

THE FRANK I KNEW... BY MAURICE HAMILTON

FAREWELL TO THE FOUNDING FATHER OF WILLIAMS



McLaren's Lando Norris on becoming a major F1 player





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CONTENTS JANUARY 2022

SECTOR 1

IGNITION Exhilarating, but was Jeddah much too dangerous?

6 **PARADES** The best images from Qatar and Saudi Arabia

F1 INSIDER 16 Mercedes and Red Bull reviews spat; Kingspan sponsor row

F1 ANALYST Is there still hope for Americans to make it to F1?

UNDER 24 THE HOOD What F1 is doing to try and avoid a repeat of the farce at Spa

SECTOR 3

SUBSCRIPTIONS 20% off annual print + digital price

REPORTS From the São Paulo, Qatar and Saudi Arabian GPs

PRODUCTS Reviews of the best F1 gear

Frank Williams: the last of F1's entrepreneurs













SECTOR 2

FRANK WILLIAMS A personal tribute to the founder of Williams and one of the most legendary figures in F1 history

LANDO NORRIS His continued upward progress and why he's primed and ready to move up to the next level

WHAT'S GOING ON AT ALFA? **54** Changes afoot after a failed buyout and disappointing season

IN CONVERSATION With outgoing Alfa Romeo driver Antonio Giovinazzi

GUANYU ZHOU What can be expected of China's first ever Formula 1 driver?

THE LONG INTERVIEW Jost Capito outlines the rebuilding job already underway at Williams

NOW THAT WAS A CAR The Brabham BT7: unreliable but good enough to win

NIGEL ROEBUCK'S HEROES Juan Manuel Fangio, modest but a true giant of Formula 1

MOTORSPORT SHOWCASE 86 The highs and lows of Honda's many efforts in Formula 1

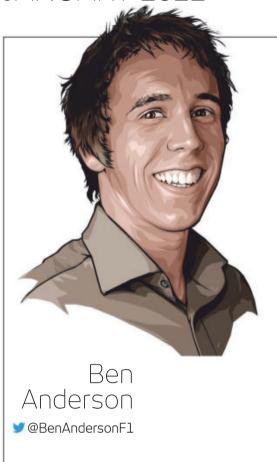
F1 PRO

29 **STRAIGHT TALK** Mark Gallagher looks at why F1 needs climate change resolutions

MEDICAL MATTERS What is it like to be the driver of the car everyone hopes isn't used

IGNITION

JANUARY 2022



Contributors



MARK GALLAGHER

Mark managed to snare a face-to-face chat with Williams team principal and CEO Jost Capito for our long interview this month (p68)



LUKE SMITH

Guanyu Zhou's promotion to a 2022 race seat with Alfa, to become China's first F1 driver, is given the once over by Luke (p64)



ROBERTO CHINCHERO

Roberto investigates Alfa Romeo's recent trials and tribulations of a supposed takeover, new recruits and unhappy drivers (p54)



ALISTER THORPE

Alister shot Williams' Jost Capito this month (p68), but his passion is for gardens, trees and plants. He's also a fully qualified drone pilot....



The 'unnecessary danger' of Jeddah

By the time you read this, F1's most thrilling title race in nearly a decade will have been settled: but at the time of printing, the inaugural Saudi Arabian Grand Prix has only just concluded, so everything is still to play for in Abu Dhabi between Lewis Hamilton and Max Verstappen.

Events in Jeddah were certainly dramatic, and Saudia Arabia's makeshift layout will probably receive plaudits for creating a compelling TV spectacle, but from a sporting perspective it was a difficult race of questionable driving standards on a highly dangerous circuit.

Many would argue F1 needs more of those, because it has become too sanitised, but any grand prix where the championship leader is penalised multiple times for erratic and unsporting behaviour, two red flag periods are required to clear major accidents, and more than half of the 20 drivers are involved in collisions of one sort or another (littering the circuit with debris, creating more danger) is not something to celebrate.

Clearly it was a fantastic thrill for the drivers to lap what was deliberately made to be the fastest street circuit on the calendar – Hamilton's pole lap averaged 40km/h faster than Charles Leclerc's equivalent lap of Baku, and was more than twice as fast as Leclerc's effort in Monaco – but that dubious honour came at a clear cost.

Quite apart from the bigger picture of morality again intersecting with F1's 'cash is king' business

Drivers

model, this track looked tantamount to lapping Suzuka lined with Monaco's walls. The first time I saw a flying lap onboard I thought the layout looked utterly bonkers – like Baku's final sector stitched together three times with corners 10 times more dangerous because of blind sections leading into more blind sections with barriers far too close.

Leclerc had a massive accident at Turn 22 in second practice; Mick Schumacher had an identikit crash in the race. Nikita Mazepin felt "fortunate to be racing in this era" after rear-ending George Russell's Williams following another crash up ahead. Russell, director of the Grand Prix Drivers' Association, said sections of the track "just offer unnecessary danger", describing it as "an incredibly exhilarating and exciting track to drive" but "lacking a lot from a safety perspective and a racing perspective". Ferrari's Carlos Sainz said "there is no space to avoid an accident, no visibility and we couldn't avoid crashes if they were in front, which is what we've been saying since we arrived here..."

Everyone who likes motorsport enjoys danger to a certain degree. We are thrill seekers after all. But this must balance with pragmatism. We should not leave races feeling simply relief that no one got seriously hurt. As it is, Jeddah seems unnecessary. The same could be said of Verstappen's apparently pathological aversion to being overtaken by Hamilton. But in the end, F1 got the show – and the title showdown – it wanted...

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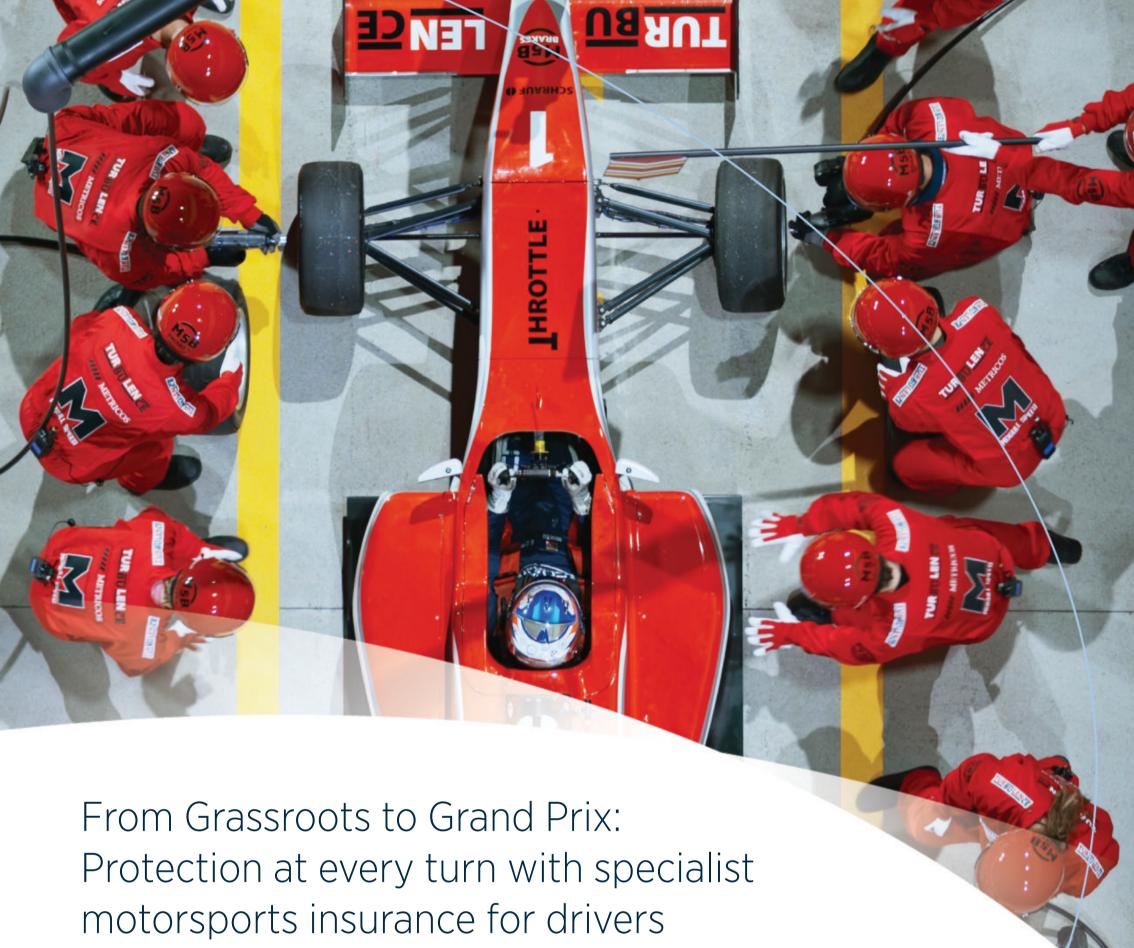
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Matt Sleight

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Seeking out the setting sun

I love going to new circuits because it gives you the opportunity to explore and create something new and distinctive, rather than looking for variations on a theme within a well-known space.

The timings in Saudi were perfect for FP1 and FP3 to be day-into-night, so on my usual Thursday track walk I was looking for where the setting sun would work best. You don't have much time and it's a long track!

This is Turn 10, a fast S-bend, and I was shooting through the fence. The light was at its best for no more than 10 minutes and there was no guarantee of who would be out, but fortunately all the top cars came by.



Photographer Steven Tee

Where Jeddah, Saudi Arabia When 5:22pm, Saturday 4 December 2021

Details Canon EOS-1D X MkII 400mm lens, 1/1000th @ F6.3



You're my number one, Ted...

Formula 1 has a lot in common with a travelling circus – as you'd reasonably expect, given how much travel is involved and the fact that all the participants know each other well. There's an interesting dynamic between the team people and the media people - it's a complicated relationship because the media is trying to tease out information the teams want to keep quiet.

Generally you only see the professional side on camera so I was amused to capture this little scene during FP2 in Saudi Arabia where Christian Horner was lounging in his seat, saw Sky Sports F1 reporter Ted Kravitz, and gave him the finger. Then they both had a giggle...



Photographer Sam Bloxham

Where Jeddah, Saudi Arabia When 8:21pm, Friday 3 December 2021

Details Canon EOS-1D X MkII 70-200mm lens, 1/400th @ F2.8







A quick entry in Qatar

This being a circuit built to host MotoGP, you're miles away from the action and the run-off areas are vast. That posed quite the conundrum when it came to finding photo opportunities on F1's first visit to Qatar.

The pitlane entry was one of the few exceptions where you could get up close to the cars, so I headed off there with the intention of getting an almost Monaco-style shot, where you're up close to the car as it comes in and you can capture a real feeling of movement.

With this sort of shot you're working with a wide-angle lens and a slow shutter speed to give motion blur, the trick is to get Seb's helmet pin sharp.



PhotographerGlenn Dunbar

Where Losail, Qatar When 5:06pm, Saturday 20 November 2021

Details Canon EOS R5 12-24mm lens, 1/15th @ F4.5







Special lights for Arabian nights

New venues like to explore ways of adding some distinctive razzle-dazzle to the grand prix spectacle, particularly those elements which are quite generic. In recent years we've had Mexico's rotating podium with a DJ booth behind it, but the Saudi Arabian promoters really pushed the boat out for the podium ceremony with massive video screens, dry ice, and a spectacular laser light show.

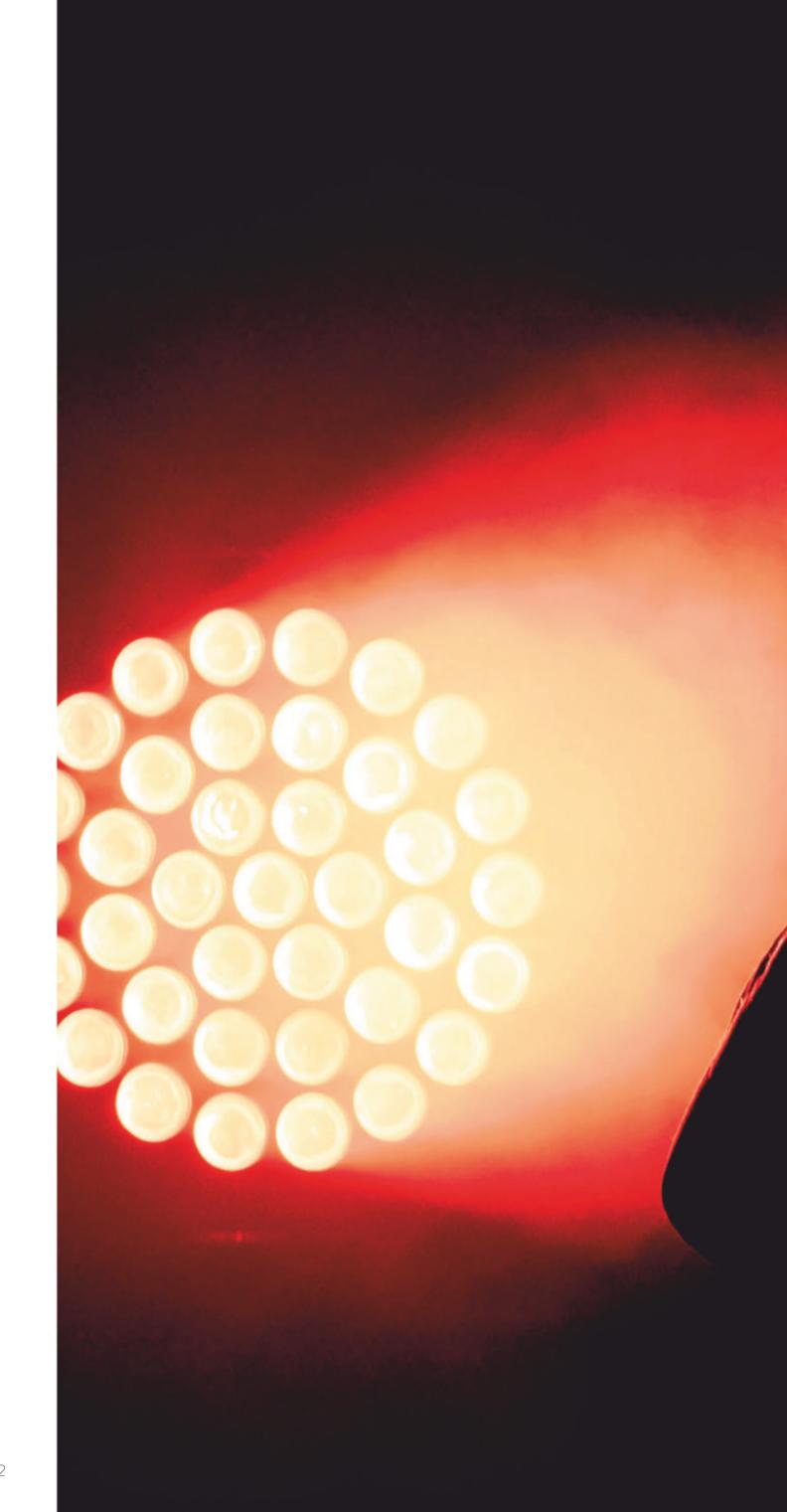
The build-up went on for quite a while and I noticed the drivers waiting for their cue to come on. Lewis briefly stepped out to have a look, and one of the spotlight arrays gave a really nice red key light effect on his profile, so I decided to seize the moment...



Photographer Glenn Dunbar

Where Jeddah, Saudi Arabia When 11.54pm, Sunday 5 December 2021

Details Canon EOS R3 100-500mm lens, 1/320th @ F7.1







Remembering a towering F1 figure.

You'll no doubt have spotted one of the Jeddah Corniche's landmarks during the inaugural Saudi Arabian Grand Prix weekend – the plush 100-floor Golden Tower, described to potential tenants as "an iconic yet subtle crystal sculpture".

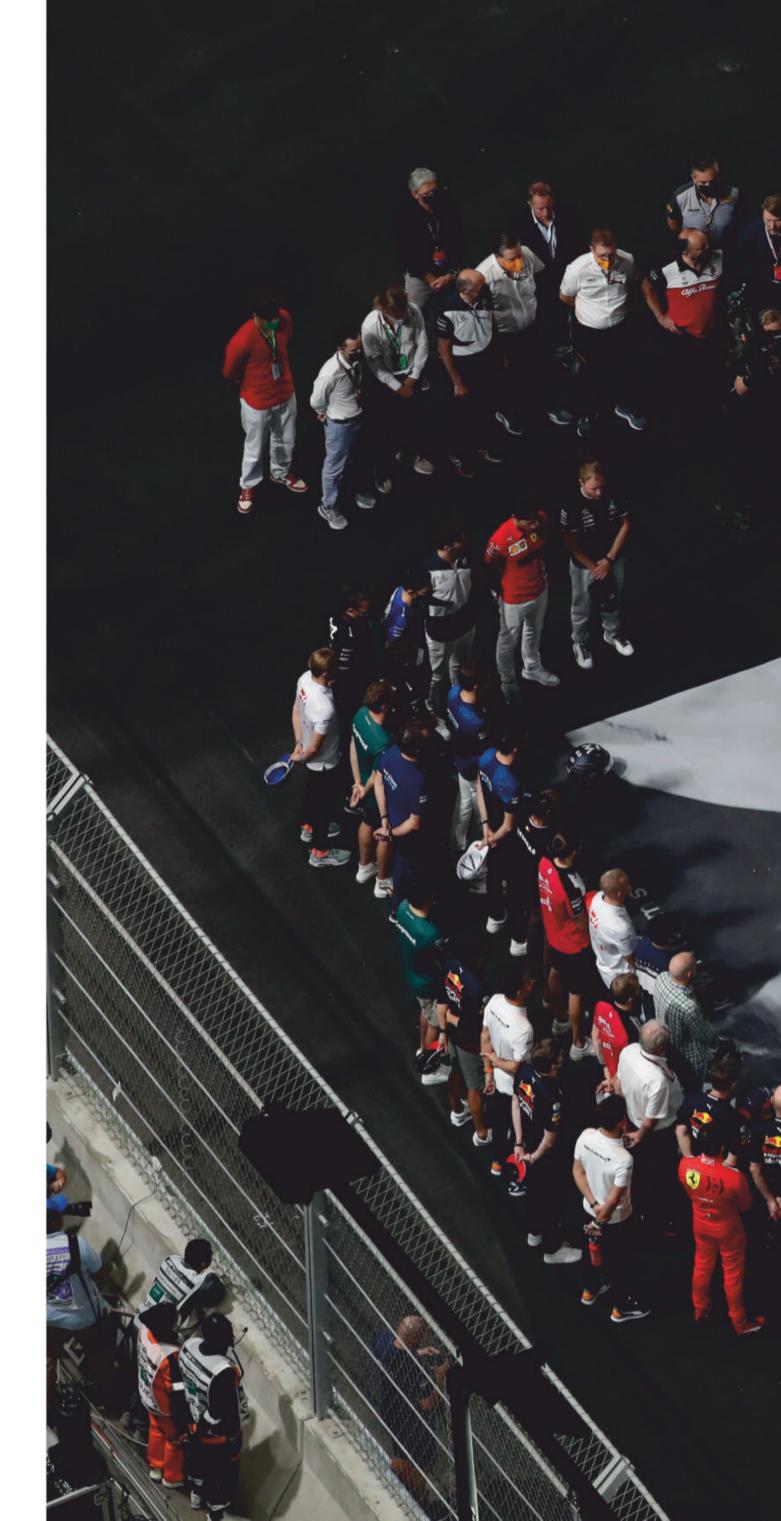
We had access to an apartment on the 44th floor (the penthouse would have been asking a lot, even of a powerful telephoto lens) which gave a great spot for a different perspective on the action, as well as this tribute to the late Sir Frank Williams. F1 laid on a demonstration run of historic Williams cars on track and team personnel also gathered to honour one of F1's greats.



Photographer Zak Mauger

Where Jeddah, Saudi Arabia When 7:18pm, Sunday 5 December 2021

Details Canon EOS-1D X MkII 600mm lens, 1/640th @ F4







FIA/RED BULL/MERCEDES: THE FIGHT GOES ON

RED BULL-MERCEDES RANCOUR NOT OVFR YFT

As you read this issue of *GP Racing* the identity of the 2021 world champion will have been decided (unfortunately the most recent set of calendar changes pushed the final round outside our print schedule). But this title run-in, the most tense in years, has opened wounds which will take a long time to heal – indeed, the resentment between Red Bull and Mercedes, and their mutual angst with the governing body, is likely to fester over the closed season.

Accusations of cheating have dogged the final rounds of the championship and in several instances the FIA appears to have fudged the issues rather than solving them decisively. Technical matters and driving standards have repeatedly provided fuel for the ire.

Red Bull's grievances have been building since the FIA introduced new rear-wing deflection tests at the French Grand Prix, believed to have been the result of Mercedes' lobbying. It was then dissatisfied with the outcome of its petition for a review of the stewards' decision at the British Grand Prix, where Lewis Hamilton and Max Verstappen collided. Hamilton was adjudged to be predominantly at fault in the incident, which sent Verstappen's car into the barriers at 180mph, but went on to win the race despite incurring a 10-second penalty. Red Bull thought the punishment insufficient, but its petition was turned down on a technicality.

The process ratcheted up the tensions between the teams, as Mercedes issued a statement saying: "We hope that this decision will mark the end of a concerted attempt by the senior management of Red Bull Racing to tarnish the good name and sporting integrity of Lewis Hamilton".

More recently Red Bull has raised an official query with the FIA over Mercedes' engine, which it believed was exploiting a loophole in the technical regulations in order to cool inlet air below ambient temperature, theoretically producing more power earlier in the acceleration phase. The FIA found no evidence to support the theory, but Red Bull continued to fulminate, especially when Mercedes decided to add a new power unit to its pool for Hamilton at the São Paulo Grand Prix.

It was at this weekend that relations between the rival teams reached a new low as Hamilton was excluded from the qualifying results, and put to the back of the grid for the Sprint event, when the DRS mechanism on his rear wing was found to open beyond the permitted maximum of 85mm at one end. Footage later emerged of Verstappen



The clashes between Hamilton and Verstappen in Saudi Arabia (above and below) and the FIA's responses to them just added fuel to a fire of discontent that has been rumbling on between Mercedes and Red Bull since the Azerbaijan Grand Prix



PICTURES: ANDY HONE; STEVE ETHERINGTON

touching Hamilton's rear wing in parc fermé after qualifying, an action which had no effect on it failing the scrutineering test, but which nevertheless earned Max a €50,000 fine. Red Bull team principal Christian Horner also voiced complaints about Mercedes' rear wing, citing the existence of "score marks" on the endplates as proof that the main plane had been engineered to flex illegally.

Most damagingly, a subsequent incident in the race itself – when Hamilton went to pass Verstappen at Turn 4 on lap 48 – introduced a grey area on driving standards which would play a significant role further down the line. Hamilton moved past Verstappen on the outside line into the corner but Max reappeared on Hamilton's inside at the apex then ran off track, forcing Lewis into evasive action which carried him



across the run-off too, so Max retained the lead.

Although Hamilton subsequently made the pass cleanly, Mercedes chafed against the stewards' decision not to penalise Verstappen for seemingly running its driver off the road. Team principal Toto Wolff described it as "laughable".

"I've always been very diplomatic in how I discuss things," he said. "But diplomacy has ended today."

When F1 released onboard footage from Verstappen's car which appeared to show him not applying enough steering lock to make the corner, Mercedes launched its own petition for a review of the stewards' findings, since the forward-facing camera angle had not been available when taking the original decision. As with Red Bull's Silverstone petition, the request was bounced on a technicality.

THE MUTUAL RANCOUR AND PARANOIA ABOUT UNEQUAL TREATMENT WON'T BE FORGOTTEN OVERNIGHT

This decision would have troubling repercussions. In Qatar – where Christian Horner felt Mercedes' straightline speed advantage was reduced amid heightened FIA monitoring of rear wing flexibility – GP Racing understands that, during the Friday evening drivers' briefing, FIA race director Michael Masi came under great pressure to clarify what was and was not acceptable etiquette

during wheel-to-wheel racing. Many of the drivers present could not understand why Verstappen had not been penalised.

Crucially, the rationale given in the FIA's decision not to review the case – that the stewards were in effect following the spirit of referees in other sports by saying "play on" – was considered highly unsatisfactory. The drivers were assured that incidents would be considered individually and that deliberately pushing another driver off would not be tolerated.

The grey area in interpretation persists, though. The Turn 1 incident in Saudi Arabia between Hamilton and Verstappen, which led to Verstappen receiving a five-second penalty, was similar to the one in Brazil – for which Max went unpunished.

"I find it interesting I am the one who gets penalised when both of us ran outside the white lines," said Verstappen. "In Brazil it was fine and now suddenly I get a penalty for it."

As both Mercedes and Red Bull, and their star drivers, switch focus to the 2022 season and the fascinating prospect of new technical rules, the bad blood between them — and the governing body — will remain for months to come. The cars will look different and the competitive landscape may shift, but the mutual rancour and paranoia about unequal treatment won't be forgotten overnight.



NEW MERC SPONSOR SPARKS CONTROVERSY

The stickers on the nose cones of the W12s might be relatively small, but the arrival of insulation manufacturer Kingspan as a Mercedes sponsor has had huge repercussions – running all the way to the top of British politics. Kingspan K15 insulation panels were among the products used during the refurbishment of the

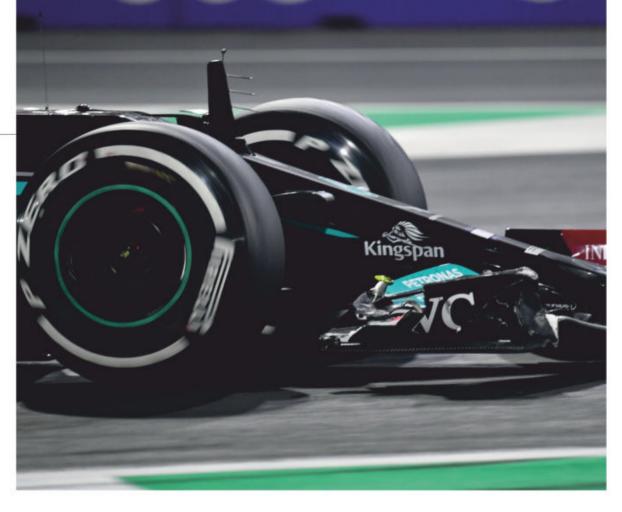
Grenfell Tower before it caught fire, killing 72 people,

in London in June 2017.

While Kingspan has distanced itself from the tragedy, saying it was not involved in the design of the cladding system and that K15 panels made up no more than 5% of the total and were used as a substitute without its knowledge, in October 2020 it withdrew fire test reports it had been using in its marketing for the product since 2005. At the opening of the Grenfell Tower Inquiry Stephanie Barwise QC, representing the bereaved families, accused the company of having a "seminally causative role" and said its "unrepentant arrogance is truly chilling".

When it announced the partnership deal, Mercedes framed the arrangement as part of its commitment to reach net zero emissions. "Breaking new ground for Formula 1, Kingspan will chair a Sustainability Working Group for the team," it said in a statement. "The working group's remit will be to draw together expertise from diverse fields to contribute to the team's objective of pioneering new approaches and technologies for emissions reduction in motorsport."

Grenfell United, a pressure group formed by survivors of the fire and bereaved families, sent an open letter



The Kingspan logo appeared on the nose of the Mercedes cars in Saudi Arabia, but the sponsorship deal has been very unpopular

to Mercedes calling on the team to sever its relationship with Kingspan. "This news has shattered us," it said. "By partnering with Kingspan, we believe that you are directly involved in this system which puts profit before human life. We are therefore seeking assurances from you that you will take affirmative action to disassociate yourselves from Kingspan."

Michael Gove, the UK secretary of state for levelling up, housing and communities, also weighed in with an open letter to Mercedes team principal Toto Wolff in which he made the tacit suggestion that the British government might be moved to change the rules for advertising on racing cars. The arrangement "threatens to undermine all the good work the company and sport has done," he wrote.

As the political tensions rose, Lewis Hamilton distanced himself from the sponsorship, saying, "Unfortunately my name is associated with it because it has been on my car, but whether that remains the same, we will see."

Wolff has agreed to meet with Grenfell United to develop a better understanding of the situation. Asked if Mercedes would re-evaluate the deal, he said: "We have also discussed that with the important people, and we will reach out to Kingspan and come up with the right solution.

"There is a contractual agreement that's behind these things, and we want to just do the right thing with integrity. And that's why I don't want to further comment."



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FERNANDO ALONSO: WILL FORMULA 1'S 2022 **REVOLUTION MAKE HIS COMEBACK WORTH IT?**

> First look at F1's 2022 revolution at the Abu Dhabi test

- > Mercedes' new tech double act
- > Now That Was a Car: Red Bull RB16B
- > Jacques Villeneuve: 1997 revisited

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A new concept

The new 210-piece limited edition C60 Concept celebrates Christopher Ward's ground-breaking five-day power-reserve chronometer movement, Calibre SH21.

There are many fine Swiss-made skeletonised watches available, but few have their movements hand-finished to the exquisitely exacting standards of the C60 Concept, and none come anywhere near matching its remarkable value: the result of CW's famously disruptive approach to luxury watchmaking. If you relish the finer things in life and are understandably sceptical about the pricing of many luxury watch brands, you should have a look, a close one, at the C60 Concept.

christopherward.com



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AUDI AND

Volkswagen brands Audi and Porsche are likely to decide on their long-rumoured F1 involvement in the next few weeks. As previously reported in *GP Racing*, the new commercial structure in the Concorde Agreement – which gives existing teams a 'franchise value' – along with changes to the powertrain regulations and adoption of sustainable fuels may tempt brands to enter as engine manufacturers or team owners.

F1 has been courting the VW Group for over a year, trying to persuade it to commit to developing an engine for the new regulations due to come into force in 2026. These rules, which include a greater proportion of electrical energy, the removal of the MGU-H, and net carbon zero fuel, were due to be signed off by the FIA's World Motorsport Council on December 15.

"Electrification has its place, we believe sustainable fuels have their place," said Ross Brawn, F1's managing director of motorsports, in late November. "There's a billion vehicles, getting on to two billion vehicles, on the road at the present time and you can't get rid of them. So unless you find something which can be applied to these vehicles you're not going to have the impact that you want.

"We believe F1 can set an example of how a sustainable fuel can be created and used. That's actually why we're seeing

manufacturers take a much stronger interest in the sport because they can see the value of that involvement. It's no secret to say Volkswagen with Porsche and Audi are having a very close look at F1 and that's one of the reasons they're interested. And I think there'll be more."

VW's involvement could take the form of an engine supply arrangement, badged as Porsche

or Audi, or it could take a stake in a team. It was believed VW was seeking to partner with start-up Red Bull Powertrains on engine development, but it's understood that a fully in-house operation is also a possibility, since this would not dilute the VW Group's involvement from a branding perspective.

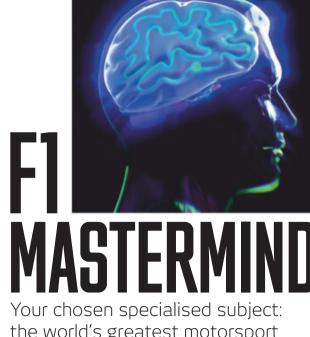
Williams, Sauber and even McLaren could be targets for acquisition. Audi's supervisory board is understood to have evaluated the option of acquiring McLaren or taking a stake in it, and gone as far as making an initial offer, but this was rebuffed. McLaren already has a number of shareholders including the US company MSP Sports Marketing, which is looking to expand its shareholding rather than sell out.

IT'S NO SECRET TO SAY VOLKSWAGEN WITH PORSCHE **AND AUDI ARE** HAVING A VERY **CLOSE LOOK AT F1**"

ROSS BRAWN

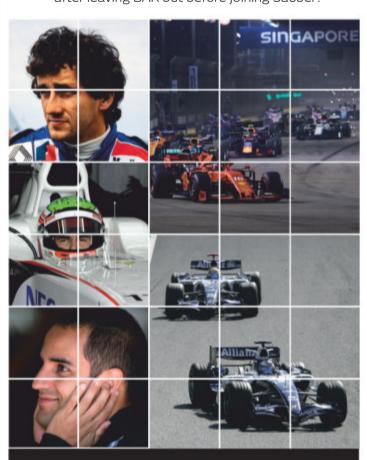


A decision regarding VW's involvement in F1, through either its Audi or Porsche brands, is believed to be only weeks away



the world's greatest motorsport

- Q1 How many races did Alain Prost win when driving for Renault: 8, 9 or 10?
- 02 Which was the first race this season that Lewis Hamilton led the opening lap of?
- Q3 Where did Max Verstappen qualify for the 2016 Spanish GP, scene of his first F1 victory?
- Q4 Did Juan Pablo Montova win more GPs for Williams or McLaren during his F1 career?
- Q5 Where did Sergio Pérez finish on his F1 debut at the 2011 Australian GP?
- Q6 Name the four circuits that have held the Portuguese GP?
- **Q7** True or false: no one team has ever claimed backto-back pole positions at the Singapore GP?
- Q8 Michael Schumacher won 13 of the 18 GPs in 2004. Who were the other four drivers who won races that season?
- Q9 Nico Rosberg retired after beating fellow Mercedes driver Lewis Hamilton to the title in 2016, but who was his first team-mate in F1 when he drove for Williams in 2006?
- Q10 Which team did Jacques Villeneuve drive for after leaving BAR but before joining Sauber?



Kimi Räikkönen, Jarno Trulli 9 Mark Webber 10 Renault 7 True 8 Rubens Barrichello, Juan Pablo Montoya, disqualified from seventh **6** Porto, Monsanto, Estoril, Portimão 192 French GP 3 4th 4 Williams (4 to 3) 5 Nowhere - he was



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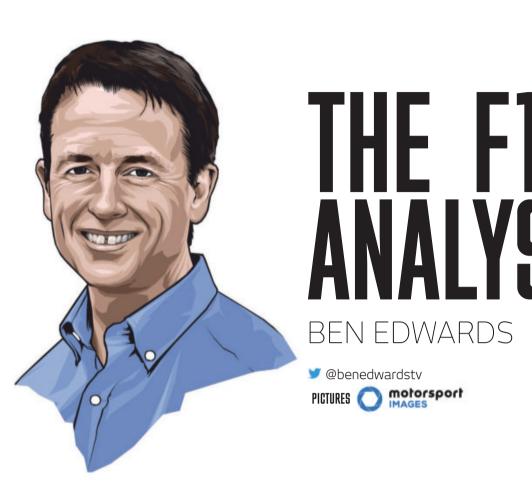


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monitored, a driver whose opportunities have been boosted thanks to the Team USA Scholarship programme. Created by Jeremy Shaw, a British motorsport journalist and commentator who has been based in the United States for over 35 years, the scheme supported Conor Daly and Newgarden as well as Jimmy Vasser and Bryan Herta. Jeremy has his own views on driver development.

"Without going through the ranks in Europe, it's really difficult to step into a Formula 1 car," Jeremy told me a few days after Michael Andretti's plans to get IndyCar race winner Colton Herta into an Alfa Romeo were curtailed. "It would have been awfully difficult for Colton to be competitive; he did the junior categories in Europe but didn't have the funding to carry onto the higher levels (F3 and F2) and that's where you learn so much more."

So what about someone like Max Esterson getting a chance to do the full European build-up sequence?

"If a young driver is partnered with an F1 team on one of their junior programmes then great, they're going to get a lot more resource, but if they're not they are pretty much wasting their time and money. Now that a lot more people in the United States

know about Formula 1, perhaps F1 teams will start paying attention to the young US drivers a bit more."

McLaren is a team that may look in that direction. It is partially funded by American investors as well as integrating with an IndyCar team that ran Mexican racer Pato O'Ward, who will test for McLaren's F1 team after the Abu Dhabi Grand Prix. Executive director Zak Brown would surely like to see a racer from his homeland rise to the very top.

But Jeremy Shaw reckons F1 teams might already have missed out on a talent who could have been the perfect fit, a driver who finished second at the Walter Hayes Trophy in 2016 and won US FF2000 and Indy Lights titles over the following three years.

"Oliver Askew is someone they've missed because Oliver is a massive, massive talent and he doesn't have a lot of racing experience," Shaw says. "Even when he got to IndyCar he only had three years of racing, one year at each level. If he was given the training and the mileage that you need, he could do it in my opinion."

Drive to Survive on Netflix and the Miami Grand Prix are both elements that are ramping up the fever in the United States, but imagine the buzz that would be created by the 23rd grand prix win for an American. Formula 1 could soar even higher, much to the delight of US owners Liberty, so perhaps Max Esterson's Walter Hayes victory could not have come at a better time.

CAN AMERICA'S FINEST STILL MAKE IT TO F1?

Max had a key win in early November. He started from pole position on a classic track, led from start to finish and won by just under three tenths of a second. Later that night he learned that Verstappen had just won a crucial race in Mexico.

Max Esterson became the fourth American racer to win the prestigious Walter Hayes Trophy at Silverstone that day. The 21st running of an intense junior single-seater contest came one week after the similarly competitive Formula Ford Festival at Brands Hatch, where Esterson snatched the runners-up spot having started 13th. It was a significant achievement at the 50th Festival, where former F1 drivers Roberto Moreno and Jan Magnussen were also competing.

On the evening before the event, I asked both Roberto and Jan about the value of winning at that level. Moreno ended up in tears, telling guests at the BRSCC celebratory dinner about the testing contract earned with Lotus as a result of winning the Festival; it gave him a lifeline to build his career in Europe. Magnussen was also grateful for the plaudits of winning the event in 1992 after his year in the national championship hadn't resulted in a title.

Winning significant junior events can be fundamental to a career; it worked for Mark Webber and for Jenson Button, the only Festival winner to become Formula 1 world champion. Conor Daly, son of ex-F1 driver Derek, won the Walter Hayes in 2008 and is a regular IndyCar racer, while Josef Newgarden won the Kent Festival in 2008 and is now a double IndyCar champion.

But seeing an American win at a key European junior level and then make it all the way to F1 is uncommon. Alexander Rossi came in at a slightly higher level in Europe before racing in GP3 and GP2 and starting five races for Marussia in 2015. Now he's another of the competitive oval, road and street track racers in his home country.

Scott Speed was the last US driver to complete full campaigns in F1 thanks to being picked up by the Red Bull driver search programme which was specifically looking to promote drivers from America. The backing allowed him to compete in British Formula 3, European Formula Renault and GP2, a sequence that gave him a high level of preparation for his grand prix debut in 2006. That particular Red Bull programme had ended by then, but perhaps we are about to see a resurgence across the teams to look into US talent now the popularity of F1 is building across the country.

Max Esterson may be one of those being







Visibility is a much more complex problem, as it involves not just the tyre but also the aerodynamics of the car. Like aquaplaning, it is really only something of concern when on the full wet tyre. The intermediate tyre, by definition, is dealing with much less severe conditions and not ones that generally concern the drivers.

A full wet tyre displaces an enormous amount of water. At 155mph, a front tyre displaces 50,000cc of water per second; a rear tyre displaces 70,000cc per second when running through water 2.5mm deep. To put that into context, an average bath is filled to around 100 litres, so the four tyres on an F1 car displace enough water to fill that bath in well under half a second.

F1 HAS A PLAN FOR NO REPEAT OF SPA SHAM

As we look back at what has been an extremely exciting season involving the closest inter-team competition that we have seen for many years, several events will stand out. Most of these will be positive as even the circuits that normally struggle to produce good racing seemed to throw the mantle of dullness off this year. Unfortunately, the one negative that will be discussed for some time to come is the events that occurred at Spa.

The circuit is renowned for wet weather, with prevailing westerly winds picking up moisture as they transit the sea and then meeting the hills of the Ardennes, causing them to drop that moisture as rain. We have raced at Spa for years and always dealt with it, but this year the sheer intensity caused the race to be effectively abandoned.

So what are the complexities of racing in the rain? It comes down to two things: aquaplaning and visibility. Grip is reduced considerably, but this in itself is not a problem. The drivers adjust and it actually increases the differentiation between the very best drivers and the rest of the field.



The spectators at Spa got a very rough deal when the cars were unable to race in the rain

Drivers dread aquaplaning as they have no control over it. For a given tyre it is a function of speed and depth of water. Below a critical speed, a tyre will clear water and above it the tyre will ride up on a wedge of water causing a total loss of grip. Tread design is secondary to these other factors in determining the propensity to aquaplaning.

As a tyre rolls over the water on a track there are several mechanisms of fluid flow in place. In front of the tyre a proportion of the water is expelled forward of the tyre contact patch in the form of a bow wave. Side waves are also formed by the water that is squeezed out sideways from the tyre.

The side wave is a plume of water that encounters a wall of water at the edge of the contact patch which absorbs some of its energy but also changes its direction, throwing it upwards. The wall of water which is outside the area of the contact patch has now had this energy imparted to it and undergoes the same process.

The result is that the apparent displacement of water is actually much wider than the tyre footprint itself. Both the bow and the side waves start off with relatively large droplets, maybe 3-5mm in diameter, but when they interact they are broken into a fine mist which is carried aloft as spray. Spray droplets are typically well below 1mm in diameter and hence are more easily moved by the airflow around the car.

A further amount of water is actually picked up by the tread and ejected behind the tyre at an angle of around 30 degrees. The final contributor to the spray is a film of water that adheres to the tyre by capillary adhesion and is stripped from the tyre by the airflow as a very fine aerosol.

With an F1 car it is not just the tyres that are contributing to the spray. At a certain speed the low pressure generated under the car by the floor and diffuser will be enough to overcome the surface tension that is holding



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the water on to the track and will suck it up into the rooster tail.

We can understand that an enormous amount of water is lifted off the surface by the car, and what goes up must come down. Luckily a combination of crosswinds and natural outwash of flow from the cars will displace an amount of water sideways, leading to the racing line drying out – but the water will still be held off line and, if there is any banking on the track, can continue to flow into the path of the cars.

At F1 we are undertaking some fundamental research into the formation and dispersion of spray in wet weather. It is a complex subject involving the simulation of what are termed 'multi-phase' flows - that is flows that have both a liquid and a gas component.

Fernando Alonso has told me his experience of LMP1 cars in the wet is much better and so I am sure, even without enclosing the wheels as is done in sportscars, we can do things to mitigate the visibility problem that exists in F1 today.

Our research will not be the matter of a moment, as some new techniques need to be evolved, but similar approaches have been employed in other industries. For example, it is important that an aircraft engine running on a wet runway does not

EVEN WITHOUT ENCLOSING PROBLEM THAT EXISTS IN F1 TODAY ingest too much water and this is investigated by modelling as well as practical tests.

It may be that the 2022 cars, with reduced outwash, perform slightly better for following car visibility, but until we understand and can replicate the physics of this complex subject it is difficult to be sure. What I am sure of is that there is answer to the problem and we will eventually make F1 considerably safer in the rain.



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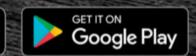
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Essential guide to the business of F1



STRAIGHT TALK

MARK GALLAGHER

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insects stuck to the windscreen. No longer.

Between 1997 and 2017, Danish ecologist Anders Møller collected data showing the number of insects killed on the surfaces of cars had fallen by 80%. His 2019 paper supported a peer-reviewed study by German scientific publication Plos One which revealed that mid-summer 'flying insect biomass' had plummeted by 82% in 63 protected nature areas.

Meanwhile in Malaysia, between 2000 – the year after F1 first visited Sepang – and 2012, the country lost 14.4% of its wilderness to deforestation. When F1 first visited Shanghai in 2004, the city boasted 16.4million inhabitants. Today that number is almost 28million.

You get the picture. To be part of F1's travelling circus is to have a window on the world. We collect the data first-hand, often with our own eyes. This is before we even start to discuss the impact of burning the black gold extracted, refined and distributed by names which are very familiar: BP, Shell, Exxon Mobil, Orlen, Gulf and Petronas.

Formula 1's November 2019 announcement that it would target net zero carbon emissions by 2030 has been followed by a welter of

initiatives, investments and announcements.

Press releases from teams announcing FIA Environmental Sustainability Accreditation seem to arrive every other week. Meanwhile, Lewis Hamilton promotes a meat-free diet, Nico Rosberg has reinvented himself as champion of environmental technologies and Sebastian Vettel will happily discuss sustainable farming or the litter plague.

Former Williams and Mercedes technical director Paddy Lowe is over a year into his new business, Zero Petroleum, which aims to produce fuels and petrochemicals synthesised by the recycling of water and carbon dioxide using renewable energy — in essence taking carbon dioxide out of the environment, creating a circular, carbonneutral energy supply which will not add to the stock of CO2 warming our planet.

Williams' team principal Jost Capito is "convinced" motorsport will die unless it helps develop meaningful solutions. Capito recently announced his team aims to be become climate positive by 2030 thanks to initiatives including generating its own energy, reducing waste and carbon emissions from travel.

Capito is positively excited at the prospect of F1 providing a high-speed laboratory for the development of super-efficient, e-fuel-powered hybrid engines; certain that Formula 1 needs to play to its strengths and help develop some of the technologies upon which society's future may depend. Adapt or die...

F1 DEPENDS ON CLIMATE CHANGE RESOLUTION

If you found the blanket coverage of November's COP26 UN climate change conference in Glasgow hard to take, beware. My topic is grand prix motor racing's role in helping to combat climate change caused by human activities.

While mainstream media brought us deep insights on driving an electric car from London to Glasgow and asked politicians why they use aeroplanes, the world of motorsport was walking the walk. Formula E, Extreme E and other motorsports EVangelists led the way.

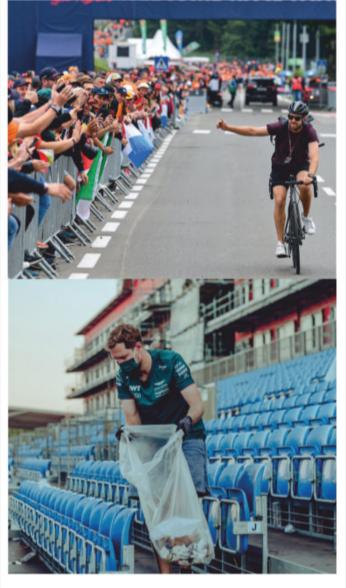
Meanwhile Formula 1 heads towards a future in which its highly efficient hybrid engines will no longer be powered by fossil fuels. It may seem counter intuitive that senior figures in F1, the FIA and the teams care so much about climate change. This is motor racing after all...

The truth, as they say in F1, is in the data.

Back when I started attending Formula 1 events

the mid 1080g, a road trip corose continental

in the mid-1980s, a road trip across continental Europe was invariably followed by a visit to the car wash in order to remove the hundreds of



Sebastian Vettel has been 'walking the walk' this season, whether it be by arriving at the Red Bull Ring on his bike (top) or picking up litter at Silverstone after the British GP (above)



FORMULA 1'S **EMERGENCY** SERVICE

As the driver of Formula 1's medical car, Alan van der Merwe's job is to wait - and hope his skills aren't needed



The drawn-out wait for the decision everybody knew was coming, that the 2021 Belgian Grand Prix would not restart, was for many characterised by consumption of snacks and complaining on social media.

But for F1's medical car driver Alan van der Merwe it was an intensely busy time. He and safety car driver Bernd Maylander completed more laps than the F1 field, regularly taking to the track to evaluate whether conditions were such that racing could get under way. It's all part of the an impromptu meet with then-F1 race director

social media," van der Merwe tells GP Racing. "Sometimes I'll do the tiniest of skids on the track and it'll be on Reddit and YouTube. We are anonymous the majority of the time, but it doesn't take much to get a lot of attention."

By his own frank admission, the South African's time on grand prix weekends involves "a lot of waiting around" for events the FIA has "actively tried to mitigate or avoid altogether". It's quite the departure from the life of a racing driver: van der Merwe and his important passenger Dr Ian Roberts remain strapped in and ready to go in the medical car during every live session. That applies to the support series too, when most F1 drivers are still having their breakfast... It's a claustrophobic environment in which to spend prolonged periods on high alert, and the pair's intercom system is so sensitive that they can hear each other's breathing.

"It's a bit contradictory in that we put a huge amount of preparation into things that are becoming less likely to happen because of other efforts that we're making at the same time," the former BAR F1 test driver explains. "It's a lot of being prepared, a lot of waiting to be required at a scene and it possibly never happening. Then, once in a blue moon, we're called to something which is genuinely novel. It's less about driving and more about understanding F1 and being ready. The end goal is avoiding drivers not making it out of the circuit and going back to their family."

The medical car's importance was brought sharply into focus during the 2020 Bahrain GP









marshal Thayer Ali Taher, was Roberts, who aided Grosjean's escape from the wrecked Haas. Not far behind was van der Merwe, who sprayed the pair with the extinguisher he'd grabbed from the Merc's boot as Grosjean staggered clear.

The rescue brought them a considerable amount of attention, which van der Merwe prefers to shy away from. But he concedes it was an "incredibly positive" experience that put the spotlight on Roberts' competence and bravery.

"I've never been a fan of being in the spotlight," Alan says. "I like to be quite anonymous, but it was brilliant Ian got the recognition he deserves. He's been working at this sort of thing for decades, he puts a lot into it. And it was good for people to see we're not just there for show.

"But one thing that people probably didn't understand from Bahrain is we didn't actually have to do our job there – we didn't do anything, we literally just turned up. If things hadn't gone as well, then people would have seen what someone like Ian is really capable of, with such a huge amount of experience and bravery.

"It was nice to see it was appreciated and all of the things that we've been doing, which sometimes feel a little bit useless because they never get used, came together to work."

Van der Merwe explains a key part of the job is preparing equipment and to keep it running as consistently and as reliably as possible. This includes the biometric gloves used by all F1 drivers, an innovation Roberts and van der Merwe were key in developing, which give Roberts an indication of a driver's pulse, oxygen levels in blood, and detect movement to inform him of what to expect upon arrival.

Those on-site preparations vary depending on the venue and its staff's level of experience, and on the car van der Merwe uses on any given weekend. Mercedes and Aston Martin now share duties and each has "slightly different curves that they're still on in terms of the car being where they want it to be". Track time on Thursday, chiefly for testing systems including the startlights sequence and exploring track limits, is also used to assist in vehicle development.

The actual driving, of course, is vitally important too. Calling on "experience you can only really get by doing icy tests at Pembrey in an F3 car", van der Merwe is required "to be incredibly confident in all conditions" and acutely aware of what's going on around him. Given the huge pace difference between the F1 field and the



Van der Merwe (right) and F1 doctor lan Roberts are strapped in ready to go whenever there is live action on track

medical car, it has to be driven flat out.

"Why Charlie wanted people with F1 experience is he knew that the delta between an F1 car and a road car is silly, it's a minute-plus quicker per lap," he says. "If you're learning on the job, you're probably going to have some kind of an accident."

That competence helps breeds trust between him and Roberts – who doesn't need to be fearing for his life at every corner. Van der Merwe describes their relationship as being "as good as you possibly could have".

"I know that I can depend on Ian if things really go quite downhill," Alan says. "I think we complement each other quite well."

But relationships with drivers can't be taken for granted. Having been around the paddock for over a decade, van der Merwe is now a familiar face to most, "whether it's just through seeing me in the garage occasionally, if we've picked them up for something, or actually helped pull them out from underneath some barriers". But he's eager for them "to understand as much as possible that we're always trying to improve".

"It's a tight-knit community and some drivers know us better than others," he says. "I get along fine with all of them; we're all here to do a job so sometimes our interactions are very short.

"I'd like to think that they appreciate us being there, but I don't really mind if they don't because I didn't think about it when I was competing.

"Some are more conscious of safety efforts and where things need improving or developing than others, and might raise questions during the drivers' meetings. That's where we build the



Collecting and returning drivers to the pits after they have stopped out on the circuit in practice is a useful dry run for the medical car



The medical car is most visible when it lines up on the grid and follows the field round, in prime position if there is a first-lap accident



"SOME DRIVERS KNOW US BETTER THAN OTHERS. I GET ALONG FINE WITH ALL OF THEM, **WE'RE ALL HERE** TO DO A JOB SO **SOMETIMES OUR** INTERACTIONS **ARE VERY SHORT"**

ALAN VAN DER MERWE

relationships. We know it's never going to be perfect, but it's important the teams and drivers know we're constantly doing our best."

Not all of his interactions with drivers follow an incident of Grosjean's severity. As a dry run "to get the system moving", van der Merwe is dispatched to collect drivers during practice if they suffer a

breakdown which induces a red flag.

"We are a bit of a glorified taxi, we mainly do that to keep teams and drivers happy that we're doing the best that we can, we're not just letting them walk or ride back on a scooter," he says.

Van der Merwe recalls an excited Sergio Pérez following his Baku victory, the Mexican having stopped on track during his slowing-down lap. But not everybody is so delighted to see the him.

"Sometimes they want to chat, sometimes not," Alan says. "A lot of the time when they get in the car, they're still in race mode and it's like it's the end of the world. They might have just crashed in qualifying and think their weekend is ruined.

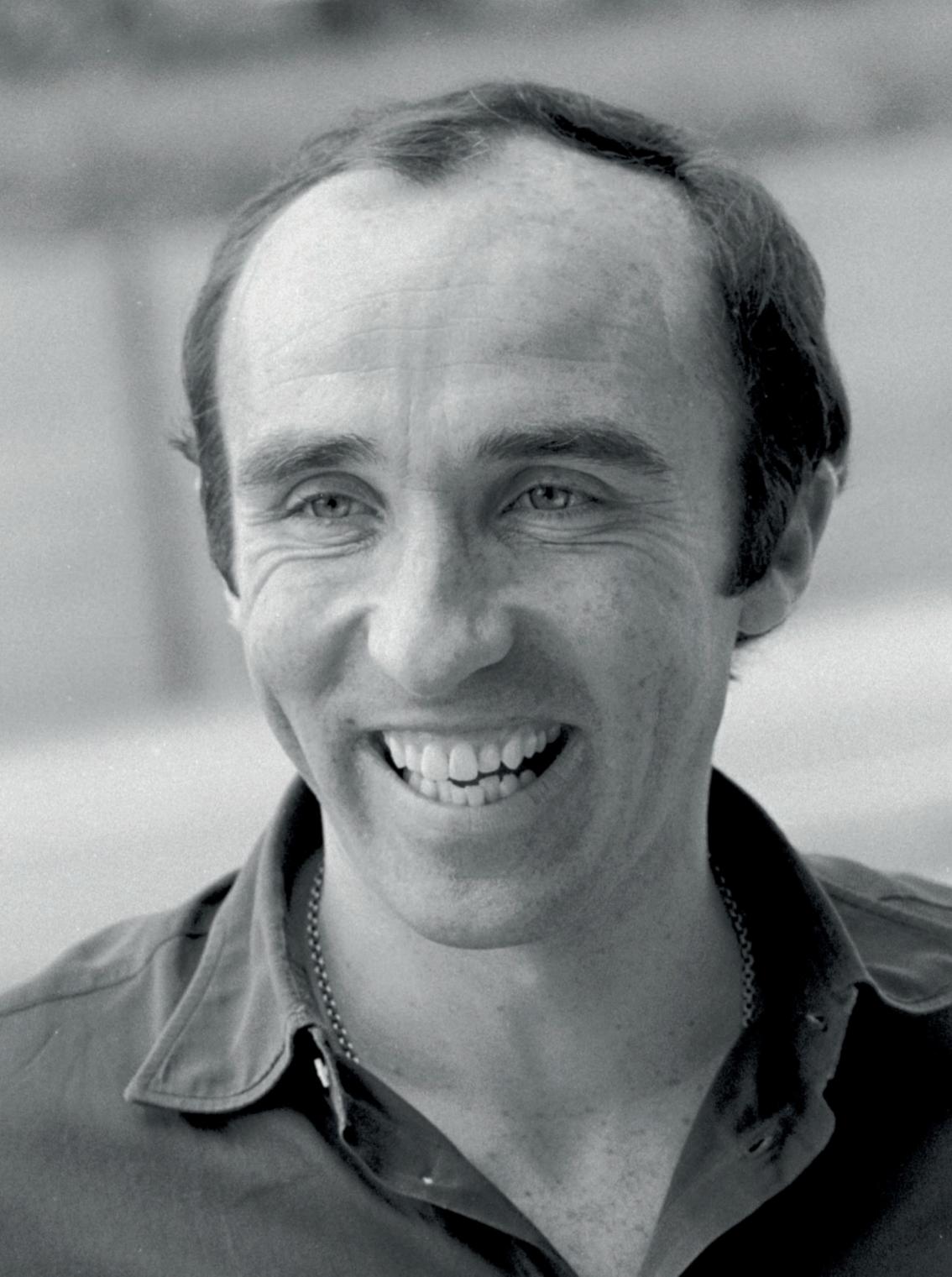
"It's interesting," he summarises. "It's probably a bit like an Uber driver who meets all sorts of funny characters during their day..."



Like **Sir Frank Williams**, journalist and broadcaster **Maurice Hamilton** came from a background in sales and made a threadbare entrance to the world of Formula 1. He knew Frank, who died recently, aged 79, for over four decades – and even lap-charted Keke Rosberg's 1982 title-winning race for the Williams team...







FRANK WILLIAMS AND I GREW UP TOGETHER.

Not in the sense of boyhood friends, but as wannabe members of the Formula 1 establishment; Frank as a respected entrant; me as a journalist. During the time I was a salesman in the early 1970s, Frank was also using fast talk to inveigle money from whoever might help him go racing with a

variety of cars that retired more often than they finished. But I'd seen a rare exception at first hand when a keen fan in 1975.

My weekends were spent going to motor races, with grands prix high on the agenda if they were within reach. The Nürburgring was always a favourite, particularly since it was easy to blag your way into the paddock once the race had finished. In 1975, I witnessed universal delight as the F1 world descended on the Williams truck to congratulate Frank and Jacques Laffite for finishing second in a car which, given the nature of the Nordschleife, had defied all logic by holding together for 14 punishing laps. The fact that Laffite was a minute and a half behind the

winner didn't matter; a Williams driver was on the podium for the first time since the heady days of Piers Courage in a privately entered Brabham in 1969.

Frank seemed stunned as he stood quietly to one side and accepted the heartfelt congratulations with a broad smile but very few words. The obvious affection was because everyone knew what Frank had been through following the devastating loss of his dear friend Piers at Zandvoort in 1970. There was also the thought that the six points would be enough to guarantee all-important FOCA travel subsidies which would be worth £150,000 in 1976. Plus, he

had won £5,000 in a single afternoon.

The truth was, however, that the prize money would scarcely touch the sides of a financial drain lined by creditors. When Frank got back to London Heathrow after that race, he had to borrow enough money to get his Porsche 911 out of the car park. Despite the hardships, Frank believed that driving a smart car presented the right impression; a Williams rationale with which Bernie Ecclestone had become familiar. Bernie owned Brabham and he also had an interest in a company that rebuilt the Ford-Cosworth DFV engines run by Frank.

"Frank would come in for a chat," said Ecclestone. "He would say, 'Bernie, can you lend me £5,000?' And I would say, 'Sure, Frank.

No problem,' and give him a cheque for £5,000.

Whatever the day was – two weeks, three weeks – whenever it was time for Frank to repay, he would be there with a cheque for £5,000.



He would put it on the table and say, 'Thanks a lot; it's really helped me. Could you do me a favour?' Sure, what is it Frank? 'Could you lend me £7,000?'

"So, he would get a cheque for £7,000. And this went on for a long time. He would take the cheque and immediately go to [London's] Fulham Road and buy himself some cashmere socks or a cashmere sweater or an expensive shirt. That was Frank."

The off-the-shelf Ford-Cosworth DFVs powered 92% of the grid in 1975. The original concept for the V8 had been funded several years before by the Ford Motor Company, under the guidance of Walter Hayes. As head of public

> Williams with Piers Courage (below) at Spa in 1970. The death of Courage at the very next race at Zandvoort hit Frank hard, but he carried on





Frank at the 1979 British GP (above), the scene of his team's first F1 victory. Lap charting enabled him to maintain a full picture of a race's evolution

relations (and later as vice-chairman of Ford of Europe), Hayes could see the value of a strong motorsport connection as he kept a fatherly eye on anyone associated with Ford.

"I used to lend Ford Anglia vans to Frank from time to time - and he would sell them," said Hayes. "That's how he raised money to survive. It was the sport's currency at the time. 'We need money to go motor racing,' he would say, 'and so we get it any way we can.' If you had brought in someone from outside and they had seen what was happening, they would have said, 'You can't let him do that with your property. It's illegal.' For people like Frank, we didn't see it that way."

I gathered the foregoing quotes from Ecclestone and Hayes three decades after taking the plunge and quitting my sales job in 1977. Co-incidentally, that was the year Frank finally started to come good. I found myself learning the ropes as an F1 reporter while closely following the birth and dynamic growth of Williams Grand Prix Engineering. I don't recall formally meeting Frank, but I clearly remember being invited to a former carpet warehouse in Didcot on a sunny morning in December 1977.

Billed as the launch of Williams' latest grand prix challenger, this was treated with some scepticism, based on Frank's threadbare ventures during the previous seven years. But from the moment the 20 or so reporters stepped inside his new headquarters, they were aware of a tangible difference; a buzz of energy and purpose within a small but immaculate workshop. At its heart sat the FWo6; the first of many cars to come from the drawing board of Frank's new associate, Patrick Head. Completing this hungry triumvirate and resplendent in fresh, white driving overalls, Alan Jones shared the welcome to what was clearly a major moment for his new boss.

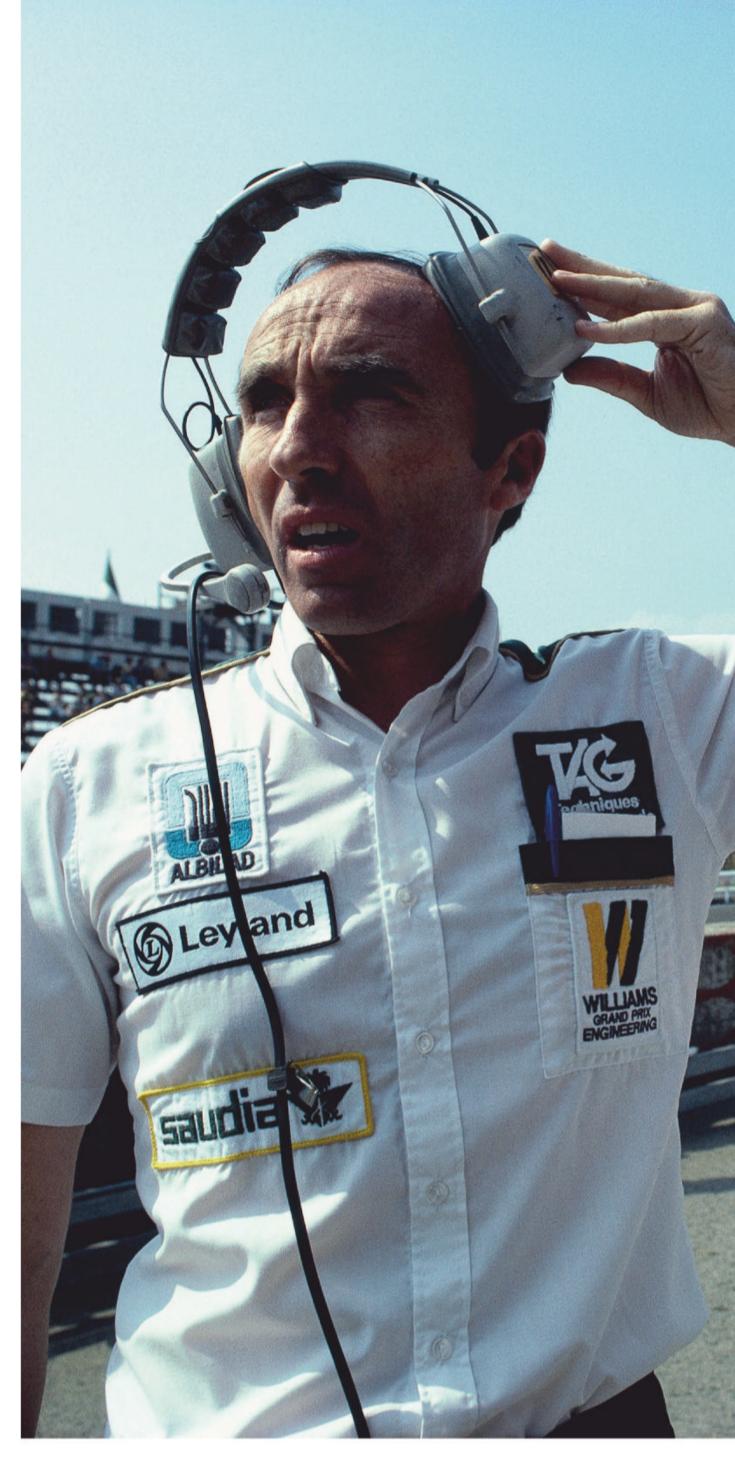
Dressed in a Doug Hayward two-piece suit with a broad striped tie, Frank – noticeably more hyper than normal – was stirred into demonic action by the beat of a helicopter's rotor overhead. Throwing open the back doors of the workshop, he watched a helicopter land on a nearby football pitch. On board was a party of four from the airline, Saudia, including its director-general, Sheikh Kamil Sindi.

As Frank buttoned his jacket and prepared to walk towards the temporary landing pad and receive such significant sponsors, he seemed to realise that his media guests could recite enough horror stories to have the Saudis feel the urgent need to catch the next plane home. Turning briefly towards the assembled company, he winked and said, "Don't let me down lads," and then flashed that winning smile. Had references been asked for on the spot, Frank would have been embarrassed by the depth of genuine affection and warmth on that chilly morning.

If the FWo6, a car that was as soundly engineered as it was straightforward, did enough to make Williams a serious and consistent runner in 1978, the FWo7 would eventually sweep the team to the next level halfway through the following year. Frank's first win could not have come at a better place than Silverstone. The entire place, it seemed, wanted to share his joy.

There was no official winner's press conference then, but someone had the bright idea of having Frank come to a marquee at the back of the paddock. He looked as stunned as anyone might when post-race procedures in the past had often amounted to scouring the paddock for a £50 loan to buy enough diesel to get the team truck home. This time, there were tears in his eyes as he quietly and repeatedly murmured 'thank you, thank you so much' to the many well-wishers keen to shake his hand. Someone gave him a whisky, and another lit a cigar. He gamely tackled both despite being teetotal and a non-smoker. This was not so much about getting down to the nitty-gritty of how the race was won but more a simple but very emotional

> Competing team owners Bernie Ecclestone (right) and Williams in 1981. When Williams had been struggling in the early 1970s, Ecclestone had always been willing to lend him some money...







Williams and Patrick Head (right) show off the Williams FW06, the first of Head's designs, in March 1978, With this car and Saudi backing the team now had a platform to build on

celebration. This was a timely achievement by the quietest but feistiest of fighters.

And one of the calmest, too. Frank had shown not a flicker of emotion during the race when Jones had lost an easy lead due to a water leak, leaving Clay Regazzoni in charge in the other Williams. At no stage did Frank reveal concern that Regazzoni might succumb to the same failure. He had remained focused on the lap chart kept on his knees as he sat by the pit wall. In the absence of computers, lap charting was the only way to maintain the full picture as the race evolved, Frank using this information to formulate instructions for the pit signals shown to his drivers. This was Frank's principal race day role. With one exception.

At the end of a bizarre year that would feature no fewer than 11 different winners, the 1982 championship boiled down to a three-way fight in Las Vegas, with Keke Rosberg in the running for Williams. Longines provided very small black and white timing screens for the teams, but there was

nothing for journalists. The only way to follow the race was to stand trackside with a lap chart.

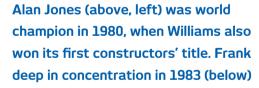
I received a message to visit Frank in the Winnebago motorhome allotted to his team. With so much at stake, Frank wanted to hold a roving brief at the pit wall and, rather than rely totally on the sometimes-unpredictable timing screen, he asked if I would keep the team's lap chart. On the one hand, I welcomed the opportunity since the Williams pit was normally out of bounds to the media; I would be right in heart of the championship story. On the other hand, I was terrified of screwing up on such an important occasion.

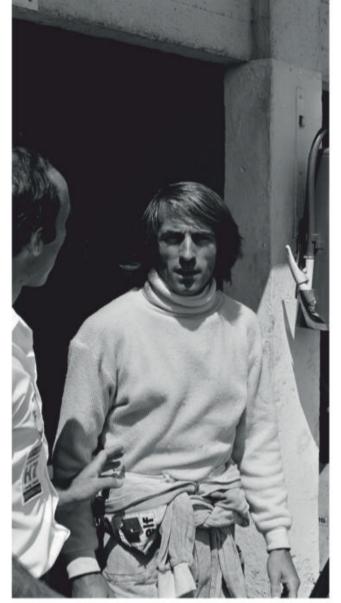
On race morning, as I was passing his motorhome, Frank called me inside. "Will you be all right?" he asked with what I thought was



The Williams/Head partnership (above) was the heart of the team. Frank and Jacques Laffite (right), ahead of the 1975 German GP where Laffite finished an emotional second







more anxiety than I really needed to feel. When I replied in the affirmative and showed him my prepared lap chart, he handed me a sheet of A4 paper. "I find this useful," he said. "You'll need it for scribbling down the numbers when they come by in tight formation at the end of the first lap. Then you can transfer them neatly to your lap chart before they come round for a second time." Keeping the piece of paper I had already assigned for that task in my back pocket, I said thanks and reassured Frank everything would be OK. He nodded and ticked 'Maurice – lap chart' off a long list. Such attention to fine detail would undoubtedly help Rosberg win the championship.

The precise regime that governed every aspect of Frank's life would be cruelly broken – along with his spine between the fourth and fifth verterbrae – during the accident when his hire car left the road in the south of France on 8 March 1986. I was lucky enough to be one of the first to interview him the following January, not





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Frank remained as the head of Williams until the sale of the team to Dorilton in 2020 but in 2013 his daughter Claire was made deputy team principal

long after he had begun trying to form a regular work pattern at the team's new headquarters in Didcot's Basil Hill Road. I didn't know what to expect. I found Frank utterly defiant, despite such a crippling handicap.

"You see me now, fiddling around, shifting about, still very uncomfortable," he said, matter-of-factly. "I don't have anything working below my armpits. The problem is that all I can move is my shoulders, neck and arms – so they are grossly overworked. They ache like fuck all the time."

Taking such typical candour as a cue, I moved

the conversation into an area which I knew was likely to affect him most. Frank had a reputation for not wasting a single second of his day. It had been a standing joke among team members that he had worked out it took something like 19 minutes from the moment he got out of bed, to shower, shave, dress and be waiting in the hotel lobby with his briefcase, ready for a day at the race track. The irony now was that the straightforward business of getting up and mobile in the morning – something which, ironically, most people detest – was a daily routine Frank would have loved to have achieved with his former dexterity.

"The *frustration* is almost unbearable," he said. "It is without a doubt the biggest setback to come to terms with. I don't want to go into sordid

details but everything – being lifted out of bed, put in the bath, being shaved, dressed, put in my chair, taken from the chair and strapped into the lift which runs down the stairs, put back in the chair, even putting my tie on – everything seems to take forever. Going to bed isn't so bad. You're more placid then, a bit tired and ready to sleep. That operation only takes about 30 minutes..."

Frank made no excuses for the cause of his life-changing injuries on a rural stretch of road between Paul Ricard and Nice airport.

"I COULD HAVE BEEN KILLED, THE WAY I DROVE, I HAD IT COMING. I DIDN'T DO STUPID OVERTAKING OR ANYTHING LIKE THAT. BUT, FOR ME, **EVERY CORNER WAS A** CHALLENGE! I LOVE RACING, MAURICE - AS WE ALL DO -AND THAT'S THE TROUBLE. I'VE SUCH AN URGE TO GO QUICK; TO HANDLE THE **CORNERS WITH A HIGH-SPEED** DRIFT. THAT'S WHY I LOVE ALL THE DRIVERS. BECAUSE WHAT THEY DO IN A CAR IS JUST FUCKING BRILLIANT. I LOVE IT. IT REALLY TURNS ME ON."

"I'm very lucky to be here, to have this company full of wonderful people to run, to be able to afford the necessary care. A lot of people in my position don't have that. I shall have a normal life expectancy, less a few years. I was going to live until 80 anyway, so I shall live to 70 - 75, unless I'm careless.

"What I'm saying is that maybe I'll be dead in five years, but I don't believe that. And even if that turns out to be the case, I'll have no regrets. I met a 16-year-old boy recently with much worse injuries than I have; absolutely terrible. I may have all this aggro now, but I've had a good life and mean to continue it for as long as I can. So, let's get on with it.

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25/26 JUNE **SNETTERTON 300**

(BRITISH GT/GB3)



30/31 JULY **SILVERSTONE GP**

(GB3)



BRANDS HATCH GP
(BRITISH GT/GB3)



(BRITISH GT/GB3)





Lando Norris came of age as a grand prix driver in 2021. McLaren's young ace is no longer an apprentice or a quietly capable number two - he's proved himself a potential winner in the top flight, ready to move upstairs to join the greats...

WORDS STUART CODLING



it's just a handful of months since *GP Racin*g last sat down to talk to Lando Norris, so much has changed in the interim. Who could have predicted, at the beginning of the season, that Norris's highly rated new team-mate Daniel Ricciardo, a multiple grand prix winner no less, would take so long to master McLaren's capricious MCL35M — and that it would be Norris, the youngster with the well-documented confidence issues, who would lay on the swagger?

With a new technical format beckoning, 2021 was always going to be about making do as teams pivoted development resources early to gain

an advantage in the era to come. For McLaren's drivers that meant making the best of a difficult car with a particular set of characteristics that made it a potential winner at some tracks and virtually undriveable at others. Ricciardo's journey was the most obviously troubled – as he explained in *GP Racing* last month, he had to revise his entire driving style – although he delivered a fine victory on one of those good days for the MCL35M, at Monza.

Had the cards fallen slightly differently that victory might have gone to Norris. Two weeks earlier, in Belgium, he'd looked to be a prime candidate for pole position on a perilously wet Spa-Francorchamps circuit before spinning heavily into the barriers. A fortnight after completing that McLaren 1-2 in Italy, Norris dominated the Russian Grand Prix from pole position and should have won, only to make the wrong call on tyres as conditions changed in the final laps.

Norris, who turned 22 in November, has been unusually open about mental health, as well as being among the more vocally self-critical of the current crop of drivers. But his demeanour seems to have undergone a subtle shift as he's developed over the season. He gives the appearance of being more confident than in the past, underlined most graphically in Sochi by his unequivocal "NO!" when race engineer Will Joseph radioed to ask if he felt the time was right to shift from slicks to intermediates. Has he passed a kind of tipping point in his personal development, where his speed and racecraft now measurably outweigh the nagging doubts?

"There's been many improvements I've made this season," Norris says, "both from my own side, and also with my team, how we're working, our efficiency and so on. I think that's better than ever. I guess the racing side is one area I've improved a lot this year compared with last season. There's still areas for me to improve in quali, and the races, but I'm much happier.

"I'm still very self-critical – maybe you don't always hear it on the radio that much, and maybe I'm not as vocal about not doing well as perhaps Charles [Leclerc] is, for example. But yes, I'm still very critical and hard on myself. Many times even when I've done well, I might not necessarily be happy with how I've done because I could have done even better.

"It's just I don't do it publicly as much as before, I keep it within the team. And I think I've just learned more how to turn disappointment into work ethic and trying to work with my team to make it better next time."

For McLaren, the focus this season has necessarily been on extracting the maximum from its car on the circuits that suit its characteristics. Development was always going to be limited, given the transition to new technical regulations next season. The MCL35M received its last significant upgrade package in Hungary; a handful of subsequent refinements had already been signed off before the summer break. McLaren hoped to secure third place in the constructors' championship but, instead, has found itself overhauled by a resurgent Ferrari. The key here is the system of limited development agreed between F1, the teams and the FIA when the regulatory reset was deferred until 2022: McLaren had to spend some of its 'tokens' on adapting its chassis to accommodate the Mercedes engine, whereas Ferrari was able to focus its entire allocation on performance improvements.

"Since halfway through the season there's not been that many changes to the car: what we've got is what we got," says Norris. "There are always some tweaks we can make, and little things we're still learning, but you still have to drive in quite a specific way and our problems are still the same."

> The MCL35M is slippery in a straight line but tends towards understeer in slow corners, which is why it thrived at venues such as Spa and Monza.

"Obviously our focus is on next year from a car development point of view," continues Norris. "The positives and negatives from how you have to drive the [MCL35M] car are still the same, so that's why on some tracks we still really struggle, and on others we're much more competitive. And that's because of those characteristics. We're trying to make the most of it.

"For us, it's not surprising that they've been good,"
"They're Ferrari, right? They're one of one of the most successful teams in F1 for many reasons.

"On average, you would still say Ferrari have had a more competitive car from start to finish this year. We worked hard to develop our car in the beginning, and little bits here and there, but we knew that next season [with new regulations], we have a big opportunity to make that next step. We committed to doing that and there was no half-heartedness or anything, we knew it might make the end of the year a bit tougher, and that's been about right."

Certainly, the final triple-header of Mexico-Brazil-Qatar was particularly bruising – McLaren banked just four points and slipped to

fourth – but it was in 🕨

After his second at Monza
(right) Norris claimed pole in
Russia and almost secured
his first F1 victory









the Belgium-Holland-Italy triple-header where Norris demonstrated the qualities which arguably defined his season and underlined his burgeoning status within F1. He'd already signalled the progress he'd been making in the art of qualifying in Monaco and Austria, where he set lap times within half a tenth of Max Verstappen's Red Bull-Honda – in the latter case to the absolute bafflement of Ricciardo.

Granted, at Spa the outcome was a hard shunt into the wall at Raidillon, bringing out the red flags in Q3 and – given what eventuated on Sunday – scuppering not just a potential pole position, given Lando's pace until that point, but also a possible race win. What's significant is not just his speed on that day, making the most of the MCL35M's performance envelope in tricky conditions, but also his response to the setback.

"Spa was the biggest crash I've had in F1," says Norris. "Just that in itself is a bit of a shock – the size of it, the speed and everything. I felt bad at the time because you never want to do that kind of thing.

"But I don't think I can apologise for my efforts or for what I was trying to achieve. I was P1 in Q1 and Q2. I was there for a reason, because I was finding the limits, but I wouldn't say my crash in Q3 was because I was massively pushing the limits – I knew it was going to stop raining.

"I knew the track would be getting a lot quicker, so I didn't try and go out and do the best lap of my life in Q3 run one. I knew Q3 run two would be where the opportunity was. It's simply that I hit the puddle and a bit of the white line and this bump just a little bit wrong, a little bit too much speed, and that was it. But if you'd said, "Q3 run one, you've got one lap, go out and do it," I would probably have tried to go through much quicker than I did.

"So I didn't feel like I'd taken any unnecessary risks at all. The problem was aquaplaning – these cars are terrible in the heavy rain. George [Russell] almost had a massive crash as well, he aquaplaned all the way down the Kemmel Straight just ahead of me.

"If I hadn't crashed, someone else would have done. It was just a shame it was me. I apologise that I crashed the car, but I don't apologise for my efforts, my mentality, my decision-making or anything like that, because so far that's what has helped me and put me in the positions we've been in a lot of times."

This is a very different Lando Norris from the one who spent his first two seasons in F1 quietly fretting that he might not have what it takes to fight with the occupants of the top drawer. It's a Lando Norris who is ready and able to do exactly that — backed by a team long absent from the winners' circle, but which is learning how to win again.

Ricciardo's expertly managed victory in Monza made him the first McLaren driver to step atop an F1 podium since Jenson Button at the 2012 Brazilian Grand Prix (a week and a half after Lando's 13th birthday). The team's form since then has been largely woeful. Personnel and leaders have



When the MCL35M allows,
Norris delivers, with Monaco
(below) and Monza (bottom)
prime examples of this



PICTURES: MRK SUTTON; FIA POOL

come and gone, and the McLaren of today is a very different organisation, one finding its way back towards emulating past glories rather than being burdened by the expectations of them.

This would become obvious in Russia, where team and driver in effect tripped over each other after an otherwise impressive performance. Norris qualified on pole, was unfazed when Ferrari's Carlos Sainz outdragged him to Turn 2 – always a possibility at this track – then bided his time before striking back decisively ahead of the first round of pitstops.

"It was something I knew instinctively," says Norris "We'd discussed it: What happens if this is the scenario? What happens if I end up even further back than second? We'd planned for as many scenarios as possible, but you've got to have the right mentality in every one of these different situations. When I dropped back to P2 it was sort of inevitable – I don't think there's been that many times in Sochi when pole position has led out of Turn 2, so it wasn't like I was worried or shocked or didn't know what to do from then on.

"We had a very good plan, it was just a question of lifespan [of the tyres], what's the stop lap we have to get to, will I be able to pass him or not, and so on. It didn't worry me. I was waiting for that situation; I was ready to be in whatever position I was in for that whole race. So even with the fact of Lewis being in the position he was, and [Valtteri] Bottas and Max, knowing how much to push in the middle phase of the race, how much to save for







the end of the race, things like that were all taken into account. There were so many things we did well that weekend, just that one thing went wrong and took it all away. But many decisions we made were very good."

Having passed Sainz, Norris controlled the race until the rain set in during the closing laps, gradually at first and then in earnest. Both Norris and his pursuer, Lewis Hamilton, pushed back against team calls to pit for intermediate tyres, but Lewis acquiesced after Mercedes upgraded its request to an order, based on expectation of heavier rain to come. When that arrived,

a disconsolate Norris slithered down to seventh at the chequered flag.

Naturally attention turned to the quality of McLaren's decision-making, though this might be a little unfair. While Mercedes seemed to have a key piece of information the McLaren pitwall didn't – that the rain would intensify - it was also able to pit Bottas first and evaluate the intermediate tyre option. Since Bottas was running outside the points, there was no downside. McLaren couldn't do that with its other driver since Ricciardo was in the top six.

Despite the mitigating circumstances, Norris was obviously disappointed. This was not an opportunist victory lost but one which had been well earned. Hamilton, significantly, recognised this and commiserated with Norris. As a more experienced driver, and one who regularly interrogates his team's strategic calls, Lewis openly acknowledged that on this occasion he had been wrong and his team had made the right decision.

"It didn't change the outcome," says Norris, "and I still wasn't happy but it was good to know that we had the same mentality at that point – we both were thinking 'these tyres are OK'. And I still stand by it. From what I knew - because I didn't know it was going to rain any harder - it was the right decision [to stay out] and if it hadn't rained any harder I would have won

the race. Slicks would have been good enough to be ahead of Lewis after he boxed onto inters, and he probably would have stayed out as well if it wasn't going to rain more, but he got that

> bit of information from the team that it was going to rain more, and that proved to be key.

"It meant a lot to hear that from him, not so much as a seven-time world champion, but as someone who has been through situations like that before and the kind of guy that he is, to say what he did to me and to be supportive. It didn't rid me of the frustration but it definitely helped.

"The time spent on reviews was very good. And it wasn't just one thing, there were a couple of little things which added up to the eventual decision. Things I said, or the

way I said them, had changed things a little bit, and the pace that I had as well, that influenced our decisions. So it wasn't simple. Our strategy team is one of the best in F1 and they made that decision because that's what they believed was correct at the time. Of course, in hindsight it was a mistake, but we learned a lot in the review which we were able to put into practice in the following races."

It was the American football coach Vince Lombardi who coined the famous phrase "winning is a habit". Another apt aphorism which sprung from his pen should resonate with Norris and McLaren: "Winning is not a sometime thing, it is an all the time thing. You don't do things right once in a while... you do them right all the time."

That must be the long-term goal for this upwardly mobile team and driver. Both have shown the capacity to win and the ability to learn from mistakes. Much will depend on how strong McLaren's 2022 car is relative to the competition, although for now that remains unknown. But in terms of controlling what *can* be controlled, Norris thinks he's in the right place.

"One thing that's changed is my confidence level," he says. "I feel like I'll be able to deal with it better when I'm leading a race. I know where we deserve to be if we take our time to try and make further improvements, to get to that position of winning races.

"And I'm ready to be in those positions more often."





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ALL CHANGE PLEASE

One driver allowed to quietly retire, another one fired in a blaze of rancour. An American buy-out that never happened. A title sponsor demanding an annual right of review. No wonder Alfa Romeo is looking to start 2022 from a clean sheet...

WORDS ROBERTO CHINCHERO PICTURES (



motorsport

Alfa Romeo team principal Frédéric Vasseur has had a lot to think about in 2021...





WHILE THE RESULTS ON TRACK were thoroughly unexceptional, for Alfa Romeo Racing 2021 was a year destined to play a very important role in the future of the team. Behind the scenes of the Sauber Motorsport-operated organization in Hinwil, Switzerland, cogs have been turning with the express purpose of executing great change on the financial and technical front – and, of course, the driver line-up.

As Kimi Räikkönen and Antonio Giovinazzi laboured in vain to secure points on track, around the boardroom table the top management laid their plans. But among the various news to come out of the team, paradoxically the most important event, one which attracted great interest, was a decision... not taken. And it was a huge one: to sell or not to sell. For many months negotiations had been underway which would end in a change of ownership of the Sauber Group, which since July 2016 has been the property (via various holding companies) of Finn Rausing, the reclusive businessman known for being co-owner of the Tetra Laval packaging company and the grandson of the inventor of Tetra Pak.

ENTER AND Exit andretti

Last spring Rausing received a purchase offer from a US consortium which included the large insurance holding company Group1001, a sponsor of the Andretti Autosport IndyCar team co-owned by Michael Andretti, who was acting as figurehead for the bid. Andretti's consortium had identified the Sauber Group as a means of bringing another US team into Formula 1 without the start-up complications that would

otherwise ensue – not least the requirement to pay \$200million up front into a pot to be shared among the existing teams.

Sauber wasn't officially for sale, but Rausing decided to start negotiations by evaluating the benefits of the offer. Since 2016, the 67-year-old Swedish billionaire has made significant investments in Sauber's Hinwil facility to bring the struggling Formula 1 team back to the level of performance which made it a championship contender during its years under BMW's ownership. The F1 organisation expanded from 220 employees in 2016 to the current 500, and strategic investments in infrastructure enabled it to acquire must-haves such as a simulator. It also embarked on new long-term technical collaborations with suppliers.

Sauber also launched a new division, similar to McLaren Applied and Williams Advanced Engineering, which operates not only in the automotive sector but also in industrial fields where the Group's F1 technology can be adapted to profitable use. Rausing has never closed the doors where the possibility exists to work with partners who could make a strategic contribution: joint ventures that would allow the sharing of effort on a financial and organizational level, strategic and managerial, with partners who add value through their own expertise and networks. So long as these arrangements offer the potential to move the team forward they will be entertained.

Andretti's proposal was therefore considered worthy of attention. In fact the negotiations continued for several months, even reaching a final phase which seemed to be a prelude to Rausing handing over control and remaining only as a minority shareholder. But precisely in that final phase, divergences of strategic vision emerged – and not only related to the management of the F1 team.

Contrary to what has been reported or assumed elsewhere, *GP Racing* understands it was Rausing who called off the negotiations and not by the group represented by Andretti. They simply had to accept their counterpart's decision. The reasons for the breakdown in negotiations



It been a busy few months for the Sauber-run Alfa with the takeover led by Michael Andretti (above, far left) falling through, Räikkönen retiring and Giovinazzi being dropped from the team for 2022

are many, but it's certain the current ownership of the Sauber Group would not have accepted the likely dismemberment of the Hinwil facility. It is believed Andretti's plans included moving part of the business to the United States.

WHERE DOES ALFA ROMEO STAND?

In November 2017 Alfa Romeo became the main sponsor of the Sauber F1 team, a relationship which evolved to the point of a name change to Alfa Romeo Racing at the beginning of 2020. The arrangement has been transformative not just for the team's branding and image, which was dour and anonymous, but also for its finances. At the time of the Rausing acquisition in 2016 the team's sponsorship take was practically zero, its share of F1's 'prize pot' negligible.

Sauber-Alfa Romeo's form has fluctuated, though: after an initial improvement it peaked at eighth in the constructors' standings in 2018, and has risen no higher since. The partnership was renewed in July 2021 with a new multi-year agreement, but one featuring significant changes compared with the previous arrangement. Most threatening is the contractually enshrined right for Alfa Romeo to review the partnership every year; along with that, as a concession, Alfa has given up its right to nominate one of the team's two drivers.

The old contract granted Alfa Romeo the choice of a driver, which in the case of both Charles Leclerc (in 2018) and Antonio Giovinazzi (in the past three seasons) has meant drawing on the Ferrari Driver Academy program. On several occasions during the past two years, team principal Frédéric Vasseur has publically referred to the constraint on the team's choice of drivers, so it wasn't too surprising that in the new contract he managed to eliminate this condition, reserving the freedom to choose both. The team has pushed hard to be able to evaluate all the options offered by the drivers' market which doesn't preclude the possibility of having a driver linked to Ferrari in the team, just that it no longer represents an obligation.

As quid pro quo Alfa Romeo got greater flexibility, guaranteeing the possibility of reevaluating the contract every twelve months. While this naturally cast the new agreement in a more precarious form, Alfa Romeo CEO Jean-Philippe Imparato painted a more reassuring context, but one with nuances – as you might

expect from a senior manager who once declared "motorsport is dead unless it's electrified". After the merger last January between Fiat Chrysler Automobiles and PSA, Alfa Romeo is now part of what has been renamed the Stellantis Group, which includes fifteen manufacturers. Marketing strategies and even entire brands will be fluid in the years to come. Alfa Romeo needed the annual review clause in the event of further Covidrelated chaos in the car market (in any case, the brand has effectively been on life support for several years), but it also offers the option of evaluating a brand change. Should it become strategic to promote other Stellantis brands, such as Maserati, the switch would be applicable without contractual changes.

WHY 2022 WILL BE CRUCIAL

For Alfa Romeo, the renewal of the contract on an annual basis enables it to evaluate the team's results more regularly. With this, the pressure on the team increases. It must demonstrate significant progress in 2022.



The team was aware the 2021 season was going to be very difficult, given the carry-over of much of the technical package from the previous season: 70% of the 2021 car was the same, and this obviously had an impact on relative performance to those teams which had directed resources to development. Sauber's decision to focus technical and financial resources on the new rules package to come meant no meaningful in-season development on the 2021 car, a sacrifice it hopes will yield benefits in 2022.

Unlike Haas, which buys in many components from external suppliers and has a direct link with Ferrari, Sauber has always sought to maintain its autonomy. That represents a challenge from many points of view, but it has never been questioned internally. Today in Hinwil the team can design and build the entire car in-house with the exception of the power unit, a philosophy which allows the team not to depend on others, and which enables it to theoretically have a choice of power unit suppliers.

For all these positives, however, the reality of 2021 has been grim. At the time of writing Alfa has been overtaken by Williams for eighth in the constructors' championship, which had been its minimum target for the season. Clearly Williams has made progress with its car and profited from George Russell's excellence.

This aspect affected another of Alfa Romeo

Racing's strategic choices. At the start of the 2021 season it was still not clear who would be driving the following year, since both Räikkönen and Giovinazzi were out of contract. Vasseur wanted to wait for Räikkönen's decision on whether to retire or not, but at the same time he evaluated Valtteri Bottas's intentions regarding his future after being informed he would be giving up his Mercedes seat to Russell. When Räikkönen confirmed his decision to retire, Vasseur closed the deal with Bottas, securing the Finnish driver for the next two seasons as the team's point of reference. While there are those who view Bottas as something of an also-ran after five years of being number two to Lewis Hamilton, he remains quick enough and is younger and hungrier than Räikkönen.

A BITTER END For Giovinazzi

Bottas's appointment was formalised on September 6 but, in the wake of the announcement, Vasseur remained tight-lipped about the identity of the second driver, leading

THE TEAM WAS AWARE THE 2021 SEASON WAS GOING TO BE VERY DIFFICULT, GIVEN THE CARRY-OVER OF MUCH OF THE TECHNICAL PACKAGE FROM THE PREVIOUS SEASON

many to conclude that Giovinazzi remained in the frame for 2022. In fact the impression which emerged between the weekends at Zandvoort and Monza was that the team had already decided to end its relationship with the Italian driver.

Giovinazzi was always a slightly peculiar choice, having spent two seasons on the sidelines after finishing as runner-up to Pierre Gasly in the 2016 GP2 Series. Twice in 2017 he substituted for the injured Pascal Wehrlein at Sauber, without greatly distinguishing himself, and through that season and 2018 he was Ferrari and Sauber's nominated reserve driver. To his credit he grew up fast after being promoted to a race seat for 2019 but Vasseur expected more from his driver, even if he never publicly expressed such sentiments. Giovinazzi's principal flaw has been





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his tendency to make small but costly errors in races, such as when he crashed out while running in the points at Spa in 2019.

For his part, Giovinazzi can wag a finger at the team over 'finger trouble' and peculiar strategies which have denied him opportunities to score. He went as far as to harangue the team publicly after it called him in for an early stop in Mexico, from which he emerged behind the long-running Bottas and Daniel Ricciardo. But at that point Alfa had already made its choices, announcing the agreement for 2022 with Guanyu Zhou, and Giovinazzi's departure, right after Interlagos.

Vasseur's decision to drop Giovinazzi was also central to Sauber chairman Pascal Picci's resignation, announced before the Mexican GP. In an interview with the Italian edition of *GP Racing's* sister website *Motorsport.com* Picci, a key figure in saving Sauber in 2016, was critical of Vasseur. "I do not want to be associated with the management of Fred Vasseur in the future,"

Giovinazzi had been hoping to hold onto his drive, even after Bottas was announced, and was unhappy at being replaced by Zhou

Picci said. "The way in which the drivers were chosen was one of the points that broke the table between me and the current management."

The hiring of Bottas had already been taken as a rejection of Giovinazzi, who hoped to inherit the role of 'reference driver' after Räikkönen's retirement. It's clear the will to change has prevailed, and the beginning of a new technical cycle in F1 as a whole has provided an ideal context for starting work with a new driver, especially a rookie such as Zhou. The Chinese driver also came with 25 million good reasons – in dollars – for choosing him, courtesy of his personal backers, but it wasn't just this which excluded Giovinazzi from the running for 2022.

Essentially the team doesn't believe its car was slower than the Williams, and that its drivers let "WE HAVE TO GO BACK TO THE MIDFIELD. WE WANT TO BE IN Q3 REGULARLY. I'M CONVINCED WE CAN GO BACK TO WHERE WE WERE IN 2018" FRÉDÉRIC VASSEUR

the side down. As Vasseur pointed out:
"We finished most of the races ahead of the
Williams, but we lost in Hungary and Belgium,
and this made a lot of difference."

Vasseur has never articulated it explicitly, just as no one in the team has ever expressed opinions about drivers, but the impression is that the performance of Alfa Romeo's drivers has also been subject to a rigorous assessment. And they have been found wanting in comparison with Russell, who has created points-scoring opportunities seemingly from nothing by regularly outperforming his car in qualifying.

"We have to go back to the midfield," Vasseur says. "We want to be in Q3 regularly. I'm sure Ferrari will also take a step forward with its power unit and I'm convinced we can go back to where we were in 2018."

The certainty is that 2022 will be a crucial year for the future of this team as it embarks on a completely new programme, with new drivers in a new car which has had the benefit of Hinwil's entire technical resource focused on it. It's not only the outcome of a season which is at stake, but the future of a team in search of its identity.



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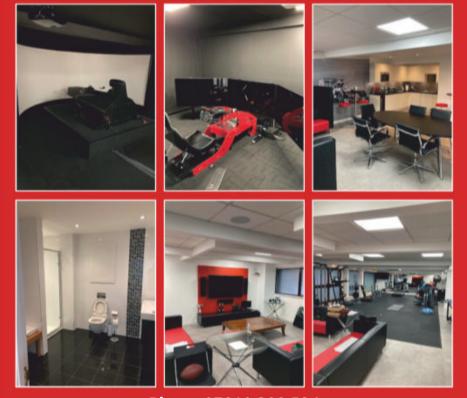
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ANTONIO GIOVINAZZI

After three seasons with Sauber/Alfa Romeo, the Ferrari Driver Academy graduate is heading to Formula E. He opens up about his difficult start in F1 - and why having Kimi Räikkönen as a team-mate is the best thing that could have happened to him...

Let's go back to 2011 and your days in karting. If back then, before you met Ricardo Gelael, who eventually became your sponsor and 'second father', someone said you'd end up spending three years in F1, would you have believed it?

When I was a kid my dream was to make it to F1. I was convinced that if you have a talent and work really hard, you can achieve that. But as I was growing up I started to be more realistic about it. It's only 20 drivers, you need a lot of luck and a lot of money. So in 2011, no, I wouldn't believe. I was 17 and still in karting but, luckily, I found Jagonya Ayam [an Indonesian fast food chain] and this man, Mr Gelael, who helped me to go to single-seaters. But even at that moment my main priority was simply to become a professional driver, just to get paid from this sport.

In F3 I was racing alongside DTM and thought that it would be nice to be a manufacturer driver there, and I almost signed for Audi in 2015. We thought with my father that if they called us, then this would already be way above our expectations. But then there was the 'Dieselgate' scandal and they decided to stop taking new drivers. But as one door closed, another - even bigger one - opened for me, because I went to GP2 with Prema, again with Jagonya Ayam [sponsorship]. I won the third [feature] race, was fighting for the championship until the last round. And then, at the end of the year, I had a call from Ferrari.

After two races in 2017 you still had to wait two years for your proper F1 chance. Did that affect your progress early on in 2019?

Yes, for sure. The first half of the season I was a little bit lost, especially in the races, in wheelto-wheel battles. You don't sit out of racing for almost three years and then jump into F1 – that is the top category. So it wasn't ideal, but in the end

I couldn't change anything.

The second year we struggled with the car, but for myself I'm sure I improved a lot, if I compare with Kimi [Räikkönen]. This year, again, I did another step, but in F1 you need to be in the right time with the right car.

A tough question, but one that has to be asked - going into the last race, Kimi has 10 points and you only have three. Why?

Because of this I'm really disappointed. We didn't achieve what we deserve. We got into Q3 four times, at most of the races we got into Q2. And last year we went to Q2 four times and Q3 once but still achieved four points. This is my best year in terms of how I feel, in terms of performance, but the worst in terms of points. When you work really hard for a year, you do well on Saturdays, but then on Sundays for one reason or another you never achieve what you want, it's difficult.

Some things this year didn't go your way, right? A tear-off stuck in a brake duct in Imola, a halfminute pitstop in Barcelona because a new tyre was flat...

You know, Imola was the second race, Barcelona was the fourth. At one point I just said to myself, 'OK, it will turn around, it can't always be like this.' But it never turned around! We never had

"THIS IS MY BEST YEAR IN TERMS OF HOW I FEEL, IN TERMS OF PERFORMANCE, BUT THE **WORST IN TERMS OF POINTS"**

a race where we could say luck was on our side. Unfortunately it's like this, but what can we do?

How was it to measure yourself against Kimi during all these years?

To compare myself with him is the best thing for me, because he's always been consistent and fast, in the races especially. If I see myself in the first year and where I am now, I can really see progress. He was the best possible team-mate for my career in F1, because I never had to compare myself with a rookie or not a really fast driver. I came here and it was Kimi, a world champion. So I'm OK with myself, because I know that when I left F1, I was almost at Kimi's level. This makes me proud of what I did. Unfortunately it ends like this, but for myself, like I say, I'm happy, 100%.

You already know you're going to be racing in 2022. What are your expectations for Formula E?

I did two days of testing and unfortunately they will be the last test days before race one. This will be a handicap, because the car is completely different to any car I've driven in my career. Be it Formula Abarth, F3 or F2, it's all the same: you have to brake late and go on the throttle. Here you cannot brake really hard, you don't have much downforce, there's not much grip and no sound! I won't have any early expectations, but when I feel more comfortable with the car, I can try to set some goals from there onwards.

Is the plan to come back to F1?

Never say never. I will have one foot in this paddock next year as well. This is one of my main priorities. Formula E will finish in August, so it will be a good time to understand what I want to do for 2023. We'll see what I have on the table, and then take the best solution for me.



In 2022 **Guanyu Zhou** will become Formula 1's first full-time Chinese driver, a potential hero who could galvanise grand prix racing in the world's most populous nation. No pressure then for Alfa Romeo's newest recruit...



ormula 1 established a foothold in China with the first grand prix in Shanghai in 2004. But the crowds took their time coming. What the series' bosses have always craved is a local star to help properly tap into the latent riches of the world's second-largest economy.

In 2022, F1 will finally get its first full-time Chinese driver when Guanyu Zhou graduates from Formula 2, joining Alfa Romeo as Valtteri

Bottas's team-mate. The announcement of Zhou – colloquially known as 'Joe' – was heralded as being "fantastic news for F1" by head honcho Stefano Domenicali, who was delighted that "the millions of passionate Chinese fans now have a home hero to cheer all year long".

It's certainly a breakthrough moment for F1, but Zhou's signing was anything but a formality. A potential buyout of the team nearly derailed his F1 dreams completely. And even when he was announced, a barrage of criticism followed – given the calibre of rival drivers who were arguably outperforming

him in F2 yet missed out, it was inevitable there would be suggestions he is in effect a pay driver.

These are claims Alfa Romeo team principal Frédéric Vasseur brushes off, saying Zhou's performance in F2 this year — where he claimed three race wins and sat second in the standings at the time of his signing — was "speaking for itself". And Vasseur has a fine record as a talent spotter — his ART Grand Prix organisation has guided a good many drivers through to F1, including champions Lewis Hamilton and Nico Rosberg and rising stars such as Charles Leclerc, Esteban Ocon and George Russell.

"He won this season in Bahrain, Monaco and Silverstone," Vasseur says. "In F2, they're the most demanding tracks. He scored pole positions. He's always there, consistent and I'm sure he will do well on the next step."

Zhou has widely been regarded as China's brightest talent for several years. He first linked up with the Ferrari Driver Academy in 2014 while still in go-karts before switching to the Renault – now Alpine – junior programme in early 2019.





Alpine Academy director Mia Sharizman formed a three-year plan to prepare Zhou to make the step up for 2022, believing him to be China's only F1 hope for "the next 15-to-20 years".

Vasseur highlights the determination Zhou showed in leaving China for Europe as a teenager to chase his F1 dream. "We know perfectly that when you move from Europe even to Japan, it's not an easy move for a driver – and Zhou did the opposite," he says. "But when you are 13, and you move to Europe just because you want to become a racing driver, for me, it's a huge commitment."

Entering his third F2 season with UNI-Virtuosi in 2021, Zhou knew that a title challenge was the minimum expectation. His early-season form thrust him to the top of the standings, but a poor weekend in Sochi — including a spin on the formation lap — left him a distant 36 points behind fellow Alpine junior Oscar Piastri before the season-ending rounds in Jeddah and Abu Dhabi.

But plans for Zhou to move up to F1 were already well advanced. Alpine had put him through a rigorous private testing programme and fielded him in FP1 for the Austrian Grand Prix. While the team itself had no seat available, having signed Esteban Ocon to a long-term deal and triggered the option in Fernando Alonso's contract, it would not stand in Zhou's way if he could land a drive elsewhere.

Alfa Romeo emerged as the only real destination for Zhou. Vasseur hinted he could look to bring in a rookie to partner the incoming Bottas from Mercedes, but continued to insist there was no rush to decide. Alex Albon and Nyck de Vries were both linked with the seat, yet once Albon signed for Williams, it left all the power with Alfa Romeo in the driver market since it held the final vacancy.

Zhou's management team, which includes former Manor F1 boss Graeme Lowdon, set to work on getting a deal across the line. The combination of Zhou's F2 record and experience, plus his backing from an array of Chinese sponsors, meant that by September a deal was understood to be a formality.

And then Andretti entered the fray. As America's foremost racing dynasty accelerated plans to secure involvement in F1 by acquiring a majority stake in Sauber, which runs the Alfa Romeo team, Zhou's hopes lay in the balance. Michael Andretti made clear that his intention was to place his young IndyCar star, Colton Herta, in the seat. Early plans were drawn up for



Herta to appear in practice for the United States Grand Prix. But the acquisition deal ultimately fell apart owing to what Andretti called "control issues".

This put the Zhou deal back on track and the announcement followed in November. Zhou would depart Alpine with the blessing of race drivers Alonso and Ocon, both of whom said they were excited to see him on the grid next season. Alfa Romeo dealerships in Shanghai celebrated the news with banners proclaiming China's first full-time F1 driver,

while Zhou himself recognised it was "a breakthrough for Chinese motorsport history".

"I know a lot of hopes will be resting on me and, as ever, I will take this as motivation to become better and achieve more," he said.

Yet not all parties were so complimentary. The man Zhou was ousting, Antonio Giovinazzi, took to social media to express his disappointment, saying: "When money rules, it can be ruthless." That earned him a rebuke from Vasseur, and was somewhat ironic given Giovinazzi's own F1 graduation hinged on the team's relationship with Ferrari. But it

reignited the debate about so-called 'pay drivers'.

Vasseur acknowledges Zhou's financial support was important, helping to boost the team's income, but says the primary criteria remained on-track performance. "[Budget] was a pillar of the decision for sure," he says. "I was always clear like this, because we want to get to the cost cap [Alfa Romeo is currently understood to be operating well below F1's recently introduced budget cap]. It's the best way for us to perform. But it's not the only one.

"Everybody is underestimating the level of performance and the job done by Zhou this season."

The driver many felt on paper was more deserving of the seat was Zhou's F2 title rival and Alpine Academy peer.





Piastri, who as a rookie has won more plaudits than Zhou this season, didn't have the budget to compete for the drive. But Piastri has defended Zhou, calling the criticism "pretty unfair".

"We all know he's bringing some financial backing behind him, but he's not doing poorly," Piastri says. "He's second in the championship, he's got the same number of wins as me, he led the championship for the first part of the year. He's certainly not coming in with no results at all."

While Alfa Romeo made it clear that Bottas had joined on a multi-year agreement, there was no such detail given for Zhou. Vasseur shies away from expanding on contractual information, simply saying he anticipates a "long-term collaboration".

But much as Alpine had junior drivers knocking loudly on its door, Vasseur may find himself in a similar position. At 18, Sauber junior Theo Pourchaire has been the star of F2 in his rookie campaign, winning at Monaco and Monza. He enjoyed a first F1 run-out in the summer, and is being whispered about as the next big thing.

Vasseur says it would have been "too risky" to hand the seat immediately to Pourchaire, who will remain in F2, tasked with winning the championship. While he may lack experience – he was in F4 when Zhou made his F2 debut – Pourchaire is surely a talent Alfa will not want to relinquish.

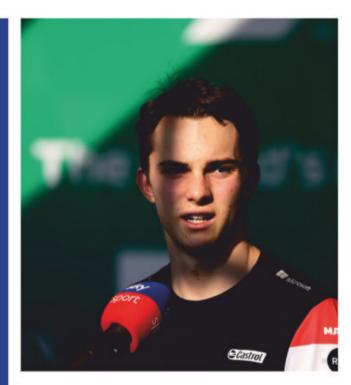
Is Zhou a stop-gap? So long as Alfa Romeo needs his added backing to push towards the cost cap, his value will remain high. And like many other recent F1 graduates, while his junior record might not indicate he's a future champion, Zhou has done enough to earn his shot and the chance to impress.

It is a chance both he and F1 have long coveted. Just as a six-year-old Zhou was captivated by Alonso driving for Renault when attending his first Shanghai race in 2005, F1 will hope he can be the catalyst to inspire a generation of Chinese fans.

FP1 in Austria for Alpine was part of the plan to get Zhou ready for 2022



The 2020 postseason test was Zhou's first time in an F1 car



OSCAR NOMINATED

Oscar Piastri has been a victim of his own success. When the Australian joined the F1 support ladder in 2019, racing in F3, Alpine made the plan clear: two years in F3, two years in F2, and then we'll see about a possible F1 seat.

Piastri blew that apart. He won F3 at the first attempt, and quickly surged into F2 title contention this year. His success meant that Alpine decided regardless of whether he won the F2 title or not, he wouldn't be returning next year. "It's clearly turned out a lot better than expected," Piastri says.

Without bags of cash behind him, Piastri knew securing an F1 drive for 2022 was always a "very outside chance". He will spend 2022 as Alpine's reserve driver, completing an extensive test programme on the side.

A season without racing may seem odd for a talent with a junior CV that would put most of the F1 grid to shame, yet Piastri – who is managed by Mark Webber - is taking it in his stride.

"I would have loved to be on the grid, but I'm certainly not disappointed with what the outcome is," Piastri says. "It's nice to be ahead of schedule and having these results on my CV to help me for anything in the future."

With Zhou now out of the picture at Alpine, Piastri is set to lead its academy roster. He will surely become a regular fixture in the driver market silly season until he finally gets his shot in F1 something for which Alpine will want to ensure he doesn't have to wait too long.



THE LONG INTERVEN

With a long career encompassing engineering and management roles with the likes of BMW, Porsche, Sauber, Ford and Volkswagen, Jost Capito knows better than most what it takes to build a successful organisation in the automotive and motorsport worlds. Now he's applying his vast experience to a major rebuild of the Williams Formula 1 team...







JOST CAPITO





oung people in their twenties and thirties are trooping through reception, products of the talent pipeline that is the UK's motorsport valley. Most will have been born after Williams won its first drivers' and constructors' world championships in 1980. Some might yet have a been a twinkle in their parents' eyes when the team scored its last such success in 1997.

Jost Capito, 63 years young,

the team's CEO and team principal, is sitting upstairs in a large open plan office, sharing a joke with a colleague. Relaxed and smiling, the German executive charged with turning around the fortunes of the iconic British team is less than a year into the role.

He is clearly enjoying the opportunity to apply 40 years of experience working on motorsport programmes for BMW, Sauber and Porsche, not to mention those multiple World Rally Championships for Ford and Volkswagen. It's a track record which proved irresistible to Williams' new owners, Dorilton Capital...

A motorsport fan from an early age, Capito was all set for semi retirement when he was approached about becoming **CEO** at Williams

GP Racing: You have said you were considering slowing down prior to taking on this role at Williams. How has the experience been?

Jost Capito: For me retirement wouldn't have meant that I'm not doing anything anymore and staying at home. I got my enduro motorbikes ready, including my old enduro bike from 1978 that I own, to do the classic enduro championships. So I would have been pretty active. Also some people wanted to work with me - a bit here, a bit there - so I had some really good ideas what to do that would have kept me more than busy. And I was really fine to do that.

But then when I got the call and was asked 'can you talk about the CEO role at Williams?' First of all you cannot say no. As a kid you have never ever dreamt that you could be in that position. I first went with my father to the Nürburgring to the Formula 1 race – it must have been the mid-60s when there was still the old paddock and you could go everywhere – and I remember watching the Ferrari mechanics.

I watched the F2 race in 1968 when Jim Clark crashed. I was in front of the TV, and I was the biggest fan of him. So then when you go racing you always follow F1. It's every young boy's dream and it doesn't come true for many. So I said yes [to Dorilton], we should discuss it. Then I met the new owners and was very impressed. I think they had a lot of



WHEN YOU KNOW THE TEAM IS 10TH THREE YEARS IN A ROW, THERE MUST BE A REASON WHY. SO YOU KNOW THAT IF YOU TAKE THIS JOB IT IS MOST LIKELY THE MOST DIFFICULT JOB YOU CAN HAVE IN FORMULA 1



into WRC [World Rally Championship] and they have never done WRC, and you take it on half a year before the season starts, it's very much jumping straight into cold water [at the deep end], as you say. And it's been very much the same [here]. When you know the team is 10th three years in a row, there must be a reason why. So you know that if you take this job it is most likely the most difficult job you can have in F1.

GPR: Are you here to participate, or win?

JC: I never go anywhere to participate.

GPR: You've changed the leadership structure at Williams. Why has that led to such an improvement in performance – currently eighth in the constructors' championship?

JC: It's not an easy challenge but then the Volkswagen

challenge was also not easy. When they say you've got to get

JC: I think that is a couple of things. Maybe one is my management style – open communication, having clear roles and responsibilities. A big step was getting the technical director in (François-Xavier Demaison) to align all the technical departments under one head. Not having a separate home team and a race team, an aero team and a design team, but having one technical team that works together and talks to each other, communicates properly and respects each other.

[Also we] started to take risks again. If you are 10th for three years, you start not taking risks. To convince the team you say, "look the only fun we have now is taking risks because if you are at the top you can't take these risks". So enjoy it, take risks and do things others wouldn't do. Because if we do what everybody does, we have the ninth fastest car, last year the 10th fastest car. That's where we are, so you have to do things differently. [They] now enjoy doing things differently, taking some risks, getting the support and not having the blame culture [if it goes wrong].



applicants and did a lot of interviews, so I was really honoured when they asked me 'if you want to do that, you can do it.'

GPR: You have spent your life in senior roles in motorsport, so you must have recognised the challenge of taking on a team which has had a difficult few years?

Capito was director of motorsport at VW when it dominated the WRC



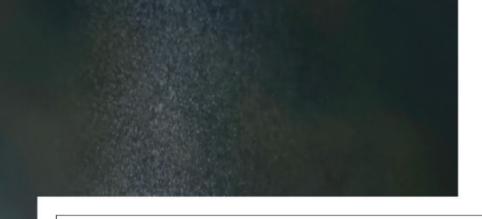
GPR: Most organisations want to avoid risk, so to what extent is taking risk essential for innovation – and performance?

JC: I think it's essential for everybody nowadays, for every business. I think business [has] changed to be more agile and it's very much the software companies that have changed it. They do releases before they are proven 100% perfect. You don't have to be perfect if you produce a product, but you have to be innovative, try some stuff and develop it over time and not be conservative. I think that is the approach to take. But... you have to know what you do. The risk has to be calculated and the risk has to be based on data so that then you can justify the risk. It's not 'let's try something different', it might just be stupid, so that's not what we mean by risk taking!

GPR: Having taken on 'FX' Demaison and created a much more coherent structure with clear roles and responsibilities, how would you characterise the team of people you inherited?

JC: I think the capabilities and the talents are there. Lots of young engineers as well, and a good mix with experienced engineers. What I found is that a lot would say, "oh, this is the Williams way, this is how we always did it" and that had to be overcome. I think we are in a good way to overcome this so that young people coming in, people from other teams coming in, have a voice and have a chance to speak up and have a healthy discussion about how you can change things.

Sven Smeets (former VW Motorsport Director) started yesterday [November 1] as the sporting director, so with that the race team itself is represented on the management





JOST CAPITO

77

respects. It's difficult to run beside George. [Lewis] Hamilton will notice that next year.

GPR: Your decision to sign Alex Albon surprised a few people. What was behind that move?

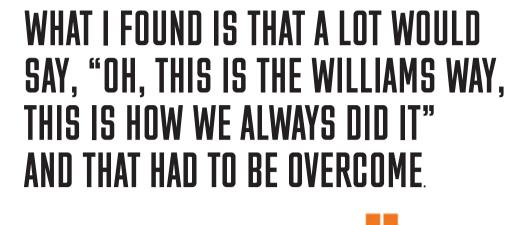
JC: I think Alex was, for us, the logical choice because you have always to look at what situation the team is in. I think if we had Max Verstappen it would have been the right driver at the wrong time. You need a driver who is still not yet at the peak of his career but has a certain experience so that he gets the respect from the team, yet has to have the speed and to fit into the mentality of the team. Even if the choice would have been bigger, Alex would have been the number one choice.

GPR: Given the new Concorde Agreement, budget cap and recent changes to Formula 1's structure, what's your opinion on the current health of Formula 1?

JC: I think F1 is in a very good phase right now. When you see in Austin 400,000 spectators over the weekend, it's massive. When I got the job and knew Stefano [Domenicali] was taking over I knew he will take F1 in the right direction. He understands the business – he has been a team manager, team principal, and ran a car manufacturer. He is the guy with the best credentials. I really understand him. I worked with him, we became friends, so I thought I can also be of support to him to develop F1 in that direction by working closely with him, by having one team where he can really know exactly who he is talking to and what kind of mindset he is talking to.

GPR: What's your opinion of Liberty's ownership of F1? When they came in four years ago they seemed to take a very 'American' approach, but that has changed...

JC: I think they learned pretty quickly. In Stefano they brought the right person in, so that shows they have learned. They did not bring in another American who has no idea about F1. Also having Ross [Brawn] and Steve Neilsen in there, they have the right team now who can drive F1 forward.





committee, which was not the case before. I believe it is very important that the guys who travel all year are represented in the management. That is the next big step – to have the technical side and the sporting side very close.

GPR: How have George Russell and Nicolas Latifi responded to the changes this year?

JC: Both are really good drivers. It's obvious George is an outstanding talent and for every driver beside him it's difficult. But Nicky took this challenge on well, many times in the races he has been faster than George.

George just gets a miracle out in qualifying, again and again... and he's happy to take the risk. I think George is one of the most complete race drivers I ever met. In many Capito is full of praise for what George Russell (left, and below, right) has done, and says he will push Hamilton hard







JOST CAPITO

GPR: The 2022 regulations mark a new chapter. What's your view of it from a Williams perspective?

JC: I think it's exciting and worrying! It can't get much worse with the car so that means more exciting than worrying. We have defined the objectives of the car, we are pretty close to delivering these objectives, but [whether] these objectives were set rightly and high enough nobody knows. I think that's the same situation for everybody.

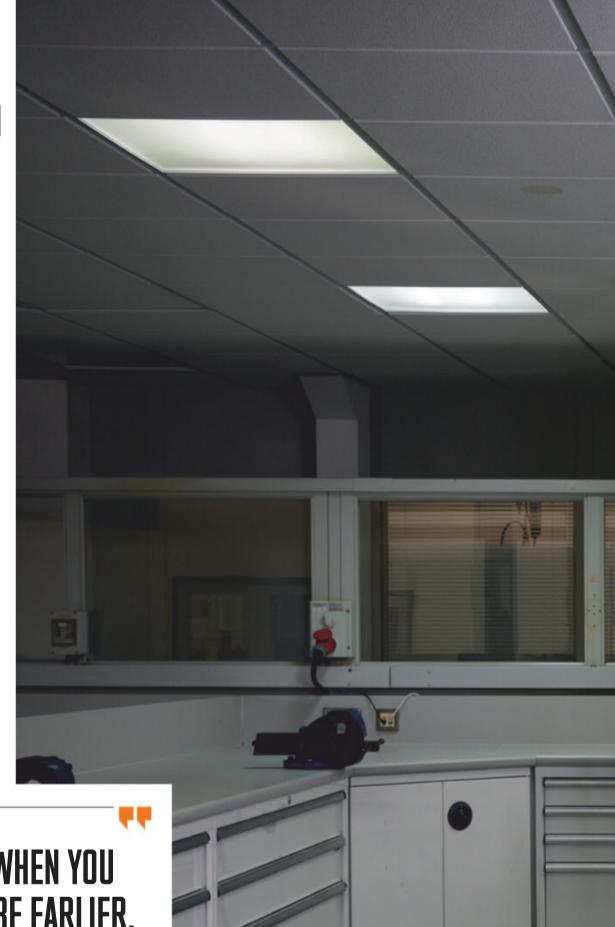
Normally, I think the teams will be much closer together because they start from the same level. It's not like making a fast car faster and a slower car faster – everyone is on the same level – but we will see. There can be surprises both ways.

GPR: What does success look like for Williams between now and 2025?

JC: To constantly improve in the direction of winning. You can't put a timing on when you want to win or want to be world champion because you are not on your own.

You know, if we say we want to be climate-positive by 2030 this is up to us to do. We are not competing with anything. We are competing not with a competitor, we are competing with facts, we are competing with what we are doing, so you can put a date on it.

But in the sport, you can never put a date on when you



YOU CAN NEVER PUT A DATE ON WHEN YOU BELIEVE YOU CAN WIN - IT CAN BE EARLIER, IT CAN BE LATER - BUT YOU HAVE TO **CONSISTENTLY SEE AN IMPROVEMENT**

believe you can win – it can be earlier, it can be later – but you have to consistently see an improvement and catch up. Go a step up, go a position further. On the way you might fall back a bit and this is also not a nightmare, but you have to see the consistent improvement. How we improve on the infrastructure, how we improve the team, how you improve your car so that you get towards it.

GPR: To what extent is McLaren a template for turning things around in four years – from nowhere to winning a GP. Is that what you aspire to?

JC: You can't compare and again I wouldn't say in what kind of time frame it is. McLaren could have won the championship two years ago with Honda engines, so you cannot compare the







JOST CAPITO





marketing impact, so it's a good marketing tool, and I think [in terms of] road relevance let's see where it goes. The industry is going very much on electric because this is the solution that you can implement right now. The technology is there because you can use it. But I believe in [technical] diversity on that as well. There are many technologies and I don't believe that full electric vehicles will serve [every kind] of mobility in the future.

Formula 1 engines are now the most efficient hybrid engines around. The combustion system that Formula 1 developed in recent years will make it into production and will be another huge step in making combustion engines cleaner. You will have hydrogen cars and fuel cell cars in Le Mans for example, you will have a different hybrid concept in the Dakar with Audi, you have Formula E with full electric and in Formula 1 you have the hybrid which is going in the direction of e-fuels.

I think these e-fuels, combined with hybrid electric, has huge potential for the future. Formula 1 going in that direction is a one-off chance to speed up the technology [through] motorsport competition. So I am fully convinced that this technology will be for road vehicles in the future and it will be highly influenced by the Formula 1 technology.

GPR: We have recently seen Red Bull establish its own powertrain division in the wake of Honda's withdrawal, essentially following the in-house model that Mercedes and Ferrari enjoy. Do you see that as a possible route for Williams to follow, or is manufacturer supply a better model?

JC: I wouldn't say a better model. There is not only one model that can lead to winning the championship. You have seen that in the past with Cosworth engines winning the world championship and Ferrari having its own engines [in-house]. You have seen both models.

Every team has to look at what is the right thing to do at the right time. I think for Red Bull it's the right thing to do right now where they are with the team.

For Williams I don't think it would be the right time, but you can never say never. You have to have a plan as a team, but you have to keep an open mind and change if there are better options. Whatever comes up in the future, again there is more than one solution.

past to what it is now, and you have different bases where you come from. McLaren came from a different base than Williams came from – it was a team that was run completely differently, you can't compare it one-to-one. I am sure that here we have all the infrastructure, we have the talent, and we have the chances to win races and win championships in the future.

GPR: The automotive industry is going through a profound change and you have spent most of your career working with car manufacturers, so what's your opinion on Formula 1's ability to remain relevant to the car industry?

JC: There are different aspects. Formula 1 still has a huge

I AM SURE THAT HERE WE HAVE ALL THE INFRASTRUCTURE, WE HAVE THE TALENT, AND WE HAVE THE CHANCES TO WIN RACES AND WIN CHAMPIONSHIPS IN THE FUTURE





GPR: Perhaps for obvious reasons, Williams has tended to lead the way on diversity and inclusion, and now you have also set out to become climate positive by 2030. Explain the background to why those programmes are important?

JC: I think diversity and inclusion are very important, to be competitive now and in the future. You need different kinds of views, you need all these kinds of cultural discussions. The more diverse a team or company I had, the better it performed.

You can manage crises much better if you have different views, and the same is true for inclusion. I think the more you do on that the more happy workforce you have and the more

happy people are working there. You get better results.

To have the sustainability strategy - first of all, I want to see motorsport survive. If motorsport does not do these things and lead the way, motorsport will die. I am absolutely convinced.

I would say that you have to be more aggressive than others – motorsport has to be – on the technical side, the engineering side, it's more aggressive than standard businesses so why should you not put this on sustainability issues?

GPR: Is leading the way in some of these technologies a business opportunity for Williams?

JC: Yes I think it is a business opportunity. It is a part of the business, it's also applying F1 technologies, thinking and mentality into other areas... like when the [COVID] crisis came along last year and a lot of Formula 1 teams developed technology for the health sector.

[I have had] quite a lot of comments, does a sustainability strategy win races? I think one has nothing to do with the other – but we are not less focused on winning races because we are also looking into the sustainability strategy and actions as well. I think they are complementary.

GPR: How does Williams Racing work with Williams Advanced Engineering, following the sale of a majority stake in the Williams Advanced Engineering side of the business two years ago?

JC: It is still quite a good relationship between us and we have a couple of projects ongoing. WAE runs the Formula E team for Jaguar so they use our simulator, wind tunnel and our

development of batteries. [It works] the other way round as well – we work with them on advanced solutions for other industries. We have regular meetings with them, it is a close business relationship and Dorilton Capital owns 25% of it, so we are involved.

GPR: You said it was a dream come true when you were offered the job and took it. Are you happy with your first-year report?

JC: Yes, especially when you see how the team moved forward in the last months. We are still not there, we are far away from being there, and a lot still has to be done, but you have to take the team with you on that journey.





Brabham's first world championship race-winning car, hampered by unreliable Climax engines

A Car

WORDS Stuart codling PICTURES James Mann

No. 106





ack Brabham was a racer ahead of his time: commercially savvy; brusque bordering on ruthless in his on-track manners; and as adept at stripping down an engine as he was at flinging a broad variety of cars around the circuits of the day. Brabham knew what he wanted from a racing car *and* how to get it – little wonder that he should become the first driver to win the world championship in a

car bearing his own name.

Mechanically gifted, Brabham had quit school at 15 to work in a local garage, then set up his own business buying, fettling and selling second-hand motorbikes before joining the Australian air force as a mechanic. His earliest experiences of racing came in self-built, motorcycle-engined midget cars on dirt ovals, and the reflexive driving style never left him. In road racing he demonstrated a tendency to flirt with what was possible and permissible: rivals would speak ruefully of the way he would deliberately put a back wheel in the dirt while cornering to flick stones at his pursuers; and he had an early run-in with the Australian motorsports body over sponsorship. Having reached a compromise to cover the Redex logos on his Cooper-Bristol rather than removing them, Brabham applied a loosely attached layer of masking tape which detached at speed, sending the officials apoplectic. Indubitably he was cut from the correct cloth to attain success in the more thrusting and entrepreneurial era to come, one dominated by the Britishbased car makers once derided by Enzo Ferrari as 'garagistes'.

Europe beckoned. Brabham's mechanical engineering skills furnished his integration into the Surbiton-based Cooper Cars organisation, where his flourishing talent behind the wheel





became obvious on the European racing scene. Resettling his family in the UK, Brabham claimed the 1959 Formula 1 world championship by a slim margin, and somewhat against expectations, in the diminutive rear-engined Cooper T51. F1 had reached a turning point: the front-engined era was over. Brabham won the 1960 title more convincingly with five consecutive victories mid-season, but only after winning a proverbial arm-wrestle with the Cooper principals over car development. Father-and-son Charles and John Cooper were fundamentally change-averse, designer Owen Maddock – if Brabham is to be believed – even more so: "I couldn't believe it when he [Maddock] took up gliding as a hobby," Brabham wrote in his autobiography. "I was pretty sure old Owen would find some situation in which he would convince himself he was right regardless of what the flight instruments or even any basic sense of self-preservation might be telling him."

In resolving the argument to develop the 'Lowline' Cooper T53 – with straight rather than curved chassis tubes, coil-overshocks instead of leaf springs in the rear suspension, and the engine and transmission mounted an inch lower – Brabham paved the way for going it alone. In partnership with Ron Tauranac, who designed the step-down transmission which enabled the lower mounting of the 1960 title-winning T53's engine, Brabham founded Motor Racing Developments in 1961. It was a suitably anonymous name for a company whose co-owner was seeing out his Cooper driving contract. The first product of the Brabham-Tauranac partnership was a Formula Junior chassis which Gavin Youl raced to victory in the Australian Formula Junior Championship in 1962.

F1's transition to 1.5-litre engines produced an outlier season in 1961, dominated by Ferrari principally because other manufacturers were slow to produce engines for the new formula. The balance tilted back in favour of the garagistes as more competitive engines became available, though Brabham was unimpressed with the quality and consistency of the Coventry Climax V8s he campaigned in customer Lotus chassis through 1962 as his own prototype F1 car took shape. Neither was he enamoured

of the Lotus 21 or 24, finding
them both "as tight as a
sardine can" and intolerably
hot, owing to the internal
plumbing. During the
British GP at Aintree, Jack
blistered his right foot on a
hot pipe and had to discard
the burned shoe afterwards.
The BT3 F1 prototype
took shape in Motor Racing

Developments' new premises in the Weylock Works, a fittingly

BRABHAM BT

NOW THAT WAS A CAR

No.106

nondescript unit on the banks of the River Wey in New Haw. Introduced at the 1962 German GP, it saw action in just a handful of world championship races, though Brabham campaigned it in non-championship events even after it was superseded by the BT7. The prototype delivered some useful lessons: neither Brabham nor Tauranac were inclined to follow Lotus into monocoque construction, believing a properly engineered spaceframe could be just as light and stiff, and Brabham was delighted with the new car's handling. Running 13-inch rather than 15-inch front wheels wasn't so successful, though, as Brabham discovered when his brake pads wore out mid-way through the non-championship Oulton Park Gold Cup. The Colotti gearbox and Climax engine also proved fragile.

Brabham and Tauranac quickly dropped the 13-inch front-wheel set-up and made further developments to the concept of the BT7, including time in the Motor Industry Research Association windtunnel to refine the shape of the nose, which had been generating lift. The original BT3 was retained as a spare, with 25kg stripped from it, as the team expanded to enter two cars for Brabham and Dan Gurney in 1963.

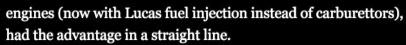
In Gurney, Brabham found a kindred spirit of sorts. Not only was Dan a racer from the top drawer, he possessed mechanical aptitude he would later bring to car manufacture through his own company. But the results would take time to flow.

The BT7 was lighter than the prototype, and featured a new five-speed Hewland gearbox based around a Volkswagen casing – which proved reliable enough after a troubled introduction in Monaco. Both drivers appreciated the comfort of the roomy chassis with its external coolant pipe runs.

The car handled sweetly enough, though the slimline monocoque Lotus 25, which ran theoretically identical Climax



THE BT7 WAS LIGHTER THAN THE PROTOTYPE, AND FEATURED A NEW FIVE-SPEED HEWLAND GEARBOX BASED AROUND A VOLKSWAGEN CASING

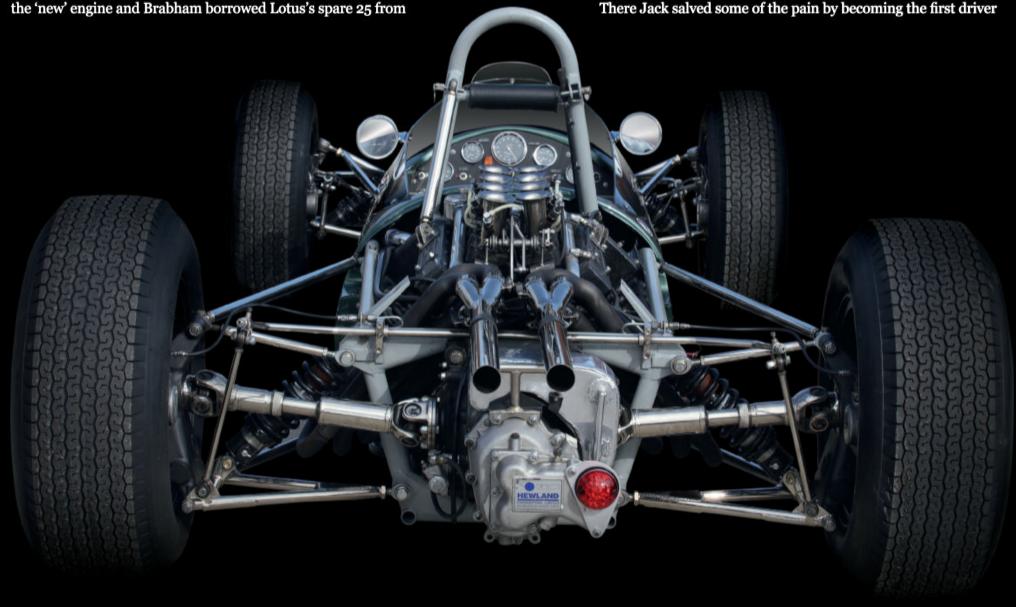


Theoretically. As the season wore on, Brabham became convinced he was receiving unequal service from the manufacturer which had delivered him to two world titles.



The reliability of the 1.5-litre Climax V8 had been suspect since its introduction, and in Brabham's cars it proved exceptionally vexatious. A string of problems in non-championship races left Brabham short on engines for the start of the 1963 F1 season proper, in Monaco, where Jack had a rebuilt engine flown in on Saturday - just in time to learn that Gurney's had dropped a valve during practice and expired messily. Gurney was given the 'new' engine and Brabham borrowed Lotus's spare 25 from

Engine failures came to define Brabham's season, and the picture wasn't improved by the development of a revised unit with a flat-plane crank which demanded a different exhaust and oil inlet set-up. Gurney finished second at Zandvoort despite a late pitstop to fix a sagging oil line, then fifth at Reims a week later, where the team arrived late owing to the time taken effecting repairs. Twin failures at the subsequent British GP led to Brabham slimming down to a one-car entry – Jack in the BT3 – for the non-championship Solitude Grand Prix.



to win an F1 race in a car of their own making.

"Having once been Climax's favourite customer," ruminated Brabham, "it was galling now to realise how much we were receiving second best. Where the four-cylinder Climax FPF engines had been virtually unbreakable, the Climax V8 was, in my experience, never much good. It was rough-running, never really nice to drive, and worse, its reliability, in our cars at least, was often abysmal."

While Brabham's frustrations were understandable, particularly in 1963 when Jim Clark won seven of the 10 world championship rounds, the following season three of Clark's four retirements were engine-related. And many of the BT7's retirements were caused by flaky fuel pump filters and failures of the electronic ignition's transistor box, elements sensitive to location and installation across different chassis designs.

Ultimately the BT7 was not quite as quick as the Lotus 25 and, later, the Lotus 33. Regardless whether Lotus was







receiving preferable treatment from its engine supplier, its slim monocoque chassis forged an easier path through the air – a crucial advantage in this low-power era. While many retirements came while Brabham and Gurney were occupying points-scoring positions, generally those places were best-ofthe-rest behind Clark.

Dunlop's new 13-inch R6 tyres prompted a change in suspension geometry for 1964. The season started brightly as Brabham won the non-championship Aintree 200 and Silverstone International Trophy. Success in championship rounds seemed to remain frustratingly out of reach, though, as Gurney led commandingly at Spa only to run out of fuel. Next time out, at Rouen, Gurney was running second to Clark when the Lotus's engine failed. Now, finally, Brabham's name took its place on the roster of championship race-winning marques. Gurney would win again in Mexico at the end of the season, but by then neither driver was in the hunt for the title. Powertrain

NOW, FINALLY, BRABHAM'S NAME TOOK ITS PLACE ON THE ROSTER OF CHAMPIONSHIP **RACE-WINNING MARQUES**

issues had contributed to seven retirements and several other missed points-scoring opportunities despite the BT7's pace.

Still, Motor Racing Developments had a full order book for its junior single-seaters and its new, customer BT11 F1 chassis. An exclusive tyre supply deal with Goodyear meant the final season of the 1.5-litre era would be an interim year in more ways than one as the new manufacturer got up to speed, but it put Brabham's racing team on a proper financial footing at last – and enabled him to draw plans for the 3-litre era to come... 👨

Starts 52 Wins 2

Poles 2

Fastest laps 4

Podiums 6

Drivers championship

points 61

Chassis Steel spaceframe

Suspension Double wishbones with coil springs/dampers (front), lower wishbones with parallel radius arms and coil springs/ dampers (rear)

Engine 90-degree naturally aspirated Climax FWMV V8

Engine capacity 1495cc

Power 195bhp @ 9,500 rpm

Gearbox Five-speed manual

Brakes Discs front and rear

Tyres Dunlop, Goodyear (1965),

Firestone (Bonnier 1966)

Weight 475kg

Notable drivers Jack Brabham, Dan Gurney, Denny Hulme, Jo Bonnier, Giancarlo Baghetti

NIGEL ROEBUCK'S FORMULA ON E HIGHEROEBUCK'S FORMULA ON E

JUAN MANUEL FANGIO

THE BROWN OF THE FACSIMILE HELMET...



wasn't dark enough, but never mind: the pole position trophy won by Bottas in Mexico was something to savour, and Valtteri – the epitome of Finnish calm – had a crack in his voice as he accepted it from Jackie Stewart.

The power of Juan Manuel Fangio endures, and always will. "The greatest racing driver who ever lived," commented JYS, and many would concur. Once, at Interlagos, I saw him tap Senna on the shoulder, and Ayrton – momentarily annoyed – swung round, then saw who it was and, tears glistening, put his arms round the old man who was his earthly god.

I first met Fangio at Monaco in 1971, on the morning after the grand prix. Outside Rampoldi's, a lovely old restaurant on the run down from Casino Square, there seemed to be a lot of activity, and I wandered in to take a look.

The place was packed with movie people, and in their midst, sitting quietly at a table, was the great Juan Manuel. With knives, forks and model cars, he was fighting old battles again, this for a forthcoming biopic. I was transfixed, and he must have noticed, for when there was a break in shooting, he beckoned me over.

Who – me? After regaining the gift of speech, I told him I was a journalist, new to this business, and later, before shaking hands, we exchanged cards. Thereafter, remarkably, he invariably remembered my name, albeit with a Spanish twist – 'Niguel'. I swooned out of Rampoldi's on a cloud.

Although I encountered Fangio many times over the years, only once did I interview him. In June 1979 he came to England to drive a Mercedes-Benz W125 in the Gunnar Nilsson Memorial meeting at Donington Park, and on the Saturday morning we met at the legendary Steering Wheel Club in Curzon Street.

As always, the quiet maestro – now 68 – was utterly charming, first of all introducing me to our interpreter, a Spanish lady. She was extremely attractive, and clearly this had not escaped him. Very amusing, too, as it turned out, and well able to do justice to the nuances of his anecdotes.

At one point I said something about team-mates, about the games played by drivers to get preferential treatment, and Fangio cackled with laughter. Nothing new under the sun.

"At Monza in 1953, my Maserati had a terrible vibration all



After five world championships, and 24 wins from 51 starts, Fangio was revered by many of the great drivers that succeeded him

through practice, and it could not be cured. Every team I drove for, you know, I made sure of having the mechanics on my side – anything I win, you guys get 10%.

"The night before the race I complained again about the vibration – and on Sunday it was miraculously cured, and I won! I've no idea how they solved the problem," he said, eyes twinkling, "but I remember that during the race [Felice] Bonetto's teeth fell out..."

Every great driver has his other-worldly day of days, and Fangio's came appropriately at the Nürburgring in 1957. Following a long pitstop, his chase of the Ferraris of Mike Hawthorn and Peter Collins – in the course of which he lowered his own lap record by 24 seconds – has gone into legend. If it were the greatest drive of his life, so it follows that there has been none better, nor ever will be.

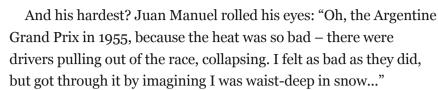
More than anything he remembered the day with relief. "Even now, talking to you over 20 years later, I can feel fear when I think of that race. More than any other circuit, I loved the Nürburgring, and I believe that day I conquered it – but on another day, maybe it would have conquered me. The next year, Collins died there...

"I had a strange feeling after that race — I had never driven like that before, and knew I never would again. My Maserati was not very powerful, but it was a beautiful car to drive, and I felt I could make it do anything. Everybody has always said it was my best race, and they are right."





I LOVED THE NÜRBURGRING, AND I BELIEVE THAT DAY I CONQUERED IT - BUT ON ANOTHER DAY, MAYBE IT WOULD HAVE CONQUERED ME



It was at the end of 1957 that Fangio, world champion for the fifth time, decided to stop. "I was 46, and very tired after all those years of racing and travelling. I loved my years as a grand prix driver, but did not miss it afterwards, because there had been great sacrifices – necessary, to stay on top, but sacrifices nevertheless.

"During my time around 30 drivers died. While I did not allow that to influence me, my sadness deepened every time. Racing is beautiful when you are full of enthusiasm, but when it becomes work you should stop. By the end of 1957 it was becoming work..."

Twenty-four hours after our meeting, he drove the Mercedes at Donington. When he came out of the chicane on his first lap — unfamiliar with the car, and its 5.6-litre engine — he dabbed the throttle a little too early. Out the tail flicked, and momentarily we held our breath, fearful that he was about to look foolish.

We needn't have worried. Before you could blink, the slide had been checked, and the power was on again. Close by me on the pit wall, Dan Gurney and Mario Andretti whooped like schoolboys. The great man still had it.

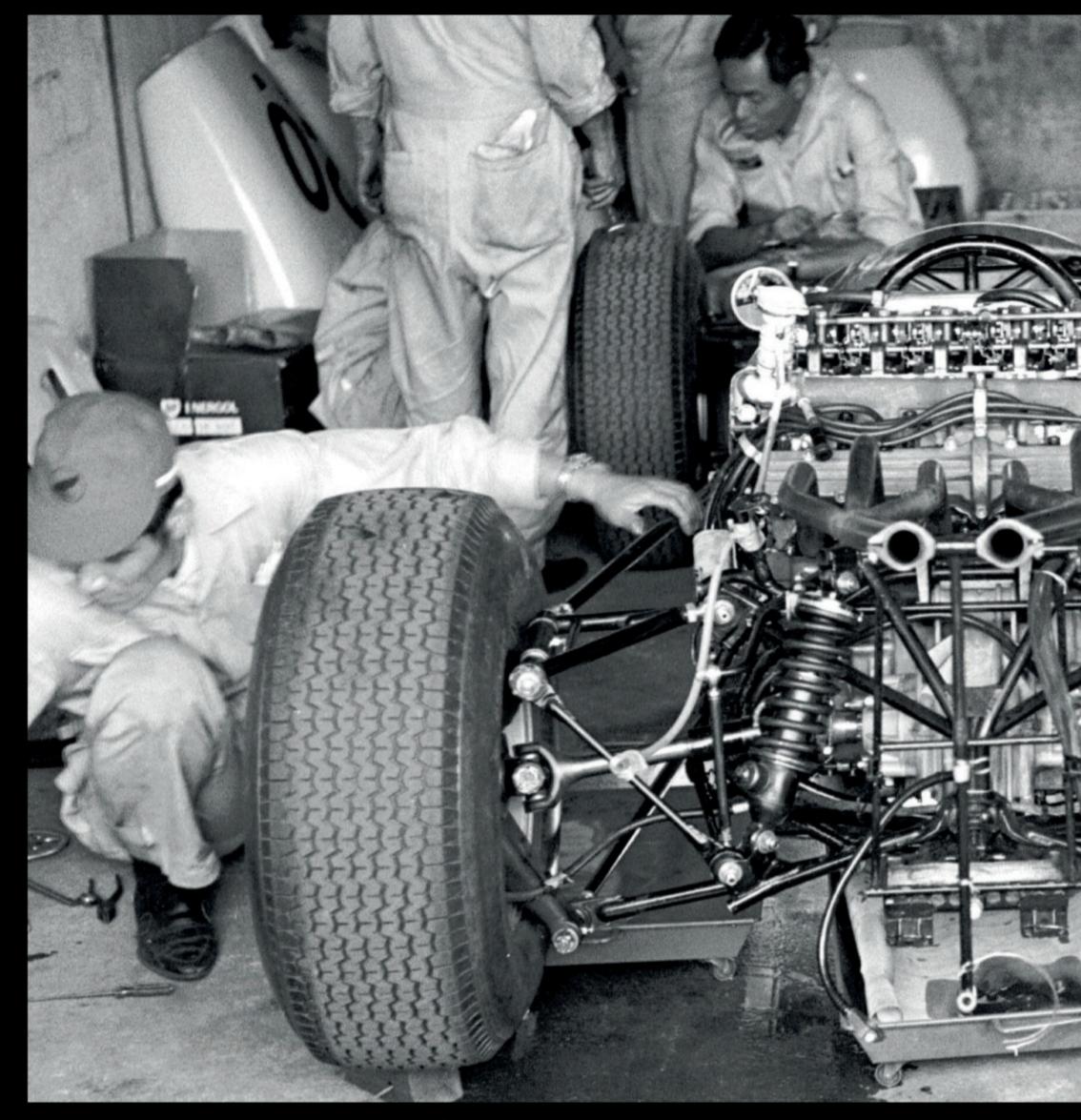
He had raced for the last time at Reims in 1958, primarily as a favour to the Maserati people, of whom he was very fond. "I had plenty of time to think in that race, because Reims was mainly straights, and I thought about my career – how I had come to Europe originally for just one year, never expecting to win a race, and in the end I stayed 10 years, and won five world championships!

"Now, though, I wondered what I was doing here, and knew then it was time for the rest of my life. And you know, when I stopped racing, I was made President of Mercedes-Benz Argentina – me a lad from a little town..."

A colossus of a driver; a modest and enchanting gentleman.

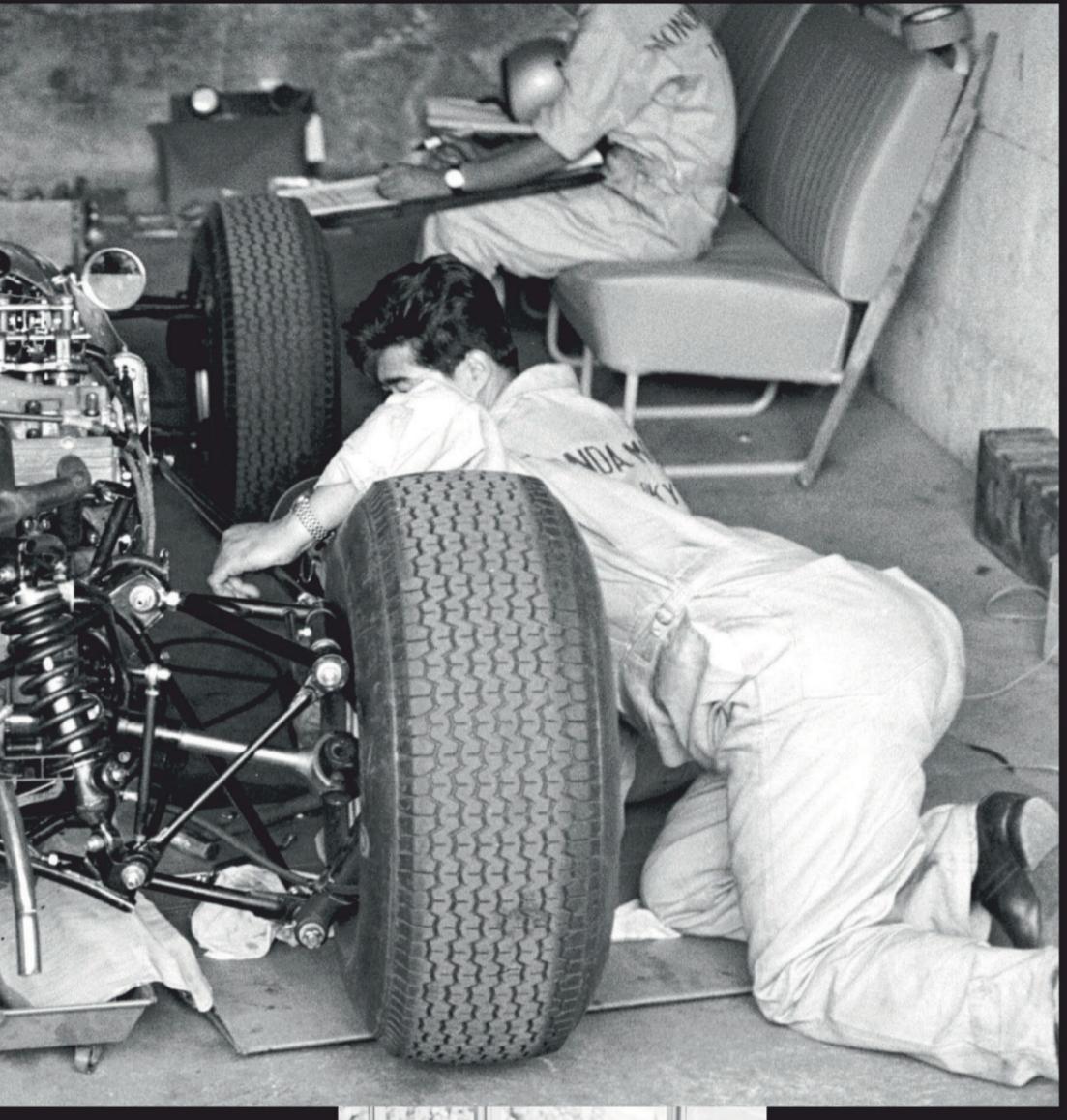








MAGES SHOWCASE



As Honda prepares its exit as engine supplier to AlphaTauri and Red Bull, we take a look at the Japanese company's storied history in Formula 1



Soichiro Honda (left) loved
racing and decided in 1962 that
his company, known mainly
for motorcycles, would go
grand prix racing, building
both the chassis and engine
in Japan. At the 1964 German
GP Honda made its F1 debut
(above) with the V12-engined
RA271 and a completely
Japanese team, apart from
driver Ronnie Bucknum



1

After its debut in 1964, when it entered a single car in three races, Honda upped the stakes for 1965. With a new chassis, the RA272, and uprated engine, the team chose to run two cars with another American, renowned test driver Richie Ginther joining Bucknum



In 1987 Honda committed to supplying engines to two teams, Williams and Lotus, and at the British GP Honda-powered cars dominated the podium. Thirdplaced Ayrton Senna here follows eventual winner Nigel Mansell (5) and runner-up Nelson Piquet (6)





4

Thirty-eight years after it ceased to be a full-blown constructor, Honda once again took on that role for 2006 after gaining full control of BAR late the previous year. And it wasn't a bad first season, including this win for Jenson Button – his first – at the Hungaroring, and fourth in the constructors' championship



1

The Canadian Grand Prix was a pivotal moment for Honda in 1985. Running a heavily redesigned V6 in the two Williams FW10s, and despite this turbo failure for Nigel Mansell in qualifying, Mansell and team-mate Keke Rosberg finished the same race in the points for the first time that season and Rosberg went on to win the next race, Detroit





1

Honda had already committed to supply engines to Spirit for its return to F1 in 1983 when Williams snagged a deal for 1984. In the end, the first Williams cars to use Honda's turbo V6 engine actually raced in the final race of 1983, the South African GP



Honda-powered McLarens had won the 1989 constructors' crown by the time of the Japanese GP but drivers Ayrton Senna and Alain Prost had a title to scrap over. Embarrassingly, at the Honda-owned Suzuka Circuit, they tangled, Senna was excluded and Prost won the championship





2016, year two of the revived
McLaren and Honda partnership,
was an improvement, but not
by much. True, there were fewer
engine penalties and retirements,
and more points finishes. But a
couple of fifths by Fernando Alonso
at Monaco and the Circuit of The
Americas was scant reward...

This typical PR event to promote
Honda's involvement as an engine
supplier was at the 2001 British
GP at Silverstone. Jarno Trulli
(right) and a bored Olivier Panis
(left) were representing Jordan
and BAR respectively in the
annual Honda lawnmower race





After winning the last race of 1965, its first F1 victory in only its 11th race, Honda was unable to follow that success up in 1966. The introduction of the new 3-litre formula meant a new engine was needed and that wasn't ready and married to the new RA273 chassis until the summer. This resulted in the team only doing the last three races of the season but Richie Ginther at least led a lap of the final race, in Mexico, before going on to finish fourth



Toyoharu Tanabe, Honda F1's technical director, showers Red Bull's Max Verstappen with champagne after Verstappen won the 2019 Austrian GP, thus giving Honda its first win as an engine supplier since it had returned to F1 in 2015. Red Bull had only started using Honda engines at the start of the season after sister team, Toro Rosso, had been the guinea pig outfit in 2018. Verstappen would win twice more in 2019, in Germany and Brazil



A

In 1968, Honda announced was withdrawing from F1 at the end of the season primarily, it said, to concentrate on selling more cars in America. However, the death of Jo Schlesser in the French GP at Rouen, driving the new magnesium monocoqued R302E because John Surtees refused to race it, was also a huge factor. This meant that Jo Bonnier, driving this high-winged non-works RA301 to fifth at the Mexican GP, scored the last points for a Honda car until 2006





Fernando Alonso sits forlornly at the side of the track after the Honda engine in his McLaren had expired during the 2015 Brazilian GP.

Honda's return to F1, after selling its team to Brawn in 2008, was a disaster. Ron Dennis decided that McLaren couldn't win titles as a Mercedes customer, but persuaded Honda to enter a year earlier than planned. Engine penalties and outright failures abounded and it didn't help when, in Japan, Alonso called the power unit a "GP2 engine" ...

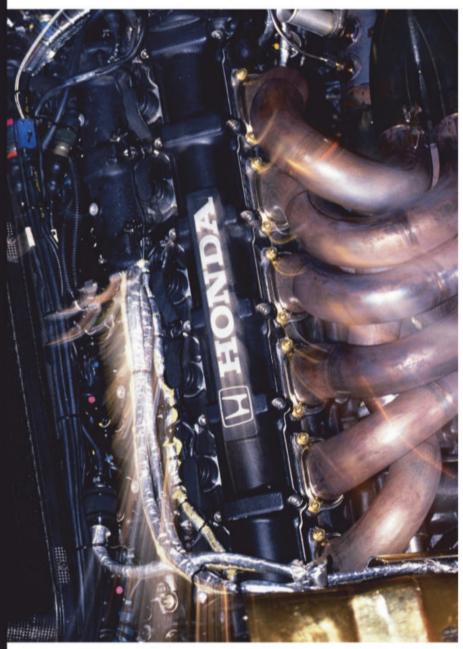


motorsport SHOWCASE HONDA



At the end of the 1990s Honda considered a return to F1 as a constructor. It hired Harvey Postlethwaite to design a car and a test chassis, the RA099, was built by Dallara and powered by Mugen-Honda engines. Jos Verstappen tested the car at Jerez in early 1999, but after Posthlethwaite died at a subsequent test the project was quickly shelved

This is the Honda V12 engine that powered McLaren's MP4/6B and 7/A in 1992, Honda's last year in F1 until 2000. Although McLaren won five times in 1992, it was outshone by Williams and the active-suspension FW14. Honda ended the season with a farewell win in Australia





Red Bull personnel celebrate Max Verstappen's win in the 2021 Mexican GP. Honda's third season with Red Bull has been its most successful, but Honda had already announced, in October 2020, it would be ceasing its involvement in F1 at the end of 2021, citing economic concerns. Subsequent developments mean Honda will continue to build engines and provide trackside support for Red Bull and AlphaTauri in 2022, with Red Bull Powertrains fully taking over the engine programme from 2023



Coming into the Mexican GP in 1965 Honda, in its first full season in F1, hadn't shown any winning form, with a pair of sixth places the best either of its two cars had managed.

But Mexico's high altitude suited the Honda engine, and Richie Ginther qualified third and led the race from start to finish to give the Japanese constructor its first F1 victory



When McLaren dropped Honda at the end of 2017, Toro Rosso ditched Renault and opted to pick up the full works-supported engine package for the 2018 season, with a view to sister team Red Bull following suit in 2019 if the engines showed promise. Pierre Gasly qualified fifth and finished fourth in only the new combination's second race, Bahrain, bettering any result McLaren had achieved in three years with Honda engines



2020 was a return to the glory days of 1987 when not one but two Honda-powered teams managed to win races. In 1987 it was Williams and Lotus, but in 2020 it was Red Bull and AlphaTauri (nee Toro Rosso). Max Verstappen won the 70th Anniversary and Abu Dhabi GPs, and Pierre Gasly triumphed in front of his jubilant team at AlphaTauri's home race, Italy

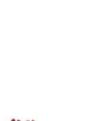




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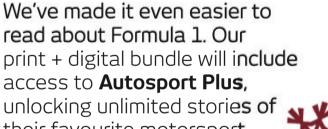


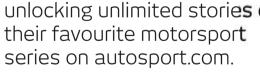






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F1 WORLD CHAMPIONSHIP ROUND 19

RAGE DEBRIEF THE SÃO PAULO GP IN 3 KEY MOMENTS



Hamilton overcomes the odds – and Verstappen's questionable tactics

Lewis Hamilton arrived in Brazil talking of every race from now to the end being "must win". He sorely needed to hit back having failed to win since Sochi, and this was one of his very best victories – a lesson in how to overcome adversity.

It was clear Hamilton did not expect to beat Red Bull at Interlagos, but fitting a fresh Mercedes engine gave Hamilton a big power boost. Christian Horner called Hamilton "unraceable" and pointed to Mercedes' "mind-boggling" straightline speed (while also querying the flexibility of the W12's rear wing). The way Hamilton qualified 0.4s clear of Max Verstappen around a lap less than 70s in duration, suggested Mercedes had been carefully managing what Toto Wolff called higher than average "degradation on the engine" in recent races. Hamilton also thinks W12 a 'monster diva' but here Mercedes nailed the set-up.

Hamilton's searing Friday speed suggested he was in great shape to overcome the five-place grid penalty this engine swap warranted, but then the FIA measured Hamilton's DRS gap and found

his Mercedes in breach of the 85mm tolerance. After a long deliberation, the stewards disqualified Hamilton and sent him to the back of the grid for Saturday's Sprint event.

Mercedes was convinced Hamilton's wing broke on one side during the session, and thought the FIA would allow repairs after finding Mercedes in breach by what Wolff said was "0.2 of a millimetre". "One side was OK, the middle was OK. The right side was not OK, and that means we actually had a performance disadvantage," Wolff added.

Later, Mercedes found two screws had worked loose. The FIA rejected Wolff's suggestions Red Bull, which has repeatedly repaired damaged rear wings before qualifying at recent races, is getting preferential treatment.

Hamilton charged from 20th to fifth in Saturday's Sprint, which meant starting 10th on Sunday while Verstappen occupied the front row.

Hamilton drove around Pierre Gasly through the double right-hander at Ferradura/Laranjinha on lap one, and had reached third within the first half-

dozen laps. Red Bull repelled Mercedes' attempts to jump Verstappen in the pits, so this race boiled down to a 28-lap chase of Verstappen.

Lewis finally picked up DRS at the end of lap 47 of 71 and suckered Verstappen into a defensive line through Turn 1. This allowed Hamilton to try a pass around Verstappen's outside as they approached Turn 4, but with the move seemingly done Verstappen suddenly reappeared on Hamilton's inside at the apex. Both cars ran off the circuit, with Verstappen still ahead.

Christian Horner predictably called Verstappen's defence "fair" and the stewards - without being able to review onboard footage - decided no investigation was necessary. Wolff called this decision "laughable", and in fairness it did look as though Verstappen simply released his brake to fill the space on Hamilton's inside with no intention of making the corner - again forcing his rival into evasive action to avoid a crash.

Fortunately, this was all rendered moot when Hamilton tried again with 12 laps to run and got



the move done before the braking zone, chopping firmly across Verstappen's bows for good measure. Verstappen, who was fined €50,000 for touching Hamilton's rear wing before it was examined in parc fermé after Friday qualifying, then warned for excessive weaving in Sunday's race, had to settle for second, his championship lead cut to 14 points after team-mate Sergio Pérez strategically stole the bonus point from Hamilton on the final lap.

Lap one shows what Bottas is missing

For the second time in three attempts, Valtteri Bottas claimed victory in F1's new Sprint format, but the Finn was again found wanting when it mattered at Interlagos.

Back in 2017, Bottas' first season with Mercedes, he was criticised after starting from pole but leaving the door open for Sebastian Vettel's Ferrari to steal past and win.

Four years later, the picture looked rather similar, as Bottas got beaten off the line by Max Verstappen, forced wide at the Senna S, then passed by the second Red Bull of Sergio Pérez after a mistake at Turn 4, the Descida do Lago.

Bottas has consistently struggled to be productively assertive on opening laps, ever since his early days with Williams. Instead of dictating this race from the front in service of Hamilton's title challenge, Bottas quickly became a tail gunner in pursuit of the Red Bulls.

"For me the first lap was a bit of a nightmare," admitted Bottas, who benefitted from pitting during a mid-race Virtual Safety Car to nick third place back from Pérez. "I could imagine Toto banging his table for sure, but I kept pushing and I'm glad Lewis was in his own league today once he got by me. It was all up to him and he delivered, so that meant we got the points on Red Bull."



Bottas' first-lap frailty was costly after Verstappen beat him off the line and forced the poleman wide at the Senna S

McLaren concedes more ground to Ferrari

McLaren knows its car works less well relative to Ferrari and AlphaTauri on high-downforce circuits, but scoring just two points in the past two races still represents a significant underachievement as Ferrari gained further ground in the fight to be best of the rest in the constructors' championship.

Lando Norris battled back to 10th after suffering a puncture at the start. He launched around the outside of Carlos Sainz from fifth on the grid, but snagged the McLaren's rear-left against the Ferrari's front-right as Sainz choked off the space.

Team-mate Daniel Ricciardo reckoned a one-stop might have allowed him to beat both Ferraris, or at least "disrupted" them, but he was forced out by a loss of power, traced to a cracked pipe on McLaren's installation of its Mercedes engine.

An aggressive first lap by Charles Leclerc carried him from sixth to fourth, and a second straight 5-6 result for Ferrari meant it left Brazil 31.5 points clear of McLaren.



RESULTS ROUND 19

INTERLAGOS / 14.11.21 / 71 LAPS



_			
<u>lst</u>	Lewis Hamilton Mercedes	1h32m22.851s	
2nd	Max Verstappen Red Bull	+10.496s	
3rd	Valtteri Bottas Mercedes	+13.576s	
4th	Sergio Pérez Red Bull	+39.940s	
5th	Charles Leclerc Ferrari	+49.517s	
6th	Carlos Sainz Ferrari	+51.820s	
7th	Pierre Gasly AlphaTauri	+1 lap	
8th	Esteban Ocon Alpine	+1 lap	
9th	Fernando Alonso Alpine	+1 lap	
10th	Lando Norris McLaren	+1 lap	
11th	Sebastian Vettel Aston Martin	+1 lap	
12th	Kimi Räikkönen Alfa Romeo	+1 lap	
13th	George Russell Williams	+1 lap	
14th	Antonio Giovinazzi Alfa Rome	o +1 lap	
15th	Yuki Tsunoda AlphaTauri	+1 lap	
16th	Nicholas Latifi Williams	+1 lap	
17th	Nikita Mazepin Haas	+2 laps	
18th	Mick Schumacher Haas	+2 laps	
Retirements			

Daniel Ricciardo McLaren 49 laps - cracked pipe Lance Stroll Aston Martin 47 laps - accident damage

Fastest lap

Sergio Pérez 1m11.010s on lap 71

F1 Sprint - 24 laps

1st Bottas 2nd Verstappen 3rd Sainz

TYRE COMPOUNDS USED







AIR TEMP





CLIMATE

Hard (C2) Medium (C3) Soft (C4) Inter

TRACK TEMP

Sunny



DRIVERS' STANDINGS

1 Verstapper	332.5pts	11 Ocon	50pts
2 Hamilton	318.5pts	12 Vettel	42pts
3 Bottas	203pts	13 Stroll	26pts
4 Pérez	178pts	14 Tsunoda	20pts
5 Norris	151pts	15 Russell	16pts
6 Leclerc	148pts	<mark>16</mark> Räikkönen	10pts
7 Sainz	139.5pts	17 Latifi	7pts
8 Ricciardo	105pts	18 Giovinazzi	1pt
9 Gasly	92pts	19 Schumache	r Opts
10 Alonso	62pts	20 Kubica	0pts
moto	rsport	21 Mazepin	0pts



RACE DEBRIEF THE QATAR GP

F1 WORLD CHAMPIONSHIP ROUND 20

THE QATAR GP In 3 Key moments





Hamilton dominates to leave Red Bull reeling

Lewis Hamilton's second straight victory cut Max Verstappen's points lead to eight, putting the title battle on a knife's edge heading into the final two races – but it's the dominance of Hamilton's recent displays that must concern Red Bull.

Christian Horner described Hamilton as "unraceable" in Brazil, where Lewis won from 10th on the grid after starting the sprint race from the back of the field, and Hamilton was on similarly untouchable form as F1 made its first visit to Qatar.

The Losail circuit has hosted motorcycle grands prix since 2004, but nothing of a higher level than GP2 on four wheels since 2009. This 3.3-mile desert venue turned out to be a frenetic blast through rapid sequences of medium and high-speed corners; the drivers never dropping below third gear (and then only momentarily), front left tyres protesting sustained abuse, invitingly smooth kerbs counterintuitively damaging the cars at such speed.

Hamilton was off the pace on Friday, as Mercedes trialled alternate set-ups on its cars, but Lewis was less than a tenth behind Friday pacesetter Valtteri Bottas in FP3, before topping every segment of qualifying. Verstappen was less than a tenth adrift in Q1, but that gap grew to 0.3s in Q2 and almost six tenths in Q3, as Hamilton set two laps good enough for pole.

"We thought we'd be good here, but this is a track that of the three that remained we were most concerned about," said Mercedes engineering director Andrew Shovlin. "We can do all our simulation, but nothing explains why he was that far ahead of Max. Fundamentally, it is just down to him digging deep and doing what needs to be done."

Hamilton's performance was more remarkable for the fact he didn't use the new engine fitted for Brazil, a unit Mercedes said would be brought back into play for what is expected to be another extremely high-speed race in Saudi Arabia.

"They have woken up the lion on the Saturday at Interlagos," said Mercedes team boss Toto Wolff of Hamilton's display. "He's absolutely on it. Brutal. And cold-blooded. When adversity happens, it takes him to a place where he's able to mobilise superhero powers."

Red Bull made more noise about extra flexibility in the Mercedes rear wing, but Horner admitted straightline speeds were "virtually line on line" between RB16B and W12 in Qatar, and said Red Bull had been shipping "two tenths a lap every lap from Friday to Sunday through Turn 6, the slowest corner on the track."

Horner was formally warned by the FIA for criticising a "rogue marshal" in a TV interview ahead of the race, after Verstappen received a five-place grid penalty for failing to respect double waved yellow flags in Q3.

Verstappen easily overcame that setback within the first five laps by going inside Bottas (who was also penalised for a similar offence) and Carlos Sainz at the start, sweeping bravely around Lando Norris through Turn 2, then DRS-ing past Pierre Gasly and Fernando Alonso.

But Hamilton remained 'unraceable'...

Pirelli problems boost Alonso to podium

Fernando Alonso claimed his first F1 podium since the 2014 Hungarian Grand Prix, after Valtteri Bottas suffered a left-front tyre blowout and Red Bull elected to pit Sergio Pérez as a precaution against a similar outcome.

Bottas "couldn't build enough tyre temperature" on the formation lap and made heavy weather of recovering from his own three-place grid drop for failing to respect a single yellow flag in Q3, dropping from sixth to 11th on the first lap then receiving a hurry-up from Mercedes team principal Toto Wolff having made no progress through the first eight laps.

Valtteri grew into the race and recovered to third after running a mammoth 32-lap stint on medium Pirellis when his front left suddenly deflated "maybe three laps" before his planned pitstop.

Pérez was planning to go to the end after stopping for hard tyres on lap 19 of 57, but Red Bull stopped him again on lap 41 as a precaution. Without the Virtual Safety Car called after Nicholas Latifi stopped on track with his own puncture three laps from the end, Red Bull felt Pérez would have beaten Alonso to third - but the Alpine driver made his own one-stop strategy work to cling on by less than three seconds.

"We managed these tyres quite early, but also we understood that avoiding the kerbs was key and we instructed our drivers to do that," said Alpine executive director Marcin Budkowski. "Honestly it was a question of a few corners whether we would make it or not..."

After Bottas, Latifi, George Russell and Lando Norris (who was running a few seconds behind Alonso in fourth) all suffered similar sudden front-left failures, Pirelli's investigation into the issue concluded excessive kerb striking at high speed to be the cause.



The omens were good for Gasly and AlphaTauri on Friday and Saturday but it all went south come race day

Gasly starts second but no-scores

Pierre Gasly was second fastest in both Friday practice sessions, fourth in FP3, second in Q2, qualified fourth and started second after Verstappen's and Bottas's penalties, but finished out of the points after a disastrous race.

It was Gasly whose damaged car caused the yellow flags that tripped up Bottas and Verstappen in Q3, and Pierre wondered if repairs to his AlphaTauri contributed to his Sunday downfall. Even committing to an "aggressive" two-stop strategy made no difference.

"It was very, very frustrating, our pace was shocking," Gasly said. "Even with fresher tyres than Fernando I was miles away when he was on used tyres. We could have done five stops, it doesn't matter. I don't understand how both cars can qualify in the top 10 and go backwards during the race."

Gasly later revealed that the team had identified why he and Tsunoda struggled so badly, but the only detail he alluded to was excessive tyre wear.



RESULTS ROUND 20

LOSAIL / 21.11.21 / 57 LAPS



lst	Lewis Hamilton Mercedes	1h24m28.471s	
2nd	Max Verstappen Red Bull	+25.743s	
3rd	Fernando Alonso Alpine	+59.457s	
4th	Sergio Pérez Red Bull	+62.306s	
5th	Esteban Ocon Alpine	+80.570s	
6th	Lance Stroll Aston Martin	+81.274s	
7th	Carlos Sainz Ferrari	+81.911s	
8th	Charles Leclerc Ferrari	+83.126s	
9th	Lando Norris McLaren	+1 lap	
10th	Sebastian Vettel Aston Martin	+1 lap	
11th	Pierre Gasly AlphaTauri	+1 lap	
12th	Daniel Ricciardo McLaren	+1 lap	
13th	Yuki Tsunoda AlphaTauri	+1 lap	
14th	Kimi Räikkönen Alfa Romeo	+1 lap	
15th	Antonio Giovinazzi Alfa Rome	o +1 lap	
16th	Mick Schumacher Haas	+1 lap	
17th	George Russell Williams	+2 laps	
18th	Nikita Mazepin Haas	+2 laps	
Retirements			

Nicholas Latifi Williams 50 laps - puncture Valtteri Bottas Mercedes 48 laps - puncture damage

Fastest lap

Max Verstappen 1m23.196s on lap 57

TYRE COMPOUNDS USED











CLIMATE

AIR TEMP

TRACK TEMP

Dry/ night





DRIVERS' STANDINGS

1 Verstapper	351.5pts	12 Vettel	43pts
2 Hamilton	343.5pts	13 Stroll	34pts
3 Bottas	203pts	14 Tsunoda 2	20pts
4 Pérez	190pts	15 Russell	16pts
5 Norris	153pts	16 Räikkönen	10pts
6 Leclerc	152pts	17 Latifi	7pts
7 Sainz	145.5pts	18 Giovinazzi	1pt
8 Ricciardo	105pts	19 Schumacher	0pts
9 Gasly	92pts	20 Kubica	0pts
10 Alonso	77pts	21 Mazepin	0pts
11 Ocon	60pts		





F1 WORLD CHAMPIONSHIP ROUND 21

RACE DEBRIEF THE SAUDI ARABIAN GP IN 3 KEY MOMENTS

Hamilton draws level with 'over the limit' Verstappen

Relations between Mercedes and Red Bull descended further into rancour as Lewis Hamilton won the Saudi Arabian GP with Max Verstappen a penalised second. Hamilton also scored a point for fastest lap, enabling him to pull alongside Verstappen in the championship standings.

The stage was set when Max locked his leftfront wheel under braking into the last corner on his final Q3 run, smacking his right-rear into the barrier at the exit. The physical damage was minor – no need for a second new gearbox of the weekend – but the botched lap put him third on the grid, behind Hamilton and Valtteri Bottas, when he had been easily quick enough for pole position. That enabled the Mercedes duo to control the start and pull away into a commanding 1-2.

At this point Verstappen seemed to have no answer to Mercedes' race pace, which might have informed Red Bull's gamble on not bringing him in when the Safety Car was deployed at the end of lap nine. Max was furious when Bottas backed him up behind the Safety Car, enabling Mercedes

to double-stack in the pits, but this was rendered moot by the red flag which enabled Max to take the restart from pole - and with a fresh set of hard-compound tyres.

Verstappen raged again as Hamilton was slow to the grid at the restart, causing the Red Bull's tyres to lose temperature, and sure enough Hamilton made the better getaway - only for Max to hang it out around the outside into Turn 1, run off, then rejoin in Hamilton's path. The Merc was forced to check up, enabling Esteban Ocon to sneak past.

Another stoppage ensued after Charles Leclerc and Sergio Pérez collided, causing Nikita Mazepin to run into the back of George Russell, and the horse trading kicked off behind the scenes as race director Michael Masi proposed to the Red Bull and Mercedes team managers that Ocon would restart from pole, with Hamilton second and Verstappen third - else Max's conduct at Turn 1 would be referred to the stewards.

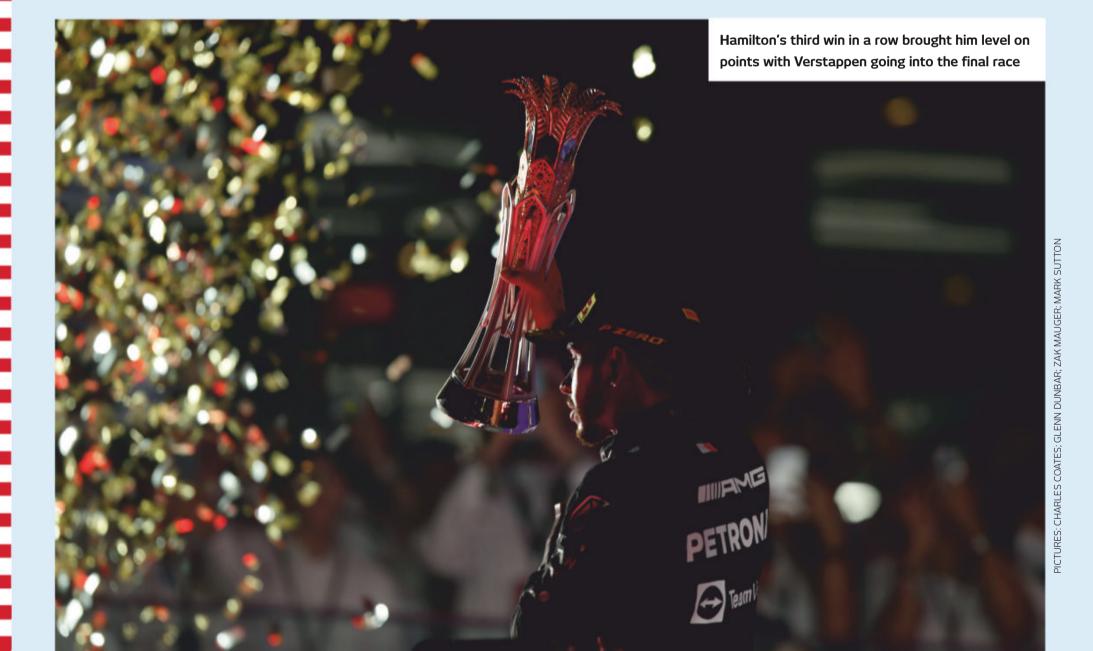
Verstappen took the second restart on medium

tyres and forcefully passed Hamilton and Ocon at Turn 1 – but Hamilton eventually closed in. At the start of lap 37 Lewis swept by on the pit straight but Max stubbornly clung to the inside line, briefly going sideways mid-corner as momentum took them both across the run-off.

Masi ordered Red Bull to give up the position and the team directed Verstappen to do so "strategically", ie in the DRS detection zone at the end of the lap, giving him the best opportunity to retake the lead immediately. But Hamilton hadn't been informed of the race director's call.

As Max slowed sharply through Turns 25 and 26 Lewis hit the back of him, dislodging a front wing endplate. Max eventually handed the position back but would later incur the wrath of the stewards, picking up separate five- and 10-second penalties.

"I've come across a lot of different characters and there's a few at the top which are over the limit," reflected Hamilton. "Rules kind of don't apply, or they don't think of the rules. He is over the limit for sure."





Norris stopped for new tyres when the Safety Car was deployed, but tumbled down the order when those ahead of him who hadn't stopped changed tyres under red flag conditions

Red-flag tyre-change rules under scrutiny

The rule which enables drivers to change tyres when a race is suspended has come under fire after several compeitors were inconvenienced by the first red flag. Lando Norris, who scraped back into the points in 10th after taking the final restart at the tail of the field, described the rule as "stupid".

When the Safety Car was deployed in response to Mick Schumacher spinning his Haas into the barriers at Turn 22, Norris was one of several drivers to head for the pits - a logical strategic decision given the race was anticipated to be a one-stop affair. But after five laps behind the Safety Car the race was red-flagged, in effect giving a free stop to those who had chosen not to pit.

This had the effect of rearranging the order up front, enabling Verstappen to leapfrog Hamilton and Bottas, who had stopped. For Leclerc and Pérez it resulted in minor track-position losses (fourth to sixth and fifth to eighth), but for Norris it was hugely costly - Norris went from sixth to 14th. Hamilton complained over the team radio and Norris also spoke out after the race.

"It's happened a few times, like obviously at Monza last year, you just get a free pitstop and it ruined our race," said Norris. "I think they should change it to one mandatory pitstop with two different tyre sets needed to be used, and then I think that's acceptable. But this just ruins everything, to be honest. You put so much effort in for it to be taken away for some stupid rule."

Drivers unhappy with 'unnecessarily dangerous' Jeddah track

The new Jeddah Corniche circuit received what might diplomatically be described as a mixed response over a weekend punctuated by incidents. Sunday's F2 feature race was red-flagged twice and a result declared after five laps following two major incidents. And even before the inaugural Saudi Arabian Grand Prix was interrupted by two red flags and several full-course yellows, Sergio Pérez described the venue as "unnecessarily dangerous".

Those sentiments were later echoed by George Russell, who was rear-ended into retirement by Nikita Mazepin shortly after the first restart.

"It seemed pretty inevitable," Russell told GP Racing's sister title Autosport. "You go around a Turn 2 that's fairly wide and open – cars can go side by side - and then it really funnels in.

"There are unnecessary incidents waiting to happen in all of these small kinks that are blind, which are not even corners in an F1 car."



RESULTS ROUND 21

JEDDAH CORNICHE / 5.12.21 / 50 LAPS



wis Hamilton Mercedes	2h6m15.118s	
ax Verstappen Red Bull	+21.825s*)S
altteri Bottas Mercedes	+27.531s	and 10s
teban Ocon Alpine	+27.633s	intage a
aniel Ricciardo McLaren	+40.121s	advan
erre Gasly AlphaTauri	+41.613s	ig an
arles Leclerc Ferrari	+44.475s	gainir
rlos Sainz Ferrari	+46.606s	k and
ntonio Giovinazzi Alfa Romed	+58.505s	e trac
Indo Norris McLaren	+61.358s	ing th
nce Stroll Aston Martin	+77.212s	or leav
cholas Latifi Williams	+83.249s	alty fo
rnando Alonso Alpine	+1 lap	s pen
i ki Tsunoda AlphaTauri	+1 lap**	ides 5
mi Räikkönen Alfa Romeo	+1 lap	*inclu
	ax Verstappen Red Bull Altteri Bottas Mercedes Ateban Ocon Alpine Aniel Ricciardo McLaren Berre Gasly AlphaTauri Barles Leclerc Ferrari Arlos Sainz Ferrari	ax Verstappen Red Bull +21.825s* Altteri Bottas Mercedes +27.531s Ateban Ocon Alpine +27.633s Aniel Ricciardo McLaren +40.121s Berre Gasly AlphaTauri +41.613s Arles Leclerc Ferrari +44.475s Arlos Sainz Ferrari +46.606s Antonio Giovinazzi Alfa Romeo +58.505s Ando Norris McLaren +61.358s Annce Stroll Aston Martin +77.212s Acholas Latifi Williams +83.249s Arnando Alonso Alpine +1 lap**

Retirements

Sebastian Vettel Aston Martin	44 laps - floor damage
Sergio Pérez Red Bull	14 laps - collision
Nikita Mazepin Haas	14 laps - collision
George Russell Williams	14 laps - collision
Mick Schumacher Haas	8 laps - accident

Fastest lap

Lewis Hamilton 1m30.734s on lap 47

TYRE COMPOUNDS USED











Medium (C3) Soft (C4)

CLIMATE AIR TEMP TRACK TEMP Dry/ night

DRIVERS' STANDINGS

1 Verstapper	369.5pts	12 Vettel	43pts
2 Hamilton	369.5pts	13 Stroll	34pts
3 Bottas	218pts	14 Tsunoda	20pts
4 Pérez	190pts	15 Russell	16pts
5 Leclerc	158pts	16 Räikkönen	10pts
6 Norris	154pts	17 Latifi	7pts
7 Sainz	149.5pts	18 Giovinazzi	3pts
8 Ricciardo	115pts	19 Schumacher	0pts
9 Gasly	100pts	20 Kubica	0pts
10 Alonso	77pts	21 Mazepin	0pts
11 Ocon	72pts		





Both Spanish drivers have picked up podiums in 2021, but there hasn't been a Spanish racer on the podium in Barcelona since Alonso's win in 2013. Since then, Mercedes has dominated at this circuit, with seven wins in the last eight years.

Following two years racing in empty grandstands, the home heros will be looking to repay the returning fans this summer by taking a step up onto the rostrum. But that's only one reason to get excited about racing in Catalonia.

The circuit is just half-an-hour away from the centre of Barcelona, making the race a prime candidate for fans wanting to experience a new city and culture during a weekend away – in addition to the excitement of the race.

To give you a head start on planning your trip, we've handpicked five top attractions you should add to your to-do list on a trip to the Spanish Grand Prix.



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Barcelona is a rare example of a major city with sunny beaches to relax by. Most tourists head for the central Barceloneta Beach – which is the largest in the city. If you're willing to venture a few blocks to the north, though, you'll find some quieter, but equally tranquil beaches to relax by.



Don't settle for your only experience of authentic Spanish food being a stroll around a foreign supermarket. The Mercat de la Boqueria is where you'll find a true taste of Spain and Barcelona. If you're staying in an apartment or camping near the circuit, this is where you'll want to shop for authentic Spanish ham and meats, fresh fruit and veg, and delicious fish. It claims it's the 'best market in the world'... and there's only one way to find out.

4. Montjuïc Cable Car

Not sure where to start your Barcelona adventure? Reach for the sky and get a birds' eye view of the city with the enormous cable car. Stretching 750m across the city, visitors leave from Montjuïc Park, and ascend into the Montjuïc Hill, where you will be greeted with an incredible panoramic view of the city.



1. Camp Nou

FC Barcelona is hailed as one of the world's all-time great football clubs. And they play in an arena fit for that title. The 100,000-capacity stadium is the biggest in Europe, and has been the stage for some of the sport's greatest matches.

Tours of the ground include visits to the changing rooms, tunnel and the first team dugout, plus a trip to the club museum. The Spanish Grand Prix weekend will be at the conclusion of the La Liga campaign, and with Barcelona's struggles this season, the eyes of the sporting world will be on the city.



5. Sagrada Familia



MONTJUÏC

It's hard to go more than five minutes in Barcelona without stumbling across one of Antoni Gaudi's architectural masterpieces. But La Sagrada Familia is surely a grand attraction. Towering over the city, the unfinished basilica has been 138 years in the making, due to be completed in 2026. It's one of the sights to remember of any trip to Barcelona, but if you're after that perfect photo, head to the rooftop bar at nearby Hotel Ayre, where you can enjoy a drink while admiring the intricate designs.

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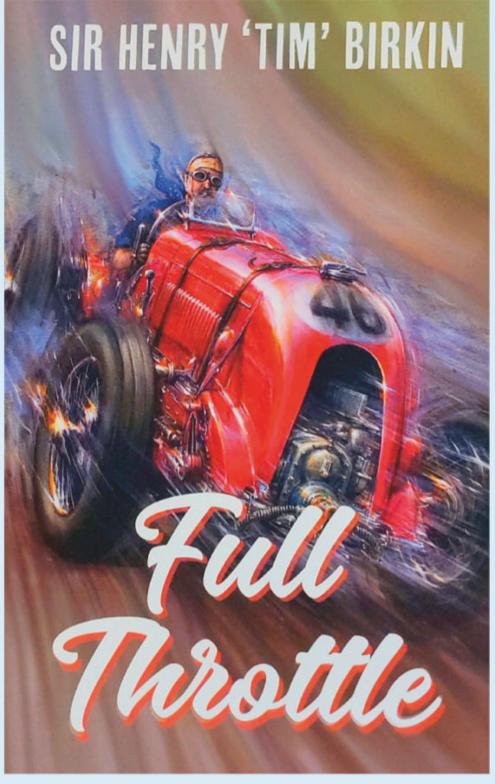
Squeezing Ferrari's expansive history - it's over 70 years since the company was founded and the story goes back



to the turn of the 20th century into a 160-page not-quite-pocketsized book is quite an ask. Written by GP Racing's executive editor, this diminutive hardback also delves into Enzo Ferrari's complicated backstory and charts the brand's influence on and enduring appeal within popular culture.

Ferrari, the self-confessed "agitator of men", was a sporadically successful racing driver who found success as an organiser, salesman and entrepreneur. Within these pages there's plenty to see about the "empire-builder who came to relish his role as the spider in the centre of an elaborate tangle of intrigues" as well as the road and racing machines into which his DNA remains encoded.





FULL THROTTLE

Author Sir Henry Birkin **Price** £22.95

daredevilbooks.co.uk

Nearly 90 years after its first publication, the autobiography of Sir

Henry Ralph Stanley Birkin, colloquially named 'Tim', has been reissued by the UK publisher Daredevil Books.

A ferocious competitor and a double Le Mans winner, Birkin is perhaps remembered for his exploits in one of the Le Mans editions he didn't win: in 1930, outgunned by Mercedes' supercharged SSK, Birkin passed Rudolf Caracciola while flat out on the Mulsanne Straight with two wheels on the grass.

Birkin also contested grands prix, driving his 'Blower' Bentley to second at Pau in 1930. While racing a Maserati to third in the 1933 Tripoli Grand Prix, Birkin burned his arm on the car's exhaust pipe; the injury is believed to have triggered a relapse of the malaria he contracted while in the RAF during World War I. His premature death robbed Britain of one of its greatest racing stars of the period. This new edition features reflections on Birkin's legacy by fivetimes Le Mans winner Derek Bell.





TAG HEUER FORMULA 1 X SENNA SPECIAL EDITION 2021

Price £1,900 tagheuer.com

Released to celebrate the 30th anniversary of Ayrton Senna's third and final F1 drivers'championship, this is the latest in a series of limited-edition timepieces by the watchmaker for whom Senna acted as a brand ambassador. Embossed with the famous double-S design, the 43mm black DLC steel case with ceramic bezel features yellow accents

to match the colour of Senna's crash helmet. Elements of the sub-dials and another Senna 'S' are picked out in matching yellow, which coordinates with the yellow stitching on the strap.

Based on a quartz movement, the watch is water-resistant to 200 metres. On the rear of the case it features an engraving of Senna's crash helmet.

THE BUSINESS OF WINNING

Author Mark Gallagher

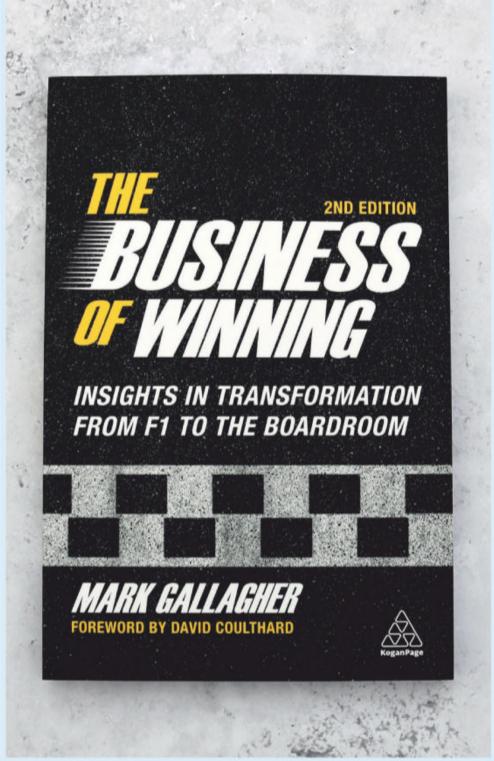
Price £14.99

koganpage.com

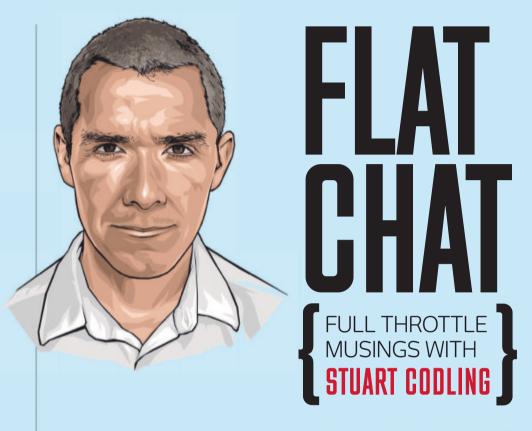
GP Racing readers and fans of our Flat Chat With Codders podcast will be familiar with our columnist Mark Gallagher. Over four decades he's worked in F1 as a journalist, PR man and commercial guru, and even been in charge of the engine manufacturer Cosworth. He now works as a consultant, demonstrating to the corporate world how the technology and human performance mindset of F1 can be transformative.

In this new edition of *The Business*Of Winning Mark embraces the

far-reaching changes which have rippled through F1 since the first edition was published in 2013. F1's relentless quest for performance remains powerfully instructive for the business community. Over the past few years F1 has pivoted towards sustainability and greater inclusion, honed its approach to risk management, and weathered a global pandemic. It's a constantly changing, adaptive environment; little wonder business leaders find it endlessly fascinating.









"My view was coloured by my financial ability to get to the next race. At Monaco in 1969 we got £1500 starting money, finished second and got another £150. But I assure you that by the time we'd paid the hotel bill, filled the lorry up with gas and taken care of everything else, there was very little left. Maybe £200..."

As we contemplate yet another

LAST FOUNDER-OWNED ENTITY TO FALL WHEN THE FAMILY SOLD ITS CONTROLLING INTEREST IN 2020

WILLIAMS WAS THE

new era to come — one in which budget caps and franchise value may transform teams into billion-dollar businesses — perhaps it's time to put the intervening period of corporate largesse in context. In the 1990s and 2000s, many of Frank's contemporaries, or teams they'd founded, went bust or sold out. Williams was the last founder-owned entity to fall when the family sold its controlling interest in 2020.

But for all the trappings of accountability and solid corporate governance, and the emergence of team leaders as employees rather

than owners, one inescapable reality remained for the majority of competitors: the hand-to-mouth nature of F1. In 2019 Red Bull banked a modest profit of £618,000, having spent £237.3m. And this was a team at the sharp end. For those contesting the minor placings, the economics were enough to make Mr Micawber slam his ledger shut. Over a similar period Williams reported a loss of £10.1m, precipitating the team's sale.

Can we say, then, that this was a truly different era? Perhaps only in terms of the faces at the table and the scale of the stakes.

Now F1's commercial landscape is defined by capped costs and a barrier to new entrants which secures the value of those in the club. While you could say the predominant model in this new age is one of high-net-worth individuals and their proxies controlling teams – your Dietrich Mateschitzes, Lawrence Strolls, Doriltons and, dare we say it, Dmitry Mazepins – Mercedes, formerly the Tyrrell Racing Organisation (proprietor: Ken Tyrrell), provides a fascinating throwback. Team boss Toto Wolff owns a third of the business.

Much has changed in F1 but those entrepreneurs with skin in the game can draw a tangible link to the past..

GP Racing has a podcast! Search for 'Flat Chat with Codders' in your podcasting platform of choice.

SIR FRANK: FI'S LAST TRUE ENTREPRENEUR

The passing of Sir Frank Williams

definitively brings down the curtain on a particular era of Formula 1: a time when teams were run not by salaried employees of large corporations but by gritty, tough, resourceful entrepreneurs whose names were above the factory door. An era, indeed, when the over-riding priority was to get to the next race, not to appease shareholders with sales projections and suchlike.

We live in a singularly polarised age, one which deals in absolutes. Readers accustomed to categorising racing folk into heroes and villains may therefore baulk at the tales of sharp practice recounted by Maurice Hamilton in his excellent tribute to Frank (p34). Surely a racing hero, a veritable secular saint, wouldn't stoop so low as to sell a vehicle which had been lent to them?

Yet ducking and diving was an unwritten, but accepted, element of the rules of engagement at the time. Having set up Williams Grand Prix Engineering in 1977, Frank acquired a March

761 chassis (from Max Mosley, another owner-racer) to run pay driver Patrick Néve, though the discovery of a layer of orange paint suggested the underpinnings derived from a 751. Frank had got a good deal based on the car being built-up from second-hand parts – the documentation said as much – but he probably wasn't expecting it to be *that* second hand. Still he raced on. It was all part of the game and more important tasks lay at hand – such as staying in said game.

In 2009 Frank graciously gave up some of his time to describe his formative F1 experiences for my book *Real Racers*. "It was a hand-to-mouth existence for young people," he said.

Frank at the 1971 Dutch GP, times when a large part of his focus had to be having enough cash for the team to make it to the next race...







£44 MILLION IN PRIZES WON WIN UP TO £50,000 CASH IN THE BOOT









RICHARD MILLE

