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Anthony Rowlinson

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ADRIAN MYERS
He's shot Hamilton, Rosberg, Alonso and Vettel for our front covers. This month Adrian electrified Max Verstappen (p26)



PETER NYGAARD
The Danish photo-journalist has reported on 560 GPs and has a '93 Tyrrell in his office. We lap Copenhagen with him on p36



ZAK MAUGER
Taking a break from photographing both Formula E and F1, the Guernseyman flew to Abu Dhabi to shoot Esteban Ocon (p48)



ANDREW VAN DE BURGT
Having joined as Editor in chief, 'VdB' was tasked with putting the F1 paddock's questions to Niki Lauda (page 42)

It's a kind of magic

Flash, boom, bang! With a flick of the wrist that grand old showmaster Bernie Ecclestone would always keep us coming back for more.

"It's all about the next one..." he'd mutter with dark relish, perhaps inspired by the declaration of *Rocky Horror's* Dr Frank N. Furter: "I see you shiver with antici..... pation."

And on that point, if not, perhaps, in all his thinking, the grizzled impresario was surely correct: the next race would *always* be better; the season ahead more thrilling than the last. *Of course* it would be (even if, in the event, it wasn't).

'Bigger, better, faster, more' was a mantra and method that served Ecclestone well over his 40-plus years in charge and we're all, dare one suggest, still suckers for it.

Good news for Liberty as they wrestle with the challenge of making a great sport even bigger.

And comforting, too, for teams toiling to ready themselves for the trials ahead. For what happier distraction could there be than considering whether, say, this could be the year that Max Verstappen truly establishes himself as The Man in grand prix racing. For what it's worth we think it very well might be (tho' Lewis Hamilton will doubtless have a view) and you can read how we've come to that conclusion in our cover story from page 26. All Max needs, surely, is some proper

shove from the Renault motor in an RB14 authored by a fully energised Adrian Newey (see page 82) and he'll do the rest... Or will he?

Therein lies the titillation of the off-season: will Seb and Ferrari find the reserves to finish what they started last year? Might Mercedes finally have run out of gas? And what of McLaren and their own becalmed world champion, Fernando Alonso? Might a switch of power unit wake that sleeping giant? Things can hardly get worse... can they?

Much, then, to relish, along with the emergence of fine new talents such as Esteban Ocon, about whose gangly excellence you can read more on page 48. Then we bring you the enticing prospect of a new grand prix in one of Europe's loveliest cities, Copenhagen. We've been there for a look-see (p36) and if the plans for a street race in the Danish capital come to fruition, we're in for a scorcher.

It's always been like this, our grand old sport, hasn't it? Ebbs and flows in the power game, stars falling in and out of favour, mighty racing empires that rise and fall, new territories to conquer... And underneath it all, the thrill of the new – a hope that this season will be the one to rule them all.

Already, we can't wait.

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Kimi Räikkönen, 38, took his last F1 win at the 2013 Australian Grand Prix

IS THE ICEMAN MELTING AWAY?

01 Kimi Räikkönen's days in Formula 1 are numbered. A cynic might say that has been the case for a while – he is the oldest driver on the grid (38), and these days there are few flashes of his best form. But the difference in 2018 is that Ferrari head into the season with a clear plan to replace him.

What is that plan? This year will be Räikkönen's last at Ferrari and in 2019 Charles Leclerc will partner Sebastian Vettel, who is under contract until the end of 2020.

Ferrari have already set their minds on it, and the only thing that will divert them from it is if Leclerc does not continue the rapid and impressive progression he has



Charles Leclerc scooped the FIA Formula 2 title in 2017 and will drive for Sauber in F1 this season

shown so far in his career, in his debut season at Sauber alongside Marcus Ericsson this year.

Ferrari are of course not admitting this publicly, but the idea of promoting Leclerc alongside Vettel in 2019 has been an open secret in F1 for some months. It has now firmed up within Ferrari, and at the team's traditional Christmas lunch at the end of 2017 there were strong hints from president Sergio Marchionne for those who knew what to listen for.

On Räikkönen, Marchionne said: "When things go right, it's a pleasure to see him driving. He has an incredible coldness. Otherwise, in other moments it seems like he takes a break.

"He needs more consistency in terms of performance, but it's important to find the right key to make him drive like in Monaco [where he qualified on pole in 2017 and led for 33 laps] and also on other circuits.

"This is probably the last season to find the right key

Ferrari boss Sergio Marchionne is heading the negotiations and reiterates their threat to quit

and we must do it. I think it would be a shame if he left F1 without showing his real potential.”

And of the next generation, Marchionne added: “We see Leclerc, [Max] Verstappen and [Antonio] Giovinazzi: drivers with great skills, who can deliver a big change in the driver market. I’m still happy to have chosen Leclerc.

“I think that if we cannot find the right key for Räikkönen, the choice will fall on a young driver.”

Who is Leclerc? He is a 20-year-old Monegasque, managed by Nicolas Todt, who dominated Formula 2 in 2017. He broke the record for consecutive pole positions with seven in a row – surpassing the six set by Stoffel Vandoorne in 2014 and 2015, when the series was called GP2 – taking seven wins and winning the championship by 72 points. In so doing, he became the first rookie to win the series since Nico Hülkenberg in 2009. The only other drivers to achieve that feat are Nico Rosberg and Lewis Hamilton.

Leclerc won the GP3 title in 2016 – again in his first season – and was runner-up in the 2015 Macau F3 race. Success in the junior formulae does not necessarily mean that a rising star will cut it in F1, but there is a big prize awaiting if he can justify Ferrari’s faith.

BRAWN FACES FERRARI MUSCLE

02

Räikkönen was not the only stalwart to whom Marchionne brought bad news in his Christmas address. He also had a none-too-subtle message for new F1 owners Liberty Media, and their motorsport director Ross Brawn in particular.

Back in November, in the wake of the announcement of plans for new engine regulations with which the car manufacturers in F1 are not happy, Marchionne floated the possibility of Ferrari quitting F1.

Predictably, the threat was dismissed as a bluff by some commentators. Marchionne has responded with bluntness, pointing out that this was the first time such a situation had arisen since he took over from Luca Di Montezemolo at the end of 2014.

Di Montezemolo used to bluster, but ultimately former F1 boss Bernie Ecclestone always found ways to buy Ferrari off – in the case of the last negotiations by securing them a five per cent slice of the total F1 income before any money was distributed to the teams.

Marchionne is renowned as a hard-nosed businessman and he is leading the negotiations for Ferrari for the first time. And while many believe Ferrari need F1 as much as the other way around, the reality is no-one knows how he will respond.



SOME SAY OUR QUIT THREAT OVER THE 2020/2021 REGULATIONS IS A BLUFF BUT THEY'RE PLAYING WITH FIRE. IF WE THREATEN TO DO SOMETHING, THEN WE WILL DO IT

SERGIO MARCHIONNE

Williams have yet to announce their 2018 line-up, but expect it to be Sergey Sirotkin

“Some people say that our quit threat about the 2020/2021 regulations is a bluff, but they’re playing with fire,” he said. “The situation has changed since 2015. Starting from that moment, everyone knows that if we threaten to do something, we will do it.”

He raised the “possibility” of the manufacturers setting up their own “alternative championship” – a threat last made when they were at war with previous FIA president Max Mosley over his plans for a budget cap. And guess what? A spending limit is also on Liberty’s wish-list.

“We can’t ignore this possibility,” Marchionne said, “but I prefer to avoid it if we can. I would like to continue with Formula 1, but we have to find compromises that don’t leave Ferrari without the possibility of showing its DNA in every race.”

As for Brawn, Marchionne said: “The main thing that bothers me is that inside Liberty Media there is a person with great experience in F1, Ross Brawn, who is trying to give a direction that is not in the DNA of the sport.

“We have been part of F1’s history, so we understand bullshit and we understand F1. We have a race department that works only on F1, so we know F1 well. We have to try to balance [Liberty’s] interests with ours,



Ferrari president Sergio Marchionne (above, right) had a barbed Christmas message for Ross Brawn (above) F1’s motorsport boss



but I think that we can arrive to that in time to avoid Ferrari’s exit from Formula 1.”

Behind the bluster are a number of inter-linked issues, primarily the new engine formula; Liberty’s plans for the future of the sport; and the teams’ new commercial deals.

The engine discussions are at an impasse. The manufacturers are not keen on the proposals laid out by F1 and the FIA in November, claiming that they amount to a new engine, because of the desire to remove the hybrid system on the turbo, despite the engine architecture slated to remain the same.

But there is no agreement on an alternative and senior ▶

sources say talks are going around in circles.

There has, though, been some progress on Liberty's plans for the future. Last season ended with teams expressing concerns about falling revenue, haphazard decision-making and a lack of clarity in terms of aims.

But in mid-December all the F1 team principals went to the new F1 HQ in London for a presentation by CEO Chase Carey, his key lieutenants Brawn and Sean Bratches and the ten heads of department below them.

One senior figure said the presentation was "very impressive" and that some of the plans were "really intelligent". The key and most difficult question is whether Liberty can then monetise those plans, the detail of which has not yet been widely disseminated.

WILLIAMS DELAY DRIVER SIGNING

03 Liberty's plans to expand the popularity of F1 are not the only thing lacking detail; another – at least officially – is the identity of the driver Williams will sign to partner Lance Stroll in 2018.

Williams' strategy from about September was to take Robert Kubica, which they believed would be a win on many levels. If the Pole had been anywhere close to the standards he set before the rally accident that curtailed his career early in 2011 and left him with only partial movement in his right arm, they would have a quality driver. There was a great PR story to tell about his return from injury after seven years out. And he had significant backing – said to be about €8m – to ease the way.

[[KUBICA DID NOT LOOK THAT QUICK. IT WORKED OUT THAT HE WAS ONLY ABOUT 0.3SECS QUICKER THAN STROLL, IN FACT]]



LAT IMAGES: ZAK MAUGER; CHARLES COATES; ADAM WARNER

Robert Kubica failed to impress Williams when he took part in the post-season Abu Dhabi test



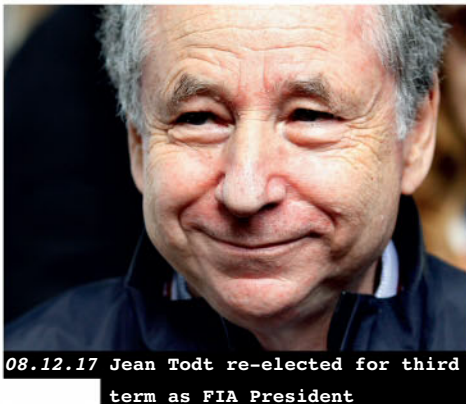
But the plan fell down when Kubica put in an unconvincing performance at the post-season Abu Dhabi tyre test. It took Williams a while to go through the data from the test and cross-correlate for variables such as track condition, tyres, fuel loads and so on. But when they did they came to the same conclusion as Renault had after they tested Kubica in their 2017 car in Hungary in August, and as engineers from rival teams did watching the 32-year-old's times from the pits.

Bluntly, Kubica did not look that quick. It worked out that he was only about 0.3secs quicker than Stroll, in fact.

That was a concern, as the team reckon the Canadian was an average of about 0.7secs off Felipe Massa through ▶

F1 DIGEST THE MONTH'S BIG STORIES AT A GLANCE

07.12.17 Honda's head of F1 leaves role in management reshuffle



08.12.17 Jean Todt re-elected for third term as FIA President

18.12.17 Ferrari chief Sergio Marchionne says 2018 is Kimi Räikkönen's last chance to find competitive form

19.12.17 McLaren rules out likelihood of securing title sponsorship for 2018 season

20.12.17 Sergio Pérez warns Force India against imposing team orders

22.12.17 FIA announces clampdown on trick suspension systems that use steering angle to vary ride height

01.01.18 Renault admit they "played with fire" by chasing

performance at the expense of reliability last season

02.01.18 Valtteri Bottas launches fan competition to redesign his crash helmet for 2018



03.01.18 Honda describe new three-engines-per-season rule as "unreasonable"



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SIROTKIN AND STROLL IS NOT EXACTLY A PARTNERSHIP TO STIR THE SOUL. INDEED THE ONLY WORSE PAIRING WAS MALDONADO AND SENNA IN '12



Russian racer Sergey Sirotkin drove in the Abu Dhabi test and with financial backing is set to secure a Williams seat

2017, and a second off in Abu Dhabi at the last race of the season. Most perplexing was Kubica's failure to significantly improve his times on the softest tyres.

Williams have considered and rejected both Pascal Wehrlein and Daniil Kvyat – the only two drivers who had race seats last season who have not either retired or already got a drive. Both were dismissed, fundamentally, on the basis they had already fallen short.

With a degree of regret, then, attention turned to the other driver Williams trialled at the test, Russian Sergey Sirotkin, a three-time GP2 race winner and Renault's reserve driver last year. Sirotkin, Williams reckoned, had shown a pace in the test a couple of tenths or so off Massa's in the Abu Dhabi race.

Not great, seeing as Williams decided to move away from the Brazilian because of his inconsistency. But not bad either, considering that the team believed that after putting in a series of weak performances through mid-season as it was unclear what his future held, Massa drove strongly in the final races once he had made up his mind to retire.

Sirotkin also has a reputed €15m in sponsorship money from the Russian bank SMP, which is owned by Boris and Arkady Rotenberg, who are close associates of Vladimir Putin. So why the delay? Not, as some have claimed, to try to prise more money out of Kubica.

In fact, having spent months working on contracts for Kubica, which were on the point of being signed, Williams had to start again from scratch in sorting out a deal with Sirotkin, and with the inevitable delays involved in the Christmas period, that was simply taking time. Expect the deal to be announced some time soon after the new year.

There are two issues here, of course.

One, Williams look like they have ended up with a worse driver line-up than last year, despite trying to improve it – if only Massa had swallowed his pride and waited, he might still be in F1.

Two, Sirotkin and Stroll is not exactly a partnership to stir the soul. Indeed, some cynics have said arguably the only worse pairing for a team with ambitions beyond mere survival was that of Pastor Maldonado/Bruno Senna for, yes, Williams, in 2012.

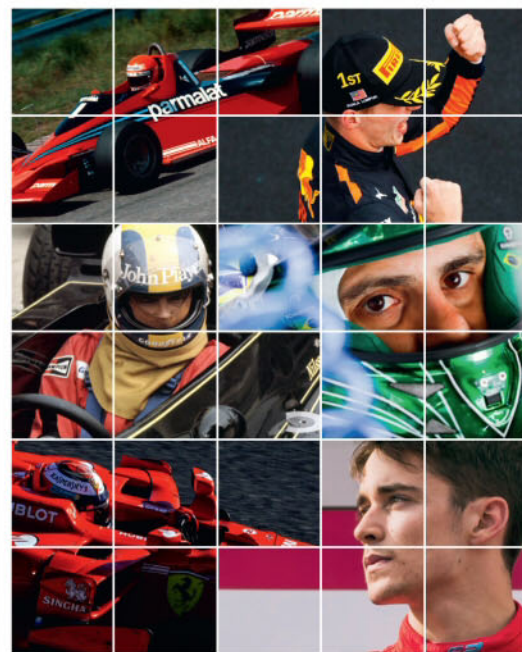
Williams, though, are hopeful that Sirotkin will prove solid and decently quick. And while insiders insist they have made the decision based on performance, with financial considerations only secondary, at least they know they have a pot of cash to spend on car development.

The belief is that Sirotkin has potential and could be a decent staging post which will buy them time and some decent results as they seek to avoid falling into the same trap with their driver choice at the end of next season.

F1 MASTERMIND

Your chosen specialised subject: the world's greatest sport

- Q1 Niki Lauda and Jody Scheckter won the Swedish GP twice, but who were the other two winners?
- Q2 Two world champions won as many GPs in their whole F1 career as both Max Verstappen and Valtteri Bottas have done? How many wins do they share and who were the world champions?
- Q3 Which marque has the most single race hat tricks (win, pole and fastest lap) in Formula 1?
- Q4 In his brief career Gunnar Nilsson won a solitary GP. Which one was it and where was it held?
- Q5 Aside from Brendon Hartley, how many other New Zealanders have raced in F1: 8, 12 or 14?
- Q6 How many seasons did Felipe Massa finally end up driving for Williams in F1?
- Q7 How old will Kimi Räikkönen be at the end of the 2018 season?
- Q8 True or false: There have been more GPs in the last ten years of the championship than there were in the first 20 years?
- Q9 Who is the younger F1 driver: Charles Leclerc or Max Verstappen?
- Q10 Where was the last South African GP held?



1 Denny Hulme and Jacques Laffite 2 They all have three wins, Mike Hawthorn and Phil Hill 3 Ferrari (8) 4 1977 Belgian GP Zolder 5 8 6 4 7 39 8 True 191 to 184 9 Charles Leclerc, by 17 days 10 Kyalami



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THE RACER'S EDGE

PETER WINDSOR

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Brabham-Alfa was hopeless. James Hunt won the year with an uncomplicated McLaren-Ford. Carlos R decided mid-season that he'd had enough. He tried hard to put together a deal to drive a third McLaren in 1977 but Teddy Mayer wouldn't wear it; he signed instead for Ferrari.

There would be only two wins for Brabham-Alfa – including the famous one at Anderstorp, Sweden, when the flat-12 Brabham wore a huge sucker fan at the back. Alfa built a slimline V12 for the ground effect era (for 1979) but not even the talent of Niki Lauda could make a difference.

Withdraw, Aston-style?

No. Alfa's response was to put their *own* team together around their own chassis and engine, and to hire the French Tyrrell star Patrick Depailler, to drive alongside Bruno Giacomelli. Carlo Chiti, responsible for the engine debacle, would build the complete car.

In 1980 I was at my desk in the *Autocar* office, one sunny afternoon in Blackfriars, when the call came through. (You always dreaded the calls back then; the chances of it being a bad one were about 50-50.)

"Have you heard?" said Helmut Zwickl, my Austrian colleague. "Patrick. He's been killed testing at Hockenheim."

Something had failed going into the fast right-hander at the back of the circuit. The Alfa had mown down layers of catch-fencing. Patrick, a good friend and a funny, cool guy with lots of talent and inscrutable eyes, had been fatally injured by the catch-fence poles.

F1 life went on – as always. 'Vit' Brambilla was drafted in as an immediate replacement. At season's end, over the bumps of Watkins Glen (which nullified the advantage of the cars with the best skirt systems and opened the playing field to understeerers like the Alfa), the concise Bruno took the pole and led for 31 laps before coasting to a halt with a failed Magneti Marelli coil (of all things).

I was in the Lotus section of the 'Tech Centre' after qualifying when Colin Chapman and Elio de Angelis suggested that Alfa had been running a "big" V12. I pointed out that qualifying had been a bit of a lottery due to the confusion surrounding the Goodyear compounds. Bruno had used 'B's when everyone else had been on 'C's or 'D's. They

ALFA ROMEO – THE RETURN OF AN F1 MARQUE

So Alfa are back. In name and large euros initially – which is probably a good thing, given the complexities of modern F1 racing and Fiat-Alfa's passion for wanting to make things happen yesterday – but there's no denying the heritage. Aston Martin tried to build a front-engined F1 car for the 1960 season, by which time everyone knew that rear engines were the way to go. Then they disappeared.

Alfa, though, are Alfa. *Il quadrifoglio*. Enzo Ferrari raced for Alfa before he managed the team. Alfa are also Giuseppe Farina, winning the first round of the world championship at Silverstone in 1950 and becoming F1's first world champion. They are also Juan Manuel Fangio taking it to Ferrari's José Froilán González and thereby making it two Argentine bulls locking horns for the 1951 world championship (which Fangio won).

And Alfa are, yes, that coach ride from Bologna to the Autodelta factory, early in 1976, when you're hoping that Carlos Reutemann is wrong.

"The biggest mistake of my life," Carlos had said a few months before, when he had been rocked



Alfa Romeo's tie-up with Sauber was revealed at an event in Alfa's museum near Milan in December

by the news that Patrick Nève had been testing a Brabham BT44B-Ford at Silverstone for John Macdonald. I'd let Carlos know by Telex, sent from the old telegraph office on the embankment.

"This means that Bernie is going to sell the Ford cars and switch to Alfa. What a disaster," he said on the phone a day later. "I should have signed for Tyrrell, or McLaren. But I didn't. I never imagined that he would do it. Until now. It's the biggest mistake of my life..."

In the crowded press conference the spin was predictable: "More cylinders equals more power." Carlos Pace, in dark green velvet suit, lapped it up. The Other Carlos, in sweater and jeans, sat morosely next to Gordon Murray, squirming in the flashbulbs.

Young and eager, I consumed the Alfa message. "It could be good," I suggested to Carlos. "The flat-12 didn't hurt Niki last year..."

Carlos was correct, of course. The 1976



Alfa's Gérard Ducarouge with team-mates Bruno Giacomelli and Andrea de Cesaris (right); front row for de Cesaris, Detroit '82 (top)



looked nonplussed; I still think it was a genuine pole.

As did Mario Andretti, who by then had signed to drive alongside Bruno in the Marlboro-Misura sponsored Alfa team for 1981. The start that year was slow – but then, mid-season, Gérard Ducarouge joined Alfa (above Carlo Chiti) as the new chief engineer.

Duca transformed the race engineering of the team and stiffened up Chiti's suspension pick-up points, enabling Giacomelli for a while to lie third at Monza; Bruno then finished fourth in Canada and third in Las Vegas; Mario, though, thirsting again for Indy, left for America at the end of the year.

Duca's talent was in building things quickly and with great strength. He produced an all-new carbon-Kevlar chassis for 1982 and that Alfa was a genuine frontrunner.

Andrea de Cesaris took the pole with it at Long Beach, but you feared for him. He had crashed his way through 1981 at McLaren; now he was on a street circuit, starting ahead of them all.

Andrea suffered from a nervous tic and it unsettled the other drivers. Nervous – almost ashamed – he sat at the back of the drivers' briefing, hoping, now that he was in the spotlight, that no-one would notice him. As it happened, he was fine. He led the race cleanly until his soft Michelins degraded.

Then Gilles Villeneuve died at Zolder. Torn apart by the accident, Bruno nonetheless qualified his Alfa third at Monaco. Out early with a gearbox failure while running second, Bruno sat disconsolate in the pits with his girlfriend, Linda Marso, as Andrea drove his Alfa to P3.

“ GÉRARD SMOKED HIS GITANES AND SIPPED A COORS; ANDREA AND BRUNO ORDERED THE PASTA. THERE WAS THE OCCASIONAL CHAT ABOUT UNDERSTEER BUT NO-ONE LET TECHNICALITIES SPOIL THE EVENING ”

It was, though, a strong year overall for Alfa and Ducarouge. Andrea was on the front row in Detroit, where they de-briefed later in an Italian restaurant in the 'RenCen' – the huge hotel in the middle of the circuit that also served as race headquarters. Gérard smoked his *Gitanes* and sipped a Coors; Andrea and Bruno ordered the pasta. There was the occasional chat about understeer and tyre choice but no one let the technicalities spoil the evening.

The momentum continued through to 1983,

Back in '84, our man Peter Windsor took to the cockpit of an Alfa Romeo, while holding a cat!



when Alfa ran a V8 turbo rather than the normally aspirated V12. Andrea led at Spa and qualified third at Hockenheim, despite being fined \$10,000 for hitting a marshal as he drove into the paddock without his credential.

Benetton switched from Tyrrell to Alfa Romeo for 1984-85 and the cars looked nice in green, even if Duca *had* switched to Lotus to build another of his quick-fix specials.



As well, Alfa were now the only team on the grid running an eight-cylinder turbo at a time when new fuel capacity restrictions favoured fours and the sixes. Classic Alfa.

And – oh yes: Eddie Cheever and Riccardo Patrese grew up together in Italy and didn't get on... at all. So that was it. Alfa (Fiat) had had enough. Until now.



THIS F1 LIFE

PAT SYMONDS

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had addressed many of the criticisms of old. While the changes that had been made to allow recovery of performance after overheating were both successful and welcomed, drivers and teams universally felt that softer compounds should have been available. Fans also rued the fact that so many races became single-stop events.

During the season Pirelli responded as best they could, bearing in mind they are not allowed to make wholesale changes. The unloved hard tyre was shelved after Barcelona and on occasion they brought tyres one step softer than they had originally been planning.

One might ask why Pirelli didn't simply bring the softest compounds in their range to more races, but unfortunately it isn't

as simple as that. Even though the majority of the tread may have been able to handle a softer compound, there were areas on the shoulders prone to overheating and blistering. A goal of tyre and suspension design is to get a relatively evenly distributed load across the tread, but that's easier said than done. High-stress areas will experience increased elastic deformation and, owing to the visco-elastic properties of rubber, reach higher temperatures.

The phenomenon known as blistering is a condition where the sub-surface material reaches an elevated temperature that causes it to erupt, leaving a crater which resembles a burst blister. If the blistering is minor and localised it does little to harm either the performance or the integrity of the tyre – but if allowed to develop then it could (in extreme circumstances) lead to a tyre failure. For this reason Pirelli couldn't simply use the softer compounds in the range.

For 2018 they have taken the opportunity to refine the construction and materials to try to even out the temperature distribution. That, coupled with more comprehensive in-season testing capability in 2017, has given them the confidence to lower the stiffness of the compounds, thereby giving more grip.

In 2017 the teams had five compounds to choose from, although the useable range was four because the hard wasn't worth using. This season there will be seven on offer, although the orange superhard tyre is unlikely to be used unless the cars are much quicker than anticipated. The new

WE'RE ABOUT TO GET A WHOLE LOT QUICKER

The regulation changes for 2018 are minor compared with the upheaval of last year, and while the introduction of the halo – and the enormous loads the chassis has to handle as a result – has set a considerable engineering challenge, it's certain that changes to the tyres are going to have a much larger effect on racing this coming season.

In preparation for 2017's wider tyres, coupled with increased aero loading, Pirelli ran a testing



campaign through 2016 using so-called mule cars. These were '16 chassis modified to accommodate the 2017 wheels and tyre sizes, and which had various appendages designed to increase the downforce to the levels expected of a properly

developed 2017 car. It has to be said that this wasn't a particularly successful exercise, and it left Pirelli in the invidious position of doubting the data they'd acquired. Since the regulations require tyre constructions to be fixed by September of the previous year and compounds by December, it's no surprise they took a cautious approach.

As a result, last season's race compounds were generally felt to be too durable, even though Pirelli

Developing the first generation of wider tyres using hacked-about 'mule cars' was an unfortunate necessity, and not a very successful one



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Pirelli's updates include changes to the working range of the tyres and two new compounds: the pink hypersoft and the orange superhard



LAT IMAGES: ANDREW HONE

“ THAT LEAVES TWO EVEN SOFTER COMPOUNDS. SINCE THE LATEST ULTRASOFT IS OVER 20 PER CENT SOFTER THAN ITS PREDECESSOR, THESE NEW COMPOUNDS ARE SERIOUSLY RACY ”

blue hard tyre should be useable on severe circuits since it's slightly softer than last year's unloved hard tyre. Although all the compounds are new, the next group – the white medium, yellow soft and red supersoft – are essentially of similar durability to the old soft, supersoft and ultrasoft. That leaves two even softer compounds, the purple ultrasoft and the softest of all, the new pink hypersoft. Since the latest ultrasoft is over 20 per cent softer than its predecessor, these new compounds are seriously racy.

Perhaps just as significantly, the new compounds have allowed Pirelli to adjust the working range of the tyres. The philosophy for the past few years has been to have each step of compound hardness alternating between a high and a low working range of temperature. Just to complicate things further this wasn't true of every step, so while it was always difficult to find a compromise setup where medium and soft were the race compounds, it was less so if soft and supersoft were in use. Now the compounds have

been re-arranged such that as the compound stiffness decreases so too does the working range, making life much easier for the teams.

This doesn't mean it will be any easier to find the correct working temperature, because this depends on the track surface as well as the tyre compound. This means that the ideal working temperature for the supersoft tyres used in Melbourne, which is very close to the

median of track texture, won't be the same as that in Bahrain, which sits at the extreme end of the roughness scale.

Lap time will vary from circuit to circuit, but in the 2017 final in Abu Dhabi the ultrasoft seemed around half a second quicker than the supersoft. In testing the following week the new pink hypersoft was a full second quicker than the supersoft and had surprising durability. Couple that with the extra speed achieved through developments in aerodynamics and the powertrains and it bodes well for a year in which records will continue to fall.

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POWER PLAY

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he achieved under Todt's superintendence, place Schumacher top of the tree and enables Todt to enjoy a great deal of reflected glory. But there's no avoiding the fact Michael is F1's record-setting champion.

Not all inductees (or families of departed champions) were in attendance on the evening. True, a full house of 33 could never be expected, but 1978 champion Mario Andretti happily made a trans-Atlantic trip while his title successor Jody Scheckter failed to cross the Channel. Nico Rosberg was present; not, though, father Keke. Lewis Hamilton was conspicuous by his absence, ditto Niki Lauda.

A total of nine inductees were present: Jackie Stewart, Andretti, Alain Prost, Nigel Mansell, Damon Hill, Jacques Villeneuve, Fernando Alonso, Sebastian Vettel and Nico Rosberg, while the representatives of departed champions numbered ten. Schumacher's manager represented him since son Mick had a clashing F3 test, and Juan-Manuel Fangio's family sent a message. Why, I wondered, did nine living champions give the event a miss?

However, the bigger question is whether champions alone are worthy of inclusion in the FIA's Hall of Fame. By current standards Stirling Moss, certainly more famous than many champions, fails to make the induction grade, as does the great Gilles Villeneuve. Given that, should the FIA's initiatives not then be known as Hall of Champions, rather than of Fame?

Rallying opened a Hall of Fame in a forest near Tampere in central Finland in 2010. Nominations – by a panel that includes FIA and WRC commercial rights representatives – are inducted each year during Rally Finland. To date 17 personalities have been inducted, six of whom are not world champion drivers – for instance David Richards (a champion's co-driver) and Andrew Cowan (a champion's team boss).

So, Liberty Media, if you're serious about "doing something for the fans", then please consider establishing Formula 1's Hall of Fame (possibly in Monaco, given its heritage) where F1's personalities over the ages, not only champions, are recognised for their contributions to F1's rich tapestries. Inductions need not be restricted to drivers – F1's top team bosses, its brightest engineers and best mechanics deserve to be honoured too.

Thus the FIA would have its Hall of Champions, and Formula 1 its Hall of Fame. Properly co-ordinated, the two initiatives would complement each other and not compete, and F1 and its fans would be all the richer for having both (especially if entrance is free of charge).

F1 CHAMPIONS CELEBRATED IN HALL OF FAME

It was one of those "Why-on-Earth-has-no-one-thought-of-this-before?" occasions: many of the great and the good of Formula 1, past and present, attending the official opening of the FIA Hall of Fame. Watching them gather around the FIA's Parisian headquarters on a December evening, I was gripped by a feeling this should have been done while many of those represented here by family members were still alive to witness it.

So it goes almost without saying that such a homage – to the 33 people who have achieved motorsport's highest honour since the FIA Formula 1 World Championship was inaugurated in 1950 – is long overdue. That a long succession of FIA presidents failed to celebrate their achievements in this simple yet prestigious manner is unfathomable. Full credit to current FIA president Jean Todt for initiating the project.

And this is only the beginning. This first phase is focused on F1, with a dedicated area in the entrance hall of the FIA's HQ on Place de la Concorde celebrating the champions' exploits via memorabilia and audio-visual touch screens.



F1 champions, past and present, gather with FIA president Jean Todt at the new Hall of Fame

Provision has been made for expansion, and the hall will be open to fans, free-of-charge.

"The Hall of Fame has been created to celebrate the history of motorsport and to honour the heroes of our sport through the ages; to tell their stories for future generations, and to celebrate their extraordinary achievements," said Todt during the opening, which featured a display of significant F1 cars.

Phases two and three, which will honour World Rally and World Endurance champions, will be set up at the FIA's operational base situated near Geneva airport over the next two years. These halls, too, will be open to the public.

It's fitting that the project was instigated during Todt's three-term presidency, since he led Peugeot to WRC and WEC championships, then masterminded the Ferrari/Michael Schumacher era. Indeed, during the opening ceremony a cynic remarked that Michael's seven titles, five of which

LIVING THE DREAM

Winners of the **INFINITI Engineering Academy** get a six-month placement at Renault Sport Formula One Team in Enstone where they get the chance to fulfil a lifetime's ambition to help build their new Formula 1 car

When the 2018 Renault Sport F1 car fires up for the first time, there will be some very proud engineers within the team and a handful of them will be pinching themselves.

For a couple of the young engineering students, the sight of the first Formula 1 car they have helped build will be the fulfilment of a lifelong dream.

You can lay the blame at Lego. Those small building blocks that ignite a passion for problem solving, when combined with a passion for motorsport, can create engineers that want to work at the pinnacle of their profession.

But such is the competitive nature of F1 that getting the chance to fulfil a childhood ambition is extremely rare and opportunities to get a foot in the door are fleeting.

But there is hope for young budding engineers across the globe. The INFINITI Engineering Academy (IEA) was launched in 2014 and the prize for the seven regional winners (from the US, Canada, Mexico, Europe, Middle East, China and Asia-Oceania) is a six-month placement at Renault's F1 team in Enstone and another six months at INFINITI's Technical Centre in Cranfield.

Those young engineers who have successfully demonstrated the right qualities of dedication, hard work, team spirit and ambition have gone on to secure full-time contracts at Renault, proving the academy is genuinely finding future engineering talent.

Turn over to find out how to apply... →



Renault Sport Formula
One Team drivers Nico
Hülkenberg and Carlos
Sainz with the winners
of the 2017 INFINITI
Engineering Academy



A CASE STUDY

How one engineering graduate is now with the race team



Jaden Partridge
INFINITI Engineering Academy
Asia-Oceania winner 2016



“Ever since I can remember I’ve been interested in putting bits of scrap metal together and loved racing. I started karting, but for me the interest was in the vehicle dynamics of the kart. Why does it understeer? What’s causing it to kick out on the exit of the corners?”

“When it came to working in the automotive sector or in motorsport, I chose the latter. It’s so pure: whoever is the fastest wins. It’s also a public showcase, if you’re not performing everyone knows, so the pressure is on.

“I did my work placement at the Renault Sport Formula

One Team in vehicle performance, but now I work on overtaking analysis in the race team with the performance engineers.

“With the new specification of F1 car in 2017 and the increase in downforce, the dynamics of overtaking have changed dramatically, so I have been working on a probability model to predict how the races will pan out and that’s important with regards to pitstop strategy.

“For example, at one circuit it might be easy to overtake a slower car, but on another track it might be difficult so you wouldn’t risk pitting. The

information I gather from my overtaking analysis during the race goes directly to the pitwall – so there is a lot of responsibility.

“Abu Dhabi was the first grand prix I hadn’t enjoyed for a long time, because it was the final race in 2017 and we were in such a close fight for points with Toro Rosso. A lot was riding on the models we had built for that race and the decisions that would be taken.

“Once the pitstops were over, I was very relieved to see the lap counter go down and you could sense the tension over the team radio communications. It was great for Nico Hülkenberg to get the result we needed to secure sixth place in the constructors’ championship. Everyone played their part.”

“It all started with Lego,” says Jacob Debono, winner of INFINITI’s Engineering Academy Asia-Oceania regional final last September.

“I started making kits when I was young and it just developed from there. I helped create a solar car while studying at university and now I’m working on aero parts for the new Renault car. It’s amazing to have come this far in such a short space of time.”

Debono is a young Australian engineer who last year was one of thousands of applicants for the academy and judged the winner among ten finalists from the Asia-Oceania region. Just a few weeks after triumphing, he started work on Enstone’s 2018 machine.

“I remember watching F1 on Sunday afternoons with my dad, but as it’s the pinnacle of motorsport engineering I never thought I would get there,” says Daniel Sanham, another bright, young engineer and the European regional winner from 2015.

“Even when I applied for the INFINITI Engineering Academy, I thought I wouldn’t stand a chance of winning when I saw how good the other finalists were. But the ‘wow’ moment really struck me when I travelled with the F1 team to Montréal to work at the Canadian GP,” says Sanham. “That was when I said to myself ‘I’m really going to work hard now’, because I wanted a contract at this team as Formula 1 is the sport where I’ve always wanted to work.”

With a lifelong passion for electronics, when 2015 winner Sanham began his six-month placement at Enstone he continued in that field of work within the electronics department. After an initial project to help the team improve wheelspin measurements, he began work on electrical upgrades to their pitlane garage at races and is now on a full-time contract as an electronics engineer.

“I’m so grateful for the opportunity that the INFINITI Engineering Academy has offered,” he says. “It’s enabled me to achieve a lifetime’s ambition to work in Formula 1 and by focusing in electronics, it truly is my dream job.”

French engineer Damien Turlay won the IEA European region finals last summer and began his work placement at the Renault Sport Formula One Team in November. Over the last six weeks he has been working in the Design Office which has been creating the new car.

“I’ve been working on a small fairing that connects the wishbone with the top of the chassis,” says Turlay. “This is a very complex

“I DID MY WORK PLACEMENT AT THE RENAULT SPORT FORMULA ONE TEAM IN VEHICLE PERFORMANCE, BUT NOW I WORK ON OVERTAKING ANALYSIS IN THE RACE TEAM”

“BEING AT ENSTONE IS THE FULFILMENT OF A LIFETIME’S AMBITION. WHEN I COME INTO WORK AND SEE THE RS.17 IN THE RACE BAYS AND THEN BUMP INTO CARLOS SAINZ IN THE CAFETERIA – I JUST HAVE TO PINCH MYSELF!”

DAMIEN TURLAY INFINITI ENGINEERING ACADEMY EUROPEAN WINNER 2017



INFINITI Engineering Academy winners at Enstone (clockwise from top left) Jacob Debono, Damien Turlay, Matt Crossan and Daniel Sanham

part because the wishbone is designed to sustain mechanical loads, but also direct airflow directly to the bargeboards, so the work I’ve been doing is very detailed and precise.

“It will be very exciting to see the new car with the knowledge there is a part that I have directly worked on. It’s made me appreciate how everyone has their own responsibilities and by working in a team we all work together for the same goal. That’s really motivating.”

Turlay’s passion for Formula 1 started in the mid-2000s when the Enstone-based team were winning world championships with Fernando Alonso. He has been hooked on the sport ever since and from those early days set his sights on working in Formula 1.

“When I was young I wanted to be an F1 driver, but I had no connection to the industry, or any money, so it was an impossible dream,” says Turlay. “But at school I was interested in maths and science, so I thought then if I can’t drive an F1 car – I’m going to build one.

“The INFINITI Engineering Academy was such a great opportunity for me and I would say it’s almost a short cut to your dream job.

It was on my mind for years: how do I get into Formula 1? I was planning to work as an engineer in Formula Renault, then F3, F2 and then maybe one day F1. But by applying for the IEA and winning, it’s given me the chance to work there now and I’m so grateful for that.

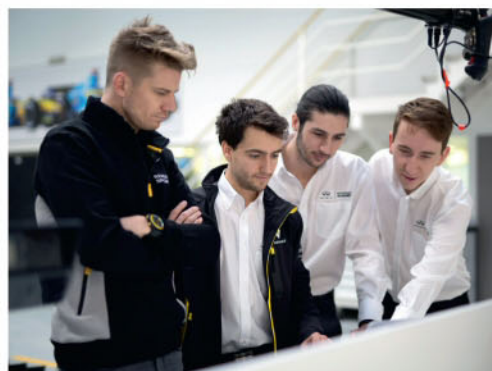
“Being at Enstone is the fulfilment of a lifetime’s ambition,” adds Turlay. “When I come into work and see the RS.17 in the race bays and then bump into Carlos Sainz in the cafeteria – I just have to pinch myself!”

Now entering its fifth season, the INFINITI

Engineering Academy is looking for applicants for 2018 and the global reach of the programme means that engineering talent from across the world can apply. If you have dreamt of working in Formula 1 from the days you played with Lego, then this could be your great chance to realise that lifetime’s ambition.

“In my eyes they were famous racing drivers,” says Matt Crossan, last year’s IEA Canada winner. “But now they are my work colleagues. That’s such an amazing thing to experience.”

Thanks to INFINITI, dreams do come true.



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

MAX POWER

Precious few drivers have ever ignited Formula 1's spark from their very first race as has Max Verstappen. And as **Stuart Codling** explains, Red Bull's charger is all set for an electrifying 2018

PORTRAITS ADRIAN MYERS



Red Bull

MAX

Red Bull

Until Max Verstappen bossed the 2017 Malaysian Grand Prix, it had become fashionable in some corners of the Formula 1 paddock and internet fandom to write Max off as an over-rated, overly impetuous danger to himself and others, a *wunderkind* whose mojo was crumbling under the pressure of sustaining the expectations thrust on him by his rapid promotion to a top-line drive before the age of 20. And, like all crank theories, this narrative gained momentum with each new event that appeared to confirm it – the start-line shunt at Singapore, for instance, when Max's Red Bull was collateral in a contact triggered by Sebastian Vettel, and yet Max was pilloried simply for being there.

Unsurprisingly, Red Bull team principal Christian Horner takes a different view: "He's had an unbelievable year, the way he's driven. If you look at the details of it, it's remarkable."

Well, you might say, he *would* say that, wouldn't he? But Horner is neither wrong nor speaking with forked tongue; Verstappen *has* excelled this season, matching and often beating his highly rated team-mate Daniel Ricciardo, but that excellence has been veiled by the underperformance (early on) and unreliability (throughout) of his machinery.

On paper, Max's results in the first half of the season were unremarkable, save for a podium finish in China, but it was during this phase of the year that the Red Bull-Renault combination was at its weakest. From launch until the first proper update arrived in Spain, the RB13 looked aerodynamically basic in comparison with the frontrunning Mercedes and Ferrari, and suffered from shifting balance, poor downforce, fragile brakes, and that perennial Renault issue in the hybrid era – a lack of power.

With that in mind, Verstappen did well to qualify P5 in Australia – best of the rest – and then actually make a fight of the race with Kimi Räikkönen until his brakes went off in the closing laps. It's not possible to make a rigorous comparison with Ricciardo here, since the other Red Bull had an unexplained accident in Q3, started from the pitlane and retired early. In China, though, Verstappen was majestic after ignition coil problems consigned him to 16th on the grid: he gained nine positions with a PlayStation-style opening lap, caught and passed Ricciardo (whose race pace later improved after a front-wing change), and finished third. If you were to

be particularly churlish, you could argue that he overcooked his front tyres, enabling Vettel to pass him for second, but that is a minor criticism in the context of the result.

"That was more to do with setup," says Horner, "and where the car was at that point in time. His race was outstanding – passing all those cars early on, managing to get the intermediates going, was truly impressive. And the car was *nowhere* at that point."

In Bahrain Max was faster than Ricciardo in Q2 and the first of the Q3 runs before losing out to his team-mate – Max blamed Felipe Massa for baulking him on his final run – but from P6 he passed both Ricciardo and Räikkönen to run fourth before his brakes caught fire. At Sochi, a power-dependent track, Max qualified seventh – Ricciardo was fifth – but again passed his team-mate on lap one and ultimately finished a lonely fifth, well adrift of the leaders but unchallenged from behind. This time it was Ricciardo's turn to drop out with his brakes alight.

"He didn't let his chin drop," says Horner. "He just believed in the team and believed we'd get it sorted. In Australia he drove a solid race, in China he was outstanding. In Bahrain he would have been in the top three. He was on fire that night... literally! Russia, he did what he could. We were confident by then that we were starting to understand the points where the CFD and the windtunnel weren't aligned."

Just how bad was Verstappen's RB13 at this point? An F1 car's development trajectory is built on understanding exactly how every aerodynamic component works, what influence it exerts on other elements surrounding it and downstream from it, and what contribution it makes to the overall aero 'map'. When theory and practice diverge, and the on-track data fails to correlate with the results of CFD and windtunnel research, the long-term consequences are far greater than, say, having to throw a new front wing in the dumpster because it didn't deliver. It can blunt the whole development approach, sponsoring paranoia back at the factory about whether they are making the car slower rather than faster.

"We've been down a similar rabbit hole ourselves," says a senior technical figure in another leading team. "And the dead giveaway is when you see a team going back and forth on new components. To an extent it's about confidence – if you think you've got good correlation, you can press on, even if the upgrade isn't as good as you thought. If you keep going, that path might lead you to a greater step."

"What can muddy the picture is if you're generally struggling – perhaps at a new track, or if conditions are changing, and the tyres aren't working as you'd expected them to – and you've chosen that weekend to bring an upgrade... it's easy then to get lost and think your new parts aren't working. Or your aerodynamicist is sure an element is working as expected, but the driver feedback and laptime suggests that it isn't. But above all, you have to treat a component that's working better than expected exactly the same as one that isn't; you can enjoy the benefit of the extra performance but you need to understand how you got it, otherwise it's still bad correlation. If you're well behind where you want to be, though, it can put you under pressure to rush things through."





Adrian Newey, Red Bull's tech talisman, has been outspoken in his dislike of the post-2013 tech formula and has wound down his involvement in F1 design in recent years [see Long Interview, page 82]. Eager to keep him on the books – and out of the grasp of rivals – Red Bull have thrown him bones such as an Americas Cup project and the Aston Martin Valkyrie supercar. But with the F1 programme in crisis, Red Bull steered him back to the RB13 as soon as possible, and he reappeared in the paddock at the Spanish Grand Prix, where the first major technical update also arrived.

There was more to the RB13's underperformance than scrambled aero, though: Renault claimed to have achieved near-parity with Mercedes, or, rather, that *in theory* the power unit was very close – but it couldn't fulfil that potential reliably. Renault even had to row back on elements of the hybrid system, reverting to the 2016 MGU-H at the beginning of the season. Many teams running Renault power units felt that the new F1 technical package – wider cars, bigger tyres, ▶

Lack of pace and reliability in the car continued to be a problem until two thirds of the way through the season: in Austria a clutch problem at the start rendered him collateral damage in a shunt initiated by Daniil Kvyat; at Silverstone he qualified and finished fourth, challenging both Ferraris on a weak weekend for the Scuderia but not having enough pace to stay ahead; and in Hungary he was pole-fast until Mercedes and Ferrari turned up their engine modes in Q3.

MAX COULD HAVE WON IN AZERBAIJAN HAD HIS ENGINE NOT FAILED

more downforce – actually put them at a greater net disadvantage than before, because the cars were at full throttle more often. That gap was exacerbated by Mercedes’ ability to deploy short-burst ‘qualifying modes’ and liberate more horsepower through the murky science of oil burning.

Armed with the updated RB13, Verstappen slam-dunked Ricciardo in Spain – he was faster in every session and almost half a second up in Q3 – and came within a breath of outqualifying Räikkönen for P4, only to shunt at the first corner as he tried to pass a battling Räikkönen and Valtteri Bottas around the outside.

“That wasn’t his fault,” argues Horner. “It was triggered by Valtteri having a go at Kimi and they cannonballed into Max. It’s difficult to apportion blame. It was a racing accident.”

Nevertheless, three cars into the one line available at Barcelona as Turn 1 funnels into Turn 2 doesn’t go; here, for sure, youthful ebullience was Max’s undoing. But he was more measured in Monaco, where he outqualified Ricciardo once more to start from P4, only to slip behind his team-mate when a strategic play to pit early (with a view to undercutting Bottas) failed to achieve the desired track position. Once the rest of the stops shook out he shadowed his team-mate to the line without being tempted into doing something rash.

In Canada Max outqualified Ricciardo once again, starting fifth, and then sliced by both Ferraris at the start – perhaps riding his luck a little, because they nearly touched. But a potential podium went begging when his engine failed on lap 10, and third place fell to Ricciardo instead. Max was fastest through practice in Azerbaijan, and although he admitted to making a small mistake in qualifying, Mercedes’ qualifying modes accounted for much of the margin between them and his P5 grid slot (Hamilton, on pole, was over a second faster than third-placed Räikkönen’s Ferrari). Red Bull later reckoned that Max could have won that controversial race had his engine not failed; as it was, Ricciardo did.

Lack of pace and reliability in the car continued to be a problem until two thirds of the way through the season: in Austria a clutch problem at the start rendered him collateral damage in a shunt initiated by Daniil Kvyat; at Silverstone he qualified and finished fourth, challenging both Ferraris on a weak weekend for the Scuderia but not having enough pace to stay ahead; and in Hungary he was pole-fast until Mercedes and Ferrari turned up their engine modes in Q3.

It was at the Hungaroring that he also made the fundamental error of clattering into his team-mate en route ▶





JUST ABOUT PERFECT

Peter Windsor reckons that Max Verstappen and Daniel Ricciardo constitute just about the perfect F1 driver pairing. But that doesn't mean they go about things the same way – not at all...

You're talking pretty much the perfect driver line-up when you look at Daniel Ricciardo and Max Verstappen. They're both aggressive racers – but they're both emotionally intelligent enough to be respectful of others and specifically of one another; and their driving styles are substantially different, which is what you want when you're seeking to maximise the data for the purposes of developing the car.

Max, like Lewis Hamilton, is all about the creation of straight lines and relatively early turn-ins. Max tries to extend the straights, lives with relatively low minimum cornering speeds but focuses on reducing the length of time his car carries load.

Sebastian Vettel is of similar ilk but seems to need a planted rear to make the vee-corners happen; Lewis and Max have additional, God-given, abilities to create something out of nothing.

That's why they're both so good in the wet or in cross-winds; that's why they're able to weave more magic in traffic than the rest of the grid put together: their naturally early turn-ins subject them to less turbulence from the cars in front – and they are generally using different bits of road, finding gaps that regular drivers fail to see.

If you talk to Max about this, he will reply, as Lewis does, that it all comes from karting – but of course that is only a part of the answer.

If karting *is* the secret, everyone would drive like Lewis and Max. It doesn't explain, for example, why other great kart racers, like Jenson Button and Rubens Barrichello, drove at the opposite end of the style spectrum – with later turn-ins, much 'longer' corners and high minimum cornering speeds at the expense of a speed trap 100m down the road.

Daniel Ricciardo is definitely inclined towards later turn-ins than Max, which means that he puts lateral load through the car, engine and tyres for a greater period of time than does Max (if you want to add up every corner of every lap and multiply it by a race distance), but he does so in a very compact, Fernando-like way. His corners are not as long as Jenson Button's; his natural suppleness enables him to live easily with changing car and track conditions, like the wet, traffic and the wind.

It's undeniably healthy for a team to run both types of driver. Daniel's style includes a slight margin for error; Max's does not. He is just out there, lapping on the absolute, ultimate, physical limit of what is achievable.



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MAX



THE DREAM TEAM

Max Verstappen and Daniel Ricciardo are incredibly closely matched as team-mates. In terms of race results, there wasn't much to separate them in 2017: Verstappen's two wins beat Ricciardo's one, but Ricciardo had eight other podiums, Verstappen only two, and Verstappen retired seven times and Ricciardo six. Dan finished 32 points ahead in the championship.

In qualifying, while the record appears skewed in Verstappen's favour, it's incredibly close on pure pace.

to harrying Bottas through the final laps to a P5 finish. Surprisingly, though Ricciardo was chippy over the team radio in the moment, the incident appeared to go no further.

"They were actually very mature about it," says Horner. "There's a respect between the two of them, and they're pushing each other hard. Outside the car I think Max has learned a lot from Daniel and the way he carries himself. It's very relaxed between the two of them, and they quite enjoy each other's company, even though there's a bit of an age gap. Daniel has taken the sort of elder brother role – in all elements of life, even down to how to sneak back into an apartment late at night without the concierge seeing you..."

By the end of the summer break the rebooted RB13 was much closer to the frontrunning cars, but engine penalties would dictate the shape of the final phase of Red Bull's season. Max qualified fifth in Belgium but his engine blew early on, and he was quick enough for pole at Monza before Hamilton put in a Q3 mega-lap; not that it mattered, for engine penalties consigned Max to 13th on the grid. This was perhaps his scrappiest race of the season, and one that provided fodder for the doubters, for he banged wheels with Felipe Massa while disputing eighth and then dropped back, engaging in further run-ins with Romain Grosjean and Kevin Magnussen.

You could argue that Verstappen had the pace to qualify on pole in Singapore and lost out because he failed to improve during his second run, but what's utterly certain – as enshrined in the stewards' decision – is that he wasn't responsible for the crash that took him, Räikkönen, Vettel and Fernando Alonso out of the race on the opening lap. This, veritably, is the one that got away, but he made amends in Malaysia, extracting the maximum from the car in qualifying, starting well from third on the grid, and then nailing both Mercedes to romp to victory. Focused, rigorous development had silk-pursified the RB13 into a contender.

At Suzuka he started in P4, just three hundredths off Ricciardo in spite of using a higher-downforce configuration that he felt might not have been the right choice, then passed his team-mate at the start and benefited from Vettel's retirement to challenge Hamilton all the way to the flag. It was as mature a performance as his victory the previous weekend; he *could* have gone for a bravura overtake, but didn't, and was mindful of a front-right tyre that was badly worn.

Engine penalties dictated a grid drop for the USGP, but what was really telling was the ferocity with which Verstappen berated himself for making two errors in his final qualifying run – a lap which, if he'd nailed it, would have been on par



Verstappen's edge is an average of only 0.03 seconds over 20 races; it's just 0.015secs if you take out Baku, where Ricciardo crashed in final qualifying and didn't set a time.

"Max improved this year," admits Ricciardo. "Qualifying shows that. His Saturdays were certainly good. Our Sundays – he's had two wins and I've had one, but generally my Sundays have been good, the racing and the racecraft. But the Saturdays I wouldn't say I was happy with myself always, and he also improved."

Verstappen attributes much of his upturn in performance to his extra experience, but some also to his preference for 2017's faster, grippier cars over their predecessors.

"I like this kind of car a bit more," he says. "You can be a bit more aggressive and that's what I like. Last year [2016] was very tricky and sensitive to front (brake) locking and stuff. This year you can go a lot faster into the corners and that helped me."

Together, they make what many reckon to be F1's strongest driver pairing and Verstappen's value to Red Bull can be measured by the salary in his new contract. He's now the third best-paid driver in F1 behind Lewis Hamilton and Sebastian Vettel, on somewhere between £18-26m per season.

But how long can the inevitable competitive edge between these two outwardly friendly 'big cats' be contained?

For now, at least, Verstappen is optimistic: "Dan's a great guy. On-track you always try to beat each other but off-track we can have a great laugh. I've never really experienced something like that in racing, to have such a good team-mate, to really have fun with. I hope we can be team-mates for a long time."

Andrew Benson



with the one that put Vettel second on the grid. Starting 16th because of engine issues outside his control galled him less than the ultimately pointless three tenths he shipped to the Ferrari. “I’m not happy with myself,” he said, “and I think this is definitely one of the worst qualifying of the year for me.”

“He was really upset with himself,” agrees Horner. “He’s a perfectionist like that.”

Regardless, Max’s swashbuckling charge from 16th was among the highlights of the race, and his last-lap pass of Räikkönen for third was audacious and clean – controversial (and fatuous) post-race time penalty notwithstanding. His victory in Mexico a week later, from second on the grid, was overshadowed by the excitement surrounding Lewis Hamilton securing the drivers’ title, but it was superbly executed: he stood his ground in the opening corners, and it was the duelling Vettel and Hamilton who ran into him rather than vice versa; he survived the impact to win by over 19 seconds.

“HE’LL CARRY ON GETTING BETTER AND HE’S STARTING FROM A VERY HIGH LEVEL.”

In Brazil Renault had to run at reduced power to preserve reliability, yet Max qualified fourth and finished fifth, although he ended the season on a disappointing note, outqualified by Ricciardo in Abu Dhabi and then stuck behind Räikkönen’s slower Ferrari in a tedious one-stop race to fifth place. Even Max, it seems, can’t overtake at Yas Marina.

Assuredly, then, Max Verstappen has only made three or four significant errors throughout a season in which he’s been stymied by technical shortcomings outside his sphere of influence. While the nattering nabobs of the commentariat might have dismissed him – until the final third of the season, at any rate – behind the scenes Mercedes and Ferrari were trying to exploit his frustration and pry him loose from Red Bull’s embrace. Max had a contract until the end of 2019 that Horner described as “watertight” and in October he signed a one-year extension which brings him into step with Vettel, who inked a three-year extension with Ferrari last August.

So much for being a busted flush. Max has put himself on a three-year path to a possible Ferrari drive... or one with Mercedes, who at the time of writing are yet to reach an agreement with Lewis Hamilton beyond the end of 2018. Either way, when contract time rolls around again in late 2020, Lewis and Sebastian will be contemplating their careers via the rear-view mirror; Max will be just 23.

“He’s hugely hungry and competitive,” says Horner. “He’s young, but seasons like this, where he’s had some tough experiences, have made him come out the other side a stronger driver, a stronger person. He’ll carry on getting better – and he’s starting from a very high level.”

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THE BEST GRAND PRIX IN THE WORLD ...PROBABLY

Plans for a grand prix in Copenhagen are quietly gathering pace. *F1 Racing* scouts the Danish capital's likely track layout



WORDS ANTHONY ROWLINSON
PICTURES PETER NYGAARD AND
RED BULL CONTENT POOL

HOLY pastries! A Danish grand prix!

Formula 1 on the streets one of the greenest, most progressive – not to mention beautiful – cities in northern Europe? How unlikely is that?

In a word, 'very', but with F1's new owners having drafted a marketing strategy that has 'DESTINATION CITIES' neon-lit across its top line, something quite wonderful might be about to happen. Yes, Copenhagen has been identified as precisely the kind of host town that would add lustre and credibility to Liberty Media's ambitious promotional plans for their banner championship. (No surprise that Red Bull, those arch-marketeers, have been here already, in the form of a 2012 David Coulthard street demo.) ▶



1 Christiansborg hairpin



2 Slotsholmsgade



3 Corner of Christians Brygge



4 Black Diamond



5 Christians Brygge straight



And with a local hero, Kevin Magnussen, remaining a punchy presence at Haas, there has probably never been a more opportune moment to bring Formula 1 back to Scandinavia for the first time since 1978. That year, Sweden's Anderstorp circuit staged the Swedish GP for the last time (it had been a calendar regular since 1973) and the world championship hasn't ventured so far north ever since.

Times are changing, however, and the consortium behind the Danish GP proposal reckons to have secured cross-party political support for the project, as well as funding pledges – from both the public and private sectors. The ambitious scheme is being led by 67-year-old former government minister Helge Sander – a one-time journalist who, among other achievements, brought six-day track cycle racing to Denmark in the 1970s.

His latest sporting passion is four-wheeled, however, and over a *kaffe* in Copenhagen's Christiansborg Palace – Denmark's main parliament building – he articulates his vision: "In Denmark, we would attract fans from a lot of countries, because of our geographical location. The whole Scandinavian region, for starters, but we're also within easy reach of northern Germany, Holland, Poland and the UK. Copenhagen is a city that people want to visit anyway, so coming here for a grand prix should just be an added attraction."

There's an echo here of sentiments expressed earlier this year to *F1 Racing* by Shaikh Mohammed bin Essa Al-Khalifa, a senior member of the Bahraini royal family and one of those who hatched a plan back in the early noughties to bring Formula 1 to the desert kingdom. The Arab region lacked a blue-riband

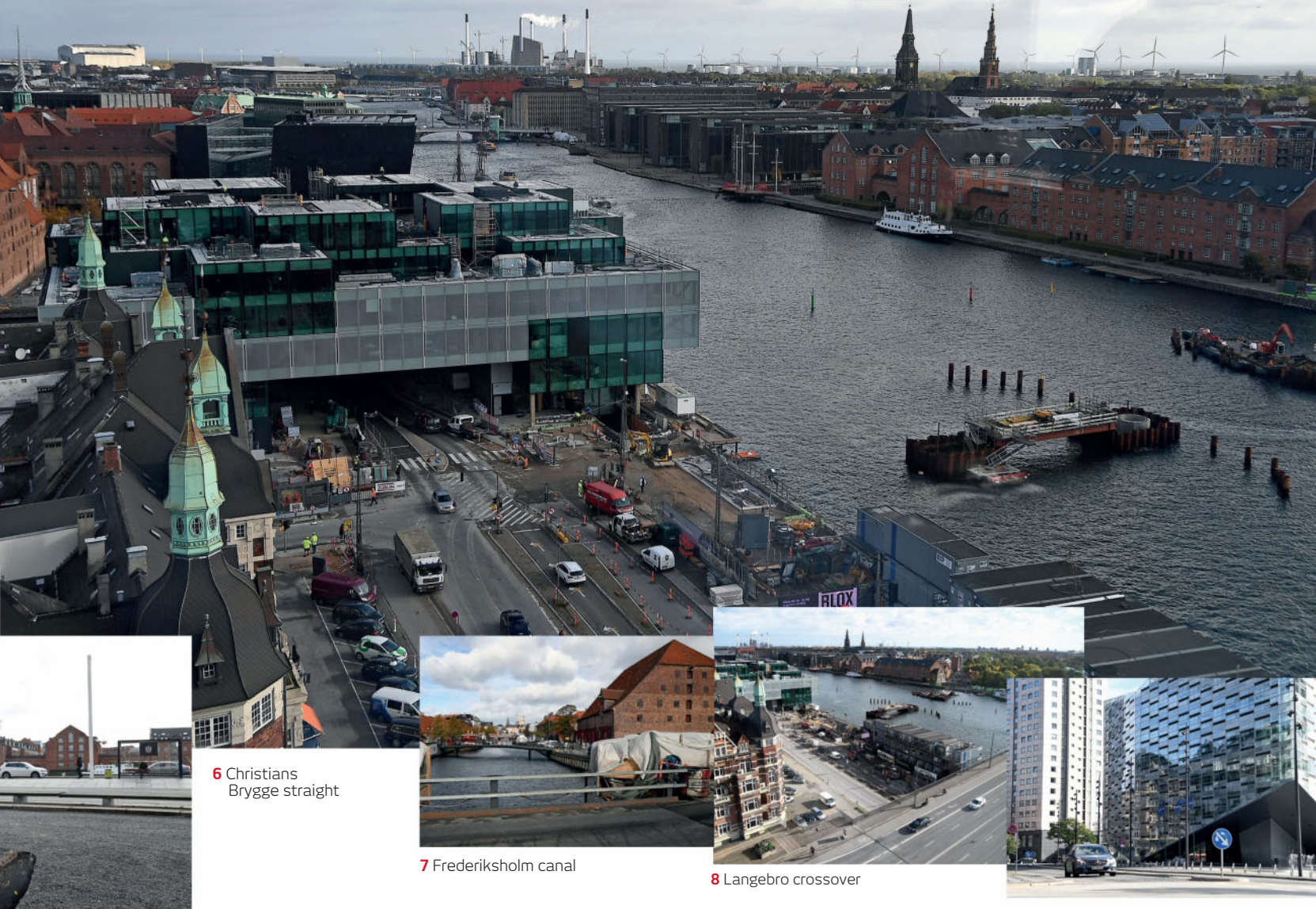
motorsport event, despite its evident passion for fast, expensive motor cars and its huge cash reserves. The Bahrainis set about filling that vacuum, much as Sander and his allies intend to do, some 3,500 miles further north.

Sander explains that the idea for a grand prix in Copenhagen had percolated at the back of his mind for several years, before being "sparked" in 2014 by the sight of K-Mag scoring a podium finish, on his F1 debut for McLaren.

Since then, he has gripped, grinned and called in favours to secure what he claims is the broad support necessary for a city-centre grand prix in a country ruled by coalition governments.

Denmark's Ministry of Industry Brian Mikkelsen is one senior figure to have offered his blessing: "We have discussed this project with private investors for some time," he says, "and we're now talking openly about it, because

“BY CLOSING TWO OF COPENHAGEN’S THREE ARTERIAL BRIDGES FOR THE WEEKEND, NORMAL TRAFFIC VOLUMES AND CARBON EMISSIONS WILL BE SLASHED”



6 Christians Brygge straight

7 Frederiksholm canal

8 Langebro crossover

9 Hambrosgade chicane

I think it looks more and more realistic. F1 would give Copenhagen enormous branding.”

Sander has also gained the backing of an influential financier, Lars Seier Christensen, who has previously committed cash to F1 through the involvement of his self-started private finance house – Saxo Bank – with the Lotus F1 team.

Switzerland-based Seier, an active social media participant, makes no secret of his fund-raising role. On 6 November 2017 he posted an Instagram picture of himself with F1 CEO Chase Carey and Chloe Targett-Adams, F1’s Global Director of Promoters and Business Relations. ‘The efforts to bring Formula 1 to Copenhagen continue!’ he captioned. ‘Good meeting this morning with Chase Carey, Formula 1 CEO and executive chairman, and Chloe Targett-Adams. #danishf1grandprix #wonderfulcopenhagen #formula1 #makeithappen’.

Seier told *F1 Racing*: ‘I’m optimistic about this. It’s complex, but there’s very genuine interest and it feels like there’s a lot of general support among the population for this. The most important thing for us is to secure the funding: ball-park \$70-80m.’

His latest meeting followed a visit by Sander to F1 HQ in June and a subsequent trip to the Singapore GP. The Asian tour was an opportunity to further discuss circuit and business plans and for Sander to gain a first-hand understanding of what goes into making a street race successful.

Singapore, of course, is something of a poster-child for ‘modern’ F1. It necessarily lacks the heritage of a Spa or a Monza, but since 2008 it has confidently occupied its own place on the calendar, delivering on its ambitious ‘night race’ credentials with some panache.

It has also benefited from the somewhat singular nature of Singaporean politics: it’s a city-state with an interpretation of democracy that would be deemed autocratic by western liberals. So a ruling party wishing to ‘get things done’ – such as stage a night race on the capital’s streets as part of a grand tourism and promotional plan – faces fewer challenges than might, say, a ruling coalition in Denmark.

‘We are aware of the challenges,’ says Sander, ‘but we have some creative ideas.’

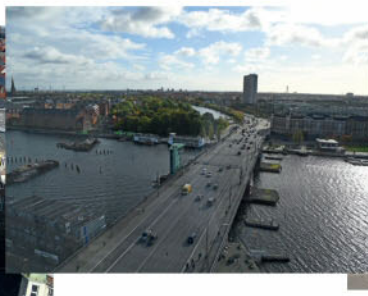
Chief among these is to designate the Danish Grand Prix as ‘The Green GP’. How so? The rationale is that by closing two of Copenhagen’s three arterial bridges to vehicles for the duration of a grand prix weekend, normal traffic volumes would be slashed. The city’s new metro system, due for completion in 2018, should be fully operational in time for the pencilled-in Danish ▶



10 Andersen Boulevard



11 Langebro straight



11 Langebro straight



12 Ved Strandgraven



GP date of summer 2020, and all teams and drivers would be compelled to travel to the circuit by public transport.

At a stroke, critics of F1's eco-credentials would find an answer to their main point of opposition: hosting a grand prix would *reduce* Copenhagen's carbon emissions for a few days.

This kind of creative thinking underpins the viability of the project. Unlike any purpose-built racing facility, a street circuit has none of the essential operational elements that allow a race to go ahead: no pits, no paddock, no media centre, no office buildings.

Some elegant solutions have already been posited, however. The F1 paddock might be located in a square behind the parliament building (the 'Borgen'), that's currently used as a real paddock area for the royal family's ceremonial horses. A media centre could easily

be accommodated within the parliament building itself. As for the pits and garages, temporary structures would have to be built, as they are in Baku for example. A likely location is an area behind the Danish police HQ that's light on local residents.

On paper, the plan looks compelling and *F1 Racing's* tour of the proposed layout confirmed one aspect of its design above all: it would be an *insanely* quick track. Its 3.6-mile anti-clockwise length is essentially two very long straights punctuated by a wide 90-degree left-hander and two slow 'backstreet' sections.

DANISH F1 HISTORY

Denmark has never hosted a round of the F1 World Championship, although Roskilde, the Magnussens' home town, did host two non-championship F1 events in 1961-62 at the Roskilde Ring circuit. The '61 race was won by Stirling

Moss, the '62 race by Jack Brabham. A Danish Grand Prix was staged 11 more times between 1960 and '95, for Formula Junior, F3 and F2 races. Red Bull also staged an F1 street demonstration in Copenhagen in 2012.

It has been sketched right into the heart of Copenhagen, past the aforementioned 'Borgen', alongside the old stock exchange, beneath the elevated walkways of the national library and past the forbidding exterior of Police HQ.

Tourist honeypots such as the dreamily picturesque Nyhavn are skirted, as is the (in)famously liberal Christiania district. Formula 1 won't have enjoyed so much free love and weed since the '60s if this race gets the nod.

Kevin Magussen's dad, Jan, the '90s grand prix racer of some repute (though little success), has had input into the design, as has F1 architect

F1 STREET CIRCUITS...

THE GOOD MONACO

'A sunny place for shady people'. 'The Cote d'Azur jewel'.

'A Mafia-owned hell-hole'.

These and other trenchant views are frequently expressed by visitors to Monaco. Regardless of which you find most apt, there's little argument that Monaco is part of F1's fabric.

Ever-present on the calendar since 1955 and a round of the original 1950 world championship, it screams 'F1' like no other race. Many of the sport's greatest drivers consider it to be the ultimate test of their skills.

And in *F1 Racing's* view, if you can attend only one grand prix in your life, make sure that it's Monaco.



THE BAD VALENCIA STREET CIRCUIT

This curious waterfront track hosted five 'European' Grands Prix from 2008-2012. They were staged during a

brief boom period for the Spanish economy, with financial backing from the regional government.

Valencia had successfully hosted the 2007 America's Cup (as it would again in 2010) in an effort to regenerate the city's previously down-at-heel harbour quarter and many of the buildings used to house ocean-going race teams were pressed into F1 service.

Despite the evocative city location, F1 never really fell in love with the track – although Alonso scored one of his greatest wins here, in 2012.



THE UGLY LAS VEGAS

Twice in the 1980s, F1 raced in a car park.

In 1981 and 1982, two US Grands Prix were staged in the vast parking lot of the Caesars Palace casino.

Some of the F1 hardcore who attended regarded these races as something of a nadir for the sport, as they represented the very antithesis of the epic road racing traditions of grand prix racing. Others, however, were happy to embrace the glitz.

Both races were of historical note. In 1981, Nelson Piquet claimed his first world title there, while at the '82 event Michele Alboreto won his first grand prix, for Tyrrell.



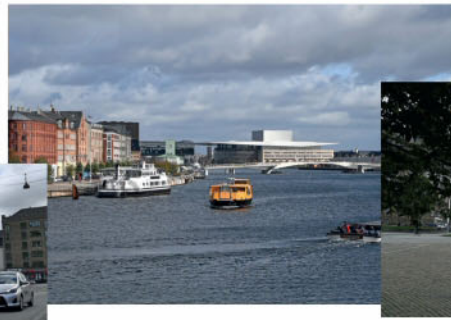
13 Torvegade Straight



14 Knippelsbro



14 View from Knippelsbro



15 Christiansborg hairpin



16 Christiansborg Ridebane



du choix Hermann Tilke. The resulting course prompts speculation that their creativity may have been enhanced by some of Christiania's finest, for there's certainly little apparent restraint in their plan. By way of analogy, imagine a London GP that ran over Westminster Bridge past Big Ben; or a New York GP passing through Times Square; a Moscow GP with a Red Square paddock; a Paris GP with a Champs-Élysées main straight. The Copenhagen circuit blends comparable landmarks into a single loop and Kevin Magnussen, for one, is rather agog at the potential.

Originally from Roskilde, 20 miles from Copenhagen, but these days living in the capital, K-Mag struggles to equate *F1 Racing's* circuit map with the streets he knows as a native: "For me, this is two separate worlds joined together: my home and Formula 1. They have always been

separate for me: you go away to a race... so for F1 to come to my home is going to be surreal."

Surreal... and quick.

"It would be ridiculously fast," Magnussen grins, "and really it's hard for me to imagine driving around these streets, because thinking about it I can't see a track here. But obviously it's going to change a lot with different Tarmac, walls, kerbs and so on."

We ask if a left-hand kink roughly half-way down the main straight would require a one-gear downshift (braking being obviously superfluous). "No way!" protests Kevin. "It would be flat all the way from here [the right-hand turn onto Hans Christian Andersen Street] to here [the 90-degree left that turns the track back on itself and through hipster-chic Christiansborg]."

So while the putative Copenhagen City Circuit wouldn't boast the most sophisticated

or technical topography, it *would* include two clear heavy braking zones, which would therefore promote passing opportunities.

"The braking at the end of the straights would be massive," confirms Magnussen. "There would be a lot of passing at this grand prix."

For the race to happen, many planets in the F1 universe must align: financial promises need to be made liquid; calendars rationalised; political accommodations reached. But with sufficient cash and goodwill, it may yet become real.

"No one in Denmark would ever have believed something like this could ever happen," says Magnussen. "It's not even as if we'd finally have got something we'd wished for – because no-one has even been taking about it until recently. But I can tell you, if it does go ahead, it would be unbelievably spectacular. I think every Dane in the country would head for Copenhagen." 📍

{ YOU ASK THE QUESTIONS }

NIKI LAUDA

The three-time world champion answers questions from his peers about piloting his jet, making F1 more appealing and why he *hates* cats

WORDS ANDREW VAN DE BURGT

PORTRAITS  LAT IMAGES: LORENZO BELLANCA

For more than 40 years Niki Lauda has been one of the most prominent characters in the F1 paddock. From humble beginnings as a pay driver at BRM, he rose to become one of the sport's superstars, leading a stellar period in Ferrari's history [see p90].

After dominating the 1975 season, he was heading for back-to-back titles in '76 before he suffered one of the worst accidents captured on film, at the Nürburgring. His subsequent recovery is ingrained in F1 legend, though the scars he carries from the accident that so nearly killed him remain traced across his face and skull.

He raced on into mid-'79, latterly with Brabham, but "tired of driving around in circles" he quit F1 to run his own airline, before being tempted back into the cockpit by McLaren for 1982. Using all his experience and wiles he pipped Alain Prost to the 1984 title before exiting racing for good a year later.

He didn't stray far from the sport. His involvement continued through TV punditry for German broadcasters RTL and also in managerial roles at Ferrari, Jaguar and, since 2012, as a non-executive chairman at Mercedes.

Lauda remains one of the few living links to a Formula 1 past where drivers faced true, mortal peril. Always famously outspoken, he's never been one to duck a question. Who better, then, to face interrogation by his paddock peers?

What was it like in the old days when the drivers actually socialised with each other?

Stoffel Vandoorne,
McLaren driver

Bullshit question, because we never socialised with each other because we were very competitive. The risk we had in those days was 100 times harder than now.

We fought each other but we had so much respect for the

other guy's life that there was a thin line between doing something stupid and risking the other guy's life, so this we did not do. There was more respect in dangerous situations but we were enemies.

F1 Racing: So, today's drivers don't respect each other as much?

NL: They don't have to because if they spin off then nothing happens. If we'd have done the same thing we would have killed each other.

Can I have a pay rise?

Lewis Hamilton,
Mercedes driver

Ummm, discuss it with Toto [Wolff] please, I'm only the chairman! ▶





NOVOMATIC
WINNING TECHNOLOGY



YOU ASK THE QUESTIONS

What do you think of modern circuits with huge run-off areas and the penalties the drivers pay for running off the track?

Carlos Sainz Sr, double world rally champion

First of all, the circuits have had the right development over the last 30 years. This was the way F1 had to go, there's no question about it. But all this bullshit of penalties if you go over a white line or whatever, I hate. It's completely wrong, stops the guys racing, and gives an opportunity

for other drivers to complain. So then immediately someone passes them, they come on the radio and say 'he passed the white line!' Are you guys nuts? Use every road you can to pass, because the best guys are racing and if the FIA doesn't like it, then build kerbs. If there are no kerbs let them race, don't penalise anybody.

How do we make F1 more appealing to the fans?

Ross Brawn, Formula 1 managing director of motorsports

Let them race. Don't interfere with your stewards all the time, Ross. Let them race – it's an FIA problem and I've spoken to Charlie [Whiting] a hundred times – and open things up. I'm completely against the halo,

because of the same thing. No one is forcing drivers into racing, you have to decide before, do you want to do this or not? These guys are the best in the world and those who can't take it need to stay at home. Therefore I don't like this development and if it keeps on going, no one will watch F1 because the drivers will not be heroes any more.

F1R: And where does DRS fit in with that?

NL: DRS at least works and we got used to it, we can pass. It's OK, but we should not do more interference in, let's say, bringing a NASCAR system into F1. That is wrong. Number one is competition of cars and engineering and development of engines – the best is the best. The same has to be for the drivers. You cannot say if you win a race, give him a lot of weight and then he is last. So they should leave it alone, so you can't change the DNA of F1.



Will you buy your wife that Range Rover she wants now you've won another championship?

Christian Horner, Red Bull team principal

No! This idiot bought his ex-wife, or was it girlfriend – the one with the kid... He started this bullshit by buying his ex a Porsche.

Therefore, all our discussions started. Why is he buying his ex a Porsche? I don't know. I do

my job, win or not, and anyway to make a long story short, she will not get a Range Rover because she is driving a Mercedes!

What was harder, winning the world championship the first time or coming back from retirement?

Allan McNish, former Toyota F1 driver

Always the first time is the most difficult... You work so many years in Formula 3, Formula 2, and then you finally make it. The others are easier, no question, because you have experience with all of these things.

How much was the interest on the loan you had to take from the bank to begin your racing career, and did you pay it back?

Alex Wurz, ex-driver and GPDA chairman

I paid everything back, and the interest rate was the advertising. I said don't charge me interest because I'm going to wear this on my helmet. In those days the interest rate was five per cent and that was my advertising. And I paid the money back on time.

Were you a better driver or a pilot?

Paddy Lowe, Williams chief technical officer

[Long pause] I won three championships. Simple. Racing and flying are the opposite. Flying is respecting the rules. I flew a Boeing 777 down

to all types of private planes, and I always respected the rules. I never did anything stupid while flying, in racing I did everything stupid.

“ I'M COMPLETELY AGAINST THE HALO. IF THIS DEVELOPMENT KEEPS ON GOING, NO ONE WILL WATCH F1 ANY MORE BECAUSE THE DRIVERS WILL NOT BE HEROES ANY MORE ”





In your day could you have beaten Lewis or Valtteri?

Marc Priestley, former McLaren mechanic

I have only been Niki Lauda, I can't compare these things.

Why do you hate cats?

David Coulthard, 13-time grand prix winner



I'm allergic, it's very simple. I can't breathe.

Why would I say that you are the most indiscreet man in the paddock?

John Watson, former Brabham and McLaren team-mate

There have been various reasons for sure... As John will remember as I am a very direct, straightforward guy, the opposite to him, and if I found something out when he did not perform out of the racing car...

What was more challenging, driving an F1 car or running an airline?

Bob Fernley, Force India deputy team principal

At the time driving an F1 car only depended on myself, I could adjust myself to the way I had to perform. Running an airline with 3-4,000 people meant I had to co-ordinate the whole team, so very different challenges.

Which of the current drivers comes closest to your most famous rival, James Hunt?

Mario Isola, Pirelli racing manager

None, they don't drink that much! At the time, James was really one of the quickest and fastest guys, Hamilton-like, no question. But today nobody drinks any more.



“PENALTIES, IF YOU GO OVER THE WHITE LINE OR WHATEVER, I HATE. IT STOPS THE GUYS RACING AND GIVES AN OPPORTUNITY FOR OTHER DRIVERS TO COMPLAIN”

When do I get to ride in your Global Express jet?

Sir Jackie Stewart, three-time world champion

When you pay for it!



If you didn't have Lewis, would Valtteri have won the championship?

Davide Valsecchi, Italian TV commentator

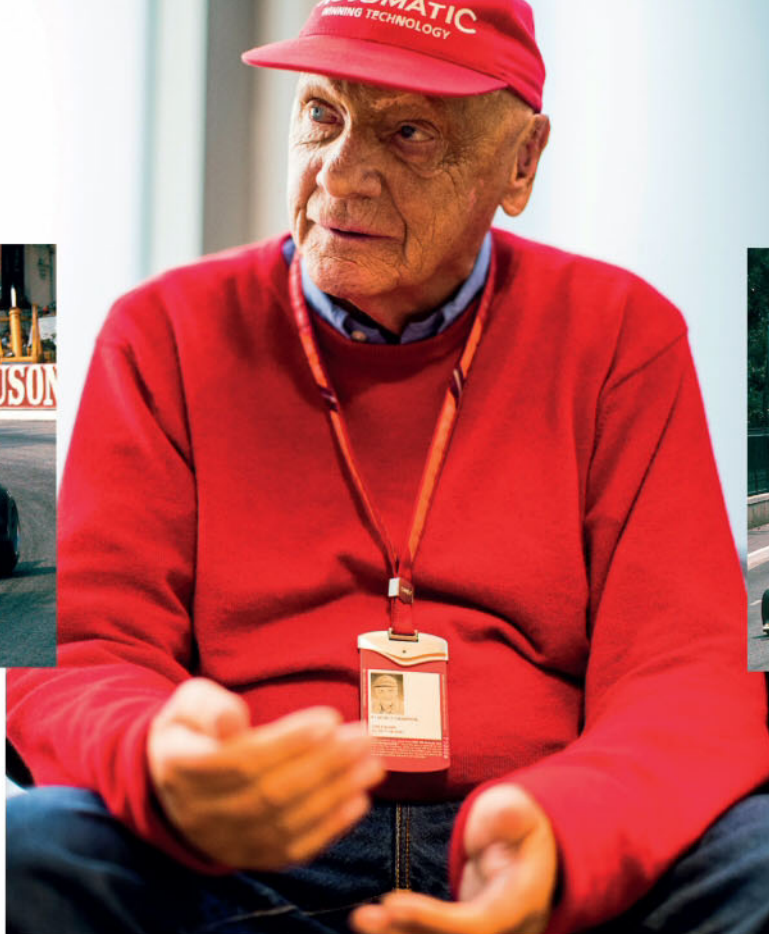
Hard to say. I think no, because Lewis won the championship this year because it was so difficult.

F1R: Do you think this is the best of his titles for Mercedes?

NL: Yes, because we all had to work hard for it and Lewis made

the change. Bottas was there anyway and he had the opportunity to win it, but Lewis did a better job. To be fair to Bottas it's his first year and you need to get used to the team, you need to understand the language used by the engineers and all that. It's difficult to compare.





Will you give me a lift in your plane when you are next flying it?

Pascal Wehrlein, 2017 Sauber driver

If he sets a time I can do it. He's a nice guy.



Do you think that back in the 1980s drivers like you, Prost and Senna were able to dictate to teams like McLaren more than the drivers are able to do today?

Karun Chandhok, TV pundit

No, we could not, certainly not with Ron Dennis, but on safety issues we had a lot more say than the drivers of today. We had more voice, but in the team we had to behave like every employee had to behave. We were not prima donnas in that way.

F1R: What about in terms of development of the car?

NL: For sure we had much more influence because we all depended on my ass feeling and translating to the engineers. Today everything is data driven, our information was much more important otherwise we would not have developed the car.

A few years ago you were quoted as having implied that a monkey could drive a modern grand prix car. What is your opinion on what it takes to drive the new breed of F1 car?

Lance Stroll, Williams driver

I was misquoted in that way, in that I said in my time we had to change gear at Monte Carlo 1,800 times and if I'd missed one the engine would have blown up and I would have lost the race. We had no power steering and we had to really work hard.

With what the drivers have to do now, it's much easier to drive the cars with the benefits they

have, but to drive on the limit is always the same, but the work to make it happen is now less than before.

“ WE HAD TO CHANGE GEAR AT MONTE CARLO 1,800 TIMES AND IF I'D MISSED ONE THE ENGINE WOULD HAVE BLOWN UP AND I'D HAVE LOST THE RACE. WE HAD TO WORK HARD ”

How do you feel the sport has changed now that Bernie has gone?

Paul di Resta, Williams reserve driver

At the moment you don't feel much, because Liberty Media are trying to introduce their own ways. We have to wait and see if they understand the DNA of Formula 1 and make it grow and make it more interesting and better.

But we are in the middle now of a transitional period. We need to come together and make it happen so let's wait and see. New rules will come up in 2021, but we don't know yet [what they are], it's a learning phase at the moment for each of us and let's wait for the outcome.

Why don't you make a comeback?

Bernie Ecclestone, former F1 supremo



[laughs] Why don't you make a comeback, Bernie?

What would your life have been like if you still had two ears?

Otmar Szafnauer, Force India chief operating officer

People would not recognise me!



Are you a good lover?

Martin Brundle, TV commentator

Don't ask me because I don't judge myself, you'll have to ask my

wife, but she won't tell you either. [Laughs]



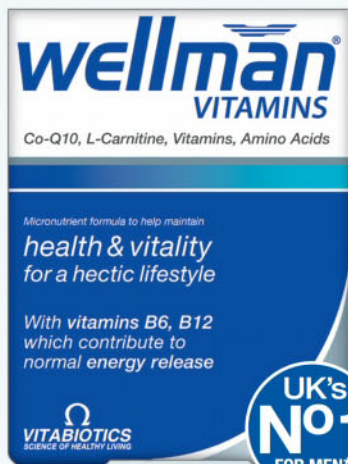
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VITABIOTICS

OCON YE

F1 Racing catches a ride with Esteban Ocon, one of the emerging stars of the 2017 season, on a training run the day after the Abu Dhabi GP



R BIKE



WORDS ANTHONY ROWLINSON

PHOTOS  LAT IMAGES: ZAK MAUGER



At six-feet-two-and-a-half inches tall in his stockinged feet, Esteban Ocon makes a most unlikely Formula 1 driver. Alongside, say, a Felipe Massa, a Fernando Alonso or an Alain Prost, his elongated dimensions appear comically divergent: he is *tall*.

But of more import to his racing ambitions over the years has been his weight and here he's well within F1 driver norms: Esteban tips the scales at a mere 66kg, or round about 10 stone four pounds. The result, however, is that Ocon's frame has an almost stork-like quality, as most of his body mass appears centred in his torso.

As those hoary old beard-rockers ZZ Top might once have observed: "He's got legs". But does he "know how to use them"?

This and other pressing questions are about to be interrogated in most particular fashion, as Ocon undertakes an afternoon's recovery spin on a rather exclusive bicycle, the day after the Abu Dhabi GP (in which he finished eighth).

F1 Racing has been invited along for the ride – quite literally on this occasion – and though Esteban is feeling a little 'the morning after the night before', we're up early on Monday for a rendez-vous at Abu Dhabi's Traders Hotel.

Quite a crew are there to meet us. Esteban, of course, his trainer, members of Force India's media and marketing team, plus a gaggle of viciously lean, powerful-looking Men In Lycra representing the cream of the Emirates' cycling community. Among them is one Henry Furniss, founder of boutique British cycling brand WyndyMilla, and it's one of his machines that Ocon will dangle his frame over today.

But first, a trip into the desert, destination Al Wathba and a dedicated 20-mile cycling loop

built into barren sands some 45 miles south-east of downtown Abu Dhabi.

This most unlikely government-funded cycling destination was opened in 2014, with the express purpose of promoting cycling as both sport and recreation in the region. A noble enough ambition in a car-worshipping culture, and also part of a bigger regional health drive triggered by statistics showing alarmingly high levels of so-called 'type-2' diabetes (a condition closely associated with obesity) among Emiratis.

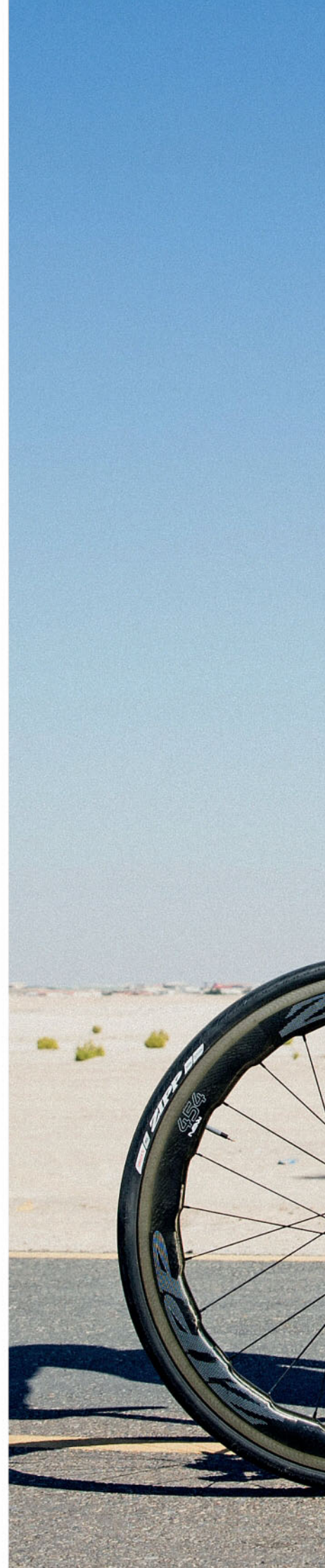
Standing alongside Ocon as he peels off a team T-shirt, to replace it with a more close-fitting lycra garment, we reflect that it's unlikely he'll ever be troubled by excess weight gain. Indeed he shares skinny, long-boned dimensions with many ultra-successful cyclists: Sir Bradley Wiggins, George Hincapie and David Millar being three we might mention.

Turns out there's something in the genes here, for Esteban's father, Laurent, is a former age-category French national cycling champion and his uncle remains a competitive rider. And as Esteban clips in and pushes off, at the head of our mini-peloton, he does so with the easily coordinated grace and fluidity of any pro athlete.

This isn't 'winter cycling' in the way that any chill-enduring northern European would know it. Instead of road grime, punctures, grit and whatever cold, watery hell is falling from the sky, we have a gentle breeze, pristine Tarmac, a ban on road vehicles, and temperatures of 20 degrees C in cosseting sunshine. An idyll, no less, one in which Ocon is glad to release some of the muscular strains of the previous day's exertions.

"You always feel it the day after a race," he tells us, spinning those limbs freely in a low gear. ▶

"YOU FEEL IT IN YOUR NECK AND CHEST AFTER A RACE, BUT CYCLING IS A GREAT RECOVERY EXERCISE. IT KEEPS THE BLOOD FLOWING"



Surrey-based cycling brand
WyndyMilla is one of Force
India's growing list of partners



Al Wathba's dedicated 20-mile cycling loop is part of the Abu Dhabi government's campaign to get its citizens to take regular exercise



“I’VE LEARNED A LOT FROM SERGIO [PÉREZ]. I RATE HIM AS ONE OF THE BEST ON THE GRID, SO IT WAS GREAT TO HAVE HIM AS A TEAM-MATE”



“You feel it in your neck and chest but cycling is a great recovery exercise. It moves your muscles and keeps the blood flowing. It’ll help me stay fresh, actually, for the test on Wednesday.”

There’s no outward sign of duress as he chats about the prospect of the last outing for 2017 cars, not even hurried breath: a reminder that he’s (a) very fit, like any F1 driver, thanks to a bespoke training and conditioning programme; and (b) very young and therefore brimful of life’s sweetest elixir. Still only 21, he’s already a 29-grand prix veteran, having made his debut aged just 19, for Manor, at the 2016 Belgian GP.

In his first full season he has made an exceptionally strong impression, giving his more experienced team-mate Sergio Pérez an ever-harder time and prompting Force India deputy team boss Bob Fernley to anoint his young flier as “a future world champion, no doubt.”

In Abu Dhabi Pérez had the upper hand, though the performance of the Force India pair was virtually identical. Qualifying separated them by just 0.023s for P8 and P9 (a gap Ocon represents by pinching finger and thumb together – “it was this close,” he says); in the race they finished seventh and eighth – just as they did in the final championship standings.

“Yeah it was close between us,” says Esteban and... are we mistaken or do we note a sudden increase in tempo at mention of The Man He Has To Beat? Talk of team-mates always cuts to the quick with any racing driver. If they’re up against another of similar ability, they know it in a way that only members of the same clan, can.

“I’ve learned a lot from Sergio this year,” Esteban admits. “I rate him as one of the best drivers on the grid, so it was great to have him as a team-mate. He’s very good on any type of corner, but he has a very different driving style – really turning the steering wheel heavily and saturating the fronts. It seems to work very, very well with these Pirelli tyres. He’s really fast.” ▶

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Ocon's father was a cycling champion in his age category at national level

“I DON'T HAVE TO BE SHY AGAINST MAX [VERSTAPPEN]. HE'S AHEAD NOW BECAUSE HE'S BEEN IN F1 LONGER THAN ME. BUT I'M GETTING THERE”

What's not spoken is that Pérez, a veteran of 134 grands prix, used that style in conjunction with all his experience to finish 13 points ahead in the drivers' championship and however impressive was Ocon's first season, beating Perez next year has to be his goal if he is to capitalise on talent that in 2014 allowed him to beat Max Verstappen to the European F3 title.

Crucially though, Ocon has done that essential thing for any Formula 1 newcomer: he has made his mark. He has burned a memory or two onto the mental hard drive, denoting him as 'one to watch'.

Three examples: (1) Ocon *arguably* offered Pérez the wall at Baku on lap 20, resulting in front-wing damage for the Mexican; (2) the give-no-quarter wheel-to-wheel dice at Spa that resulted in Ocon kissing the old pitwall on the run to Eau Rouge and then compelling team management to impose team orders that would keep their combat on the right side of pugilism; (3) a stunning P3 in wet qualifying at Monza.

Each of these moments was a marker, a moment when a driver showed not only his speed, but also his willingness to fight. When he showed, in fact, that he's eminently worthy of his place at the top table.

Ocon is disarmingly modest when asked about his achievements, yet there's a self-possession about his manner that speaks of confidence. Having measured himself against, among others, Max Verstappen, he knows how good he is: “I don't have to be shy against him,” Ocon said last year. “I wasn't the only one to beat him. I won the F3 title in 2014 and Tom Blomqvist finished second, with Max third. I've beaten him many times. He's ahead now because he's been in F1 longer than me. But I'm getting there.”

Ocon couldn't have found a better team with which to hone his already considerable skillset. Force India are famous for their driver-nurturing skills and the largely apolitical (i.e. bullshit-free) character of the team serves any young driver well. All the more so when that driver has had to graft for his chance, witnessing his parents sell their home to fund his early career. Happily for all, Ocon was picked up first by the Gravity management group and latterly by Mercedes.

With the backing and blessing of such a powerful figure as Mercedes team boss Toto Wolff, Ocon's future is potentially gilded. And if he 'kicks on' from his notable 2017, it would be no surprise to find him clad in silver, not pink, come 2019. Ride on, Esteban. 🏁



WYNDYMILLA: CUSTOM CARBON ON TWO WHEELS

Ocon's ride for this desert jolly is almost as special as the one he races 21 weekends a year. He's atop a WyndyMilla bike, a boutique cycle brand established in 2009 by co-founders Henry Furniss and Nasima Siddiqui and which is now finding a foothold in the F1 fraternity.

In 2016 they partnered the Manor team; now they're with Force India, supplying bikes and fitness expertise as well as a passion for pink.

Ocon will soon be receiving a custom carbon-framed bike to use as part of his training regimen – bespoke dimensions being essential to a perfect riding position for one of his gangly lengths. That same customising service is available (for a fee) to any prospective customer.

Find out more about WyndyMilla bikes at: www.wyndymilla.com

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THE SHADOW DN1

The first offering from this mysterious team didn't quite live up to its promise

Pointy beard, black cape and toreador hat: Don Nichols didn't exactly conform to team-owner type, even in the fab 'n' far-out decade of '70s F1. The American, who died in August aged 92, was a true-life international man of mystery who created one of the greatest cult teams of motor-racing lore.

The DN1 was the svelte machine that launched Nichols' equally enigmatic Shadow team into F1 in 1973. The chassis shown here is the 3A, sold to Graham Hill as the double champion took his first steps as a team owner/driver under the Embassy tobacco banner. The two works cars, run in Shadow's trademark plain black, established their credentials as a force to be reckoned with, and two podiums in their debut year seemed a decent return. But it was a slog of a season and a deflating precedent that would linger throughout Shadow's eight-year spell in the top flight.

Intrigue surrounded Nichols, allegedly a former CIA operative and US army veteran of WWII and Korea, who had made a fortune while serving in Japan by importing and selling racing-car components and tyres. Back at home in the late 1960s, he founded Advanced Vehicle Systems and went Can-Am racing under the Shadow moniker. The shady figure in cloak and hat, which was used as a team logo, was a look adopted by Nichols himself, inspired by a pulp fiction superhero he recalled from childhood, named The Shadow.

His Mk1 Can-Am car, featuring miniature drag-reducing wheels and a gigantic rear wing, set the template for Shadow's unconventional approach. After four years of toil in the wake of McLaren and Porsche, the team achieved few solid results, but Nichols announced his intention to crack F1 anyway.

Future Arrows boss Jackie Oliver had become part of the Shadow story in Can-Am and, with one eye already trained

NOW THAT WAS A CAR

No. 65

on a life beyond driving, he galvanised the team's grand prix assault. BRM designer Tony Southgate was hired to draw a car, which he did from his own garage, and premises were acquired in Northampton. Southgate had been responsible for BRM's final GP winners, and his appointment was surely a key factor in attracting Hill as a team patron.

The resulting DN1 certainly *looked* right. The attractive all-enveloping body, featuring a coke-bottle-shaped rear, was ahead of its time and born of Southgate's studious aero research at Imperial College's windtunnel. Tight packaging included radiators tucked into the sidepods rather than hung behind the rear axle, with the fuel and oil tanks positioned centrally behind the driver. It was neat, tidy and purposeful.

Even the fuel the car consumed pointed to the future. Sponsor UOP (Universal Oil Products), who backed the team in Can-Am, had just introduced a process to manufacture lead-free gasoline. What better way to market their product than by using it in F1? According to Southgate it had a smell of pear drops, and transporting it to each race added to team expenditure. But with an equivalent octane reading to regular leaded fuel the concoction was no detriment to performance.

The team didn't make the first two races of 1973, but Oliver and underrated US racer George Follmer pitched up in South Africa, where the latter inherited P6 and one point first time out. This was promising, but it got even better at the next race. Follmer benefitted from attrition to snatch third at Montjuïc Park, where Hill also joined the party for the first time with his Embassy-liveried car. Things were looking good.

But, thereafter, reliability niggles dogged all three entries and design flaws became apparent. That packaging was perhaps a little *too* tight. Cooling was an issue, with the sidepod radiators proving too small for the job. And Southgate



was forced to lengthen the wheelbase, which did at least improve weight distribution. The designer also discovered a snag with Cosworth's DFV, which, despite its near-ubiquity in F1 by 1973, was an engine new to him after his time working with BRM's V12. The V8's characteristic vibrations highlighted a fundamental chassis rigidity flaw and the early promise was soon shaken out by the frustration of what could have been.

Hill managed no better than a ninth place at the Belgian GP and he subsequently switched to a Lola for '74. But there was at least some cheer for the works team, when Oliver led the rain-afflicted penultimate round in Canada and was eventually classified third in a confusing race some thought he'd won. A total of nine points and P8 in the constructors' championship at season's end was respectable – but nothing more.

With hard lessons apparently learned, the new Shadow DN3 seemed a more promising prospect for 1974. But while

**“HILL
MANAGED
NO BETTER
THAN A
NINTH
PLACE AT
THE BELGIAN
GP AND HE
SWITCHED
TO LOLA
FOR 1974”**



RACE RECORD

Starts 40
Retirements 22
Wins 0
Poles 0
Fastest laps 0
Other podiums 2
Points 9

SPECIFICATION

Chassis Aluminium monocoque
Front suspension Double wishbones, coil springs over dampers, anti-roll bar
Rear suspension Reversed lower wishbones, top links, twin trailing arms, anti-roll bar, coil springs over dampers
Wheelbase 2,540mm
Engine Ford-Cosworth DFV V8
Engine capacity 2,990cc
Power 460bhp
Gearbox Hewland FG400 5-speed manual
Tyres Goodyear
Weight 575kg
Notable drivers Jackie Oliver, George Follmer, Graham Hill, Brian Redman, Jean-Pierre Jarier

Oliver and Southgate's DN2 cleaned up in Can-Am, yet more frustration followed in F1 – along with a terrible tragedy. New signing Peter Revson would die testing the DN3 at Kyalami after a suspension failure.

The DN1 was pulled back into service twice more for Jean-Pierre Jarier for the early rounds of 1974 before receiving its pension. One chassis would find a second career in Britain's Shellsport Group 8 single-seater series, driven by, among others, Lella Lombardi, the only woman to score world championship points (well, half a point) in F1 history.

As for Shadow, there was the odd glimmer of success over the years that followed: back-to-back pole positions for Jarier at the start of '75; Tom Pryce's Race of Champions win at Brands Hatch that same year; and their single F1 grand prix win, by Alan Jones in the rain at the Österreichring in '77.

But it was tragedy and controversy rather than world-conquering glory that would come to dictate Shadow's F1 epitaph. Pryce died in horrifying circumstances at Kyalami when he collided with a marshal who was crossing the track with a fire extinguisher. Then, in 1978, following disagreements with Nichols, Oliver would break away to form Arrows, taking Southgate with him. Nichols duly won the ensuing court case over the striking similarities between the Arrows FA1 and Shadow's DN9, forcing Southgate and co to produce an all-new car, the A1, in just 52 days. But it was the new team that lived on through the next decade and beyond. Nichols sold out to Theodore in 1980 and quit F1 for good.

But for all the unfulfilled potential, the mysterious American and his Shadow still left their mark. The DN1 was a fondly remembered car with a great livery that perfectly captured the swashbuckling, pioneering spirit of 1970s F1. 🏁





FRÉDÉRIC VASSEUR

Sauber's team principal talks about bringing on a new generation of driving talent, and the new Alfa Romeo tie-up

After a 30-year absence, how proud are you that Alfa Romeo are returning to F1 via a multi-year partnership with Sauber?

I'm very proud of the team because life isn't easy when you're at the back of the grid. The new project started very late, but we're improving and making small steps on the car. Real progress is visible. Success is always the addition of small things, so if motivation is there the rest should follow. I definitely do believe that – especially when you have the chance to team up with such an iconic partner as Alfa Romeo.

You moved to Sauber after splitting from Renault last year. What have you found at your new team?

Pressure. Okay, there is less pressure from the outside, from the media, but we need to create our own pressure to be successful because that is the future of the team. The guys in the factory need to have the same feeling as if they were working for Mercedes. If anything they need to be *more* committed as team members, because we are a small team and we have to create this team spirit.

Until Renault, you always ran your own teams in GP2 and F3 [ART and ASM]. How different is it running a Formula 1 team?

There is a larger organisation, but it's very similar. Whether you're talking to the chief engineer of Sauber or the chief engineer of Lewis Hamilton's car in F3 – it's the same. And Hinwil, like Enstone, like my junior teams – they're similar as they're proper racing teams with a longevity of people who work for them. The key for Sauber is to pick up pace, and that will motivate people further to push up the grid.

CV Frédéric Vasseur

Nationality French

Age 49

Role Sauber team principal

- **2017** Team Principal, Sauber F1 Team
- **2012** Founded Spark Racing Technology for design of electric systems for Formula E
- **2010** Founded AOTech (driver simulator and CFD engineering)
- **2005** Entered ART Grand Prix into GP2
- **2003** Entered ASM into F3 Euroseries
- **1996** Founded ASM and ran in French F3
- **1995** Graduated from ESTACA (Higher School of Aeronautical Techniques and Automotive Engineering)

You studied aeronautics and engineering. Did you always want to be involved in motorsport?

I raced go-karts until I was 17, then I had a huge crash and my mother told me that was it. Full stop. I had to go back to school so I chose aeronautics and engineering, since they had a link to racing. When I was at Renault I told Alain Prost that he ignited my passion for racing – as I followed him when he started racing in F1. But I knew after my first season in karts that I was never going to be a world champion.

How did you start your racing team, ASM?

When I was at engineering school, I met some guys who were racing in Formula Renault, and I started up a company called RPM and we made the Formula 3 engine for Renault. It was a bit crazy as we started from scratch. I launched ASM and did French F3 and my driver was Sebastian Felipe, who now runs my Formula 2 team ART. We won the championship in 1998 and then joined the new F3 Euroseries when it merged with German F3 in 2002. And before you ask what ASM and ART stand for – it's nothing. They aren't [acronyms for] three names, the letters don't stand for anything!

You linked up with Mercedes and ran Lewis Hamilton in F3, did you think he would be a future F1 champion back then?

He did the first year with Manor and I would say it wasn't so obvious after his rookie season of F3. I know that he had a very good season in Formula Renault and he dominated the UK championship; I think he also won the Eurocup, which was a small championship. Then he started in F3 and the first season was a bit difficult. But remember he won in Bahrain [a non-championship race], from the back. That was an incredible drive. When we did ART together at the start of GP2, Lewis drove for me again and won five races that season.

Have you always enjoyed working with young drivers?

When Sebastian Felipe started he was like a friend – now with age, I'm much more like a father figure! I think it might be the most exciting part of my job to take someone from karting up through all the different ranks of the junior ladder to F1.

The next young driver following that path is Charles Leclerc, who is one of your drivers in 2018. How good is he?

You can't judge Charles Leclerc just by his FP1 sessions for us – although he did very well. You need to have a global look over his career. He did very well last season in Formula 2 and he was very impressive for a rookie. The last time rookies won the championship, I knew them very well. I ran them: Lewis, Nico Rosberg and Nico Hülkenberg.

With Charles, even during the season when he went through a tough period in his personal life [with the death of his father], he was able to stay competitive and focused and he's very strong on the mental side. He is very impressive.

McLAREN'S GAME BOY

WORDS
JAMES
ROBERTS

PICTURES
NEALE
HAYNES

McLaren's newly anointed test and reserve driver **Lando Norris** is an avid gamer and a valued hotshot in the team's simulator. No wonder he's been advising them on their eSports competition: World's Fastest Gamer





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Castrol

CW

MICHAEL KORS

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logitech



Sparco G5

Sparco

IN AUGUST, A YOUNG BRITISH TEENAGER ACHIEVED A LIFETIME'S AMBITION.

Seventeen-year-old Lando Norris took part in the Hungaroring test for McLaren, getting his first taste of real F1 machinery. It was the culmination of a journey that began 13 years earlier. The Bristol-born youngster remembers trying to reach the pedals and steering wheel set up by his older brother to play *Gran Turismo 4* on the Sony PlayStation 2. It was the beginning of a lifelong passion for both racing and games.

Last February, Norris joined the McLaren young driver programme and clinched the FIA European Formula 3 title at his first attempt. He'll race F2 in 2018. When his racing calendar permits, he also provides track support for both Fernando Alonso and Stoffel Vandoorne by driving McLaren's simulator in Woking, testing virtual setups between practice sessions that can be fed back into the real-world car.

But there is another team with whom Norris competes. Running in parallel in the virtual realm, he is also a member of ultra-successful Team Redline, competing in sim racing games such as *iRacing*, which he does on a state-of-the-art rig, connected to a PC he has set up at home. It's a far cry from the rudimentary pedal-and-wheel combo he played when he was four.

"I spend quite a few hours each day on *iRacing*, which I do mainly for fun with GT3 cars or a Maxda MX5," says Norris when we meet at the MTC, while taking a short break from the sim. "I also practice the circuits I'm going to be racing on *rFactor*, as that game has a very good Formula 3 model. I'll do a few hours ahead of

a race weekend to get a reference for braking points and racing lines."

His sim expertise has made him the ideal adviser for McLaren on the competition they launched in 2017, World's Fastest Gamer. They're the first F1 team to bridge the gap between amateur gamers and full-time pros. The best racing enthusiasts, be they dedicated sim racers or casual gamers, who play on mobile or tablet, have entered a series of qualifying rounds for the once-in-a-lifetime prize to convert their hobby into a paid job: a year's contract to be McLaren's official simulator driver.

And it's not the only online F1 racing competition launched in 2017. Keen to expand into the gaming market, F1 launched an official eSports series last September, to coincide with the release of the F1 2017 video game. Entering was easy: simply set a time or complete a race on your console then compare your pace on a global leaderboard. A total of 63,827 drivers took part in the qualifying stages, completing 976,870 laps, while over 195,000 race times were posted on the leaderboards. The final 20 competitors took part in a televised final in Abu Dhabi and the winner, Brendon Leigh, will feature in the F1 2018 version of the video game.

Racing games have come a long way since the days of putting a ten-pence piece into a *Pole Position* arcade machine and circumnavigating a rudimentary facsimile of Fuji Speedway.

The current generation of racing games, *Project Cars 2*, *rFactor 2*, *iRacing* and *GT*

Lando's passion for racing was fired by playing video games; he's quick in both real and virtual cars



Norris impressed the team enough to be handed a ride in the MCL32 for the Hungaroring test

LAT IMAGES: STEVEN TEE

Sport have brought the handling, realism and connectivity to a new level. And unlike the F1 eSports series, McLaren's competition hasn't been restricted to one type of platform or one game. They have broadened the reach out to consoles, PCs and even mobile devices.

If you think this is just a frivolous exercise, you'd be wrong. The world of competitive gaming which fans can either watch online, or at organised events, is a huge business and quickly growing in popularity. Industry reports estimate the eSports economy will grow to \$696 million in 2017, a year-on-year growth of 41.3 per cent. And in total, the global eSports audience will reach 385 million this year, made up of 191 million eSports enthusiasts and a further 194 million



“THE RFACOR GAME HAS A VERY GOOD FORMULA 3 MODEL. I’LL DO A FEW HOURS AHEAD OF A RACE WEEKEND TO GET A REFERENCE FOR BRAKING POINTS AND RACING LINES”

‘occasional viewers’. The number of eSports participants globally will reach 58.4 million this year, up from 49.8 million in 2016.

“With our licensing agreements, McLaren is already embedded in a number of games,” says James Bower, director of brand partnership at McLaren. “And as eSports have been gathering momentum, we’ve been looking for a way to create a competition.”

McLaren’s World’s Fastest Gamer was launched in July last year and subsequently six qualifying rounds took place at different locations on a mixture of different games and consoles, with entrants from 78 countries.

The first event was for *Forza Motorsport 6* gamers who had to race a GT4-spec McLaren

570S Coupé across five different classic North American tracks, including Daytona and Sebring. There were also broadcasts online on Sunday evening, as the best *iRacing* drivers faced off in MP4-30s against each other on circuits including Suzuka, Monza and Interlagos.

Two events took place at gaming festivals and there was even a qualifying round for gamers who play on either their phone or tablet. Over 26,000 took part in that competition and the winner was the one with the best compound time over three races. The game, *GearClub*, had 550,000 downloads and the accessibility of the game resulted in some unusual participants.

“We had one person, a surgeon by trade, who’d never bought a console and had never

played a racing game before,” says Bowers. “He downloaded the game to his mobile device and beat 26,000 other people to win.

“What’s great about this competition is that the reach is huge and it’s mixing established gamers with the man on the street.”

The finalists underwent a week of gruelling evaluations, including cognition and human performance tests to ensure they met the criteria to become a simulator driver. Outright speed is important, but it’s critical to display other skills, such as to offer feedback and direction, to perform under pressure, and also to be consistent lap after lap.

“We are looking for someone who is adaptable and can work with a team,” says Bower. ▶



CV **LANDO NORRIS**

McLaren's test and reserve driver

Age 18

- **2018** Formula 2 with Carlin; set to compete in Daytona 24 Hours alongside Fernando Alonso for United Autosports
- **2017** Youngest ever FIA Formula 3 champion (nine wins); makes F2 debut at Abu Dhabi; McLaren F1 test (two days)
- **2016** European Formula Renault 2.0 champion (five wins); winner of the McLaren Autosport BRDC Driver Award; Toyota Racing Series champion (six wins)
- **2015** MSA Formula champion (eight wins)
- **2014** CIK-FIA World KF karting winner
- **2013** CIK World KF Junior karting winner; CIA-FIA Euro KF3 champion

“THE DIFFERENCE WITH THE SIMULATOR IS THAT IT IS PHYSICALLY DIFFICULT TO DRIVE. YOU HAVE TO HIT THE BRAKE PEDAL WITH 100 KILOS OF FORCE OR MORE”

“No other eSport competition has the level of sophistication in terms of testing and evaluation these candidates will undergo.”

The winner was a 25-year-old sales manager from the Netherlands. Rudy van Buren won the Dutch karting championship in 2003, but was forced to stop racing when he ran out of money. This competition has given him a second chance.

The pioneering programme in this arena was the Nissan GT Academy, which promoted successful *Gran Turismo* jockeys into the real world of motorsport, but McLaren's competition is aimed at a different type of gamer.

“The GT Academy helped people to become professional drivers, but actually a lot of gamers don't want to become racing drivers,” says

Bower. “What they aspire to is the cutting-edge simulation technology which they know exists in F1, but they can't get near it.”

At 18, Lando Norris is what those in the technology industry like to call a ‘digital native’. He's been surrounded by racing games his whole life, and is fortunate enough to be able to transfer the skills he's honed in his living room into the hi-tech simulator at McLaren. As the team attempt to unearth their next sim driver, are the current generation of gamers up to scratch?

“It's kind of there. You can learn the basics, turning, braking, finding the exits,” says Norris, who was appointed McLaren's official test and reserve driver in November. “But the difference with the simulator is that it is physically difficult

to drive. You have to hit the brake pedal with 100 kilos of force or more. Then you need to be much finer with your inputs; how you load the tyres and turning points make much more of a difference – you need to be a lot more accurate.

“Although the strength of online gaming and eSports is that it is getting much more realistic in terms of driving a car and you can drive as many hours as you want and the costs are the same. There's no fuel costs, circuit hire or repair bills. I enjoy racing people in Team Redline as they are amazing. So fast. I can't beat some of them. But... I can beat them in a real car.”

And ultimately, despite the swell in gaming and virtual racing, that's still the biggest challenge for a racing driver. 🏁

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LAND OF THE RISING SUN

▲ Blocking out any extraneous light or noise, Lewis Hamilton composes himself on the starting grid ahead of the Japanese GP. The focus is his mantra: 'Still I rise'

LAT IMAGES

PICTURES OF THE YEAR 2017



Steven Tee

As managing director of LAT Images, Tee has photographed 602 grands prix since the early 1980s. This past year he's accompanied Fernando Alonso to the Indy 500 and also shot him for an *F1R* story on the streets of Tokyo



FERRARI TAKE THE EARLY PLAUDITS

▲ The ticker tape lands among the top three podium finishers of the season-opening Australian GP. Finally Ferrari had a car capable of beating the Mercedes



▲ I'M READY FOR MY CLOSE-UP

Lewis Hamilton's title-winning Mercedes W08 sits menacingly in the garage as part of an exclusive *F1 Racing* photoshoot to celebrate Hamilton's fourth championship

◀ 'NUMERO UNO' IS THE SIGNAL HE GIVES

To steal a famous quote from TV legend Murray Walker, Vettel is signalling 'numero uno' to our cameraman Steven Tee after victory in the Bahrain GP

SPLENDOUR FALLS ON CASTLE WALLS ▶

The right-front of Hamilton's Mercedes lifts off the ground as he rounds the tight and twisty castle section of the Baku street circuit, a race that featured a touch of road rage...



PICTURES OF THE YEAR 2017



Lorenzo Bellanca

It's been a busy season for 'Loz' as he's worked on a number of *F1R*

stories away from the 20 GPs. He's taken us inside Madrid's Santiago Bernabéu Stadium with Carlos Sainz, and shot a tennis match starring Nico Hülkenberg in Monte Carlo



◀ GOLD MEDAL POSITION

Valtteri Bottas emerges from his Mercedes to celebrate his first victory in Formula 1 at the Russian Grand Prix back in April



◀ AUSTIN'S TOWERING COLOSSUS

From the 250-foot observation tower on the inside of Turn 17 at the Circuit of The Americas, you can see the whole of the 3.4-mile track and nearby Hill Country too

TUNNEL VISION ▼ As Sebastian Vettel accelerates out of the crossover point of the Suzuka circuit, the extremes of light and shade enable us to see the concentration in his eyes





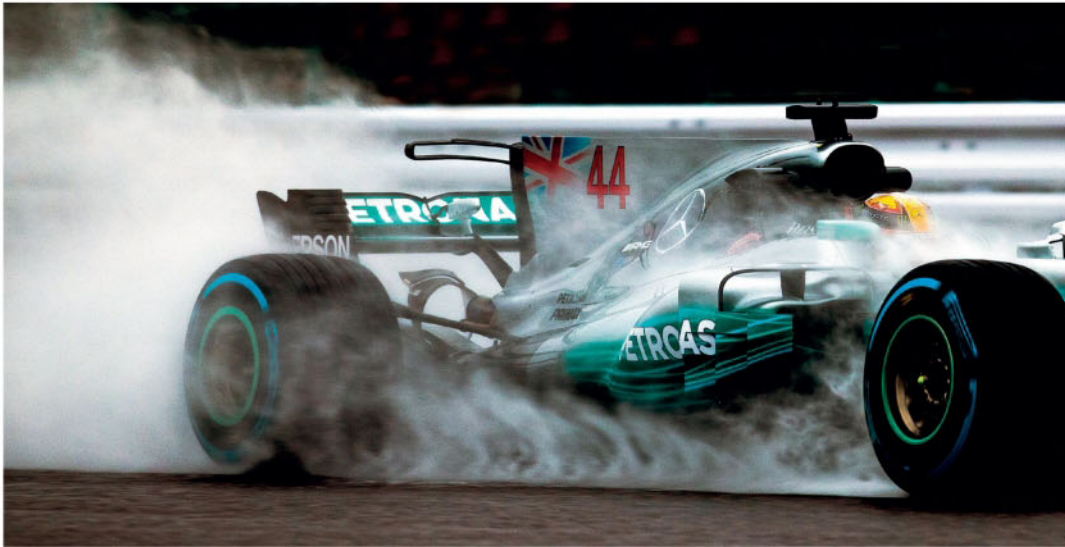
**RUSH HOUR
CARAMBOLAGE**

▲ The streets of Singapore were littered with fragments of smashed-up Ferrari after this pile-up between Sebastian Vettel, Kimi Räikkönen and Max Verstappen



**THE MASTER OF
ALL HE SURVEYS**

▲ The victory spoils belong to Valtteri Bottas as he stands on top of the Sochi podium, with the seaside resort's funfair as a backdrop



▲ **TRIPPING THE LIGHT,
FANTASTIC**

The unique setting of Singapore, the sport's only true night race on a city's streets, enables photographers to explore new heights in high-rise buildings to capture the show

▲ **SPRAY IT AGAIN,
LEWIS**

At high speed, Pirelli's blue-marked full wet weather tyre can displace 65 litres of water per second. This is Hamilton demonstrating the effect at Suzuka

**SILHOUETTE OF
A CHAMPION** ▶

The grand prix held after the hours of sunset in Singapore enables our snapper to capture the unmistakable outline of Lewis Hamilton



PICTURES OF THE YEAR 2017



Glenn Dunbar

For the past few years Glenn has been the principal photographer

for Williams and has special access to the team at races. During the summer he met up with Valtteri Bottas in Finland for *F1R* as we visited the inaugural Bottas Duathlon



SMILE, YOU'RE ON CANDID CAMERA

▲ A moment of light-relief during pre-season testing at Barcelona, as Fernando Alonso mimics the media gaze by asking McLaren team-mate Stoffel Vandoorne to pose



MARKS & SPARKS

▲ Fast pans at slow shutter speeds truly capture the frenetic, high-speed thrill of grand prix racing, as this shot from the season-opener at Melbourne attests

WELCOME TO THE AGE OF THE SELFIE

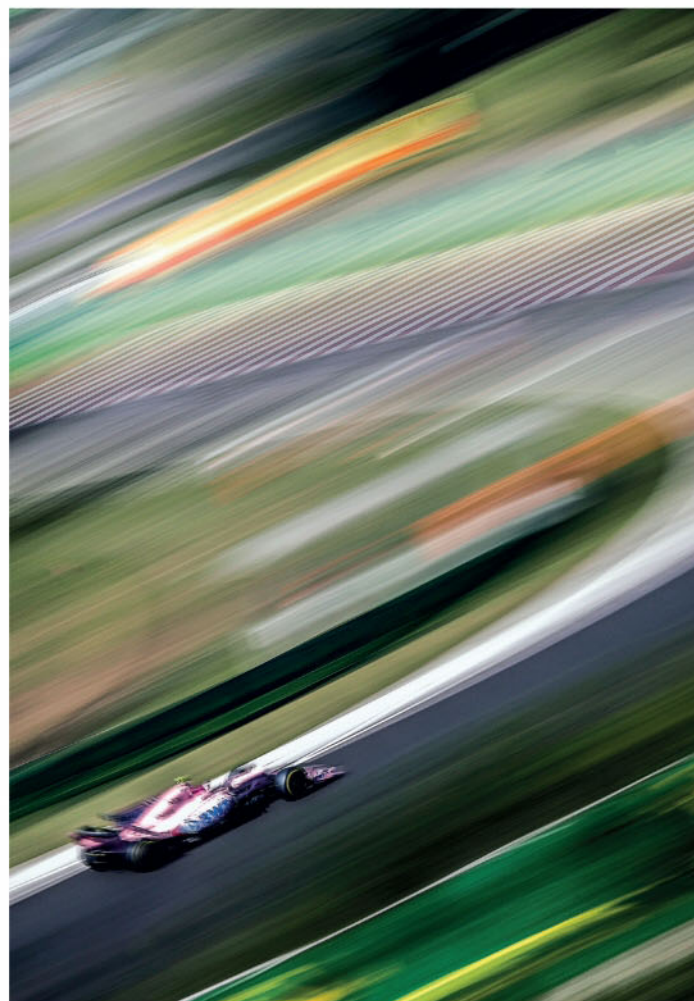
▶ Dangling precariously on the safety fencing atop the pitwall, Lewis Hamilton holds his mobile aloft to capture a selfie with the British Grand Prix faithful





KERB YOUR ENTHUSIASM

▲ Felipe Massa uses all of the track as he hammers the Hungaroring kerbs. But illness prevented him from completing the weekend, so sub Paul di Resta stepped in



STAYING IN THE PINK

The sponsorship tie-up between Force India and water company BWT was hugely successful in terms of visual impact; turning the car pink made it one of the most distinctive on the F1 grid

PICTURES OF THE YEAR 2017



Andy Hone

When he's not jet-setting across the globe, 'Hone-y' lives in Newcastle and is a keen supporter of the 'Magpies'. To give you an idea of his accrued air miles, at the end of 2017 he left the Abu Dhabi GP, flew to Japan and then on to the Philippines...



THE SPEEDY ORANGE MOBILE

McLaren returned to their traditional colours in 2017 in both F1 and when Alonso drove at the Indy 500. But some claimed it wasn't the true 'papaya' of yore



THERE'S NO PLACE LIKE HOME

Formula 1 said 'farewell' to Felipe Massa one more time at the Brazilian GP in his home town of São Paulo. It was arguably his finest drive of the season



BOWING OUT OF CONTENTION

It was a troublesome season for Max Verstappen, who regularly suffered from unreliability in his Red Bull machine. This DNF is from Bahrain



FLAGGING SUPPORT

The popularity of Ferrari and Sebastian Vettel can be felt at every race track around the world. These fans are from the Chinese GP

LAMPOONING THE EUROPEAN VACATION ▶

The Hungarian GP is traditionally the last race before the summer shut down, and Fernando Alonso famously took to a deckchair below the podium celebrations, recreating a long-lived internet meme



OH, DANNY BOY ▶

The Azerbaijan GP wasn't a race Daniel Ricciardo expected to win, but oh boy, what a GP and what a performance from the Red Bull ace



PICTURES OF THE YEAR 2017



Sam Bloxham

Over the past season of racing, young Sammy has dovetailed

two championships. As well as Formula 1, he's been photographing the all-electric Formula E series. That's just the 12 months of the year travelling then...



VERSTAPPEN'S RAYS OF LIGHT ▼

The thrill of watching a Formula 1 car tackle Eau Rouge is still one of the greatest sights in racing, particularly when it's (near) home hero Max Verstappen at the wheel

THE DOORS OF PERCEPTION ▲

Romain Grosjean has picked up a bit of bad press over the past couple of seasons for his seemingly constant moaning over the team radio. But he's a nice guy really...





◀ SUNDAY MORNING LAKESIDE DRIVE

The spectacular view of Australia's Albert Park on race day from a circulating helicopter. A fixture since 1996, it's one of the sport's favourite venues

AT THE CENTRE OF THE ATTENTION ▶

When Hamilton raced in Austin he ensured his family and friends were in tow, and post-race he celebrated with the family of his former partner Nicole Scherzinger

APRIL IS THE CRUELLEST MONTH... ▶

...if you happen to be in the hinterlands of the Sakhir International Circuit after your Ferrari has failed. This was Kimi Räikkönen trudging back through the sand



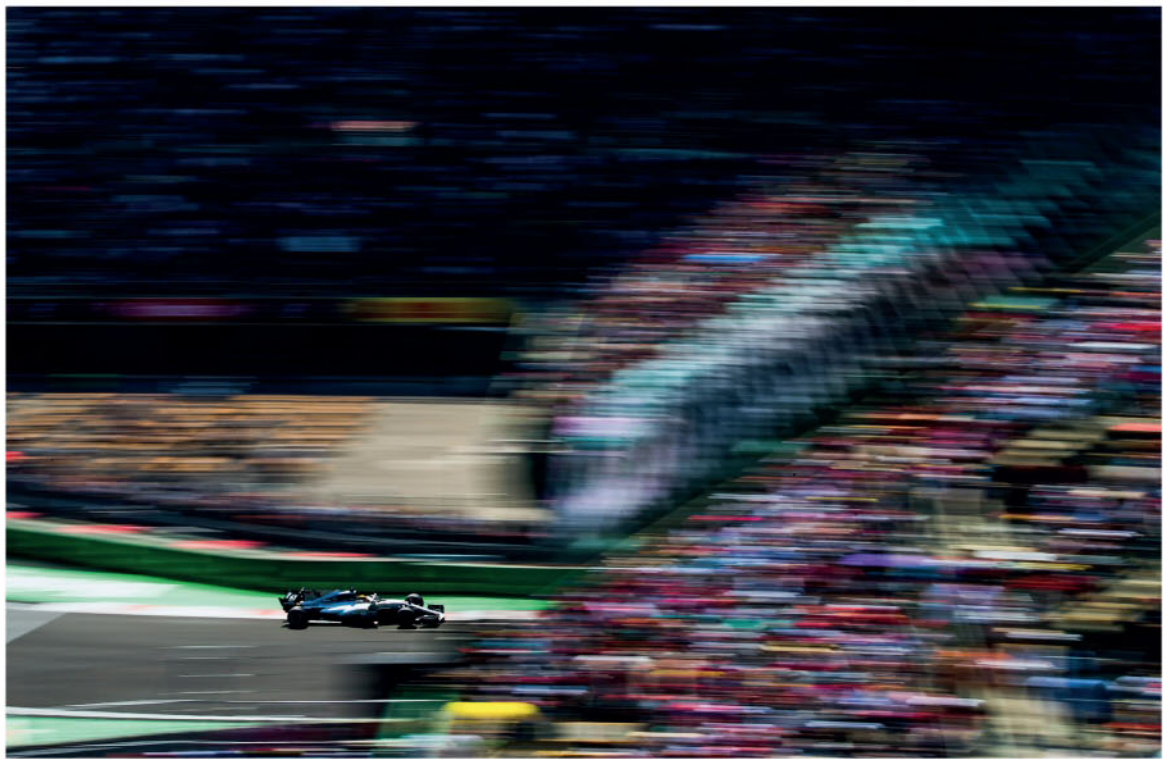
PICTURES OF THE YEAR 2017



Zak Mauger

As a proud resident of the Bailiwick of Guernsey, Mauger

has to factor in an additional flight when he returns from a grand prix. Like his colleague Sam Bloxham, Zak has been covering the Formula E series as well as F1 in 2017



FOLLOW THE YELLOW BRICK WALL ▶

Rounding the final corner of the Hungaroring, if you follow the line of the pitwall you can see the track steeply descends into Turn 1



▲ CAN YOU SEE THE MEXICAN WAVE?

The spectacular stadium section at the end of the Mexican GP lap is brilliant for spectators, despite robbing us of the ultra-quick Peralta turn

▶ THE SUN SETS ON ANOTHER SEASON

It's the Wednesday after the Abu Dhabi GP and the final laps of 2017. Here Robert Kubica tests the Williams in a bid to convince the team he's ready for a comeback





TIME FOR A BUBBLY SHOWER

▲ On the weekend of his 20th birthday celebrations, Verstappen gets a soaking from his Red Bull team-mate Ricciardo after he wins the Malaysian GP

A DEFLATING END TO THE RACE

▼ After contact with Felipe Massa at the tight first chicane at Monza, Verstappen suffers a puncture and flies across the gravel trap. He recovers to finish tenth



THE LONG INTERVIEW

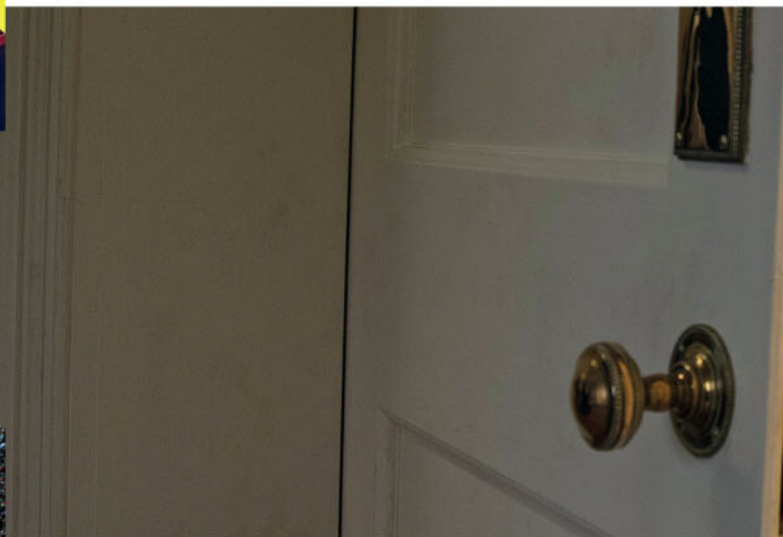
Super-successful but secretive Adrian Newey, the engineering guru once described by Ron Dennis as "the most competitive person I've ever met", rarely gives interviews. Here he opens up about why he thinks of himself as "a bit of a dinosaur", why he's never worked for Ferrari, and what he really thinks about the death of Ayrton Senna

THIS IS ADRIAN
NEWHEY

INTERVIEW MAURICE HAMILTON
PORTRAITS THOMAS BUTLER



THE LONG INTERVIEW



finding that first job and then moving from team to team and going to the States with March. It's about establishing the bond between engineer and driver, which could be a very close relationship if it worked well; more so than today.

And then, from Indycars, trying to break into Formula 1 and find my way to a top team, trying to design the best cars I could. That brings in relationships with drivers and team principals while also dealing with the challenge of managing home life and work; trying to not make motor racing all-consuming as well as not letting the spirit of competition make you too hard-edged – which it easily can do. It's about finding all those balances while, at the same time, explaining and reminiscing on how everything unfolded.

F1R: How about avoiding the trap of making all of that too technical for a wider audience?

AN: I've tried to explain it in a way that I hope non-engineers will understand. If I had to sum up the book, I would say it's trying to give an insight into the daily life and approach of an engineer in Formula 1.

F1R: I'm sure this reminded you how much things have changed. What struck you most?

AN: It's funny how, when you're in the sport, you don't notice change. When I started at Fittipaldi, my first team, I was hired as a junior aerodynamicist – which also turned out to be a senior aerodynamicist! We were five engineers in a team of about 45 people. And that was it. Today, at Red Bull, we have more than 250 engineers and over 800 people in total. That's the biggest single change.

F1R: Yet, through all of that, is it fair to say you've remained very much hands-on?

AN: Yes, I've tried to. I still spend at least 50 per cent or more of my day on my own, working in my office, often at the drawing board, trying to make the car faster through

Adrian Newey OBE: the only F1 designer responsible for championship-winning cars with three different teams; Williams, McLaren and Red Bull. Sought after by Ferrari. And now the author of *How to Build a Car*.

That's a racing car, of course. Given the secretive nature of the business, not to mention Newey's low profile, it's worth finding out just how much this essentially private man wants to reveal. On

the basis of previous enlightening and honest chats, I can only assume it will make illuminating reading. As Damon Hill (1996 world champion, courtesy of Newey's creation) says on the book's cover: 'Adrian has a unique gift for understanding drivers and racing cars. He is ultra-competitive but never forgets to have fun. An immensely likeable man.' We meet in the lounge of his Berkshire home to discover if that translates into a book.

F1 Racing: So, now you're an author – just to add to your other achievements. What's the book all about?

Adrian Newey: It's very much an autobiography from childhood, through my experiences in motor racing, but also including some of my home life. It's about the challenge of



understanding. The rest of the time I spend with my colleagues in meetings, or individually with them, going through the various targets we're trying to achieve.

A lot of technical directors are actually technical managers because the teams are so big. So, increasingly, that's making me a bit of a dinosaur. Obviously, if you're in a team of five engineers you can hopefully make a reasonable input, whereas if you're one of 250 engineers, it's a different challenge.

F1R: Did you find writing the book cathartic?

AN: Yes indeed, because I'm not a person who really bothers too much about looking in the past. I thought I'd forgotten most of it. But when you start it all comes flooding back. It was surprisingly enjoyable to relive it although some bits, particularly Imola '94, were hard to go through. Overall, it made me realise I've been very lucky. Particularly when I started and the teams were small. I think it would've been fascinating to be an engineer in the '70s, at the start of, say, the Gordon Murray period.

F1R: Why? Because aero was in its infancy?

AN: Because it was the opposite problem to what we have now. You had very small teams, very limited budgets and a lack of research. They didn't have a particularly good understanding of what they were designing, but, at the same time, they had this incredibly open regulation book, which is why you saw this explosion of different-shaped cars.

Since then, the cars have converged as a result of two things; firstly the rulebooks have become more restrictive, and, secondly, it's probably fair to say that ultimately for a set of regulations there will be close to a single solution. If you painted all the cars white in the last few years – marginally less in 2017 – you'd have to be a real expert to know which was which. But that was not the case 30 or 40 years ago.

Before moving to Williams, Newey worked for small teams including Fittipaldi, and between 1988-90, at Leyton House March



F1R: How about from a race engineering standpoint? When you were starting off, if a driver said he had understeer, you would run through springs, wings and so on. What happens now? Is the engineer plugged into a bank of computers with solutions that the engineer wouldn't necessarily reach? Or do the old fundamentals still apply?

AN: They still apply. The difference is, if the driver says the car is understeering, now you've got two inputs. You've got what the driver says and you've got what the data says. You then try to marry those together. It's a different art. When there were no data engineers, it was purely that driver/engineer relationship you're referring to. Now you've got this overload of sensory information telling you what the car's doing. But, ultimately, it does that because of the driver inputs.

I find that fascinating as well because you can actually get an even better understanding of the car than back in the '80s. But if you simply rely on the data recorders and ignore what the driver is saying, the data won't give you as full a picture.

F1R: You learned a lot at Williams. How important was it having Patrick Head letting you get on with it, but always being there for you? If there was a similar situation with a young engineer/designer coming into Red Bull, would you be there in the background?

AN: Over the last few years I've tried to step back and let the very talented young guys get on, and let them come up with ideas to take the car forward, while being there to oversee it and tap them on the shoulder metaphorically if something appears to be going off in the wrong direction.

F1R: You mentioned '94 and Ayrton Senna. I presume, in the context of your book, that must be the lowest point in your career, particularly Imola? How much detail have you gone into?

AN: A reasonable amount. Although I'd been in motor racing for 14 years by then, it was the ▶



first time I'd ever been at a racing circuit when somebody lost their life. On Saturday, it was Roland [Ratzenberger] and then Ayrton on Sunday. When something like that happens, you are a fool if you don't ask yourself a lot of questions. I'd never really thought about how I would feel, and the purpose of my job, should somebody lose their life in a car the design of which I'd been responsible for.

So, yes, it was obviously a hugely difficult period. You have to make a digital choice: you either say right, I am going to carry on in motor racing, carry on being responsible for the design of cars, knowing that this could happen again but doing everything I can to try to make sure that we field the safest car possible. Or you say I'm not sure I'm really up for this, and go and do something different.

FIR: Do you come to a conclusion in the book about what you think might have caused Ayrton to leave the road at Tamburello?

AN: I think the honest truth is we'll never know. All I can say is that engineering logic does not fit with it being a steering column failure. The way in which the car left the road, and what happened with some of the pressure sensors as the car crossed the apron from Tarmac to the concrete on the outside before it hit the wall, are just not consistent with a failed steering column at that point. What caused it to leave the road is much more difficult to say with any certainty. My personal opinion is the most likely thing is a slow puncture and deflating tyre, probably the right rear. But, as I say, we'll never know.

FIR: You must have thought about Imola '94 in all the recent discussion about the halo?

AN: The halo is emotive, mainly because it is such an ugly contraption. But I don't go along with the philosophy that there should be an element of danger to driving racing cars. Anything that can be done to make the cars safer is a good thing. So I am not against the halo. I do find it frustrating that we haven't collectively managed to come up with a more elegant solution. That's the bit that bugs me.

The good thing about the halo is, unlike some of the other things that have been proposed, it is affordable enough that it can go down through the lower formulae – which is one thing I do feel strongly about because an F1's driver life must not be considered more valuable than, say, a Formula 4 driver's.

FIR: Going back to '94, do you touch on Benetton and what you think may or may not have been going on with Michael Schumacher's car?

AN: I do, and I think one of the reasons I feel emotional about that is because of the very last conversation I had with Ayrton.

I was getting my notes together and, about two minutes before the cars were due to leave the garage to go to the grid, Ayrton came running in, peeled his overalls down and we had a quick chat. He reiterated the fact that he felt

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IMOLA WAS THE FIRST TIME I'D EVER BEEN AT A CIRCUIT WHEN SOMEBODY LOST THEIR LIFE. YOU HAVE TO MAKE A CHOICE, DO YOU CARRY ON BEING RESPONSIBLE FOR THE DESIGN OF RACING CARS?

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Having worked for Frank Williams (below, right), Newey moved to McLaren in 1997 and took the team to championship success

he was going into a race against an illegal car.

At the previous race in Japan, he had been eliminated at the first corner and spent some time watching Michael's Benetton, convinced that it had traction control [which had

been banned for 1994]. Much has been written about Ayrton's mindset going into Imola. For me, the most important thing was he was absolutely determined to win that race because he felt he was racing against a car that was illegal. That's obviously quite an emotional place to be. [Allegations as to the legality of the 1994 Benetton B194 have been denied by contemporary team members and never proven. Benetton finished second in the '94 constructors' championship, while Schumacher won the drivers' title.]

FIR: Indeed. You moved to McLaren long after Ayrton had been there.

How different did McLaren feel compared with Williams?

AN: Very different. Probably couldn't have chosen two more opposite teams although, to be fair, before the move to the new factory, McLaren still felt like a race team. It was on an industrial estate and felt a sensible, warmish factory. Even though all the walls were grey, there'd still be the odd calendar on the wall and radios playing here and there.

We were lucky enough to instantly go well and win the championship in 1998. I was kind of the golden boy with Ron [Dennis], so everything was good to start with. But by hiring Martin Whitmarsh and then Jonathan Neale, both ex-British Aerospace, Ron brought in this different approach to the management of the company; not one I particularly liked or that worked for me.

It felt to me like he was trying to bring in a non-racing, big business culture. Perhaps as teams get bigger, there's an argument for that, but at the time, I think we had around 300 people. It felt to me everything was process and planning with overly complicated organisational charts. In my experience, you stifle creativity when you put process first, and an F1 team should be putting creativity first and then learning how to handle that creativity.

FIR: And was Red Bull a racing team approach from the start?

AN: Very much so. We tried to keep it as a racing culture, encourage good communication, make it feel smaller than it was rather than appearing to make it feel bigger and clumsier than it was.

FIR: Going back to McLaren, you mentioned the walls being grey but in your office they were blue: is that correct?

AN: That's right, yes. I'd been there for two or three weeks, working in what had been John





Barnard's office, which had dark brown carpets, floor-to-ceiling mahogany panelling, black window frames and a black chair and a mahogany desk. When I was working until one in the morning, I almost felt like slitting my wrists. For me it was just a very depressing office to work in. I was due to go to Hungary for the race. Just before we left, I gave some colour charts to the factory manager and said: "Can you paint the walls a duck-egg blue? Then put in a light-tan carpet and a lighter colour chair. Just brighten it up a bit." They did a nice job over the weekend.

When I came back in on Monday morning, it immediately struck me that because everything else in the factory was grey, including the engineering office just outside my door, it was almost like sitting in this colourful office and watching a black-and-white movie through the door.

Ron came in that evening to see how I was getting on. He stood at the doorway and started gulping like a goldfish, his mouth opening and closing. After about a minute, he went deep purple, still not saying a word, just gulping. Eventually, he spun on his heels and walked off. That was that.

F1R: Overall, though, you had happy days working there with Mika Häkkinen and David Coulthard?

AN: I did a lot of the race engineering for Mika and thoroughly enjoyed it. Mika was an interesting character because he didn't say very much. Early on, when he tried to describe what the car was doing, it was easy to get confused. But I managed to develop a relationship with him where he started to understand what he felt the car was doing and what he wanted out of it. Then, with Mark Slade (Häkkinen's engineer), we'd transfer that into setup changes. It was a very rewarding time.

F1R: During this period, there were discussions with Jaguar Racing, for you to join their Formula 1 team. How far along the line did those conversations go?

AN: It came very close. As I say, I was happy at McLaren but Ron was playing hardball on my contract, which had been four years initially and was up for renewal. Despite the fact that we'd won two drivers' championships and a constructors' title, he wanted to offer me less money than I'd been earning over the previous four years. Not that I consider salary as the most important factor in deciding where I work, but it just seemed a kick in the teeth.

So when Bobby [Rahal] – who I'd worked with in Indycars and, by then, had become the team principal at Jaguar – approached me, we started to talk. In the end, Ron and his wife Lisa did a super job; as a double act in full tilt, they were very persuasive. But I often wonder how different life might have been had I gone to Jaguar – or Ferrari.

F1R: Ferrari? How close did that get?

AN: In '96 I had a choice: stay at Williams, go to McLaren or go to Ferrari. And that was a very difficult call. Then, in the first year of the hybrid engines in 2014, Renault was patently behind Mercedes in particular. That happens. But the problem was that there didn't seem to be any real drive and ▶



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FERRARI WERE OFFERING ME THE CROWN JEWELS; IT WAS A DIFFICULT DECISION BUT I DIDN'T WANT TO LEAVE RED BULL. TO WALK OUT WOULD BE UNFAITHFUL

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determination by Renault to invest the research and the money into turning that around. It was: 'this is the way it is, so stop moaning', which is quite a depressing thing to hear, from a chassis designer's point of view.

Once again, I had three choices: stay where I was, go to Mercedes, or go to Ferrari. Mercedes didn't feel right because they were the dominant team with the best engine. Ross [Brawn] was in the process of leaving and I felt I'd be trophy hunting; I've always gone to teams where I feel I can contribute and pull them up, rather than simply having the challenge of keeping them there.

At Ferrari, Luca di Montezemolo was offering me the crown jewels; it was a very difficult decision. I actually didn't want to leave Red Bull. I felt if I did so, it would be because Renault were pushing me into leaving. I've been with Red Bull almost from the start. Christian [Horner] and I have moulded it in such a way that, to an extent, I feel it's our team. To walk out would feel like being a bit unfaithful.

F1R: On the subject of Red Bull, could you reflect on Sebastian Vettel and Mark Webber's relationship and their clash in Turkey in 2010? How did you cope with that?

AN: I think it's a great shame the way 2010 and subsequent events unfolded because both Mark and Sebastian brought a lot to the team in different areas, but particularly engineering. Mark was very sensitive to the aero. Sebastian was very sensitive to tyres, engine mapping and to the low speed balance of the car. As a pair, they complemented each other from an engineering standpoint.

I had a lot of time for both of them. Sebastian was very young; still quite aggressive. Mark was more experienced but



A highlight of Newey's time at McLaren was helping to engineer Mika Häkkinen (above, left) to two world championships

perhaps ultimately didn't always have the raw pace that Sebastian could demonstrate. It could have so easily played out as a sort of the young Prost versus the older Lauda-type battle [at McLaren in 1984-85] and it's a shame it didn't.

Mark, through the lean years of '07 and '08, had been a real stalwart for the team and in many ways it would have been great if he could have won the 2010 championship. But his intense rivalry with Sebastian was unfortunately his undoing, particularly at that wet race when he spun off in Korea.

I think he was so desperate to show the team that he was as quick as Sebastian, he overcooked it and lost the championship in the process.

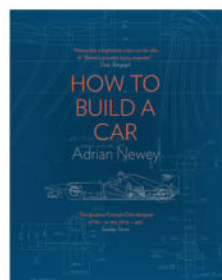
F1R: And today you've got young Max Verstappen. It must be very exciting to see talent like that coming through. And you've got Daniel Ricciardo too, who is top-quality. How good does that feel?

AN: Yes, it's the same situation revisited but, if you look at the points on the doors, that's what counts. Daniel is handling the situation brilliantly; his mental attitude is so impressive. Give it another two years, of course, and Max will smooth out his raw edges and his innate speed will shine through.

F1R: And that will be another chapter for the next edition of your book. I look forward to reading this one.

Thanks for your time.

AN: Not at all. Hope you enjoy it... 



How to Build a Car: The Autobiography of the World's Greatest Formula 1 Designer by Adrian Newey, published by HarperCollins is out now. See www.harpercollins.co.uk



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RECRUITMENT DRIVEN BY PASSION

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RED

IN

Ferrari become F1's most fiercely competitive team, winning four from five constructors' titles. But it almost costs the life of their star driver...



THE SIX ERAS
OF FERRARI
CHAPTER 3
1974-1980

TOOTH

AND

CLAW





Marlboro

GOODYEAR



HEUER

12

GOODYEAR





HISTORY TENDS TO PAINT HIM AS THE WILY PRAGMATIST WHO CALCULATED HIS WAY TO A PAIR OF FERRARI WORLD TITLES IN THE MID 1970s – A KIND OF PROTOTYPE MICHAEL SCHUMACHER.

Those labels alone do Niki Lauda a monumental disservice, however. Clinical? Oh yes, certainly. But also searingly *fast* – a match for anyone at his mid-decade zenith, and almost certainly on a curve that was still rising... until the Nürburgring 1976.

The blazing crash, head-melting scars and awe-inspiring recovery are the stuff of Lauda's legend, though his contribution to Ferrari's myth-making in the team's fourth decade was already of epic proportions, even before that fateful meeting with the barriers at Bergwerk.

Like all the Formula 1 greats before him – Fangio, Moss, Clark and Stewart – Lauda reset the bar: he was fitter, more dedicated, more professional and, as 18 impressive pole positions in 29 races across '74-'75 indicate, consequently the best of his time. That's the speed he had, right there. Without the horror at the 'Ring, it's unlikely he'd have needed to wait until 1984 to be proclaimed a three-time champion.

Of course, Niki didn't do it all alone. Like Schumacher two decades later, he was part of an axis of power within which his strengths could shine. Watching his back was the smooth-talking lawyer and beside him the bespectacled genius forging racing gold. Without them, Lauda's legend might have remained latent.

Luca Cordero di Montezemolo was Gianni Agnelli's man, parachuted in by Fiat's patriarch in the midst of all-too-characteristic Ferrari turmoil during 1973. That season, the Scuderia hit perhaps their lowest ebb, missing races mid-

season and dropping to the status of a one-car team. Just 12 points were dredged to leave the reds joint sixth in the constructors' standings.

But Montezemolo was pedalling fast – and somehow without any notion of undermining the Old Man. Mauro Forghieri's Peter Sellers-style specs were back in the F1 pitlane by August, the mercurial designer coming back in from the cold (again) following exile to the 'experimental department'. Then for '74, Ferrari hired Lauda.

His stock was of similarly aristocratic pedigree to Montezemolo's, but in defiance of his grandfather, Lauda raised sponsorship to gain access to the F1 fold, becoming with hindsight the sport's most celebrated 'pay driver'. But his talent, first at March and then BRM, quickly elevated him beyond such dismissive tags.

Moustachioed Ferrari team leader Gianclaudio 'Clay' Regazzoni knew what Lauda was made from and was man enough to point it out to Enzo. The Swiss, through solid reliability, would lead an unlikely title revival in '74, losing out only in the final round to Emerson Fittipaldi's McLaren. As for the future, as far as Ferrari were concerned, that was in the hands of Clay's forthright team-mate.

Lauda had labelled the '73 B3 a pile of "shit" on his first test at Fiorano, then immediately set to work, in harness with Forghieri, to dial out the trouble. By the new season, the B3's heavy revisions included an *en vogue* periscope air intake, improved weight distribution, pannier-mounted radiators and improved aerodynamics.

THE POWER TRIO WHO BUILT FERRARI'S LATE-1970s SUPER TEAM

Luca di Montezemolo (right) was appointed by Fiat in 1973 to reverse Ferrari's slump. Reclaiming engineer Mauro Forghieri (centre) from disfavoured and hiring Niki Lauda (left) kick-started the Ferrari renaissance.



From an embarrassing also-ran, the B3 was transformed into the fastest thing on the grid. Niki's nine poles would confirm that status, but a return of only two wins offers clues to his stalled title challenge. No matter, '75 would be their year – and in some style thanks to another dash of career-defining Forghieri genius.

Upon arriving at Maranello, Lauda had wondered why Ferrari didn't win every year, such were their resources and facilities. Like John Surtees before him, he'd learn the hard way that Italian machination could (and often would) undermine the best-laid plans – but for now he had Montezemolo to protect him, as Schumacher would have Jean Todt 20 years later.

Luca's first significant call remains, for some, one of his most destructive: he canned Ferrari's sportscar programme at a single slash. Once the dominant force at Le Mans, Ferrari have still yet to return to the 24 Hours as a true factory force. Montezemolo, though, had circled the problem that had frustrated Surtees a full decade earlier: Le Mans was a distraction to the F1 effort. Luca knew what had to be done – and the subsequent success of 'Total F1' would offer all the justification he'd ever need.

Montezemolo's other giant contribution, and in part a consequence of the sportscar cull, was how he carved Forghieri the space and freedom to do what he did best. The result was the 312T of '75 and the beginning of Ferrari's greatest series of F1 cars – at least until Rory Byrne began to weave his magic for Schumacher. ▶

“UPON ARRIVING AT MARANELLO, LAUDA HAD WONDERED WHY FERRARI DIDN'T WIN EVERY YEAR, SUCH WERE THEIR RESOURCES. LIKE JOHN SURTEES BEFORE HIM, HE'D LEARN THE HARD WAY...”





A SWIFT DESCENT INTO THE TOXIC BEHAVIOURS OF THE PAST

Di Montezemolo's promotion away from Ferrari left Lauda without the support he needed as he recovered from his accident in 1976; feeling undervalued by Ferrari, he won the world title in '77 then walked out.



'T' equals *Trasversale* – and represents the key feature of a car that would dominate '75, and in subsequent evolutions deliver a hat-trick of constructors' titles. Obsessed with the quest to conquer the polar-moment-of-inertia physics that defined this pre-ground-effects era, Forghieri was convinced that a gearbox mounted transversally would unlock new levels of performance in alliance with his masterpiece flat-12 that remained the benchmark, to the tune of at least 20hp over rival Cosworth V8 DFVs.

Memories of painful experiments at March left Lauda unconvinced, but he trusted Forghieri, and as usual, his instincts proved sound. This would be one of the great F1 cars.

Lauda's season started quietly with a fifth and sixth in the South American opening rounds in the old B3. The new car took its bow in South Africa, but only after Niki crashed it in practice. A lacklustre fifth in Kyalami brought howls from the Italian media, Forghieri stood firm.

The first win, at the non-championship Silverstone International Trophy, was a narrow one over Emerson Fittipaldi's McLaren. But the 312T was just beginning to get into its stride.

Next up, Niki would claim pole for the final (and tragic) Spanish GP at Montjuïc Park, a race forever recalled for the crash involving Rolf Stommelen's Hill which killed five spectators. Safety (or rather the lack of it) at Barcelona's swooping park track dominated the whole weekend and Lauda was haunted by the memory.

His girlfriend Mariella Reininghaus angrily accused him and his fellow drivers of hypocrisy for taking the start at all, after team members felt compelled to tighten bolts on barriers, such were the lamentable levels of circuit preparation.

Consecutive victories in Monaco, Belgium and Sweden ensured Lauda had one hand on his first title by the summer, despite a subsequent fallow patch. He'd secure the title with a safe third at Monza, to the delight of all Italy, before winning the final round at Watkins Glen to finish a healthy (for those days) 19.5 points clear of best-of-the-rest Fittipaldi.

By future Schumacher standards, this had been a far from perfect campaign. But in the perspective of this super-competitive era, Lauda and Ferrari looked formidable. Who – or more pointedly what – could possibly beat them in '76?

James Hunt had already defeated his friend at Zandvoort in '75, proving the true substance beneath the good-time frivolities at privateer Hesketh Racing. Now he found himself thrust into a top-line McLaren drive thanks to Fittipaldi's puzzling decision to leave. Hunt was clearly better than he'd been given credit for – but could he really lead McLaren in a title battle against the might of Lauda and Ferrari?

The answer to that question is too well known to require a detailed recount here. Hunt stepped up gloriously in a manner that would capture attention around the world. In the year punk shook the cultural establishment, a dishevelled

“SURE, VILLENEUVE WAS FASTER OVER ONE LAP AND WON RACES EARLY IN 1979, BUT SCHECKTER’S CONSISTENT APPROACH EVENTUALLY DELIVERED THE TITLE HIS CAREER DESERVED”

FERRARI’S NEW FAVOURITE PLAYS DUTIFUL NUMBER TWO

Enzo Ferrari snatched Gilles Villeneuve (right) from McLaren’s table and loved the spectacular racer like a son, but in 1979 it was elder statesman Jody Scheckter who secured Ferrari’s last title for two decades.



public schoolboy took F1 beyond its narrow band of fans to a global sporting audience ravenous for the next chapter of a riveting rivalry: 1976 was Year Zero in more ways than one.

Without the horror of the Nürburgring, would Hunt have been able to claw back the deficit to Lauda and beat him to the title? It’s an irrelevant and pointless question. More pertinently, the events of the long, hot summer of ’76 proved to Lauda once and for all that there’s more to life than world titles. The bravery of his racing return, and perhaps more significantly his decision to stop and walk away from the deluge at Fuji, capture the true spirit of this incredible man more than any career stat ever will.

From a Ferrari perspective, the most significant factor in this famous episode of their history was an absence; the man who was no longer there. His task seemingly achieved, by ’76 Montezemolo had been promoted away into the upper hierarchy of Fiat. Lauda surely missed his influence, but more significantly Ferrari returned to bad old habits. The callous response to Lauda’s trials – the handling of Carlos Reutemann’s hiring just as Niki was coming back at Monza, and the lack of support for his brave stand at Fuji – cost Enzo his champion. Sure, Niki stayed on and even secured a second title in ’77 – but once he’d done so, he couldn’t wait to exact his revenge and walk away.

Once he was gone, Ferrari – as usual – wasted little time moving on. Especially when they had

someone fresh on their books, a brilliant French-Canadian who would blaze a wondrous trail for an all-too-brief handful of seasons.

For many, Gilles Villeneuve remains the Ferrari grand prix driver archetype: free-spirited, utterly committed, squeezing every last drop from life – and devastatingly fast. Enzo saw something of his pre-war hero Tazio Nuvolari in Gilles, and loved him like a son.

This purist racer burst into F1 at the wheel of a McLaren at the ’77 British GP, having impressed Hunt during a sojourn to a Canadian Formula Atlantic race. But to eternal bemusement, McLaren boss Teddy Mayer let Villeneuve walk – straight into the arms of his arch rivals.

When Lauda quit immediately after securing his title, Villeneuve was catapulted straight into a Ferrari race seat. The hard-trying mistakes, the flailing rear wheels sparking off asphalt are all well documented. But the sensitivities, how he became adept at nursing tyres and how fellow racers just loved to go wheel-to-wheel with a man they knew they could trust... these are qualities less commonly celebrated.

When Jody Scheckter joined him for ’79 there might have been reason to expect more sparks. Once a ‘wildman’ himself, Scheckter was now an elder statesman with a strong survival instinct, looking for a title that would allow him to quit on his own terms. In the 312 T4 on Michelin radials, against ground-effect Ligiers and Williams yet to be fully tamed, still-grenading Renault turbos

and ’78 champions Lotus trying to back out of one of Colin Chapman’s occasional technical cul-de-sacs... he had his chance.

Sure, Villeneuve was faster over one lap and won races early in the season, but Scheckter’s consistent approach eventually delivered the title his career deserved. And perhaps against expectation, the pair became firm friends. After his fair share of run-ins with the establishment, perhaps it’s no surprise that Jody loved Gilles’ racing spirit and full-blooded approach. At Monza, Villeneuve respectfully played the team game. A man of high morals, he obediently followed his team-mate across the line for Scheckter to secure victory and the title. His own chance would come, reasoned Gilles.

Not in 1980 it wouldn’t. The old boom-and-slump habit bit hard as Forghieri persevered with his cherished flat-12 a year too long, the T5 proving slow and even unreliable against the now mature ground-effect opposition. At season’s end, Scheckter stepped from the cockpit, purposefully walked down the nose of his car... and kept going into the sunset.

Scheckter’s title had capped a fruitful decade for the Scuderia; at the birth of the 1980s no one would have imagined the tree would be barren for the next 21 years. 🍷

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FINISHING STRAIGHT



Lewis Hamilton thinks Magny-Cours would be a better venue than Paul Ricard, but not everyone agrees...

Never say Nevers again?

It was interesting to read Lewis Hamilton's comments about how he would prefer the returning French GP to be at Magny-Cours rather than Paul Ricard.

I'm not disputing that Ricard is not the most exciting of circuits, especially with that awful blue and red colour scheme that covers the acres of asphalt on the outside (and inside) of almost every corner.

However, let's not get too misty-eyed about Magny-Cours. When it first hosted the French GP back in 1991 it was universally panned, and I seem to remember one motorsport title almost advocating a boycott of the Nevers circuit when the decision was announced by shouting 'Don't go to Magny-Cours!' Yes, the 2003 revamp helped a little

and encouraged a host of different strategies due to the shorter pitlane, yet you could never describe the circuit as a classic F1 venue.

But, and this is the rub, wherever the French GP is held for the next few years it's just great to have it back on the calendar. For a country with such a rich motorsport history it was almost criminal that France didn't host an F1 race, and I'm sure there will be a plethora of home fans who – in the short term – won't care where it is. It's not that long ago that the British GP was destined for Donington Park, and British fans would have preferred it there to no race at all.

So, Lewis, you'll have to put up with Ricard for the time being...

Richard Hopkins

By email

Putting F1 to the test

Most people will agree that F1 needs to control costs while maintaining its appeal as the premier tier of motorsport. However, it struggles with a few fundamental problems:

- There are 20 [now 21] weekends of activity throughout the year and little else.
- Overtaking is difficult with the current car design.
- The drive for improved reliability spoils the competition through penalties.

Surely the answer must lie in relaxing the rules on testing. Why not give the teams the option of choosing between more windtunnel time or more on-track testing?

This would provide the fans with more opportunities to see cars in action and allow us to see

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if cars developed entirely with computers can outperform cars and engines which are developed in the environment in which they will perform. If this approach is adopted then perhaps three race engines per year would be achievable and real savings could be made.

It would be fascinating to see which approaches the teams took.

Alastair Gilchrist

Ponteland, UK

Things to come

So, with the new cars not due to appear until towards the end of February, it is Fernando Alonso's name that is again front and centre as he competes in the Daytona 24 Hours later this month.

Alonso has admitted that he is "out of his comfort zone" at Daytona, but since his aim is to compete at Le Mans in the future it will at least allow him to race at night before then. And I'm most looking forward to seeing how the next McLaren star, Lando Norris, gets on when they line up as teammates for the Daytona race. The shape of things to come?

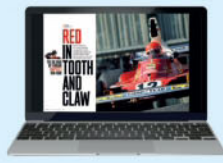
Euan Mathewson

By email

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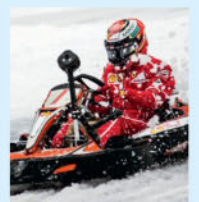
HELLO HALO

Formula 1's new look for 2018



INSIDE A GP

How the FIA run a race weekend



KIMI ON ICE

Räikkönen, a kart and the Swiss Alps

ON SALE

FEB 15

- > Now *that* was a car: Alonso's title-winning Renault R25
- > Behind the scenes at Honda's Thanks Day
- > We catch up with Renault's Nico Hülkenberg in London
- > Part four of our series on the history of Ferrari



60

FIGURE

The 2017 season in all its statistical glory



THIRTEEN overtakes by **Daniel Ricciardo** at the British GP, the record for a single race last season

38,788

tyres supplied by Pirelli for race weekends and tests during 2017

3,909



race miles driven on supersoft tyres by **Sergio Pérez**, the greatest distance reached on any compound in 2017

55

DEGREES CELSIUS

The highest track temperature during a race, recorded at the Hungarian GP

112 DRIVERS

have piloted a Pirelli-shod F1 car in races or tests since the Italian company returned to the sport as sole supplier in 2011

533

pitstops during 2017, including six drive-throughs and one stop-and-go

11



consecutive seasons in which **Lewis Hamilton** has won at least a single GP

36

places made up on opening laps during 2017 by **Lance Stroll**



400

pizzas cooked by Pirelli's chef at their F1 hospitality unit during 2017

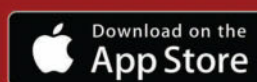
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THE HUNGARIAN GRAND PRIX

Hungaroring, Budapest; 27-29 July 2018



The view of the final turn in Hungary

LAT IMAGES; ANDY HONE; OTHER PHOTOS: SHUTTERSTOCK.

WHY VISIT?

When the cities of Pest, Buda and Obuda united in 1873, the modern metropolis of Budapest was born. Now home to over 1.7 million people, and a famed European tourist beauty spot, the city is a product of its turbulent history with Roman, Turkish and Soviet influences in every district.

The first grand prix to be held inside the Iron Curtain was in 1986, soon after the Hungaroring was built. In the intervening three decades the race has become well established on the F1 calendar and is traditionally the last race before the teams down tools for the summer break.

Drivers are always tested at the Hungaroring as there is little chance to relax; one corner quickly leads into another and it feels much like an over-sized kart circuit. That might be why Lewis Hamilton has always performed so strongly at this track, having won nearly half of the races he's driven here.

The Hungarian GP has also been lucky for British fans choosing to visit the race. Nigel Mansell secured his one and only championship with victory at the Hungaroring in 1992, while Jenson Button famously scored his first win in a wet-dry thriller here in 2006.

WHAT TO SEE

Thermal baths and spas

First the Romans, then the Turks and latterly the early 20th century glitterati have used Budapest's various hot water springs to relax and rejuvenate. You'll be spoilt for choice with several spas located in the narrow strip of land between Gellért Hill and the River Danube, located in the oldest area of the city, Buda.

The most famous bathhouse and spa of them all is the Gellért Baths and Hotel. Opened back in 1918, it is home to two effervescent baths, three outdoor pools and eight thermal baths, all with varying temperatures and mineral properties.



Parliament Building



The Citadel



Thermal Baths and Spas



Fisherman's Bastion

FAST FACTS

Currency £1 = HUF350 Hungarian Forint

Timezone GMT +1

Plug type Type C & F

Weather 27 d C / sunny

Flight time London to Budapest 2hrs 25mins
(Manchester 2hrs 50mins)

Parliament Building

A truly magnificent sight, the Hungarian Parliament is the tallest building in Budapest and the largest in Hungary. Tours are available but due to its incredible intricacy and detail it is in a perpetual state of renovation and repair.

Fisherman's Bastion

Situated in front of the Matthias Church, the Fisherman's Bastion is a panoramic viewing terrace. The seven towers, which constitute the bastion, symbolise the seven Magyar tribes which first settled in the area around the Danube now known as Budapest.

Miniversum

This museum, with models of various Hungarian towns, is a light-hearted stop on the tourist trail. Keep your eyes peeled for hidden spaceships and the T-Rex, snacking on one of the miniature inhabitants.

The Citadel

Built in 1851, this former fortress towers over the west bank of the Danube and is a symbol of the city's turbulent history, having been controlled by both Austrian and Soviet troops during respective foreign occupations of the city.

When you reach the summit you'll be greeted by the Liberty Statue, an incredible 14-metre-high structure dedicated to Soviet troops who fought to liberate the city in 1945. From the top of the Gellért Hill you will also be treated to views of both the modern Pest side of the city and Buda off to the west in the hills.

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- Representative staff in resort
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- Optional extras: ticket upgrade and Saturday return coach transfers to circuit

WHERE TO STAY

Mercure City Centre

Located on one of Budapest's most famous streets, Váci utca, in the heart of the city, this hotel is a two-minute walk to the River Danube. The Mercure offers air-conditioned rooms, free WiFi and a covered car park.

Danubius Helia

The Helia sits on the banks of the Danube, opposite Margaret Island, and is approximately a fifteen-minute walk from the historical city centre. The air-conditioned rooms are equipped with a bath, satellite TV, WiFi, minibar, wake-up service and telephone. Plus, 164 of the hotel's rooms come with a beautiful view of the Danube.

Regency Suites Hotel

With 43 exclusive suites, this hotel is situated right in the heart of Budapest's historical downtown, on the Pest side, home to the cultural and business areas, and the best nightlife in the city.

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There's a slew of racing games currently on the market with *Project Cars 2* and *F1 2017* leading the way (in our opinion). But recently launched in the legendary GT franchise is *Gran Turismo Sport*. It is much slicker and less 'glitchy' than *Project Cars 2* and is beautiful to look at – it runs in 4K if you have a top-end TV – but in comparison is lacking the range of tracks and circuits.

There is one trump card though, and that is the PS4 compatibility with a Virtual Reality (VR) headset. The downside is that the VR part of the game is limited to just two laps against a solitary AI opponent. Consequently, it's more of a gimmick than an integral part of the game.

However, if you have never used a VR headset before, then it's an experience worth trying. With a complete 360-degree view from inside the cockpit, as a racing sim it's unlike anything we've ever played before. The fact you can look behind your shoulder and see your opponent hunting you down adds a new level of realism. As a gimmick, it's a very good one. Whether VR is the future for racing games, we're more doubtful.



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Boutique British cycle maker Wyndy Milla are developing a close affinity with F1 thanks to their partnership deals with Force India and (before they went under) Manor. No surprise, then, that one piece in their designer

kit range has been inspired by this year's Force India livery.

It's a race-cut jersey, so be honest about your beer-guy-girth before purchasing. But if you're svelte enough to fit – Esteban Ocon models one on page 48 of this month's issue – it's a peach of a top and a great way to proclaim your F1 fandom while grinding out the off-season miles.

All WyndyMilla products, from full bikes to socks, are available at www.wyndymilla.com

RW_01.2 ROAD WARRIOR CARRY-ON SUITCASE (2-WHEEL)

LAT_56

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www.lat56.com

What does every hard-travellin' motorsport industry worker need? Why, their very own Road Warrior, of course. And, thanks to the ambitious Scottish high-end luggage manufacturer LAT_56, they can now own that very thing.

New for 2017 and available in an exclusive 'McLaren' edition, thanks to a kit supply deal with the F1 team, the Road Warrior is a two-wheeled carry-on piece incorporating the 'SPS' suit-packing system.

It's a carefully thought-through item, crafted from high-end materials, and boasts considered touches such as external access to the dreaded 'toiletry bag' that must be unearthed at every security gate. Any little thing that makes the screening process more painless is to be welcomed.

Other pleasing touchpoints include the zero-rattle collapsible handle and near-silent wheels borrowed from the world of longboard skateboarding.



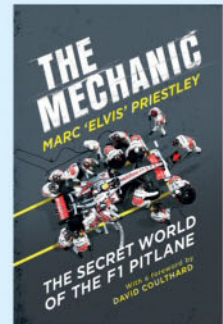


THE MECHANIC: THE SECRET WORLD OF THE F1 PIT LANE

Author Marc Priestley

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develop, utilizing CAD data supplied directly from Ferrari.

Using original manufacturer-specified paints, and manufacturer-approved race decals, these handmade replicas have undergone strict scrutiny by both the design and engineering teams, in order to ensure a completely authentic weight, look and feel.

Each model wheel (1:1 scale) is 330mm in length and has taken 132 hours to build.

Mechanics' tales have long been a rich seam for F1 story-telling and this author should have the material for a great book. Marc Priestley was at McLaren from 2000-09, working first-hand with some of the decade's best drivers during a fascinating era.

In recent years he has worked with the Sky Sports F1 production crew and is regularly on-screen too.

This is definitely the unvarnished perspective from the F1 frontline and it's certainly an earthy read.

GIORGIO PIOLA STRAT-3 BLUE WRIST WATCH

Price £440

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The Strat-3 Blue from Giorgio Piola is a limited-edition chronograph from the collection of the renowned F1 technical illustrator. The watch face is protected by anti-reflective sapphire glass, while the sub dials are a subtle nod to F1 steering wheel design. By adding naturally robust materials like the sandblasted titanium case and durable race-tyre-inspired rubber strap, the Strat-3 Blue also allows the wearer to use stopwatch features.





DANIEL RICCIARDO ME AND MY LID

Red Bull's Aussie star has toned down his design a little as he's got 'older' but the wild honey badger still refuses to go away



LAT IMAGES; GLENN DUNBAR; ANDY HONE; OTHER PICTURES: SUTTON IMAGES; RED BULL



It seems as you get older you go for something more clean. In my first year with Red Bull I ran more orange, but ran a white one in Austin in 2014 and I liked it, so went with white as a base. Then I went white and faded it into an electric blue as it looked cool, clean and summery. I used

to have a design on the top, but now I've got my logo and number and a bit of honeycomb detail.

On the back I've got the honey badger – that's cool, I like that – and a little quote above it. For years I had 'What would he do?', and other phrases like 'My time', 'Whatever it takes' and

'Let's get it'. It's just a little something to get me jacked up as when I put on the helmet it's normally the last thing I see. And finally, at the chin, I've got a subtle Southern Cross to represent Australia. I've always had a flag or something there – like a design – for Australia.

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