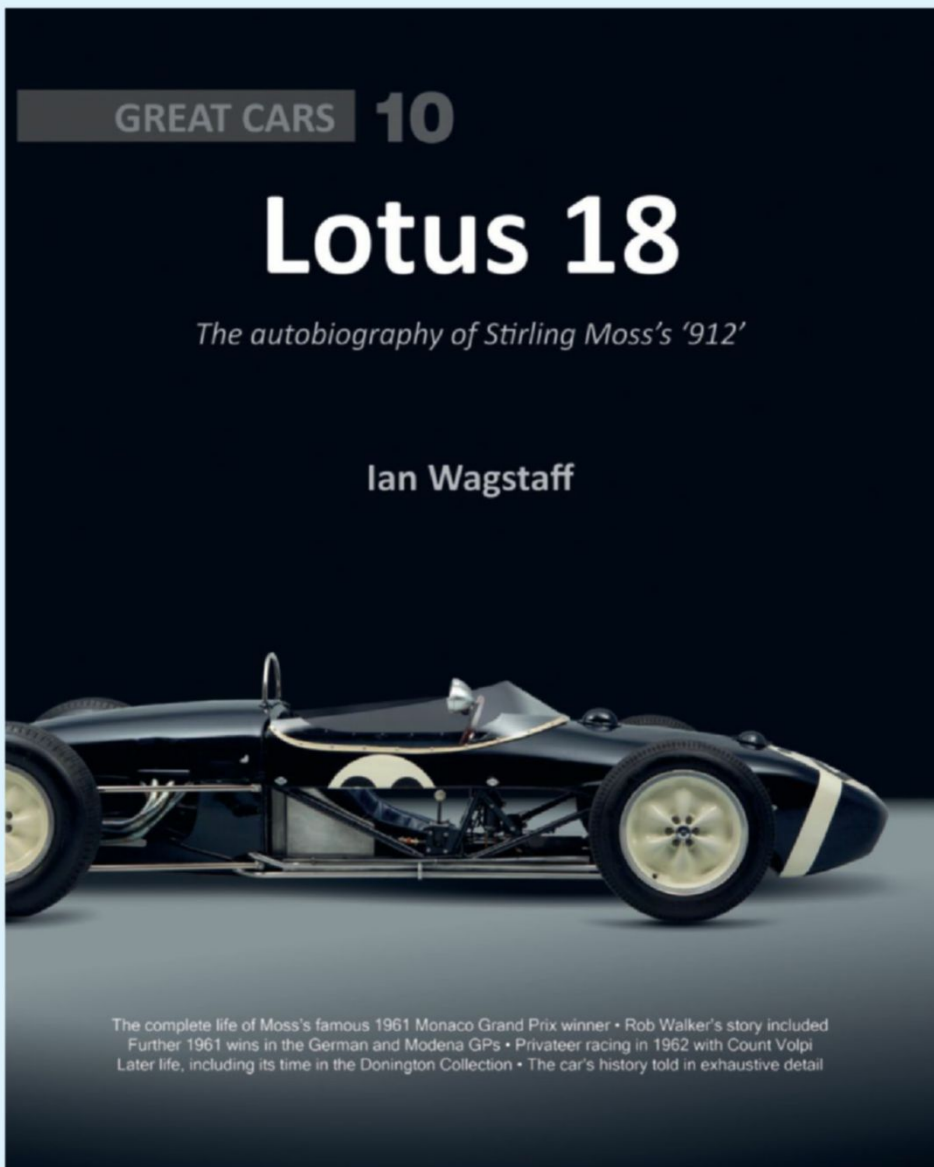


CASIO EDIFICE
F1-INSPIRED WATCH

Price £325
www.edifice-watches.co.uk

Two variations of Casio Edifice's latest F1-inspired timepieces are available, both of which feature Bluetooth technology that links to your smartphone, plus a device that displays your average speed when travelling.

Design and technical input are courtesy of Toro Rosso, ensuring Casio maintain their growing reputation for quality at the reasonably priced end of the luxury watch market.



LOTUS 18:
THE AUTOBIOGRAPHY OF
STIRLING MOSS'S '912'

Author Ian Wagstaff
Price £60

www.porterpress.co.uk

This is the tenth volume in Porter Press's wonderful 'Great Cars' series, which steps beyond the life of a famous make and model to delve into the specifics of a particularly special chassis. And as Formula 1 cars go, there are few more precious than this one.

The Lotus 18 '912' was a Rob Walker entry that

Stirling Moss drove to his final world championship grand prix victories at the 1961 Monaco and German Grands Prix.

During a year in which Ferrari's 156 'Sharknose' largely dominated, Moss delivered a pair of virtuoso performances that were not only two of his finest, but also among the greatest victories ever in F1 history.

The author is a regular contributor to this series and, as usual, has explored the deepest recesses to uncover sumptuous detail and nuance, aided by the

recollections of Walker's trusted mechanic, Tony Cleverly. We particularly like the context-setting chapter on what else was happening in the world during 1961, a pleasing touch most racing books overlook.

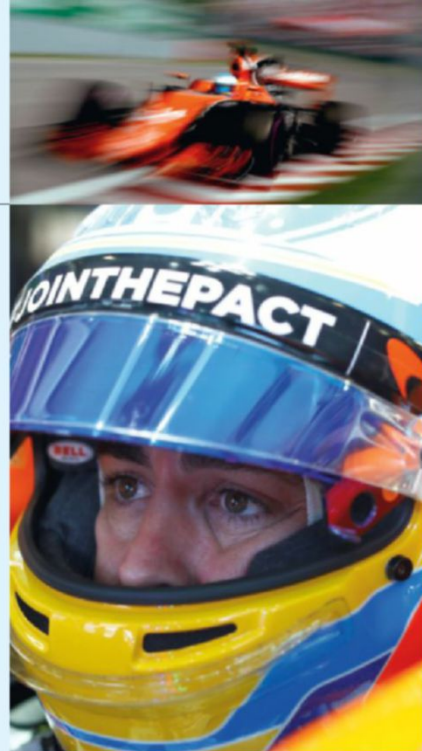
Almost 300 evocative photographs, printed on paper of the highest quality, ensure this rather expensive tome is still terrific value.

The car remains a popular campaigner in historic racing circles, the chapter on which offers an up-to-date coda to the story of a gloriously celebrated F1 classic.



FERNANDO ALONSO ME AND MY LID

Two-time champion Fernando Alonso discusses his helmet design, which is part patriotism and partly the legacy of a childhood gift



LAT IMAGES: STEVEN TEE; GLENN DUNBAR



I've kept my helmet design largely the same over the years, ever since I started out racing in karts. The key features that have remained as part of its design are patriotic, with the colour of the Spanish flag represented in red and yellow stripes around the middle. Turquoise is the main

colour of the Asturian flag, Asturias being the region of Spain I come from, and I also carry its yellow cross on the back of my helmet.

On top of the helmet are two silver-coloured, thunderbolt-shaped arrows. I took these from a remote-control car, which was a Christmas

present from the Three Wise Men when I was a kid. Well, with hindsight I think it must have come from my mum!

I liked those arrows so much that I put them on my helmet when I started racing in karts – and I've kept them on there ever since.

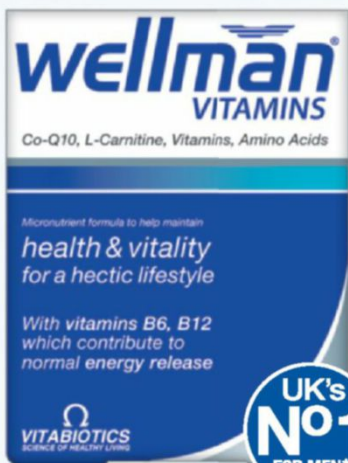
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