



EXCLUSIVE INTERVIEW

SERGIO PEREZ

ON LIFE INSIDE RED BULL, AND HUNTING MAX...

+ THE PAIN OF THE GAME

Why F1's top teams are feeling the pinch

INSIDE

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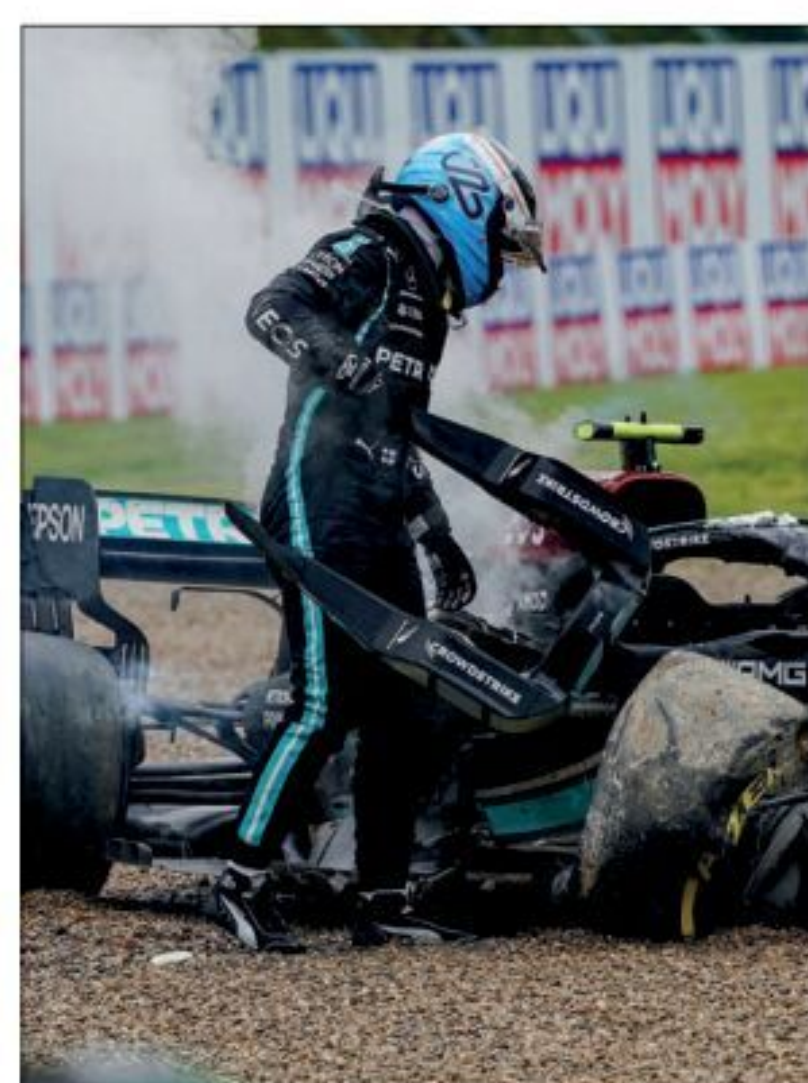
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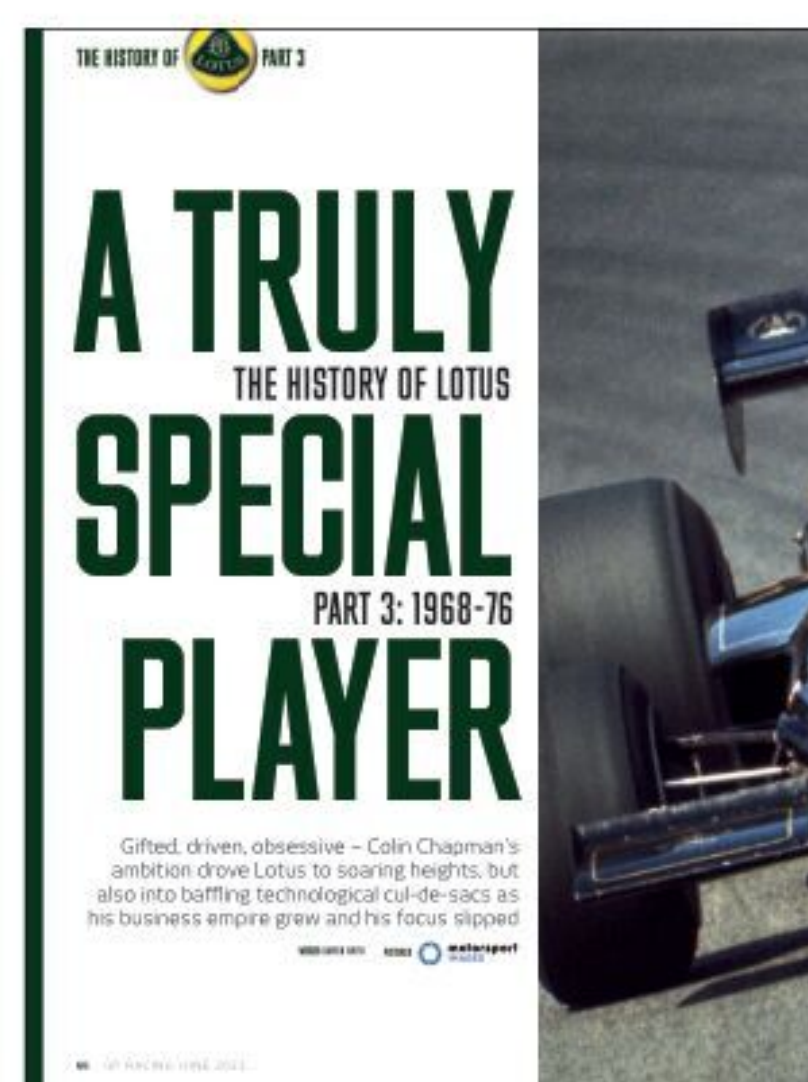


THE PAIN OF THE GAME

Formula 1's budget cap means that even the richest teams now have to juggle what they can afford to spend – to the extent that Mercedes recently had to back out of an important tyre test. But how long until the bean-counters find ways of exploiting the limits of the regulations – just like the technical directors do?

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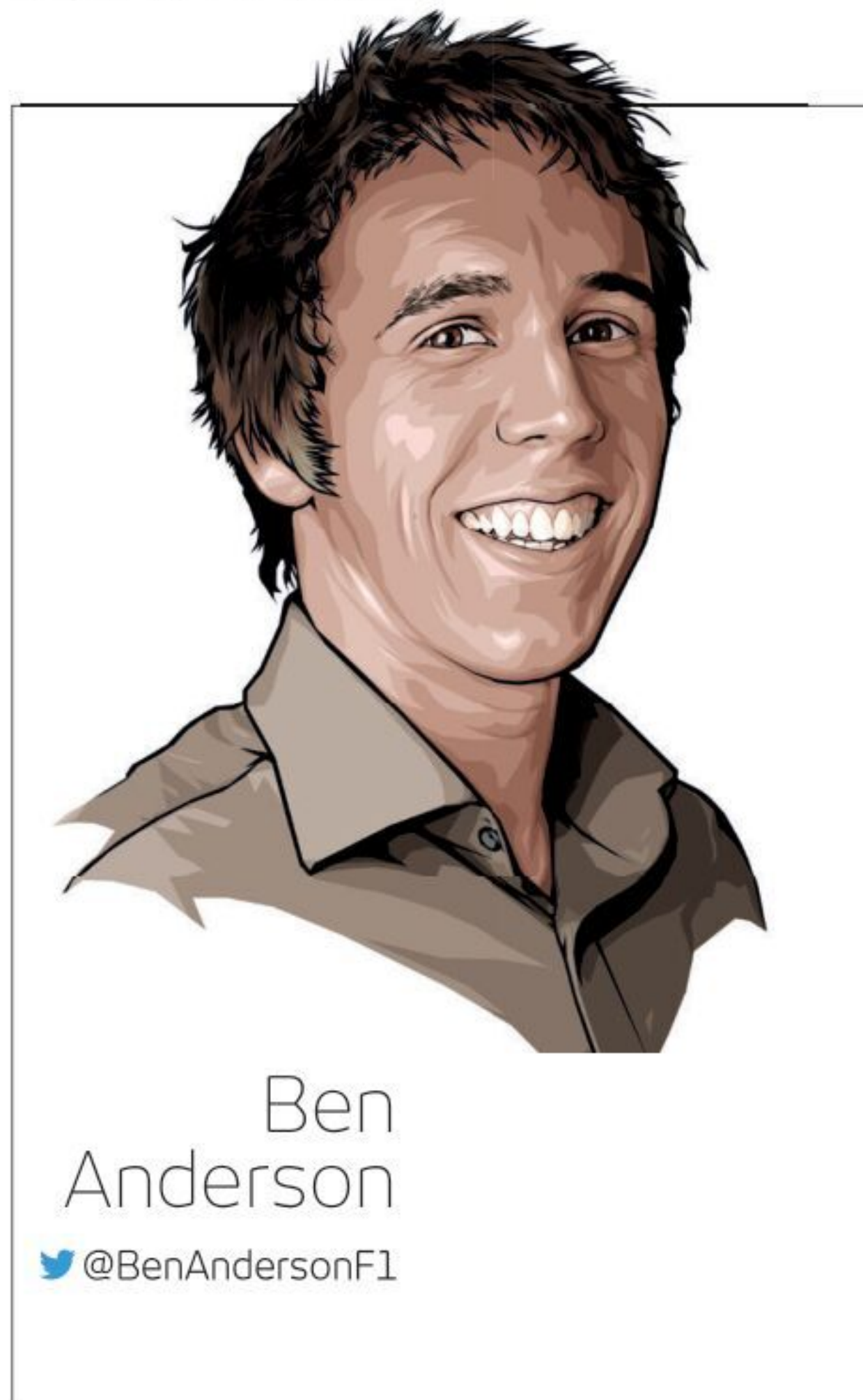
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Just who are the richest people in F1 and what are they worth?



Ben Anderson
@BenAndersonF1



Some big reputations are on the line

The ramifications of 2020's driver market merry-go-round now play out in front of our eyes. They suggest Formula 1 is tougher than ever – even for drivers with phenomenal reputations, now under threat like never before.

To hear competitors as renowned as Fernando Alonso and Daniel Ricciardo – both Monaco Grand Prix winners – say they feel they are extracting the maximum from their new cars, only to glance at the timing screens and see they are half a second or so off their respective young team-mates – who are both yet to win a race never mind a world title – is quite astonishing.

Alonso was ahead of Ocon throughout Monaco practice, until Ocon got Pirelli's tyres into a better temperature range during qualifying. But even if Monaco exaggerated things, Ocon still out-qualified Alonso four races on the bounce since Bahrain, while Ricciardo struggles to adapt to what Andreas Seidl calls McLaren's "special driving style".

All F1 drivers are malleable to a certain extent, but some are still limited by particular car characteristics or handling traits. It's why Ricciardo only really came alive last year after Renault made a set-up breakthrough at Silverstone, or why Sebastian Vettel looked so second rate against Charles Leclerc in 2020's skittish Ferrari. They prefer the car to come to them rather than chase its tail, but that process takes time – and sometimes cannot be done to their ultimate satisfaction.

Alonso is arguably among the most extremely adaptable of drivers. McLaren insiders spoke of braking systems worth tenths of a second in lap time that Alonso could utilise, but that highly rated Stoffel Vandoorne couldn't, yet now Alonso appears to be suffering for spending two seasons out of the game. F1 never stops. It's why Lewis Hamilton refuses to take a sabbatical, and why it's taken so long for Esteban Ocon to show us what he's really made of after his enforced absence in 2019.

As Alonso, Ricciardo and Vettel (Monaco aside) struggle, Ferrari's Carlos Sainz bucks the trend – showing the benefit of his driving for a fourth different team in seven seasons. He's had exposure to an unusually wide band of F1 cars in a short time, affording him expanded range and demanding adaptability from him. His early performances against Leclerc also suggest he's rather better than he first appeared when cast in Max Verstappen's long shadow.

And what of Sergio Pérez, this month's cover star and the other driver in this mix battling to show the best of himself in a new environment? Red Bull represents the opportunity of a lifetime, but adjusting to a car built around the best driver to arrive in F1 since the hybrid era began is proving difficult. Pérez's reputation is on the line, and he's got a mountain to climb to avoid getting buried. It's perhaps a lesson to all with high aspirations: life can be tough at the top.

Contributors



MARK GALLAGHER
In addition to his regular column on page 29, Mark analyses how the big three teams are coping with F1's budget cap. See page 60



CHARLES BRADLEY
Motorsport.com's global editor-in-chief investigates who the richest people in F1 are and what's in their wallets (p32)



BEN EDWARDS
Former racer Ben explains that using fantastic car control isn't necessarily the quickest way round a track (p22)



STUART CODLING
Codders finds out what ex-Sauber and Haas driver Esteban Gutiérrez is up to now (p54), and takes a look at the McLaren MP4/1 (p80)

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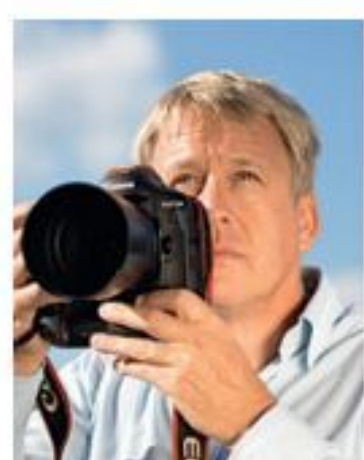
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Don't let that strap dangle

I really liked McLaren's one-off Gulf livery for the Monaco Grand Prix. It beautifully evokes the spirit of motor racing.

This is a classic shot at the exit of Casino Square where there are just two holes for photographers to lean through. Usually you have to get there a couple of hours early, but the upside of the pandemic was being alone here this year. You feel quite exposed as you lean out and you need to make sure your camera strap is tucked in as the cars go by!

At this point in second practice the more committed drivers are starting to come over right near the wall. It's a great place to experience the sheer speed of an F1 car.



Photographer
Steven Tee

Where Monte Carlo, Monaco

When 3.03pm, Thursday
20 May 2021

Details Canon EOS-1D X MkII,
70-200mm lens, 1/2000th @ F5.6









Max is the leader of the pack

Winning the Monaco Grand Prix put Max Verstappen in the lead of the world championship for the first time in his career. You could say it's about time, since this is his seventh season in F1 and his 124th grand prix – even though he's still only 23...

Monaco always presents challenges in terms of getting to places and the COVID restrictions have added to that, but it was still possible to get on the start-finish straight after the race to photograph the celebrations. The Red Bull mechanics are an incredibly competitive group of people and you can see their joy here as well as Max's after what was a well-earned victory.



Photographer
Mark Sutton

Where Monte Carlo, Monaco
When 5.05pm, Sunday
23 May 2021

Details Nikon D6,
24-70mm lens, 1/320th @ F6.3

An Aston-ishing array of emporia

This is a classic Monaco shot but, on a sunny day on one of those rare years where there aren't too many people around, why not? You stand on the inside of the track with your back to Rothschilds' bank and the cars rocket by up the hill.

On the street map this is where the Avenue d'Ostende connects to the Avenue de Monte Carlo, but of course on the track it all falls under the blanket section of 'Beau Rivage', named after the exclusive apartment complex nearby. The iconic Hotel de Paris and its designer clothing outlets exude a kind of moneyed timelessness. There are other street circuits on the calendar but only Monaco looks like this...



Photographer
Zak Mauger

Where Monte Carlo, Monaco

When 12.29pm, Thursday
20 May 2021

Details Canon EOS-1D X MkII,
16-35mm lens, 1/40th @ F16









Charles kerbs his enthusiasm

You've probably read quite a lot over the past year about photographers being frustrated by various COVID-related regulations but this is one shot which wouldn't have happened without them! Just a few minutes earlier I was standing somewhere else but was reminded by security that, as Aston Martin's photographer, my bailiwick was confined to the area around that team's pit.

I'd just arrived there, by the barriers overlooking the exit of the swimming pool complex, and was bringing my camera up to my eye as I heard the initial 'clonk' of Leclerc's right-front wheel hitting the barrier. Quite a lucky piece of timing...



Photographer
Glenn Dunbar

Where Monte Carlo, Monaco

When 3.00pm, Saturday
22 May 2021

Details Canon EOS R5,
100-500mm lens, 1/1300th @ F5.6





Light at the end of the tunnel?

On any other Monaco Grand Prix weekend this bridge, which connects the paddock and the pits and runs over the circuit at Rascasse, would be absolutely rammed with people. So this was a rare opportunity to attempt a shot with the harbour in the background, the light playing off the metalwork, and just one person in the frame.

The Mercedes social media team had been out and about doing some filming with Valtteri back at his apartment and were returning to the circuit, so I asked if we could do a shot here. Valtteri said, "OK, what do you want me to do?" I said, "It's going to be a silhouette, so you can do what you want..."



Photographer
Steve Etherington

Where Monte Carlo, Monaco
When 10.41am, Wednesday
19 May 2021

Details Canon EOS R5,
24.105mm lens, 1/4000th @ F5

SHOWDOWN COMING IN FLEXI-WING SAGA

01 It began with an offhand remark by Lewis Hamilton during the Spanish Grand Prix weekend and could end with Mercedes lodging protests against key rivals. Hamilton's incendiary claim that Red Bull fitted a "bendy

wing" to its RB16Bs on the Saturday of the race weekend, gaining "three tenths" of a second per lap, reignited a disputed issue which has lain dormant for years.

Moveable aerodynamic devices are banned in F1, and in an ideal world the rulemakers would prefer no part of the car to move or flex other than the DRS, which is permitted. But it is physically impossible for any component to achieve total rigidity. Given there are clear advantages for certain areas of the car to flex – particularly the wings, which can be engineered to produce less drag at high speeds – the question is one of where the limit of tolerance is set and how it can be policed. In F1 the standard test on the rear wing is the

The reappearance of the flexi-wing issue is a sign that the Mercedes and Red Bull battle is closer than ever



‘pullback’, where a predefined load is applied to the wing from behind the car while it is stationary.

The essence of Mercedes’ accusation is that Red Bull has designed its rear wing in a way which allows it to flex at high speed, reducing the drag penalty while complying with the FIA’s deformation tests in the pitlane. In itself this is nothing new: F1 is a competitive sport and aero-elasticity is a field in which most teams operate on the margins of acceptability to find gains. But in this case it’s the magnitude of the gain which appears to have triggered Mercedes – and in turn the governing body.

In Spain, Red Bull team principal Christian Horner claimed

the FIA was “completely happy with the car” but this turned out to be not entirely true. The FIA then issued a technical directive announcing a raft of new measures to clamp down on flexible wings: it will consider on-track behaviour via footage from each car’s on-board cameras, and bodywork must carry marks for this purpose; it underlined that any components or mechanisms in the wing assembly whose purpose was to enable flex would be considered a breach of the regulations; and it proposed to apply tests at up to 1.5 times the regulation loads. It’s this latter announcement, and the effective date – after the Azerbaijan GP – which has stirred the passions of teams on both sides of the debate.

The official rationale for delaying the implementation of the new tests is to give the affected teams, which include Ferrari, Alpine and Alfa Romeo as well as Red Bull, time to adapt their designs to meet the new tests. These teams have expressed irritation at the potential costs involved as well as the general principle of changing the parameters of the test. Mercedes is unhappy about the delay, since Baku is a track defined by extremes – a long straight and a high-downforce urban section – which will play to the strengths of cars with aero-elastic wings. The team doesn’t rule out the possibility of lodging protests at the Baku event, which occurred after this issue of *GP Racing* went to press.

**“DELAYING THE INTRODUCTION
FOR WHATEVER REASON LEAVES
US IN A LEGAL VACUUM AND
LEAVES THE DOOR OPEN
FOR PROTESTS”** TOTO WOLFF

“Nobody needs this messy situation,” said Mercedes boss Toto Wolff of the delay, which “leaves us in no man’s land”.

“Delaying the introduction for whatever reason leaves us in a legal vacuum and leaves the door open for protests.

“Our wing is extremely rigid. The new test is a

half-baked solution which gives us an opportunity and the whole thing can soften and bend more in the future.”

Aston Martin team principal Otmar Szafnauer also criticised the delay.

“To design something that flexes just the right amount and pass the test but still flex, takes a big effort,” he said. “But to design something that is stiff doesn’t take effort at all. And it can be done very, very quickly.”

This view is disputed by Red Bull’s Christian Horner, who also claimed the cost of the changes would impact his team’s ability to comply with the budget cap – or force it to abandon areas of development to compensate.

“You can’t just magic up components,” he said. “For a team like us, that’s obviously running up against the [budget] cap, then of course strategically you have to make choices. You know the impact of something like this is probably about half a million dollars, so that will prevent something else from happening. That’s the juggling act we’re now having to make.” ►



RED BULL'S POWER UNIT POWERPLAY

02 Having secured a deal with Honda to take on the intellectual property of its hybrid power unit and become an engine manufacturer in its own right, Red Bull has gone shopping for engineering talent to crew its new Milton Keynes-based powertrains division.

Naturally it has gone headhunting just down the road at Brixworth, home of the multiple championship-winning Mercedes-Benz High Performance Powertrains – to the barely disguised chagrin of Mercedes F1 boss Toto Wolff.

Red Bull announced at the end of April it had appointed former Mercedes HPP man Ben Hodgkinson as technical director. During nearly 20 years with the company, joining when it was known as Ilmor Engineering, he rose to the position of head of mechanical engineering. His focus is understood to be on long-term development as Red Bull looks forward to the next generation of engines planned for introduction in 2025.

A flurry of other announcements followed as Red Bull poached production director Steve Blewett, head of electronics and energy-recovery systems Omid Mostaghimi; head of mechanical design Pip Code, head of internal combustion engine (ICE) design Anton Mayo, and group leader of ICE operations Steve Brodie. The recruitment drive triggered an intriguingly passive-aggressive war of words between Wolff and his Red Bull counterpart, Christian Horner.

“There will always be a back and forth [among technical staff],” said Wolff. “I understand where Christian is coming from – he wants to build a structure and that’s where you have to write a big cheque sometimes. But that’s OK.”



Horner (left) dons a hard hat and inspects progress on the fitting out of Red Bull's new engine factory

“Mercedes HPP have done such a strong job over the last 15-to-20 years,” said Horner. “They’ve been an obvious place and a UK base for us to attract talent from.”

“Our best chance of hitting the ground running is to bring in some real talent with existing Formula 1 experience. Obviously, they won’t be bringing IP with them but they’ve all been long-timers at HPP, and they’ve produced the benchmark engine over the years. So that’s fantastic for us.”

In a subsequent interview with the Italian edition of *GP Racing’s* sister website *motorsport.com* Wolff engaged in punchier rhetoric while playing down the success and impact of Red Bull’s raid.

“We have about 900 people working in Brixworth,” said Wolff. “They approached 100, and got between 10 and 15, mainly manufacturing staff, not performance. In that respect, if I were to build a new factory, I would also start [like that].”

“But between hiring a handful of people and having a full up-and-running competitive engine factory, there’s quite a long way to go. Red Bull can do that, with the resource that is being put in, but Mercedes and the others have been in the sport for many decades, building the structure. So 15 guys and an empty building site construction is not going to be sufficient in order to be competitive in three years with a new power unit.”

Red Bull says it received over 600 applications for its initial batch of jobs and its recruitment drive is continuing.

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NORRIS COMMITTS TO MCLAREN

03 Lando Norris has become the first out-of-contract driver to sign a new deal as McLaren moved to secure a multi-year arrangement with him for “2022 and beyond”. It’s a logical move for the in-form Norris, who has demonstrated consistent improvement since making his F1 debut with McLaren in 2019.

Norris joined McLaren’s young driver programme in 2017 after impressing the team with his performance in its simulator – which came as part of his prize for winning what was then known as the McLaren Autosport BRDC Award. He then finished as runner-up to George Russell in Formula 2 the following year.

In 2020 Norris secured his maiden F1 podium in the opening round of the season, with a combative drive in Austria, and he has claimed two more this year already – most recently in Monaco. His original three-year contract was due to elapse at the end of this season, but he explained that while he is perfectly happy at McLaren he was initially rather reticent to make the first move in negotiations.

“It was something I brought up when I went to dinner with Zak a while ago,” said Norris. “He was talking a little bit about the future and I was just like: ‘You know, about these future years, is it something we want to start talking about now? Is it something you want to talk about later in the season?’

“Just because I don’t know when or how to bring it up, just like a guy talking to a girl for the first time, so it was a bit awkward. I think they had already started talking about it as a team, between Zak and Andreas [Seidl, team principal] and so on. And it was something that I preferably wanted to get out the way as soon as possible.

“We started talking and it all flowed from that. It was just a bit of a weird one for me to bring up, because I’ve not been in that position before.”

Norris’s new deal is understood to be worth £6m a year, an increase on his present salary of £4m. Team principal Andreas Seidl described the decision as “very straightforward”.

“He’s an integral part of our performance recovery plan and his record so far has shown he’s a formidable competitor,” Seidl said. “Like him, we have strong ambitions for our future together and I’m pleased we’re continuing this journey for both Lando and the team.”

Norris secured his future in F1 by putting pen-to-paper on a long-term deal with McLaren



“IT WAS JUST A BIT OF A WEIRD ONE FOR ME TO BRING UP, BECAUSE I’VE NOT BEEN IN THAT POSITION BEFORE”

LANDO NORRIS

F1 MASTERMIND

Your chosen specialised subject: the world’s greatest motorsport

- Q1** Which of these two F1 engine manufacturers won more world championship F1 races: BRM or BMW?
- Q2** Of the 15 F1 races Lewis Hamilton has started from fifth, which is the only one he has won?
- Q3** True or false: Jos Verstappen claimed two F1 podiums but never actually led an F1 race?
- Q4** How many laps did Lance Stroll and Sergio Pérez lead for Racing Point in 2020: 48, 58 or 68?
- Q5** Which decade has had the most one-time F1 champions and who were they?
- Q6** Four world championship F1 races were held at Montjuic Park. Which four constructors shared the wins between them?
- Q7** What was the lowest grid position Felipe Massa converted into one of his 11 F1 victories?
- Q8** Three F1 drivers have been born in Monaco: Charles Leclerc, Louis Chiron and who else?
- Q9** Lewis Hamilton has won the Chinese GP six times but who are the two other drivers to have won the race more than once?
- Q10** How many times has Japan hosted the last race of the F1 season and when did this last occur?



1 BMW (20 to 18) **2** Singapore, 2017 **3** True **4** 58 **5** 1970s, Jochen Rindt, James Hunt, Mario Andretti, Jody Scheckter **6** Matra, Tyrrell, Lotus, McLaren **7** Second **8** Olivier Beretta **9** Fernando Alonso and Nico Rosberg **10** Eight, 2003



THE F1 ANALYST

BEN EDWARDS

[@benedwardstv](#)

PICTURES  **motorsport** IMAGES

CAR CONTROL MAY ONLY TAKE DRIVERS SO FAR

Extreme car control is a joy to behold.

Photographs of Ronnie Peterson applying opposite lock around the old Woodcote corner at Silverstone, or replays of Max Verstappen saving his Toro Rosso from impact against Armco barriers in Brazil in 2016, give us a visual treat of seeing driving skills at the highest level.

Max has delivered plenty of other moments to relish, such as his perfect 360-degree spin at Hockenheim in 2019, which didn't prevent him from winning the race, and his reactive save of a sideways restart at Imola this year. Training in karts on slick tyres in the rain under the watchful guidance of his father Jos helped Max develop a truly instinctive feel for the correction of anything on four wheels.

Yet according to one of motorsport's most valued driver coaches, a man who has worked with nine of the current contenders on the grid, that instinctive car control can be a burden as well as a blessing. Rob Wilson raced alongside Nigel Mansell and Derek Warwick in F3 and developed

a deep understanding of their individual skills before he went on to race in multiple disciplines around the world.

Now in his late sixties, Rob is as flat out as ever; he was due to run two separate coaching sessions at different circuits the day after we spoke, one of them with a current F1 driver. Young aspiring racers often invest in a two-year programme of instruction with him, but it doesn't take long for Rob to learn about their innate ability.

"When I get new drivers and identify that natural car control, which I can usually sense within the first three corners, it sends up an alert signal," explains Wilson. "My concern is that they will end up relying on that car control instead of doing the Nigel Mansell thing of work, work and work at it. Derek Warwick had the initial natural car racing ability but Nigel Mansell's determination to work at the craft, step by step, ended up being far more successful."

In 1993 Rob sat alongside Mansell in a road car at Elkhart Lake, the classic Road America circuit in Wisconsin, as Mansell took on a new challenge in Indycars just months after winning the F1 world championship. A gap of nearly 15 years since they had raced wheel to wheel proved Mansell had used his time wisely.

"There was a complete transformation in his driving," recalls Rob. "His style in the car was a complete contrast to his bulldog, hard charger personality; his feel was superb, so delicate. Nigel had developed massively."

All F1 drivers are unique in how they combine natural talent with technical awareness. In Rob's view, Ronnie Peterson was at one end of the scale with incredible intuition and reactions, while Niki Lauda was at the other end, unlikely to chance a late braking manoeuvre but always aware of what he needed technically. Lauda won three titles; Peterson failed to win any – and Rob has an interesting perspective on the 1973 British GP at Silverstone, where Ronnie was so lauded for his driving prowess yet lost victory to Peter Revson.

"I was watching at Woodcote and Peterson was amazing through there," says Wilson. "But he was at 100% the whole time with the car while Revson wasn't far behind driving at 97%. When it started to rain, you would have thought that Peterson would have excelled but because he had already spent the whole race on the ragged edge there was a degree of nervousness in dealing with the change in conditions. Revson, who had not extended himself beyond pure harmonisation, got closer and closer, then overtook and won the race. He had not given himself any frights and I think the reverse can happen to those who are dancing on the tiptoes of pure instinct."

So where do our current superstars stand? Max has shown us

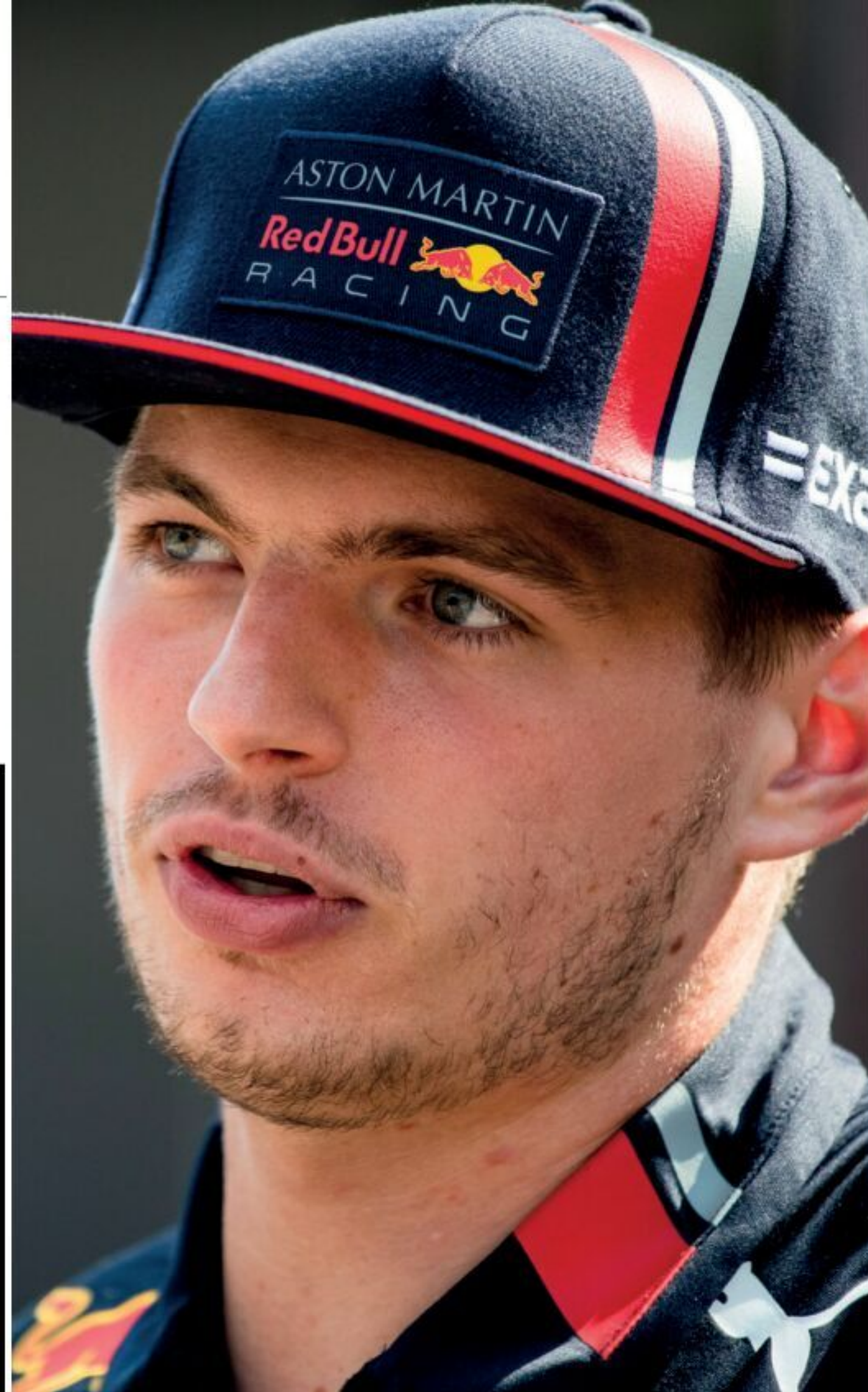
his tenacious ability to correct a car, but he has also demonstrated superb tyre management in races. Lewis Hamilton tends to have fewer dramatic moments, but his control is also remarkable.

"Max does have that natural ability," agrees Rob. "But at times he relies on it a fraction too much. Last year on the full Bahrain circuit I noticed in qualifying that at Turn 10, the inner left-hand hairpin, Max chanced it by banging onto full throttle a little bit early. He corrected it but lost time as a result. Lewis stayed absolutely within what his car could do, there was no excess movement; his car control is very subtle. He uses it to manipulate the car on corner entry so there's nothing to react to on exit. His technique is what I try to pass on."

Easing away from confident car control is something that worked well for Jody Scheckter in the 1970s and perhaps it is a route that Max is already pursuing. Jody's initial brash and dramatic style was calmed and purified until it served him perfectly in 1979 when he won the world championship with Ferrari, racing alongside Gilles Villeneuve who had become the fans' favourite for providing great visual moments.

Seeing a car saved from imminent accident damage will always give viewers a thrill, but it is clear that those in the know understand that the visually serene approach rather than blatant full-lock steering control is the real path to stardom in F1.

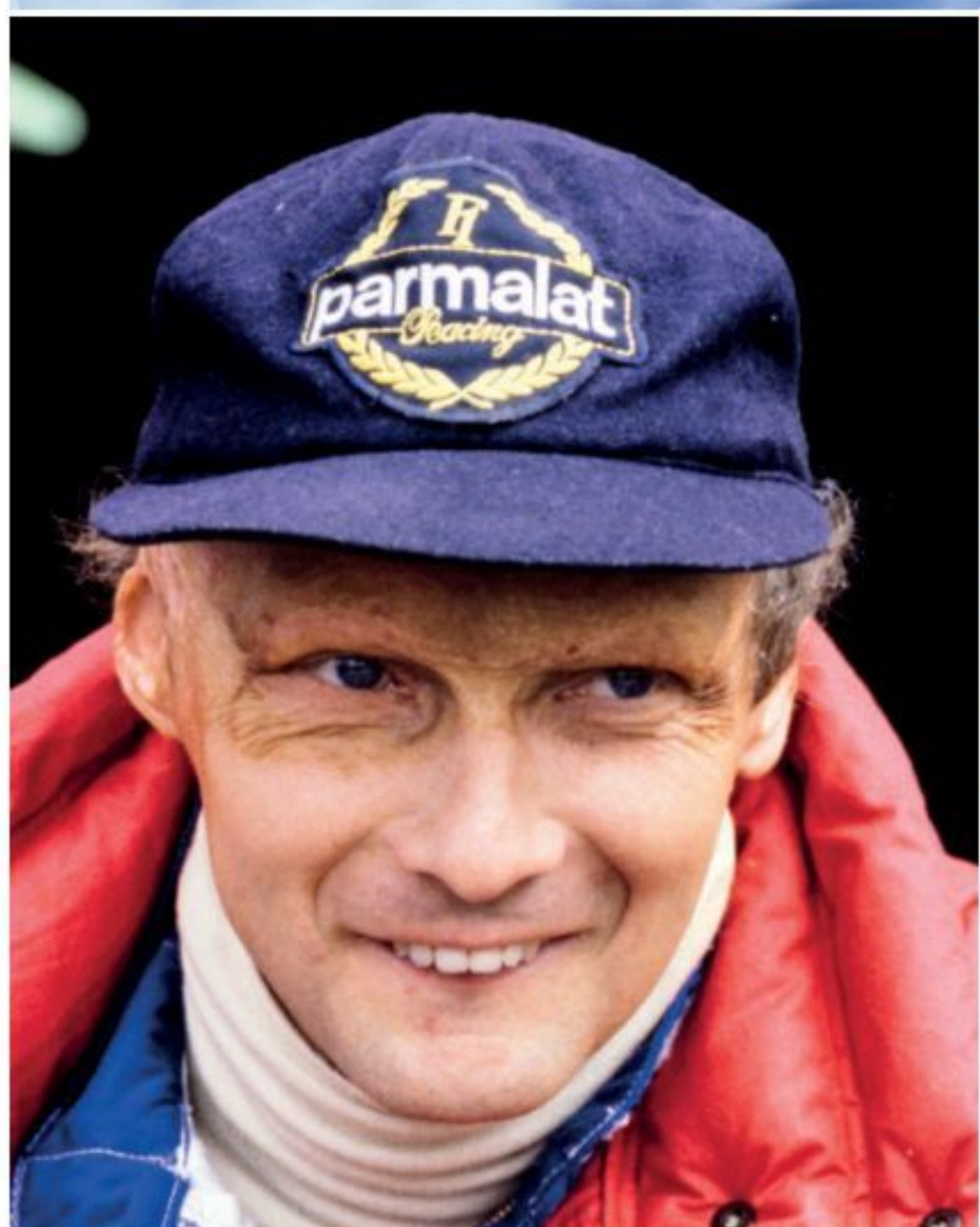
Verstappen has fantastic car control but Wilson argues that sometimes that can be a hindrance



Wilson has been a driver coach for many years and has worked with nine of the current F1 grid at some point



Max Verstappen with ex-F1 driver and father Jos when Max was karting. It was in this arena, under Jos's tutelage, that Max developed his instinctive feel for driving



Niki Lauda (above) and Ronnie Peterson (right) were at opposite ends of the driving spectrum. Peterson had great reactions and intuition but Lauda always knew what he needed to do technically to succeed



UNDER THE HOOD

PAT SYMONDS

PICTURES



much a function, at the moment, of exactly how the race plays out with Safety Cars and other such disruptions than it is of the closeness of competition. Let us hope the better wake characteristics of next year's cars changes this.

What we can begin to see is the strengths and weaknesses of each team. To do this we again use the 200m timing loops arranged around the circuit, and we classify each one of them where the car is not on full throttle as being part of a low-speed, medium-speed or fast corner. If the car is on full throttle and there is significant cornering, then we classify the section as power limited. If there is no lateral acceleration, then it is classified as a straight.

The choice of low, medium and high speed descriptions is a little arbitrary but we choose to classify slow-speed corners as those with an apex speed of less than 125km/h, medium-speed between 125 and 175km/h and high-speed anything above that.

Caution is still required in interpreting the results. For example, Bahrain is thought of as a circuit with good fast corners but in reality, such is the performance of the cars now, only Turn 6 is actually classified as a high-speed corner. Other great corners, such as Turn 12, are now completely flat out, at least in qualifying, and therefore classified as power limited.

To say in Bahrain that Red Bull was clearly faster than Mercedes in the fast corners is true, but the overall effect on laptime is less than it would be at a circuit like Silverstone where there are more corners taken at over 175km/h that are not full throttle. To try and normalise this a little we express the difference in performance as a percentage time loss compared to the fastest in any particular type of corner.

Of course, depending on who you choose as reference the time loss could be negative. In other words, for example, while we might choose Mercedes as a reference Red Bull might be faster on a particular circuit and in a specific type of corner, therefore showing a 'negative loss'.

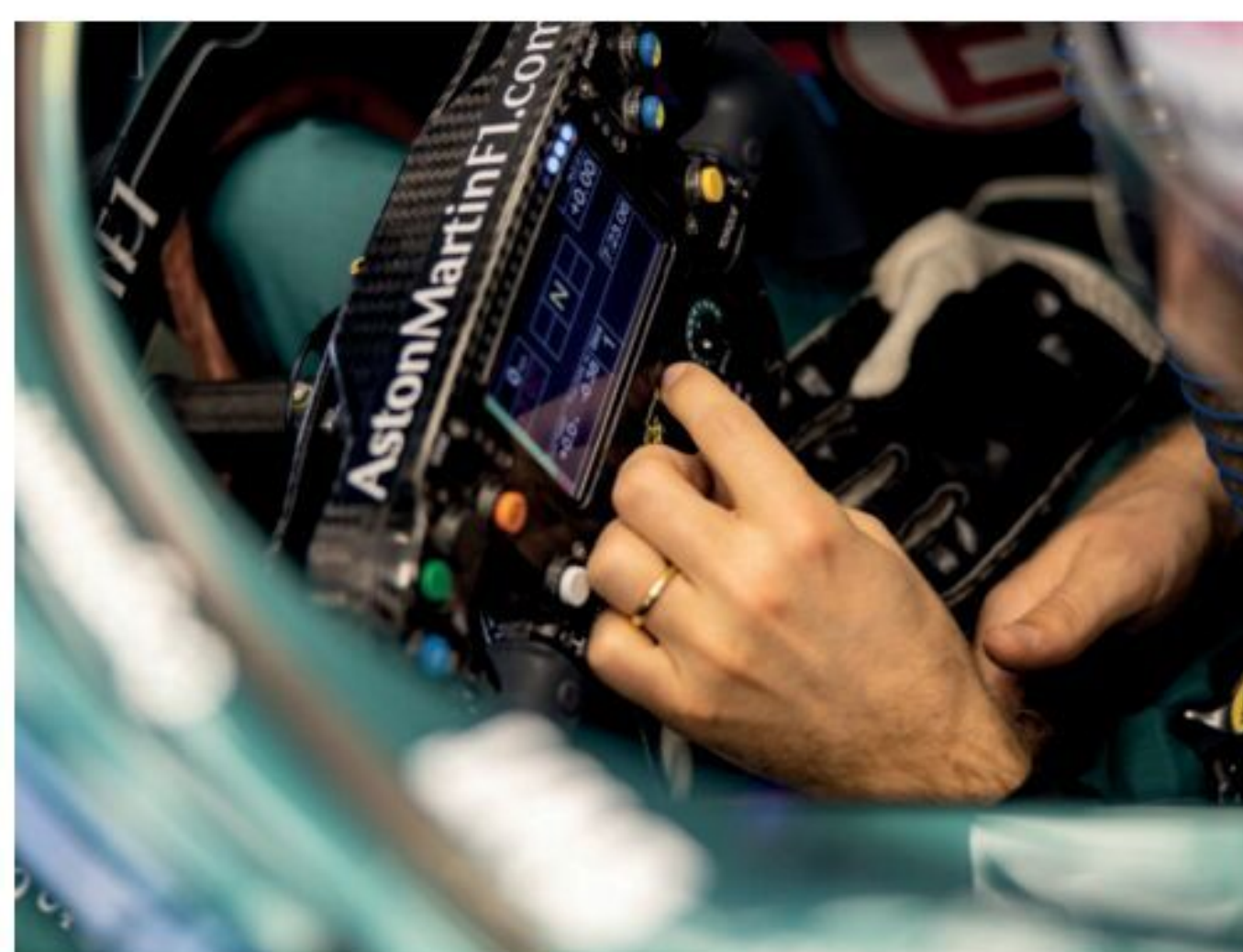
With those caveats in place, we can start to examine the data. At the time of writing this is just for the first three races of the season, but there are some patterns emerging. It doesn't need data analysis to ►

THE DATA SIGNS ARE GOOD FOR A CLOSE BATTLE

After the last test of the winter, or as was the case this year the only test of the winter, fans are always asking themselves what the pecking order is and how close is the competition going to be in the coming season. Even the teams, which actually have very little to gain materially from such knowledge, spend hours analysing every run their competitors make.

The understanding they gain does not impact on the work they do – one always works at the limit to add performance to a Formula 1 car, whether it is the class of the field or sitting sadly on the last row of the grid. However, F1 personnel are hugely competitive people for whom success is measured only by a tally of points at the end of the season, and they really can't help themselves from gauging their likely success as early as possible.

I always advise that one should not form opinions on such things based on a sample of one, and therefore never read too much into winter testing times. Now, however, with a few races under our belt, what can we see and how might it



Testing is intriguing but it is under race conditions that a car's real positives and negatives are revealed

affect how the season progresses from here?

It certainly doesn't need close inspection of the data to see that we have a much more competitive front of field this year, although it is hard to determine if the cars are overtaking more – the number of overtakes both with and without DRS were similar in Bahrain to 2020, and while the statistics show a lot more overtakes in the next two races, we have to take into account the weather at Imola and the extra DRS zone in Portugal.

We have been tracking overtakes in some detail for four years now, with more precision than using lap charts, by utilising the 200m timing loops at each circuit. The propensity to overtake is very

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Analysis shows that Red Bull leads the way through high-speed corners



Ferrari has a slight edge over the rest of the field in slow-speed corners



Mercedes still enjoys an overall advantage, albeit reduced from 2020



Williams is consistently faster than Mercedes through the speed traps

say that Red Bull and Mercedes are closer than last year, nor to say that Ferrari has recovered somewhat from the disasters of 2020, but some other trends are emerging.

Going to our slow, medium, fast-corner analysis we can see that Mercedes still holds sway overall, but this year it is only by around half a percent over the top four. In fact, in the fastest corners Red Bull holds an advantage while in the slowest corners, somewhat surprisingly, it is Ferrari which holds the smallest of advantages. This may bode well on some of the slower circuits later in the season.

While it is extremely difficult to separate downforce from sheer tyre grip, or drag from engine power, it would appear the latest Honda power unit is on par with Mercedes in qualifying trim, and that the Red Bull might be fractionally higher on downforce than their close rivals. Speed trap figures

from the early races have shown more of a drag discrepancy than normal, the Williams for example being consistently faster on the straight than the works Mercedes with the same engine.

Data is interesting. Sometimes it enlightens and sometimes it merely confuses. When it confuses it is because it is either sparse, inaccurate

“IN OUR SLOW, MEDIUM, FAST-CORNER ANALYSIS WE CAN SEE THAT MERCEDES STILL HOLDS SWAY OVERALL, BUT THIS YEAR IT IS ONLY BY AROUND HALF A PERCENT OVER THE TOP FOUR”

or inconsistent. I think at the moment analysis suffers a bit from all three aspects, but nothing can disguise the fact that we are in the closest, most competitive season we have seen for a long time. Even the midfield, which has already been close for many years, is edging ever closer to the front. Everything is set for the best F1 season in ages.

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STRAIGHT TALK

MARK GALLAGHER

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He then joined campaigners, including actor Hugh Grant, in campaigning for a free and accountable press, providing funding for claimants affected by the phone hacking scandal which consumed the *News of the World* and led to its closure.

Mosley was nothing if not combative. He had spent some time in the Territorial Army Parachute Regiment and was a trained barrister. When it came to the politics of Formula 1 he was quite the adversary. Few knew how to deal with him.

Debates tended to be one sided. As *GP Racing's* regular contributor Andrew Benson wrote in his obituary for the BBC, Mosley was patrician and patronising. If he talked down to you it was because he knew for a fact that you were beneath him.

His achievements in driving Formula 1's safety revolution in the wake of the 1994 San Marino Grand Prix, then transferring that know-how into the automotive industry through the Euro NCAP and Global NCAP crash testing programmes, is highly significant. We have much to be grateful for.

The mainstream media struggled to acknowledge that, let alone demonstrate an understanding of the detail.

During the 16 years in which Mosley was FIA president, he and Ecclestone ran the sport with fear and favour. Leadership dished up as command and control with a side order of menace. It was their way or the highway.

When the Formula One Teams Association, led by Ferrari's Luca di Montezemolo, started making noises about staging a breakaway series in 2009, Mosley and Ecclestone set about looking for ways to ensure F1 could continue.

Cosworth was called to a meeting in London with Mosley and Ecclestone, and asked whether it could supply engines to some teams. Maybe even all. The answer was yes, but the issue was finding the money needed to retune the CA V8 engine in order to meet the 18,000rpm rev limit.

Turning to Ecclestone, barrister's brain engaged, Mosley summarised that since neither the FIA nor Cosworth had the funds needed to redevelop the engine, there was only one person sitting at the table who could make it happen. Minutes later Cosworth had the £3m which enabled it to undertake the necessary work, supplying Williams, Virgin Racing, HRT and Lotus Racing (subsequently Caterham) in 2010.

Mosley belonged to an era of F1 marked and marred by strong, individual leaders who gave no quarter and were unafraid of some light, open warfare. It was fascinating but seldom pleasant. Few regret its passing.

MAX MOSLEY: A DIFFICULT MAN TO IGNORE

The death of Max Mosley has caused many to reflect on the life and legacy of a pivotal figure in world motorsport. It is clear that mainstream media did not much like Mosley.

The feeling was mutual.

He had the misfortune to be born into an infamous family and the good fortune to benefit from their wealth. Following his death, reports focused on the political beliefs of his parents, Sir Oswald and Lady Diana Mosley, and the fact that Max Mosley had sex.

While many people have sex with several partners during their lifetime, often using many different rooms in their homes to do so, Mosley's mistake was to have sex with all of them at once and in a basement.

Throw in the Nazi-associations of his parents, secure some clandestine footage, and the *News of the World* came up with a story which it was sure would bury him. Except Mosley came out fighting, defeated publishers News Group in court, and was awarded damages.



Mosley had a difficult relationship with the mainstream media (top) and his achievements at the FIA have been overshadowed due to his double act with Bernie Ecclestone (middle, right)

THIS MONTH

David Hamblin

Managing Director,
AP Racing

The 1967 Dutch Grand Prix is best remembered for the victorious debut of the Lotus 49 – but it was also AP Racing’s maiden appearance, supplying the clutch in Jim Clark’s winning car. The Coventry-based clutch and brake manufacturer has clocked up over 850 wins ever since – although, this being F1, it can’t always say who with...

CV

2018 – Present

Managing Director,
AP Racing

2014 – 2018

Head of Sales,
AP Racing

2012 – 2014

General Manager
Manufacturing,
AP Racing

2007 – 2011

F1 Race Engineer,
AP Racing

2003 – 2006

Design Engineer,
AP Racing

1999 – 2003

Bachelor of Engineering
(Mechanical Engineering),
Oxford Brookes University

GP Racing: AP Racing has been around since before suppliers were allowed to put their logos on racing cars – and it seems you’ve spent a long time there yourself.

David Hamblin: Yes, AP Racing man and boy. I’m an engineer by trade. That’s what I do, what drives me is the technical side. I started at AP Racing via a work placement at university, did a few years in engineering, then I went more customer-facing for four years in Formula 1 – then I came back, as a lot of people do when they come under pressure from home to be away less often! We were a slightly smaller company then. Latterly I’ve taken over the full responsibility of running AP Racing day-to-day. It’s a great company and it still gets me out of bed every morning excited about what the new challenges are. As well as our involvement in motorsport all over the world, we have a growing OEM and road car upgrade business as well.

GPR: AP Racing is owned by Brembo, which is also a supplier of brake components. How does that work?

DH: Going all the way back, AP Racing was part of the Automotive Products group in Leamington Spa, which was the go-to clutch and brake solution for just about any cars built in the UK. Racing started out as a sort of skunkworks, where a few guys would borrow stuff from the production line, drill it out and make it a bit racier, and sell it to the racing industry. That business line then grew as motorsport became more popular and there was a need for dedicated rather than modified products.

Then, as the British car industry declined it became the most profitable arm of the business, and in 2000 it was acquired by Brembo. So, yes, we’re competitive with our parent company, but we have been for 20 years – and it allows us to give the best to every race series around the world. We’re both in F1 on the brake side, but a really important part of our business in F1 is the clutches. Not a headline-grabbing subject but when those 20 cars line up on the grid on Sunday, they all want to launch...

INTERVIEW STUART COOLING

GPR: How much of a challenge is it to be the supplier of a part that people only talk about when it breaks?

DH: The element of having a very strong brand helps. That puts your foot in the door – you’re a serious player, you’ve got the infrastructure, you’ve got the proven record. But your product has to deliver, it has to be right, it has to be innovative. Word-of-mouth relationships are important, as they are in any business, but in the highly technical world of F1 you have to deliver on innovation, R&D and product excellence. It’s a competitive business and your customers get bored with you if you’re not improving your product all the time. The cars don’t stand still. We have a crew of guys who are constantly looking at new ideas, new materials, new processes – we don’t wait to develop with teams, we come up with our own solutions as well.

GPR: How will your business change as F1 moves towards more technology sharing between teams and more standardised parts?

DH: For sure there will be an element of rationalisation in terms of the housings as whole back ends are sold, but the rules allow for differentiation and tuning of the clutch. Ultimately clutches are a friction device and there will be a need to tune that performance, either for better starts or power unit protection. I think it’s going to be an interesting journey over the next couple of years.

GPR: What about other categories outside F1?

DH: We’ve been awarded the sole brake supply for NASCAR starting next year, when the Next Gen car comes in. That’s great for us because it’s the biggest racing series in America. We’re involved in a lot of spec series around the world, but this is another level in terms of volume. And it’s a real step forward for NASCAR in terms of its technology, what it’s trying to do – getting back to being relevant for the next generation of customers.



WHO ARE THE RICHEST PEOPLE IN FORMULA 1?

It's said that the fastest way to make a small fortune in motor racing is to start off with a large one – but these individuals are determined to disprove that...

WORDS CHARLES BRADLEY PICTURES  AND SHUTTERSTOCK

Formula 1 consumes money like no other motor racing category – and very few other sports – on the planet. The sums involved are vast and, to pass through these barriers to entry, you need access to some serious cash.

As with thoroughbred horse racing's standing as the 'sport of kings', the prestige and status of F1 attracts some wealthy people. Take, for instance, the Claro sticker on the rear wing of the Red Bull. Claro is the South American arm of America Movil, a Forbes Global 2000 telecoms group which employs almost 200,000 staff, with a head office in Mexico City and reported revenues north of \$50billion. Its chairman, Carlos Slim Helu, has a net worth of \$62.8billion (according to Forbes) and is the world's 16th richest man.

He – along with son Carlos Slim Domit – is a long-term backer of Red Bull driver Sergio Pérez via their Telmex telecoms company, which sponsored Pérez's rise through the junior ranks and into F1. In turn, the Claro sticker Pérez brings to Red Bull is attached to a car whose owners include the world's 56th richest man.

Such capital reserves are the (at times shaky) foundations upon which the F1 ecosystem rests.

WHO IS THE RICHEST TEAM OWNER IN F1?

Dietrich Mateschitz is the co-founder, 49% owner and managing director of Red Bull, the energy drinks company which owns Red Bull Racing and AlphaTauri. So enamoured of Formula 1 is the 76-year-old Austrian that he bought not one but two teams in the 2000s, first Jaguar and then Minardi.

Mateschitz was a travelling toothpaste salesman. His lightbulb moment came in Thailand, where he came across a drink called Krating Daeng (which translates as 'red bull') and found it helped cure his jetlag. Mateschitz then approached its originator, Chaleo Yoovidhya, and together they launched a 'westernised' version called Red Bull in 1987, which quickly became the global market leader in the emergent – and very lucrative – energy drink market.

Red Bull achieved that position by having plenty of product available to fulfil demand stimulated by its sponsorship of athletes in extreme sports. Gerhard Berger was the first



Carlos Slim Helu
Sponsor of Red Bull and Sergio Pérez
Estimated net worth \$62.8billion



Dietrich Mateschitz
Owner of Red Bull, AlphaTauri and Red Bull Ring
Estimated net worth \$27.6billion

such beneficiary in F1, and later Red Bull would own 60% of the Sauber F1 team – until a falling out with Peter Sauber over selecting Kimi Räikkönen rather than Enrique Bernoldi, who Mateschitz believed was a hotter prospect. Well, being a high-net-worth individual doesn't make you right all the time...

In November 2004, Mateschitz bought the Jaguar Racing team for one pound from Ford, and a year later – with Berger as partner – purchased the Minardi team from Paul Stoddart, renaming it Scuderia Toro Rosso.

Red Bull Racing went on to win the world championship four times with Sebastian Vettel. Toro Rosso, which acts as Red Bull's funnel for young talent and has since been renamed AlphaTauri to promote Red Bull's fashion brand, has won two grands prix in its own right.

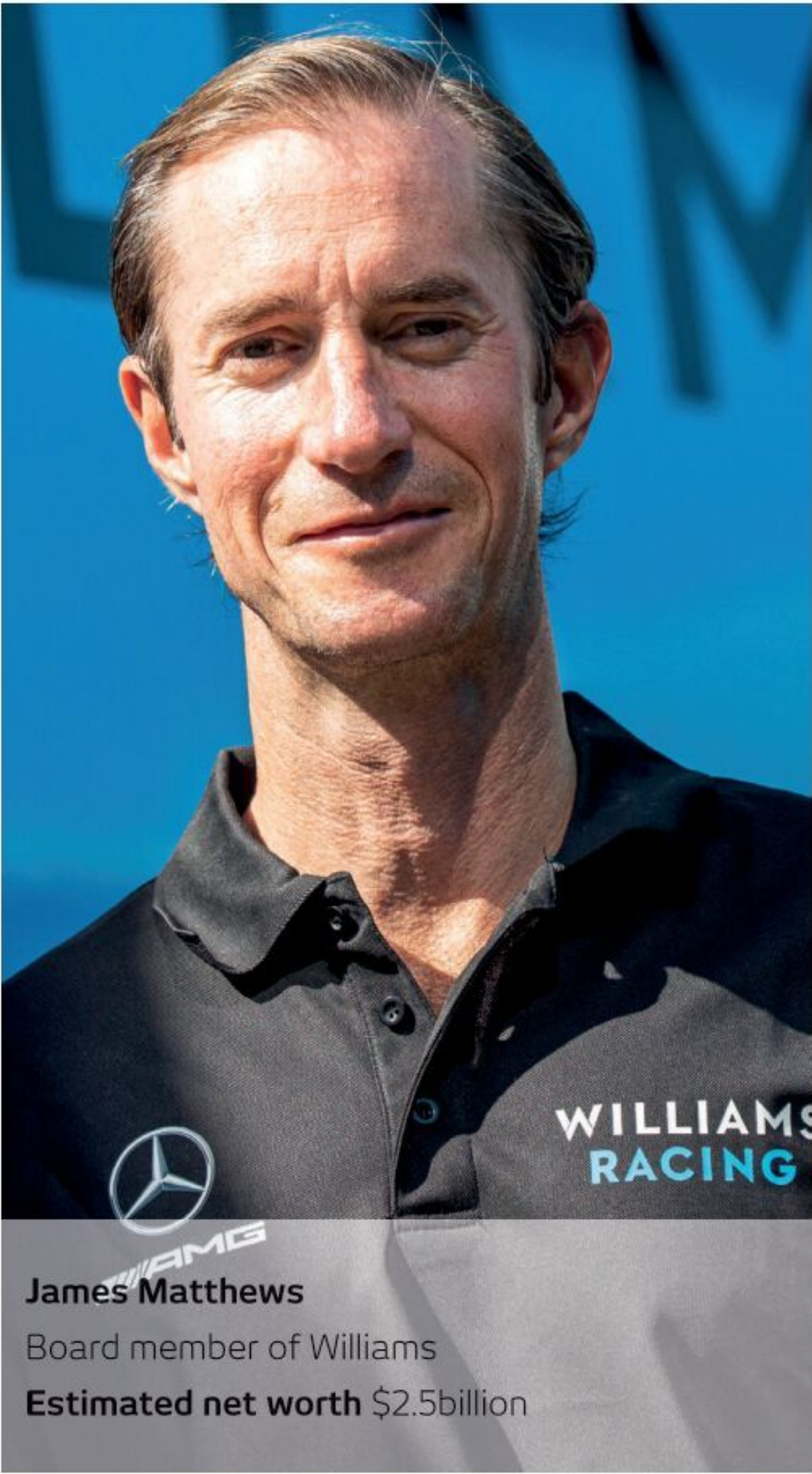
Impressive though those statistics are, they have recently been surpassed by Mercedes – whose co-owner Sir James Ratcliffe is worth \$17.3bn according to Forbes. The UK's richest person until he moved to Monaco, Ratcliffe built the Ineos petrochemicals empire and has recently made a number of big investments in sport.



Sir Lewis Hamilton
F1 driver for Mercedes
Estimated net worth \$300-500 million



Dmitry Mazepin
Racing father and sponsor of Haas
Estimated net worth \$1.3billion (in 2015)



James Matthews
Board member of Williams
Estimated net worth \$2.5billion



John Paul DeJoria
Investor in Circuit of the Americas
Estimated net worth \$2.7billion

WHO IS THE RICHEST DRIVER IN F1?

The wealthiest active driver in F1 is Sir Lewis Hamilton. The seven-time world champion commands a salary of around \$55million per annum, and his net worth is understood to be between \$300-\$500million. Endorsement deals with Mercedes, Tommy Hilfiger, Monster Energy, Bose, Puma, IWC, Sony, Gran Turismo and MV Agusta bolster his salary.

Michael Schumacher, the man with whom Hamilton is level in terms of world championship wins, is believed to be worth \$600-800million. Forbes twice listed him as its highest-paid athlete, in 1999 and 2000, and claims his annual earnings at Ferrari peaked at \$80million per annum.

WHO IS THE RICHEST RACE PROMOTER IN F1?

In the era of races which act as state publicity vehicles, those with the wherewithal to stage or

facilitate a grand prix in their country occupy an entirely different stratosphere of wealth. One such is Singapore property and hotel tycoon Ong Beng Seng, who was instrumental in his city attracting a race to his streets. Circuit of The Americas investor John DeJoria, co-founder of Paul Mitchell hair products, is also worth several billion dollars. Prince Albert of Monaco, whose Principality hosts the most famous race on the schedule, is also a member of the billionaire club.

And then there are Bahrain and Abu Dhabi, whose grands prix are effectively run by the royal families of the kingdoms. The Bahrain royal family's personal wealth is understood to be in excess of \$4billion; Crown Prince Salman is a highly visible supporter of the annual race and F1 in general. He is also a major investor in McLaren via Mumtalakat, the sovereign wealth fund of the Gulf island state. Its assets are believed to be worth \$17billion.

The emir of Abu Dhabi, Sheikh Khalifa, controls the investment authority which, at \$875billion in assets, is the largest amount managed by a head of state. His family's fortune

is also estimated at \$150billion.

F1's newest addition to the calendar, the Miami Grand Prix, adds more wealth to the F1 'family'. Stephen M Ross, a real estate developer whose RSE Ventures firm was in the running to buy Formula 1 before Liberty Media closed the deal, is also the owner of the Miami Dolphins NFL team whose stadium campus will host the new race. He has a personal net worth of over \$7billion.

HOW RICH ARE FORMULA 1'S OWNERS?

Liberty Media bought Formula 1 Group from private equity firm CVC for \$4.6billion in 2017. Liberty is controlled by John C Malone, a US billionaire who is understood to be the largest private landowner in America. His net worth, according to Forbes, is \$7.8billion.

Liberty Media recently disclosed – in a regulatory filing with the Securities and Exchange Commission – that the compensation of its CEO, Greg Maffei, had risen to \$47.1million in 2020, up from \$44million – mainly from stock awards



John Malone

Chairman/major stakeholder of Liberty Media
Estimated net worth \$7.8billion



Lawrence Stroll

Racing father and part-owner of Aston Martin
Estimated net worth \$3.2billion



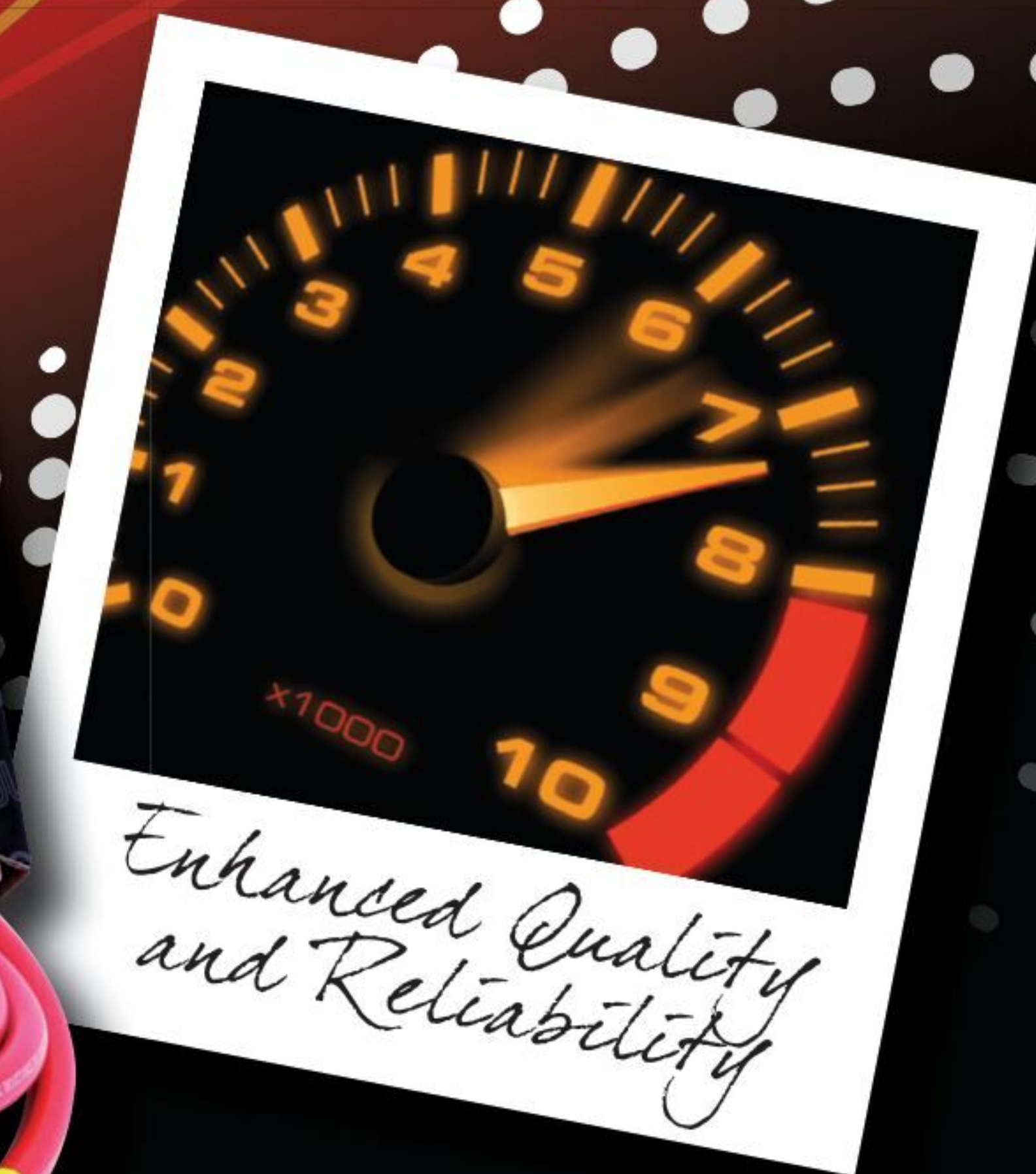
Michael Latifi

Racing father and McLaren investor
Estimated net worth \$2billion (approx)

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and options. His base salary was \$871,800.

Bernie Ecclestone, the former CEO of the F1 Group, is understood to be worth over \$3billion. He remained chairman emeritus of F1 until 2020.

WHO ARE F1'S RICHEST 'RACING FATHERS'?

Aston Martin driver Lance Stroll effectively drives for his father, Lawrence, whose net worth Forbes states at \$3.2billion. In early 2020, Stroll led a \$235million buyout of the Aston Martin car company and renamed his Formula 1 team (which he'd bought in the summer of 2018 for over \$100million) to reflect this. He is a compulsive dealmaker, as evinced by the number of sponsors and partners which have joined the Aston Martin F1 team's roster already.

Stroll Sr is the mastermind behind the 2011 IPO of fashion brand Michael Kors. He sold his final shares in the company in 2014. Before then, he'd brought clothing brands Pierre Cardin and Ralph Lauren to Canada and, along with Hong Kong investor Silas Chou, invested in Tommy

Hilfiger and then similarly developed the Michael Kors brand. Stroll is a renowned collector of Ferraris and famously purchased a 275 GTB/4 Spider for a record \$27.5million in 2013.

Haas F1 driver Nikita Mazepin's father, Dmitry, is the majority shareholder and chairman of the board of Uralchem Integrated Chemicals Company. He made the Forbes' billionaires list in 2014 and 2015, having bought into the \$5billion Uralkali company – the world's largest potash producer – in 2013. He previously worked with petrochemical companies TNK and Sibur and first formed his own company in 2004, which has since been merged into Uralchem.

Mazepin also made a bid to take over what was then known as the Force India F1 team in 2018 but lost out to Stroll. Uralkali stickers now adorn the Haas cars, and it is known that Gene Haas is looking for buyers for the team. Whether Mazepin will put in a bid is yet to be seen.

Williams driver Nicholas Latifi's father Michael is the owner, chairman and CEO of Sofina Foods. Via an investment company he also controls, he put \$200million into McLaren Group in 2018.

Latifi Sr left his native Iran for Canada at the age of 15, and he became a refugee there after the Shah was overthrown in 1979. He put his business degree together with his engineering background to start a food processing company in Toronto called Vienna Meat products, which grew into Sofina Foods, which has revenues of \$2billion. Latifi has a well-documented penchant for Ferraris and owns an ex-Michael Schumacher F2004 and an ex-Kimi Räikkönen F2007.

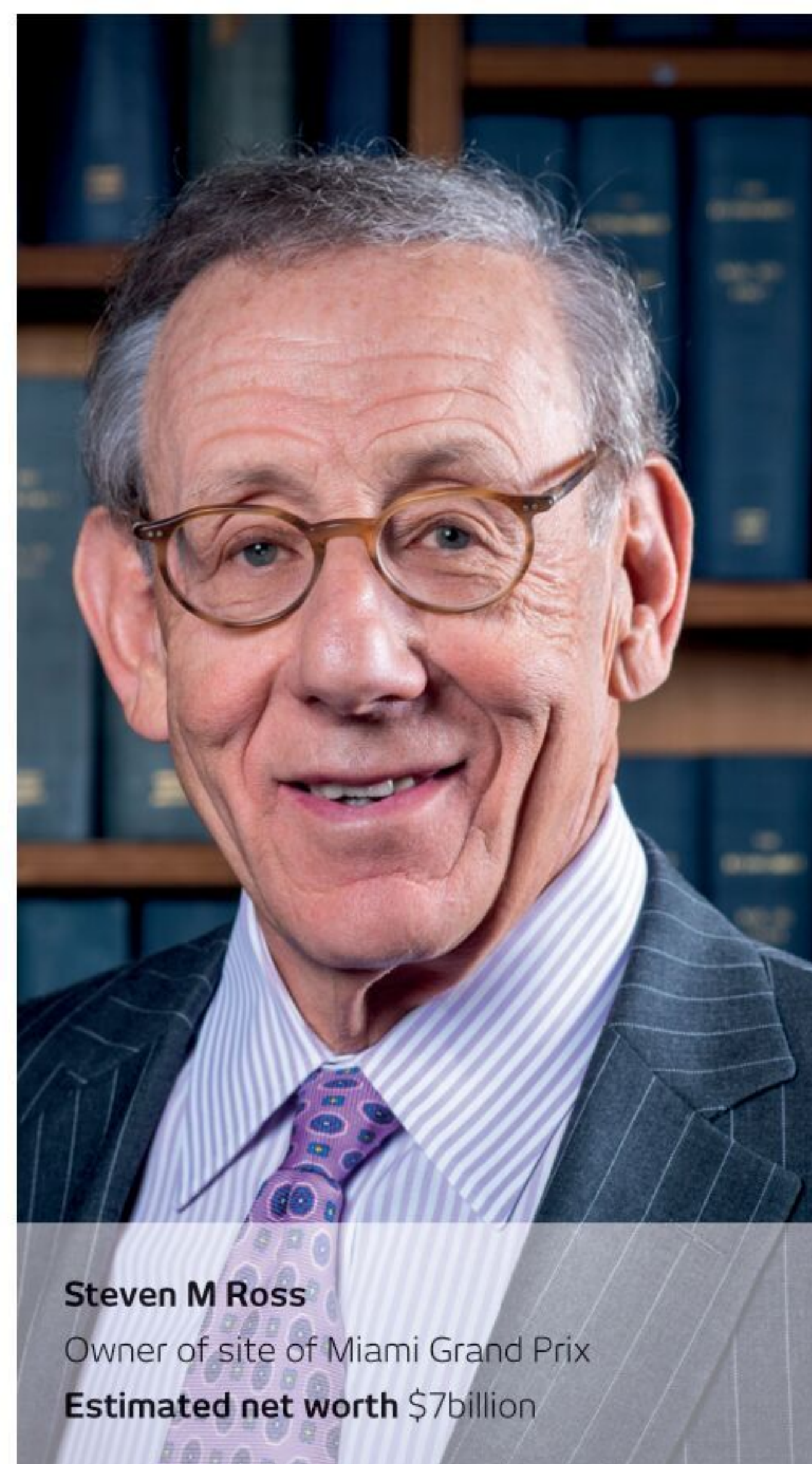
The Williams F1 team's \$180million acquisition by US investment company Dorilton Capital also carries the scent of family money, though its ultimate ownership structure is unclear. A key figure is James Matthews, whose father is a property magnate with a portfolio which includes the Eden Rock resort. Like his father (a regular in saloon cars in the 1970s), Matthews raced, winning the 1994 British Formula Renault title before becoming a city trader and hedge fund manager. He has two children but, since neither of them are old enough to attend school yet, it's too soon to say whether they will follow their father into motor racing...



Prince Albert of Monaco
Sovereign Prince of Monaco
Estimated net worth \$1billion



Sheikh Khalifa bin Zayed Al Nahyan
Emir of Abu Dhabi
Estimated net worth \$150billion



Steven M Ross
Owner of site of Miami Grand Prix
Estimated net worth \$7billion

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MAX MOSLEY

1940-2021

His handshake is gentle; his smile, demure. His gestures are temperate; his laugh, mild. His body language is faintly languid; he is tall, handsome, even elegant. As with many Englishmen of his age and class, you feel he finds the act of greeting you faintly embarrassing, but of course his manners are impeccable. This man does not need to strut his stuff.

[‘Max’, interview by Matt Bishop, *F1 Racing*, November 1997]

WORDS STUART COOLING

PICTURES  motorsport
IMAGES

In another life Max Rufus Mosley, who has died aged 81, might have become prime minister or attained similar political grandee status. Educated, urbane and charming, with a brilliant intellect, he studied physics at Oxford, served in the Territorial Army, and qualified as a barrister. A career in politics might have beckoned but did not – could not – eventuate, for above all he was the son of the British Union of Fascists leader Sir Oswald Mosley. His mother Diana, one of the famous Mitford sisters who delighted and scandalised society in the 1930s, openly advocated Adolf Hitler.

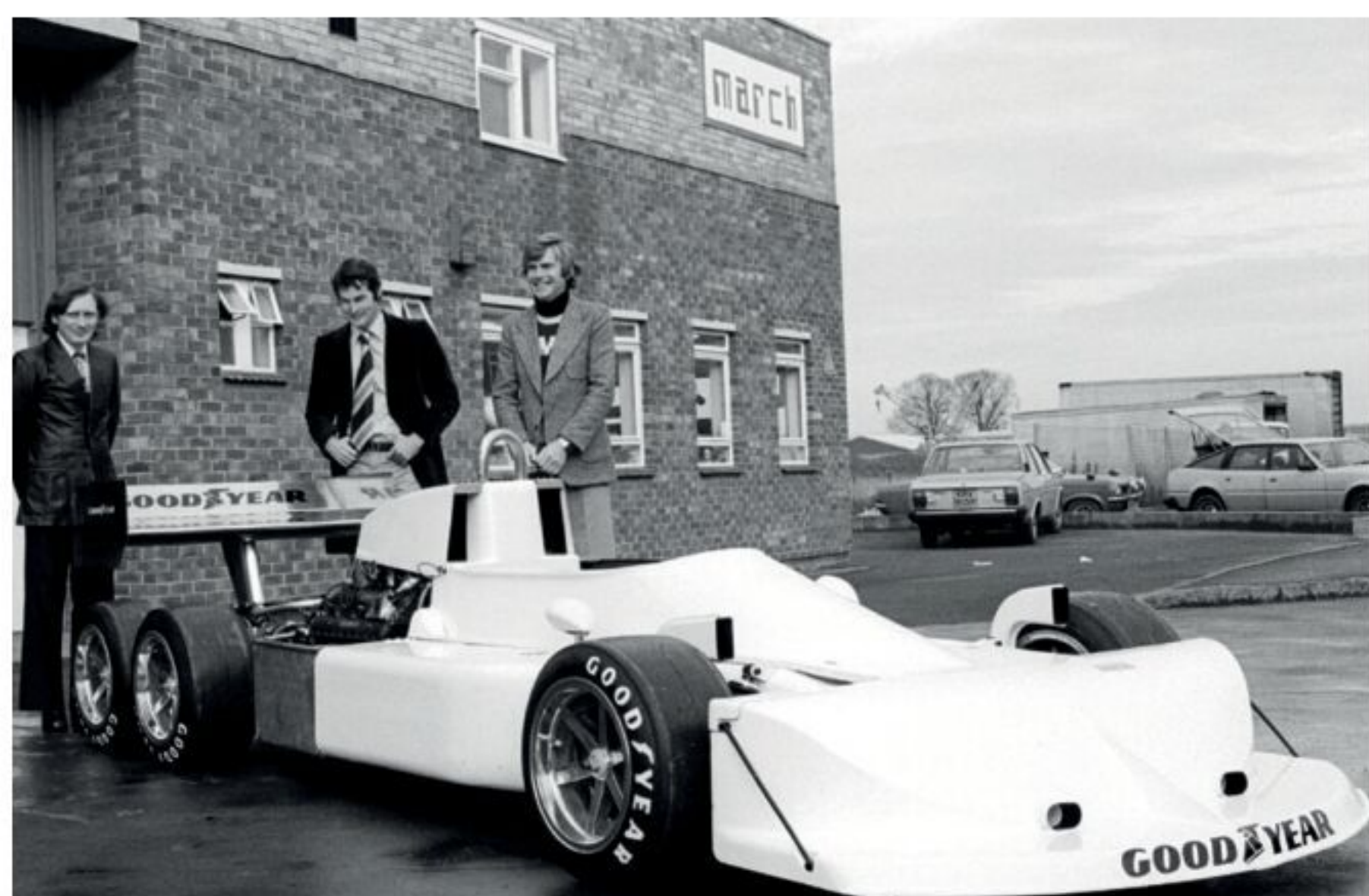
Though Mosley’s earliest memories of his parents were visiting them in Holloway prison, and he would later describe his early political leanings as “liberal and slightly left”,

his name meant he wouldn’t get past a selection committee, let alone the electorate. He was warned when joining the Oxford Union that he would be cut to ribbons in debate.

He therefore drifted into motor racing, which began as a hobby and became a vocation. It was an entirely different realm, in which his father’s involvement in the BUF and ill-judged postwar dabblings in mainstream politics counted for nothing. As Mosley recounted in his autobiography, “Standing among the other drivers at Goodwood looking at the list of practice times, I heard one say, ‘Max Mosley, he must be a relation of...’ and I waited for the inevitable, only to hear him continue ‘...Alf Mosley, the coach builder from Leicester.’

“I realised here was a whole new world. No one knew about ►





After ending his racing career Mosley (far right) helped found March in 1969. He stayed with the constructor until 1977

my background and, if anyone did, they wouldn't care. It was the first time I felt that whatever interest there might be was about me rather than my family. If I could do something in motor racing my antecedents would probably not come into it."

Through the mid-1960s Mosley funded his appetite for racing through his legal work, having gained a pupillage in the chambers of an old acquaintance of his mother's. Mosley enjoyed racing but realised his driving skills were unequal to a career at the wheel, having acquired a Brabham BT23C via a racing car dealer by the name of Frank Williams and spun it during his first test. His first International Formula 2 meeting was at Hockenheim in April 1968, the infamous race which claimed the life of Jim Clark. Thereafter, Mosley said, it was difficult to downplay to his wife, Jean, the risks of racing.

In 1969 Mosley quit both the bar and driving to co-found the racing constructor March with designer Robin Herd, manager Alan Rees and engineer Graham Coaker. Each put in £2,500 and the company took its name from the combined initials of



On leaving March, Mosley dived into motor racing politics where he formed an effective partnership with Bernie Ecclestone

their surnames. Though Coaker and Rees moved on quickly, March expanded and diversified with Mosley heading up sales – sometimes a little sharply. Sir Patrick Head recalls working on the March 761 acquired by Williams for Patrick Neve to drive in 1977, only to find orange paint underneath suggesting it was the 751 raced by Vittorio Brambilla two seasons earlier...

Wheeler-dealing didn't satisfy Mosley in the way it thrilled his friend Bernie Ecclestone, but the two formed an effective partnership when Mosley left March at the end of 1977 and immersed himself in racing politics. Over the next two decades the duo would in effect unionise the F1 teams into a collective bargaining force (the Formula One Constructors Association), go to war for control of F1 with the governing body, install Mosley in place of FIA president Jean-Marie Balestre, then hand F1's commercial rights to Ecclestone on a cheap 100-year lease.

Mosley and Ecclestone played off one another brilliantly in the good-cop-bad-cop act through which they defeated race promoters and the FIA's sporting committee – whose membership, Mosley



Mosley with Jean-Marie Balestre, the man he would replace as FIA president in 1993. Mosley would stay in the role for 16 years

felt, was predominantly made up of incompetent old buffers. Ecclestone was the clunking fist inside Mosley's urbane velvet glove, the streetwise mover-and-shaker not afraid to thump desks and theatrically walk out on a meeting – leaving Max to lay out a 'compromise agreement' which they had been seeking all along.

Adversarial relationships with F1's participants and other stakeholders would come to define Mosley's presidency as much as his laudable contributions to safety and cost-cutting. In 1993 he declared a ban on so-called 'driver aids' including traction control and active suspension. Later he would impose cost-control measures such as long-life engines and gearboxes on a take-it-or-leave-it basis. Any entity who dared oppose him publicly had to do so with great verbal care, for inevitably any statement would be met with a reply-to-all fax in which Mosley deployed all his intellect and verbal dexterity to heap ordure on the argument and point out any grammatical howlers contained within. Millennials would call this brand of patrician humiliation "punching down".

Mosley's relationship with F1's stakeholders never recovered from his decision in 1995 to cast F1's commercial rights, nominally owned by FOCA, into Ecclestone's network of companies on a 100-year lease for \$360m. This was rightly considered to be chicken ►

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feed in the grand scale of F1's income, and team bosses including Williams, Ken Tyrrell and McLaren's Ron Dennis launched legal action which tied the process up for years. There were even moves by some of the car manufacturers involved to set up a breakaway championship. Mosley always denied he was acting in concert with Ecclestone, but others reached a different conclusion.

For all the history of rancour, it must not be forgotten that Mosley's iron will also steered F1 through one of its most pressing existential crises and has saved hundreds of thousands of lives on road and track. In the aftermath of the deaths of Roland Ratzenberger and Ayrton Senna at Imola in 1994, public opinion swung rabidly against F1. Mosley calmly plotted a course which avoided over-reaction while being seen to treat the tragedy with appropriate gravity. By taking a scientific approach rather than heeding those baying from the sidelines, Mosley imposed measures that were broadly effective – and set out a progressive, clear-headed management culture of continuous improvement in which safety was never to be taken for granted.

Separately but also under his FIA presidency, Mosley instituted the European New Car Assessment Programme (Euro NCAP), a crash-testing scheme which has prevented many potentially dangerous vehicles from being released for sale. In weighing Mosley's legacy, we must bear in mind he achieved this against the full weight of lobbying by

a powerful and change-averse car industry.

Safety now sells cars...

Nevertheless, Mosley had a capacity for cruelty which he was often unable or unwilling to moderate, as evinced when the World Motor Sport Council handed down a \$100million fine to McLaren after the 2007 'Spygate' affair. Many believed the punishment to be disproportionate and motivated by Mosley's long-standing enmity towards Dennis. Mosley always denied this,

IT MUST NOT BE FORGOTTEN THAT MOSLEY'S IRON WILL ALSO STEERED F1 THROUGH ONE OF ITS MOST PRESSING EXISTENTIAL CRISES



and went so far as to pose for a staged handshake photo-op with Dennis on the steps of the McLaren motorhome at Spa that year – during which he was heard to say to Dennis, *sotto voce*, while still smiling for the cameras, “Five million for the offence, 95 million


for being a c**t.” The passage of time has muddled accounts of this exchange, rendering it almost an urban myth – and Mosley did his own bit to enshrine it thus by ascribing

the insult (in a slightly different phrasing) to Ecclestone.

After the *News of the World* exposed Mosley's penchant for BDSM role-playing in 2008, his enemies smelled weakness and attempted to pounce. As Mosley sought to impose a budget cap and cheap engines against the backdrop of a worsening economic climate, the grandee teams and manufacturers felt stitched up and banded together in a new union, the Formula One Teams Association, with a clear mandate to force Mosley out. Now Ecclestone refused to stand by his man; following Max's death, Bernie described this as one of his greatest regrets. Mosley undertook not to stand for re-election in 2009 and the budget cap – along with the new teams coming in to take advantage of the homologated powertrain concept – died messily.

This would not be Mosley's last battle.

Even before he yielded the FIA presidency, Mosley fought the *News of the World* in court, alleging its 'sting' breached his privacy. He won £60,000 in damages and pursued the newspaper through other European courts. Mosley also supported the creation of the pressure group Hacked Off, and the work of the journalist Nick Davies, whose revelation the NoW accessed the voicemail of the murdered schoolgirl Millie Dowler led to the Leveson Enquiry into press standards – and closure of the NoW.

Mosley's obituary in *The Sun*, the NoW's sister title, carried a headline describing him as “son of fascist leader and enemy of free press”. This polarising, endlessly fascinating, occasionally vexing grandee of motorsport was so much more than that. 



The infamous staged handshake with Ron Dennis ahead of the Belgian GP in 2007, following resolution of the 'Spygate' affair

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THE MOMENT OF TRUTH

Sergio Pérez has spent most of his career labouring in Formula 1's midfield, wondering whether he'd ever get another shot at the big time. Red Bull has handed him that chance, but life at the top is tough – as he's finding out the hard way...

WORDS BEN ANDERSON PICTURES RED BULL &  **motorsport**
IMAGES

There must be something about the way Max Verstappen drives Red Bull's recent Formula 1 cars that perturbs whoever happens to occupy the other cockpit. Four different sidekicks in as many seasons amounts to a level of instability rarely seen in Milton Keynes since Dietrich Mateschitz first entered the fray in 2005.

Daniel Ricciardo, once the favoured son, saw which way the wind was blowing and chose to 'leave home' for a fresh start – or "running from a fight", as Christian Horner saw it. Pierre Gasly lasted just 12 races before Red Bull sent him back where he came, and now he is reborn. No such luck for Alex Albon, who toils in the DTM because there's no room left at the inn.

Now Sergio Pérez is the man tasked with changing the record, trying to discover how to get Red Bull's car to dance to a tune other than Verstappen's. And this is very much Max's house now, ever since Ricciardo made that shock decision in the summer of 2018.

Verstappen was already establishing himself as Red Bull's new main man by being consistently quicker through the first half of that season. After Daniel departed for Renault, Max naturally became Red Bull's senior partner and thus assumed greater responsibility – and with it, greater power to bend ears inside the team's engineering departments. Ricciardo was never going to play second fiddle, but the drivers who followed him have struggled even to do that.

Gasly's mistake, if he made one, was trying too hard to force his own driving style on the car and then travelling down too many set-up blind alleys when it wouldn't produce the entry to mid-corner stability he craved. He wanted to adapt the car to suit him; Red Bull wanted its new driver to adapt to the car; they both failed to find a suitable compromise.

Albon's stint began well but subsequently ran aground. 2020's RB16 was notoriously skittish, something Verstappen's outstanding natural car control could handle but which the much less experienced Albon couldn't easily live with. He also lost a few big results to collisions with Lewis Hamilton, which might otherwise have alleviated pressure. Albon would probably be faring rather better in RB16B, which seems inherently more stable, but Red Bull already decided it needed more experience – a steadier hand to bag better results with more consistency and help carry the fight to Mercedes.

Which brings us to Pérez, a 31-year-old race winner with 10 seasons in F1 already behind him. Pérez has been one of F1's most consistently



PICTURES: FIA POOL; GLENN DUNBAR; RED BULL

outstanding midfield performers through the hybrid era, the entirety of which (until now of course) he spent with Racing Point (née Force India), culminating in that maiden grand prix victory under fortuitous circumstances at last year's Sakhir Grand Prix. In other words, seemingly just the man to provide the nous Red Bull needed in its second car – someone who's been in F1 even longer than Ricciardo...

“IT'S NOT NATURAL YET. I'M FINDING MYSELF THAT I'M HAVING TO THINK A LOT ABOUT WHAT I DO IN THE CAR, THE WAY I AM DRIVING”

So many midfield drivers long for a shot in one of Formula 1's coveted top seats; the chance to show what they can really do in a car capable of running at the front rather than fighting for lower points paying positions or occasional podiums. All believe they are able to be world champion in the right machinery.

It's why Lando Norris uttered his (since retracted) refrain about Hamilton having it easy at Mercedes, and Carlos Sainz counterargued very few drivers could be as consistently excellent as Lewis, but nevertheless could win races in the same car.

The travails of Valtteri Bottas over the past four seasons suggest this is certainly possible, but still very difficult to do with any regularity.

Pérez is under no illusions about the task ahead of him, to try and match the pace of team-mate Verstappen and give him the back-up he needs

And the journey so far for today's interviewee – a grand prix winner at the penultimate round of 2020 who is in the form of his life – shows how challenging it can be to thrive at the pinnacle. While Verstappen is taking the fight to Hamilton and Mercedes at every race, at the time of writing Pérez is yet to finish on the podium... Adapting to a new environment when you've spent so long somewhere else is not the work of a moment.

“It's a big challenge, you know, especially when you spend such a long time in one team – you realise why consistency is very good,” Pérez tells *GP Racing*. “When I come here, I see how Max is with the car, with the team, how adapted he is, how he is delivering 100% from FP1 until the final lap of the race.

“And that's something that I used to do at Racing Point, because I had experience there. But changing that environment, it's just different, you know, it's not natural yet. I'm finding myself that I'm having to think a lot about what I do in the car, the way I am driving. I'm changing my driving style a lot during the weekend, to adapt to the car.

“When you have the experience with it, you know you're gonna be taking 100% out of the car, 99% of all the time you are there. If the wind changes, you know what you have to do and how the car feels. And when you jump into a new car, it's all different. I mean, you've seen it with all the other drivers [who've switched teams for 2021]. I think we are all in the same boat. From my side, I know I will get there. But it's important to get there soon because obviously the season runs out at a point.”

Carlos Sainz bucks the trend, but otherwise the point rings true. The pandemic has hindered Pérez further, preventing integration in the usual fashion – to the point where mandatory

protocols and restrictions mean he can't even take coffee with his mechanics. Coronavirus makes face-to-face communication more difficult, and also makes it much harder to build those key relationships that are fundamental to the team play that underpins a competition like Formula 1. With severely limited pre-season testing thrown in, plus significant changes to the aerodynamic regulations and tyres to deal with, on top of the usual assimilation process, it wouldn't be an easy ride for anyone.

"At the moment I'm just trying to get on top of the car," says Pérez. "Because basically all what I did at Racing Point doesn't work here. It still is a Formula 1 [car], but it's just different – the way I have to drive in the race, the way I have to drive in qualifying, the way I look after tyres, all of that is very different. Power unit as well.

"To be honest, to be where I am with how I feel in the car, I'm surprised, you know. I feel that I should be very far away. We're talking about very small margins. But if I'm able to find a few tenths, all of a sudden then I'm in a fight to win the race. I'm extremely motivated with that. The race performance in Portimão was a big thing for me, because that really made me understand how to how to drive the Red Bull in the race. And that definitely has been a turning point."

Pérez is referring to a seemingly unremarkable outing, in which he started poorly from fourth on the grid and spent the first 15 laps clearing slower cars. His strategy was offset to the leaders, but Pérez's pace once in clean air through the rest of a long first stint compared favourably with Verstappen and Bottas. This, coupled with beating Verstappen to the front row at Imola, or sometimes being fastest of all like-for-like at certain points in free practice (Monaco FP1) or qualifying (Imola Q2), suggests Pérez can get the car to do the right things, just not yet always exactly when he demands it.

So far, he's either compromised his races by qualifying too far back or starting too slowly, or – as was the case at Imola – making crucial errors in the race when Mercedes was there for the taking. It's still early days of course, but from Verstappen's point of view the picture looks remarkably similar to before: "In the end I am always alone in the fight".

"To me, the most difficult thing I find to adjust is the way I have to drive, you know, because there's a [particular] way that you extract the maximum," Pérez says. "And obviously, what Max is doing suits the car really well. And that's something very different to what I used to do. So, I think before getting loose or something, I'm



When Pérez finally broke his duck and won the Sakhir GP in 2020, it was for a team that had already decided he was surplus to requirements

just focusing on driving the car as it should [be driven]. Once I'm in that window, then I'm able to feel the car a bit more, and I think that's key."

Engineers at Force India used to talk up Pérez's ability on so-called 'front-limited circuits' – where outside front tyre grip is the limiting factor – and his remarkable sensitivity to the slip-angle of the rear tyres on corner exit, expertly modulating throttle to preserve tyre life.

With the limited amount of pre-season testing Pérez, like most drivers switching teams over the winter, has struggled to adapt to his new car

Aston Martin technical director Andrew Green recently described this style as "extreme". It would seem, based on what Pérez is saying about everything he did previously no longer working, and the fact Verstappen is struggling to stay in the fight with Mercedes over race distances because of weak rear tyre life, that Red Bull's RB16B is very much a rear-limited car – and thus not naturally suited to Pérez's skillset.

Refreshingly, Pérez makes no excuses – for himself or the previous incumbents of his seat, whom he describes as "huge talents". He simply recognises the incredible ability Verstappen has, ▶



and the need to do better himself.

“Max obviously is a very talented driver – very, very complete,” Pérez adds. “And within the team, you can see he’s been with the team for a few years already and he knows exactly what he needs out of the car every time. If there is a change of conditions, or if there is something happening, he just adapts very quickly. He is operating at a very high level, within the team in this car. He’s certainly at his peak with the team. That’s obviously a great reference to have.”

It’s also worth considering just how exceptional a level Verstappen has reached within F1: well over 100 races started, a victory tally already into double digits (and more than James Hunt, Ronnie Peterson and Jody Scheckter all managed), almost a half-century of podiums, and still only 23 years of age...

“Look at his team-mates,” Verstappen’s father Jos tells Dutch newspaper *De Telegraaf*. “Gasly, Albon and now Pérez, they are no pancakes. But somehow Max is doing something exceptional. At Red Bull they also see how good he is. Maybe I shouldn’t say it, but Max makes that car look better than it really is. If you put Max and Lewis in the same car, there is no doubt in my mind who is better. But we hope that Red Bull will give him the material to really show it.”

You might expect the boy’s father to say such effusive things about his own son, but the serious point is that whoever sits alongside Verstappen has their work cut out for them.

“I’m not saying the previous [Red Bull drivers] aren’t extremely talented – you’ve seen with Pierre, and with Alex, they’re huge talents,” Pérez adds. “And they’re very, very young still. So, there are reasons [they struggled], and the team understands it more, but from my side, I don’t focus on that – I’m just thinking that I will make it work, focus on myself.

“That’s the best approach I can have. It makes no sense if you are off the pace with the car to be chasing, or to make the team chase a different [set-up] direction that simply isn’t going to work. First get on the pace, and then you talk...”


The greater maturity of Pérez now, compared to the jilted kid turfed out by McLaren after just one season, is clear. He’s happy to be reunited with Christian Horner, who knows Pérez from Sergio’s time driving for Arden’s GP2 team (co-founded by Horner and his brother Garry). Pérez is fascinated by talks with Adrian Newey – “every time you spend five minutes in conversation you learn something about the car”. Sergio even ►





“IT MAKES NO SENSE IF YOU ARE OFF THE PACE WITH THE CAR TO BE CHASING, OR TO MAKE THE TEAM CHASE A DIFFERENT [SET-UP] DIRECTION”





“ I ALREADY HAD A GOOD OPTION FOR 2022 WHICH I THOUGHT ‘WELL, IF I DON’T GET THE DRIVE THEN I’M DEFINITELY COMING BACK’ ”

claims to enjoy the no-nonsense motivational stylings of Helmut Marko...

“I love that part of Red Bull – it’s full of racers, and it’s all driven by results,” Pérez insists. “And if you deliver, it’s great, and if not, you know, you’re not good enough. I like that – to have that straightforward relationship with basically the whole team, and that really transfers not from the big persons in team. It’s the way the whole team operates at all levels. And that’s something that I really enjoy about Red Bull culture.”


The start Pérez has made to life at Red Bull has been anything but smooth, yet he appears extremely relaxed for someone dealing with that and the pressure that comes with an unexpected, short-term (one-year contract) opportunity to make his own dreams come true by finally having a championship contending car to play with.

“It’s been a bit of a roller coaster in my career, you know. I mean, I ended up in positions that I didn’t thought I was going to – I thought F1 was all about driving as fast as possible! And that wasn’t the case in couple of my years. A lot of things were happening out of the track that were very stressful years. But also, years that teach me a lot – not just as a driver, as a person. They made me grow a lot in many different areas. I think that has really made me stronger.

“I had a contract for three years [with Racing Point/Aston Martin] and I was very happy to be part of the project, the reveal of the team. But I think all of a sudden, the driver market changed a lot. And obviously Seb [Vettel] became available. I think he’s a massive name for a brand like Aston. So, they just brought him in. And I found myself without a place in Formula 1.

“But after so many years in the sport I was very clear in my mind what I wanted to do. I could just jump and do a deal with another team, but it was all about having that opportunity to win. I wouldn’t like to give the team names. I had options there. And I could [just] jump into it [a lesser team]. But it was not about that. It was all about getting the opportunity for my career to win.

“It got to a point where it was basically Red Bull or nothing. And then later in the year, things changed quickly. After I won [in Sakhir], I already had a good option for 2022 which I thought ‘well, if I don’t get the drive then I’m definitely coming back’. And all of a sudden that changed completely.

“In the end, I got the drive I wanted, and I’m very happy to be to be here, and very motivated – more than ever. I think I’m still very young. I’ve got the best years ahead of me.” 

KIMI RÄIKKÖNEN: HOW THE ICEMAN BECAME AN F1 LEGEND

2021 marks the 20th anniversary of Kimi Räikkönen's arrival in Formula 1, and what makes his story more compelling is that he is again racing for the team with which he started his career.

Working closely with Carrera and its **#DRIVEYOURSTORY** campaign, it is easy to see that Räikkönen's rise shares similarities to the eyewear manufacturer's brand identity; championing free spirits, embracing a daring attitude and possessing a boldness to succeed. It is these personal

attributes that have driven Kimi in his motorsport journey from karting sensation to F1 legend.

Räikkönen started his F1 journey at the Sauber-run team and two decades later there are still people in the Hinwil camp who worked with Kimi first time around, notably sporting director Beat Zehnder.

Räikkönen's story is an inspiring one, of living by his own rules and not being afraid to take the unconventional route. He came from a humble background, and his family could only offer limited support to kickstart his career. Nevertheless, Kimi stood out on the Finnish karting scene and caught the attention of father and son management team David and Steve Robertson - who helped Jenson Button on his way. They enabled Kimi to step up to car racing in Formula Renault, and in 2000 he set the pace, but at that stage F1 seemed a

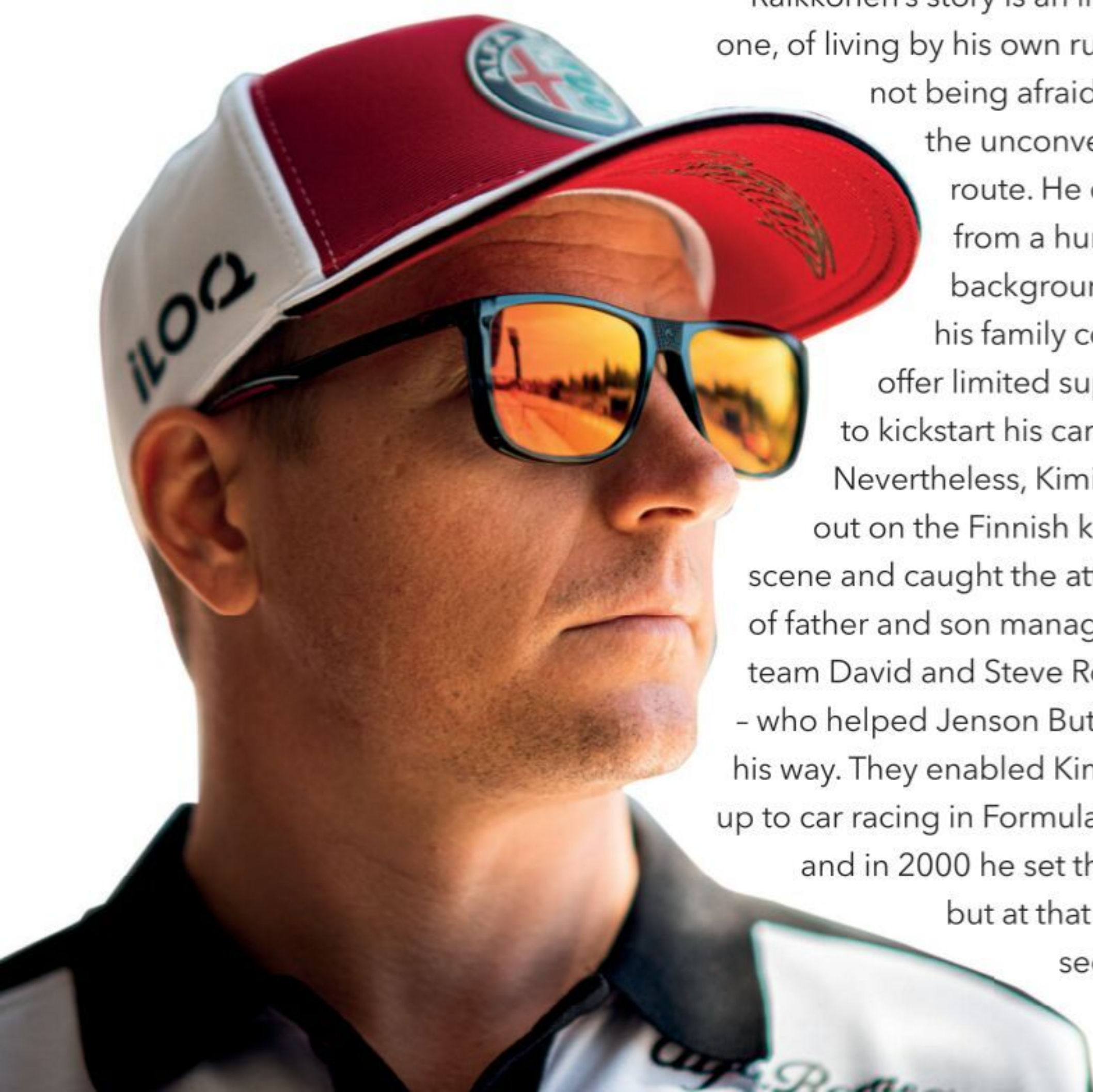
long way away.

However, perhaps inspired by Button's jump from F3 to F1 with Williams, Peter Sauber was receptive to Räikkönen's potential and he offered Kimi an F1 test in September 2000. A further test convinced Sauber that Räikkönen could make the switch to F1 but the next task was to convince the FIA that it was possible. Kimi was given a provisional superlicence on the basis that he would have to prove himself over the first few races of the 2001 season.

Once in F1 Kimi defied convention. He didn't put a foot wrong on his debut in Australia, crossing the line in seventh but

gaining sixth place - and a world championship point - when a rival was penalised. It was a brilliant debut season for the 21-year-old, who would add two fourth places and a fifth place to his tally.

His pace had caught the eye of rival teams, notably McLaren. With Mika Häkkinen set to retire Kimi became the target for the British team and he became a McLaren driver for 2002. Kimi continued





ALL PICS: MOTORSPORT IMAGES

developing, claiming four podiums in 2002. In 2003 he scored his first win in Malaysia and came close to winning the championship. He also finished second in the championship in 2005.

Kimi continued to forge his own path and in 2007 his career took another step forward when he moved to Scuderia Ferrari. That year's title fight between McLaren's Fernando Alonso and Lewis Hamilton was turned on its head when, after a brilliant end to his year, Räikkönen took the F1 driver's crown at the Brazil finale.

Living by his own rules and

endearing himself to a legion of fans who saw Kimi standing for something different in an overtly traditionalist sport, he continued to win races with Ferrari until the end of 2009, when he went on what would be a two-year sabbatical.

Kimi once again showed his daring attitude by immersing himself in the highly technical world of rally driving. Here Kimi demonstrated that, even as an F1 world champion, he was not afraid to learn by doing things differently.

The adventure continued and Kimi's journey took him into the heartland of American motorsport,

to NASCAR, where he made two guest race starts, one in the Nationwide Series and the other in the iconic Truck Series.

Kimi, always one step ahead, never closed the door on the part of his life where he had enjoyed the most success. For 2012 he returned to F1 with Lotus and immediately reinforced his own personal brand traits of daring and living without fear. He won the season finale in Abu Dhabi and again in Australia in 2013.

Against expectations Kimi took an unexpected path and returned to Scuderia Ferrari for 2014. It says

a lot about his personality and the respect he had from the team that a reunion was possible after their earlier split. Kimi would race for the Italian team for five more years, scoring many podiums but just one win, in the 2018 US GP. By then the team's protege Charles Leclerc was ready to graduate from Sauber, and Kimi left the team.

Many thought that would be the end for his career, but Kimi had other ideas and returned to his former team, Sauber – now called Alfa Romeo Racing ORLEN – to help raise the level of the team and chase points. He still loved driving F1 cars, and saw no reason to stop.

Kimi is now in the third season of his second stint with the Swiss team. 42 in October, he remains fully motivated, showing no sign of slowing down any time soon.

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Some drivers step back entirely from motor racing when they hang up their helmets – but others, like **Esteban Gutiérrez**, have ambitions to move from the hot seat to the c-suite...

FORMULA 1'S BUSINESS CLASS

WORDS STUART CODLING PICTURES  **motorsport**
IMAGES

Racing drivers softening their transition from the cockpit to civilian life by acting as 'brand ambassadors' is nothing new. When injury forced Sir Stirling Moss to retire before his time, he very quickly discovered that simply being Stirling Moss was supremely valuable.

Likewise, Sir Jackie Stewart ensured Ford Motor Company products flew off the forecourts even before he stepped out of his Tyrrell cockpit for the last time in 1973. Until the pandemic put the brakes on corporate hospitality, he was still energetically entertaining guests of a certain watch company, race in, race out, in modern times – indeed, when *GP Racing* quipped how ironic it was that being a Rolex ambassador seemed to leave him with no time on his hands, he guffawed and said, "Thanks! I'll use that..."

But these two remarkable individuals are outliers on this industry's spectrum. For most drivers, particularly the younger ones, taking on a 'brand ambassadorship' involves little more than wearing a team shirt and hanging around wondering what to do next. Not a prospect that appeals to Esteban Gutiérrez who, with at least one eye on his forthcoming 30th birthday, is developing an independent business portfolio of his own as well as working with Mercedes in a development role covering all of Latin America.

Gutiérrez made 59 Formula 1 starts for Sauber and Haas between 2013 and 2016. You could ▶

PICTURE: SHUTTERSTOCK; MOTORSPORT IMAGES



say he learned very early how not to run a business, having been at the eye of the storm when Sauber contrived to agree terms with more than two drivers at the beginning of the 2015 season. He's since contested a handful of Formula E and IndyCar rounds while acting as reserve and development driver for Mercedes in F1, which dovetailed hours in the simulator with ambassadorial appearances. That has now developed into his new role as brand and business ambassador.

"Since I've known Esteban," says Mercedes boss Toto Wolff, "I've been impressed by his overall understanding of our industry and seen the potential for him to make a broader contribution to our success. He has supported us to develop valuable commercial relationships in the Latin American market, and he is well placed to contribute more deeply to other areas of the team as well. Esteban's new position will enable him to add value across the team."

In Mexico it's challenging for any native driver to break out of the shadow of Sergio Pérez's stardom, but the Mercedes relationship has worked both ways by enabling Gutiérrez to build his own profile. It's his face on the front page of edasi.com, a new licensed F1 merchandise website he launched this year in South America, having spotted a gap in the market.

"People in Latin America don't have access to these merchandise products of F1 teams and other car brands," he says. "I've seen how people are buying them – either from the US, special import, or at events. That makes them inaccessible for a lot of people – if you have to travel to a GP and buy a ticket to get in before you can buy the product, that's not an accessible price for a lot of people. My objective was to bring these products closer to the fans and we're really happy with the progress."

Wolff (left) is confident that in his new role Gutiérrez will be able to help Mercedes develop more commercial relationships

“
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”

Obviously there are ways and means of accessing counterfeit merchandise but if the real deal is more affordable than before, that opens the potential market. At the moment the site offers official F1 merchandise as well as Mercedes, plus McLaren, Ferrari and Red Bull. So, Gutiérrez also stands to benefit from Pérez's profile, which is a smart move indeed.

"I'm pretty open with that," Gutiérrez says. "I have a great platform where I can develop different things for a purpose, which is to grow the fan base in Latin America. I'm enjoying the business side of this sport, building my part, and also trying to give something as a member of the F1 community to enrich that."

"I think with Checo [Pérez], he's doing a great job right now, he's in a great position, and people here [in Mexico] like and support him. So why not offer them that as well?"

Checo is focusing on racing on the track, and there are a lot of other things which can be done to build the F1 fan community.

"I'm putting my pattern on the sport in this part of the world. Working with Mercedes, being linked with a world-class brand like

this, has been positive for my brand and I'm really grateful. And I'm trying to find ways to give back to the fans as well, to bring this platform where they can acquire clothes – whether they're fans of Mercedes or other teams."

Moving metal is a key goal for manufacturer brand ambassadors and Gutiérrez's bailiwick comes with built-in challenges. Economies across Latin America are prone to turbulence, generally as a result of political instability and incompetence, which begets and exacerbates wider structural issues such as poverty and poor educational standards. Nevertheless, the size of the population across the continent makes it a valuable territory for the motor industry in terms of manufacturing as well as sales, although Brazil is by far the biggest market, followed by Mexico, Argentina and Chile. In 2019



PICTURE: MARK SUTTON; SAM BAGNALL

No longer eligible for a superlicence, Gutiérrez has committed to a life outside the F1 cockpit



nearly four million cars were built in Mexico, while in 2020, despite the effects of the pandemic, 1.6million cars were sold in Brazil.

Automotive industry forecasters expect incoming investment to affect supply and demand as the industry moves towards electrification of passenger vehicles and more sustainable means of production. Mercedes naturally wants a slice of this action. It's the biggest manufacturer of buses and commercial vehicles in Brazil, and its financing arm lent \$1bn in 2020, but in the passenger car market the volume manufacturers such as General Motors, Fiat Chrysler, Renault-Nissan and the Volkswagen group hold sway.

"Across Latin America we're developing at a different pace than developed countries," says Gutiérrez. "And there are opportunities to implement things that work in developed countries – because the market here is really thirsty. It's really eager to have new things, new technologies, innovation. And the automotive industry can benefit a lot from that as well.

"There's going to be new markets and opportunities. The accessibility of

new technologies and platforms bring people closer to the brands in the same way things like Netflix and social media are bringing people closer to F1. It's just a question of maximising that potential.

"The pandemic has disrupted the way people consume – in the practicalities of going out and buying things – and also how we interact with our communities. It's made a big impact on cities. We've seen how governments have implemented new technologies to help this adaptation and our industry is developing very quickly in adopting these technologies as well."

Mercedes was among the first motor manufacturers to roll out 'virtual showrooms' to facilitate the new-car buying experience without having to venture out in person. As the world learns to live with and mitigate the effects of COVID-19 – that dread phrase 'the new normal' – services such as this are likely to

remain the key customer portals for many brands.

Gutiérrez also sees technology as a means of circumventing other



Gutiérrez has launched an F1-licensed merchandising website, aimed at the South American market



PICTURE: MERCEDES

business-development obstacles created by the pandemic, such as the kind of personal appearances at networking events and corporate hospitality that have gone on the back burner these past 18 months.

“I’ve been working for the team as a brand ambassador for a couple of years as well as doing the simulator work,” he says. “This year it’s changed, with more focus on the ambassadorial side. It’s been exciting, but in a way quite slow, because there’s not a lot of events at the moment. But I’ve done some things here in Mexico and later in the year, as events start to come up more often, I’ll be going to those and hopefully some of the races, and getting more involved on the commercial side of the team, which I’ve also enjoyed over the past couple of years. Toto is a great businessman as well as a team leader and it’s been great to learn from him.

“There’s also new ways to interact, and maybe they’re even more efficient. In a job like this you have performance benchmarks. Before, you might be asked, ‘How many trips did you take? How many people did you meet?’ I think now the volume of people is maybe higher than before but with no trips required. There are some sponsors I haven’t met in person, we’ve done everything virtually – but it’s working. So, I think from this perspective it’ll make things a lot more effective and efficient.

“In terms of events, it’s going to be interesting to see how things develop. I don’t think it will return to normal but I think there will be an evolution, maybe a combination of live and virtual events will bring ways to interact with new and different audiences.”

Since acquiring the commercial rights to F1, Liberty Media has made building the audience a priority – even if that might seem counter-intuitive given its reliance for income on pay-TV channels as well as huge sanctioning fees which, in turn, push ticket prices out of reach for many individuals. It’s been a marked transition from the gatekeeping of the

In addition to the sim work he has done for Mercedes, Gutiérrez has also been involved in the team’s official Esports programme

Bernie Ecclestone era; Bernie famously declared himself uninterested in any market populated by those unable to afford Rolexes...

Still the barriers to entry in motorsport are quite steep, even at the lower levels: karts are more expensive than footballs. One of Gutiérrez’s other high-profile activities has been at the head of Mercedes’ Esports programme, in which he contested the official F1 series while the regular racing programme was on COVID hiatus last year.

“I think Esports are a good entry point for fans as well as people who have the aspiration to become drivers,” he says. “Before, you could buy a ball and play with your friends, build your skills and have fun, but you couldn’t do that easily in motorsport. Now – and maybe it’s a bit different – you can buy the F1 video game and play with your friends, whether that’s in your house or with people all over the world.

“What this does is create this huge community in the younger generation, it engages them and encourages them to be F1 fans in the future. Creating that engagement is the important part of growing a community, and you can see it happening. The audience is super-conscious of what it likes and what it doesn’t like.

“There’s more that can be done outside the virtual world. Right now, fans can select the onboards they’d like to watch

during a grand prix. Imagine extending that so they can see the team meetings they’d like to watch and listen to, the characters they’d like to watch outside the cockpit. I think these interactions can become quite interesting – and very powerful from a business perspective.”

It appears that South America now has its own answer to post-racing career Sir Jackie Stewart – perhaps a gig with Rolex is next on the list?

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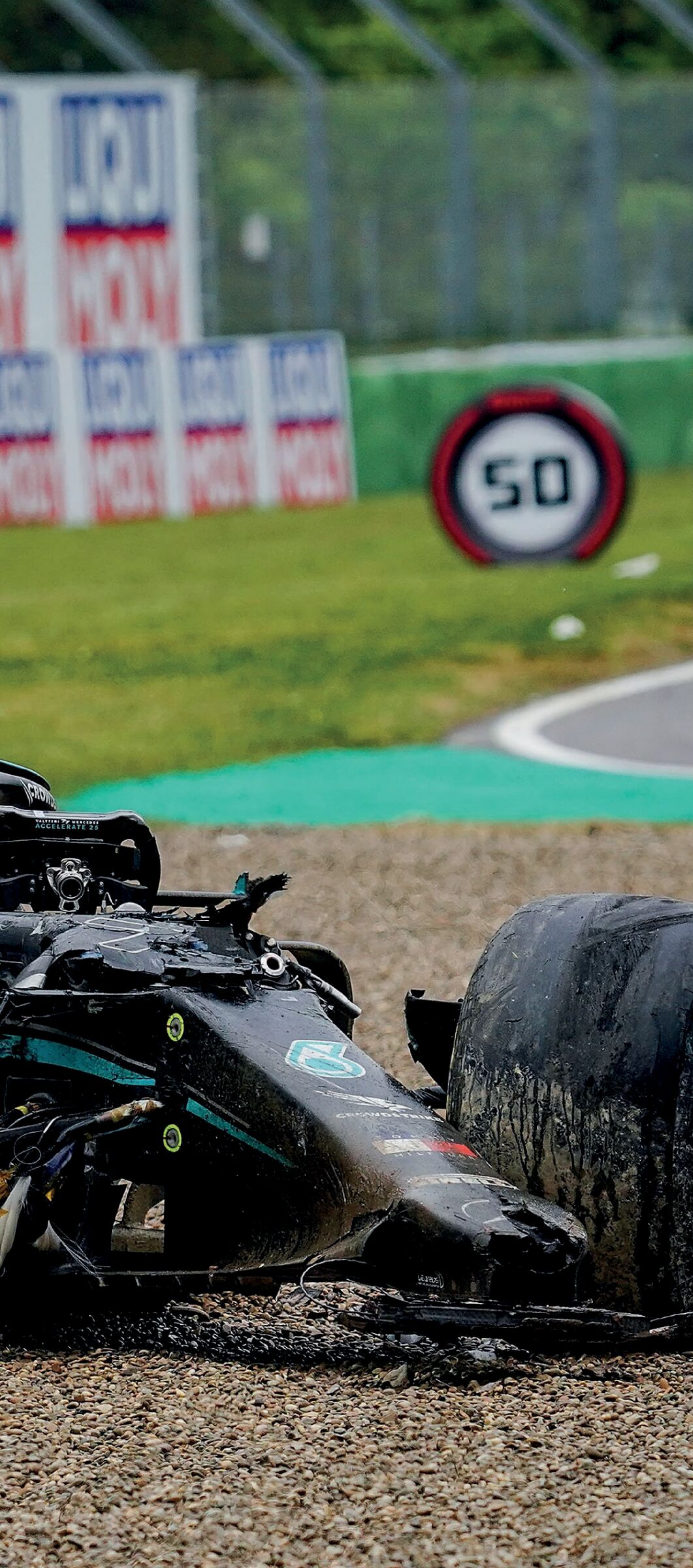
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THE PAIN OF THE GAME

Formula 1's budget cap means that even the richest teams now have to juggle what they can afford to spend – to the extent that Mercedes recently had to back out of an important tyre test. But how long until the bean-counters find ways of exploiting the limits of the regulations – just like the technical directors do?

WORDS MARK GALLAGHER PICTURES

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SHUTTERSTOCK, McLAREN,
FERRARI AND MERCEDES

IN CASE YOU HAVEN'T NOTICED, MERCEDES IS COUNTING THE PENNIES.

It first came to our attention during the controversy surrounding George Russell's collision with Valtteri Bottas at Imola. The fall-out from that included Mercedes engineering director Andy Shovlin admitting the repair costs might have an impact on car development.

"This sort of damage isn't really in the plan," Shovlin revealed in the aftermath of the accident. "The bill in terms of carbon work and metalwork will be very extensive from that."

A month later the team announced it would be withdrawing from a two-day wet-weather test at Paul Ricard, part of Pirelli's ongoing evaluations of the 18-inch tyres being introduced next season.

"We couldn't take the costs related to the tyre test," insists team principal Toto Wolff, "and we wouldn't have been able to send our mechanics on such a long journey."

Mercedes is not alone. Along with Ferrari and Red Bull, Mercedes is at the vanguard of a new and daunting task facing every team. The culprit is the budget cap, introduced to much fanfare, then forgotten about while we enjoy the title battle between Lewis Hamilton and Max Verstappen.

It was far from forgotten by the teams, particularly the 'Big Three' for whom the budget cap represents a floor to which they must drop. The change is significant.

"Clearly the introduction of the Financial Regulations has had a major impact," says Enrico Racca, Scuderia Ferrari's head of operational governance and cost strategy, "by bringing spending down to a significantly lower level than in the past, even in terms of development and investment, while one must also not forget the economic consequences of the pandemic."

"These two factors combined meant there was a need for an urgent review of the organisation and processes that had already started at the end of 2019

once the first version of the regulations had been approved."

Since Ferrari's F1 team is part of Ferrari S.p.A, a company listed on the New York and Milan stock exchanges, it is already familiar with rigorous financial compliance. It has still had to strengthen the team's financial structure. Racca acknowledges it represents a shift in mindset for Formula 1's most iconic team.

"Inevitably, it now requires a culture of efficiency and control of the financial figures that, in the past, was probably not such a priority for the Scuderia or for teams of a similar size."

The purpose of the budget cap, outlined in paragraph three of the Financial Regulations, is clear: "To promote the competitive balance of the championship. To promote the sporting fairness of the championship. To ensure the long-term financial stability and sustainability of the F1 teams."

The budget cap is overseen by the FIA Cost Cap Administration (CCA) and it requires teams to provide an interim report to it by 30 June each year covering their expenditure between January and April. The annual report covering expenditure to 31 December must then be submitted by 31 March of the following year.

The CCA is appointed by the FIA and, while the teams are focused on fulfilling the reporting requirements, there is equal pressure on the regulator to ensure the information being provided by the teams is policed correctly. Not every F1 team has the same business structure, and while inter-team and related transactions – those involving a parent company or a subsidiary – have to be charged at 'fair value', the task facing the CCA is by no means straightforward.

Initially agreed at USD\$175m, the cap was chopped back to USD\$145m for this year, while a glide path in 2022 and 2023 will reduce it further, to USD\$140m and \$135m.

The expense of competing in Formula 1 has grown almost exponentially, particularly for those focused on winning races and world championships. While Ferrari's historical spend is not publicly available, and Red Bull Racing remains a relatively recent arrival, the information relating to Mercedes Benz Grand Prix Ltd makes for interesting reading.

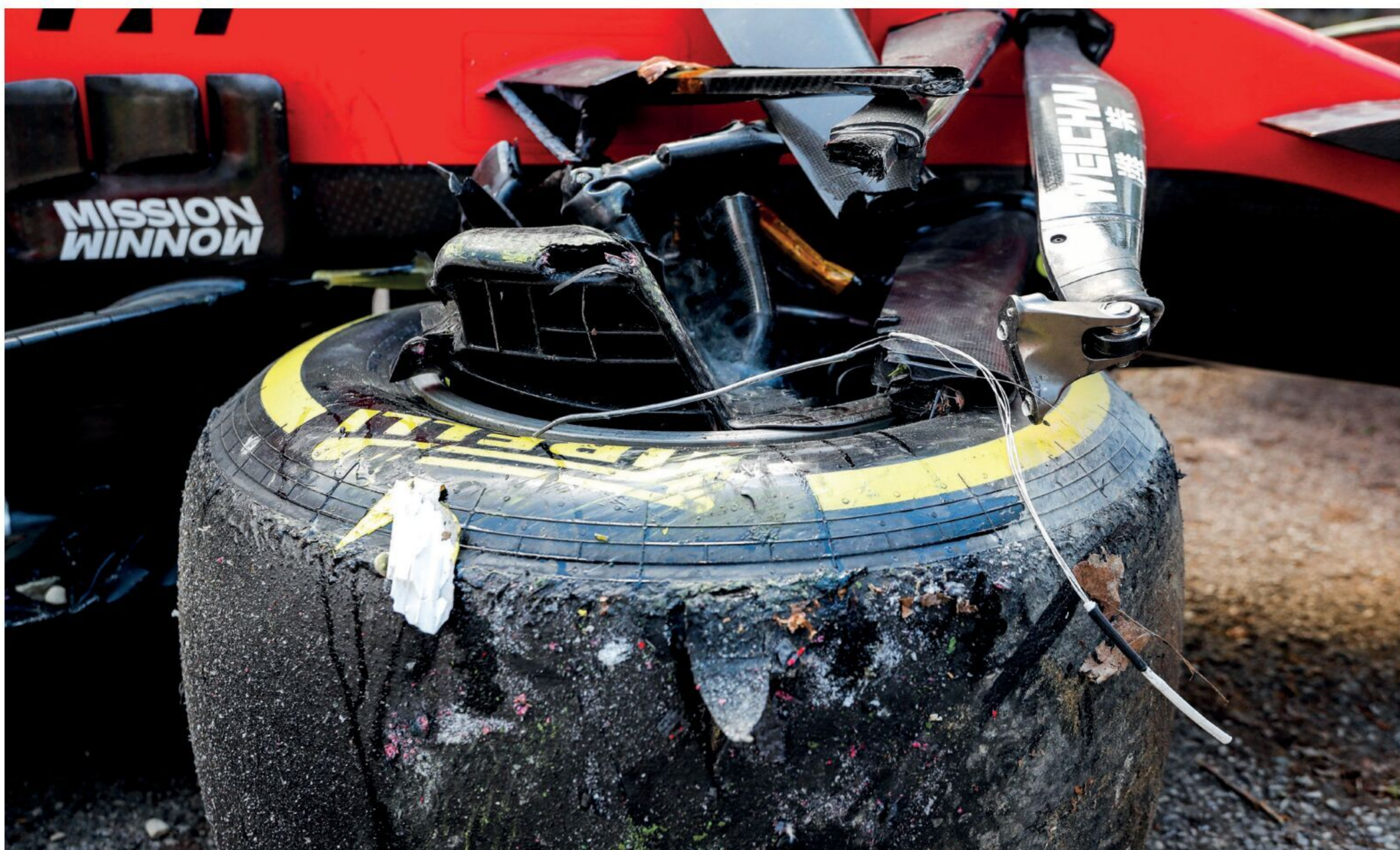
The accounts for the company, founded as the Tyrrell Racing Organisation on 31 December 1963 by Ken Tyrrell ('Timber Merchant') and Nora Tyrrell ('Married Woman') show that in 1990 the team competed in F1 with turnover a shade under £10m. By 2000, as BAR-Honda, the company was spending ten times that much.

When Honda decided to pull the plug in 2008, the team was by now showing an annual figure of £170m. While that dipped under Brawn and the

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THE CHANGE IS SIGNIFICANT

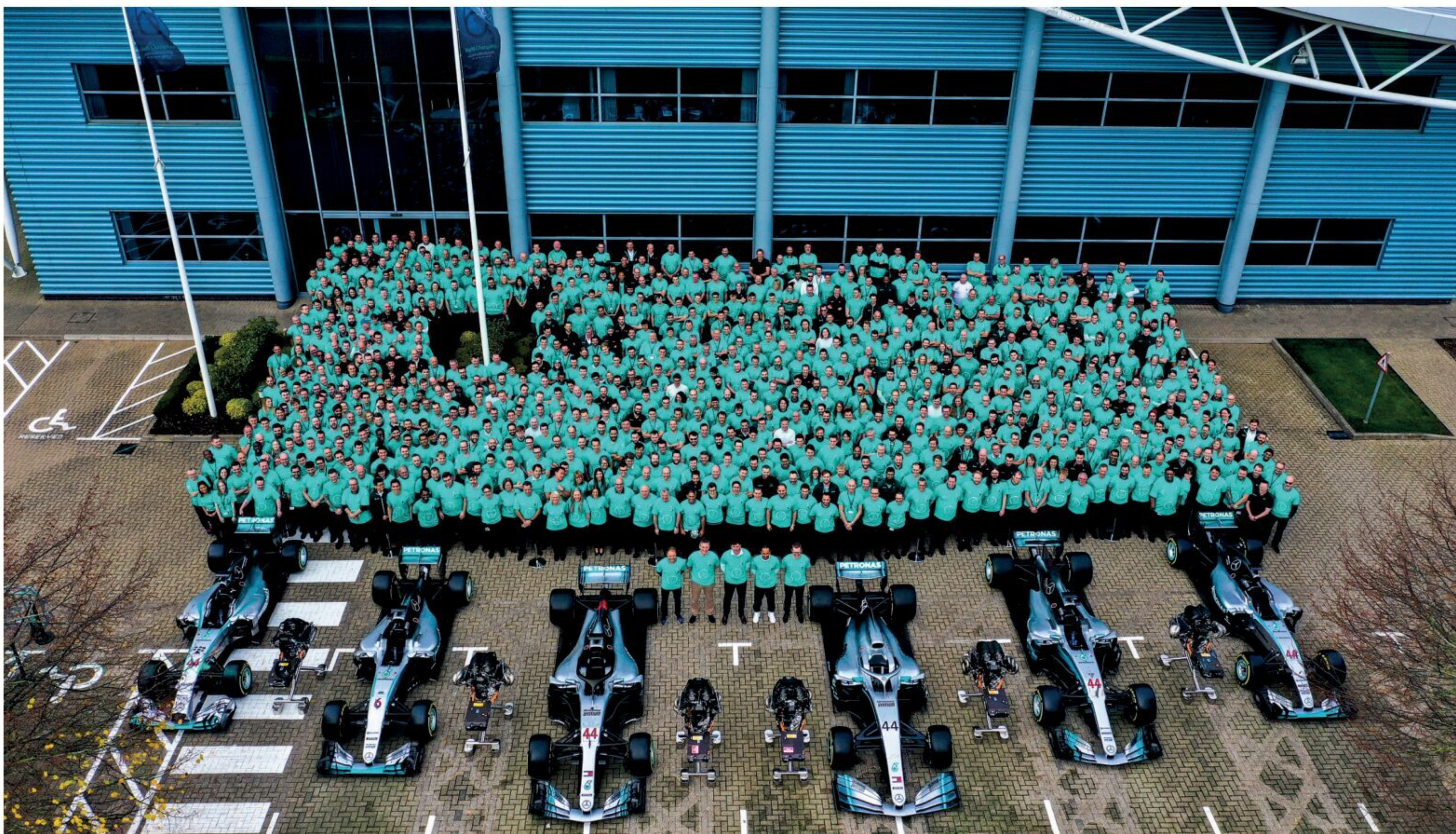


The damage from Charles Leclerc's Monaco qualifying accident (below) won't have given Ferrari the kind of financial headache that Mercedes faced after Valtteri Bottas's interaction with George Russell at Imola (above)





McLaren (top right) spent £22.4m to win the 1990 world championship. In the same year Tyrrell (top left) forked out £10m. Tyrrell became BAR (above left), and then Honda (above right) and Brawn. Mercedes then stepped in and in 2019 (below) registered a £363m turnover





initial Mercedes takeover, it soon rebounded, then climbed. The company's turnover reached a peak of £363m in pre-COVID 2019.

If you think that going from £10m to £363m in 30 years is down to inflation, consider that in 1990 McLaren spent £22.4m to win the world championship. That equates to £52m today.

F1 has become more expensive for a number of reasons. These include the scale and complexity of the engineering involved, the geographic growth of the world championship, and the way in which increased sponsorship and prize money has heightened investment by the major teams.

The introduction of the budget cap, announced in May last year, played an important part in laying the foundation for the Concorde Agreement which came to fruition during the summer. It was a key objective of Liberty Media's then-CEO Chase Carey. The impact of the pandemic created additional urgency.

The result is a financial template within which the teams have to operate, the upside being the prospect of a more equitable, competitive championship in which the best-managed teams can be fully profitable. The Financial Regulations, a 48-page document which now sits alongside the Technical and Sporting Regulations on the desks of team principals, chief operating officers and technical directors from Maranello to Milton Keynes, is typically dry but comprehensive.

It has necessitated teams putting in place parallel accounting systems and a financial reporting structure which, when added to the normal statutory accounts, places an additional administrative burden on finance departments. The regulations put specific numbers against F1 team activities in a manner which leaves little room for manoeuvre.

To participate in an individual grand prix is given as a variable cost of USD\$1.2m, such that while the USD\$145m cap applies to a 21-race championship, this year's original 23 race schedule meant a cap of USD\$147.4m. Should the calendar fall below 21 races teams have to reduce their spend accordingly.

Mercedes' decision to withdraw from the Pirelli wet-weather test at Paul Ricard came as result of a range of complexities arising from the budget cap. While each day of tyre testing is covered by an exemption of USD\$200,000, tyre tests require personnel and use valuable power unit mileage. Exceed the 5000kms power unit mileage allowance and you start racking up additional

spend within the cost cap.

The personnel issue means staff are divided into those who fall under the cost cap – race team staff for example – and those who fall outside, such as those working on non-race programmes including 'Heritage Asset Activities'. This means staff who normally spend at least 90% of their time working on operating recently retired or historic cars.

Take a member of staff out of the heritage activities and redeploy them in a core F1 activity, whether a test or race, and you have to account for them within the budget cap. The detail of this is such that teams have to prove the portion of an individual's time split between heritage and core F1 activities, attributing specific costs to each including their social security contributions.

Every activity has to be accounted for, and each scenario addressed. The addition of Sprint Qualifying results in teams being able to claw back USD\$150,000 per event. Should you be unfortunate enough to have an accident during Sprint Qualifying, a further USD\$100,000 per car is allowable. If the damage is greater than that amount, additional costs can be assessed and agreed with the CCA.

In order to tackle the reporting requirements, every team has had to create a mechanism by which each area of expenditure is accounted for as either Relevant Costs or Excluded Costs.

Excluded Costs, those which lie outside the cap, are often summarised with a few headline items. In reality it is a long and not inconsequential list of unaffected areas, at least for now.

All marketing and driver costs lie outside the cap. So too the top three executive salaries, the heritage activities and any non-F1 activities, such as the provision of engineering services to clients outside F1. All finance, legal and HR costs are excluded, along with employee bonus costs, albeit limited to 20% of an employee's salary.

Other areas of cost not included in the cap are property costs, the cost of each team's entry into the world championship, super-licence fees, any sums payable to the Formula One Group, and financial penalties incurred during the season.

Throw in all flight and hotel costs for the race and test team, a million dollars in staff entertainment costs, maternity, paternity and sickness leave, and it serves to underline the specific focus of the cap – the design, development and operation of the cars.

When combined with certain adjustments for items such as inter-team transactions, deferred R&D and capitalisation costs, the Relevant Costs and Excluded Costs comprise the Total Costs of the team's 'Reporting Group'. Given the varying structure of teams, the Reporting Group covers what we would all recognise to be the F1 team, together within related businesses which are part of the legal structure of the company.

To help focus minds, the regulations point out that each team's CEO, chief financial officer, team principal and technical director could be held personally responsible should any reporting information be incomplete, inaccurate or misleading. Major breaches could lead to sanctions which, under the International Sporting Code, might include being banned from F1.

If a team gets it wrong, punishments range from financial wrist-slapping ►

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MERCEDES HAS HAD TO ACCEPT A CERTAIN NUMBER OF JOB LOSSES AS A RESULT OF ADHERING TO THE BUDGET CAP. A RECENT STAFF CONSULTATION PROCESS HAS LED TO JUST UNDER 50 PEOPLE LEAVING THE BUSINESS

through to a minor sporting penalty such as a deduction of points. In the worst-case scenario, where a team intentionally breaches the cap and is less than cooperative with the regulator, the possibility of suspension or exclusion from the world championship rears its head.

Investigations can be launched by the CCA at any time, and immunity can be granted to an individual who brings a breach of the regulations to its attention. Best not to have a disgruntled employee if you've decided to stretch the cap... The CCA can demand access to company information, IT equipment and premises. Breaches can be procedural, such as for a late filing, a Minor Overspend of up to 5%, beyond which a team is guilty of a Material Overspend.

Should the CCA determine that a breach has occurred it will refer the case to the Cost Cap Adjudication Panel, an independent group of between six and twelve judges elected by the FIA General Assembly.

As with every team, the carry-over of 2020 chassis into this year helped

enormously in preparing for the cap. The huge financial burden which comes with designing and manufacturing new chassis was alleviated at a stroke.

At Mercedes, Toto Wolff relies on chief operating officer Rob Thomas and chief financial officer Russell Braithwaite to oversee budget cap adherence, with the help of senior executives including chief technical officer James Allison and chief people officer Paul Mills. The team estimates it has taken £50m out of its capped costs, reducing expenditure by roughly one-third. It's working hard to maintain its capability and supremacy in F1 while completely reinventing the way in which it goes about the business of creating world-class F1 cars.

In common with other HR bosses, Mills's role has been to mitigate the need for job losses. This has involved helping the Mercedes leadership to maintain a team which retains the strength in depth to protect its position in F1, grow the Applied Science business and support its customer business in supplying transmissions to Aston Martin and, in 2022, Williams.





There are ways for some teams to retain expertise, either through work on external projects (left) or transferring personnel to road car development



Applied Science under Graham Miller represents an opportunity for Mercedes to grow its business in such a way that it retains talent and capability. Thirty staff worked on this year's America's Cup yacht racing programme funded by shareholder Sir Jim Ratcliffe's Ineos Chemicals business. They provided simulation technologies, manufacturing, rig testing and control systems solutions, and attention has already shifted to the 37th America's Cup when Ineos Team UK will be the Challenger of Record.

Redeployment is the order of the day as teams move staff into activities unaffected by the budget cap or to adjacent parts of the business which may incur only a partial transfer cost. Nevertheless, Mercedes has had to accept a certain number of job losses as a result of adhering to the budget cap. A recent staff consultation process has led to just under 50 people leaving the business.

There has not been the tidal wave of job cuts which some observers forecast, but it has been painful for those affected. At Ferrari, Racca points

out that the company has a long-standing commitment to its local community, a social responsibility to protect its workforce.

"That is why we wanted to invest in the skills developed within the Scuderia and repurpose them for use in the development of our road cars," he says, "thus providing a further injection of innovation in that area while at the same time not losing all that valuable know-how."

Retaining brainpower within the business, while moving staff from F1 to road cars, is a natural step for Ferrari. A tactic which others, such as McLaren, can also make good use of.

The creation of Red Bull's powertrain division has been another tactically shrewd move, enabling the company to redeploy people and resources into a new business unit which will fulfil the two €15m engine supply deals to its teams from next season.


In precisely the same way that the technical teams under Adrian Newey, James Allison or Ferrari's Enrico Cardile would normally analyse the technical regulations for opportunities, the same rigour is now being applied to the financial rules.

The efficiency with which a team spends its money has been likened to the fuel-flow

regulations, one engineer explaining that in the same way they have to manage a race with a given amount of energy, they now have to find a way to win with a fixed amount of money. With the sliding scale aerodynamic regulations enabling the smaller teams to conduct more windtunnel runs than their more successful rivals, the leading teams have to make each test count.

From Ferrari's perspective, the budget cap simply adds to the challenge.

"Formula 1 will never become a competition between finance and cost control experts," says Racca. "If anything, the current extraordinary competition between talented individuals and teams, in terms of driving, organisation and increasingly higher levels of technology will now be taken to another level with the need to be efficient and effective in managing financial resources."

It is not only new era for Formula 1, but a fresh opportunity for teams to develop yet another area of competitive advantage. 

THE HISTORY OF



PART 3

A TRULY

THE HISTORY OF LOTUS

SPECIAL

PART 3: 1968-76

PLAYER

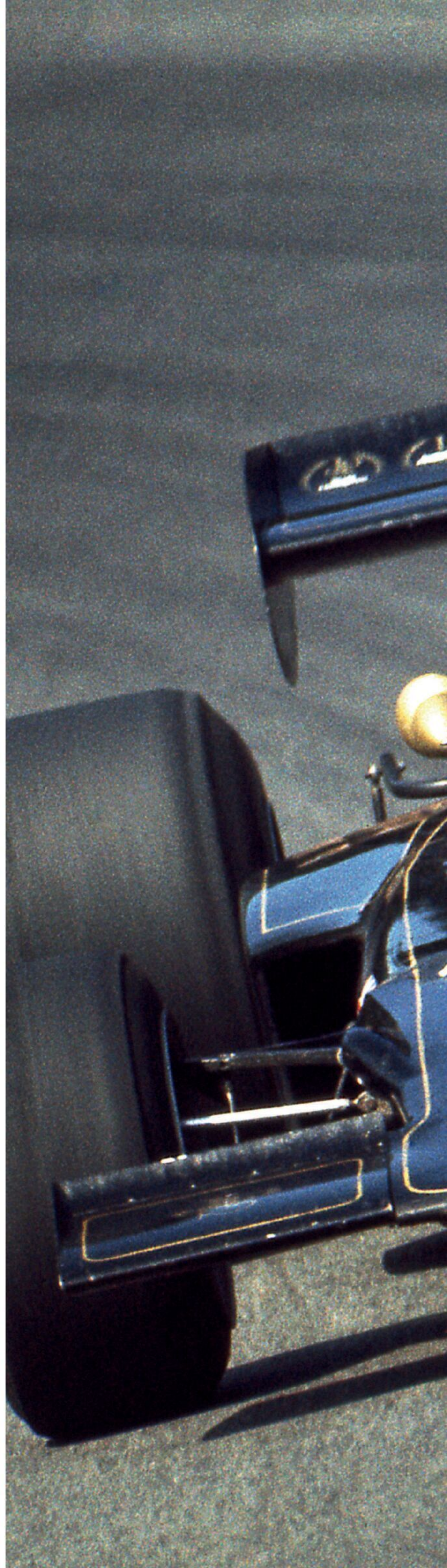
Gifted, driven, obsessive – Colin Chapman's ambition drove Lotus to soaring heights, but also into baffling technological cul-de-sacs as his business empire grew and his focus slipped

WORDS DAMIEN SMITH

PICTURES



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Colin Chapman was the (John Player) Special One of grand prix racing in the 1970s. Just not all of the time. For certain generations black and gold flag-packet Lotus racing cars distil the essence of Formula 1 – either in full-scale or Corgi toy form. But the decade in which Lotus clinched four world championships and its drivers three more for themselves was a frustratingly inconsistent one, coloured by golden heights to match the glory days of Jimmy Clark, and offset against the deepest blackspots of mediocrity, misfires and failure. That was all Chapman: often inspired, always alive to the next big thing, but at times distracted by the burning

ambition of a rapidly growing empire. Under a tamer chief, Team Lotus would have churned out a string of solid, conservative F1 cars to level out those peaks and troughs and consolidate the company's standing as the archetype of British F1 expertise. But conservative simply wasn't the Colin Chapman way. So it wasn't Lotus's either.

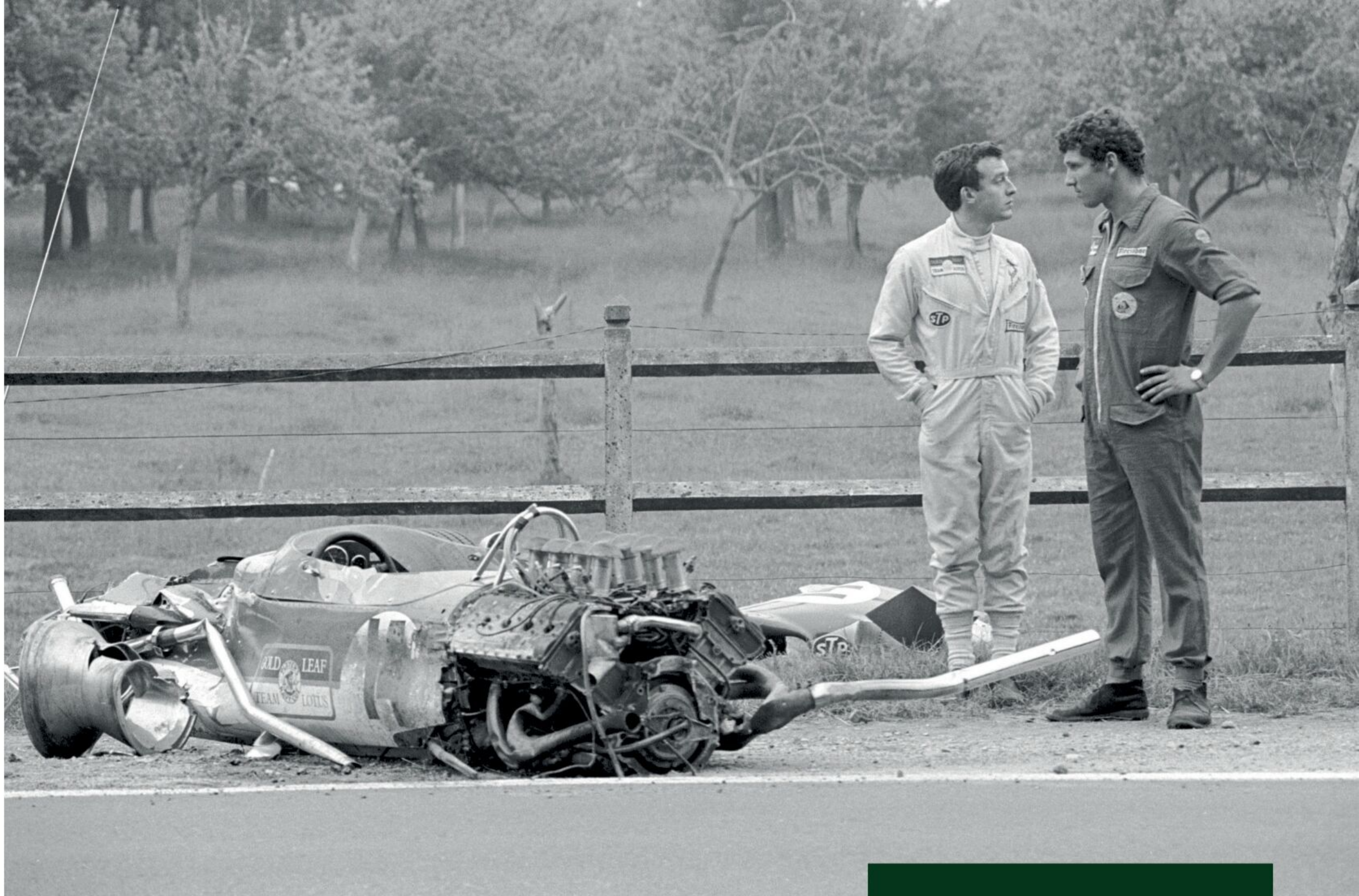
On face value it's a contradiction that a company always alert to innovation should be carried through a key chapter of its existence by just two F1 models. But these cars were the Types 49 and 72 – epochal, among the greatest created, by anyone in any era – and their longevity was a direct consequence of the experiments and blind alleys Chapman regularly explored that required Team Lotus time and again to fall back on its best work. Neither were supposed to race for so long.

The 49 was conceived as a relatively simple device upon which to develop the wonder that was the Ford-Cosworth DFV V8. It ended up serving Team Lotus across three full seasons and the first bit of a fourth – winning grands prix in each. In the 49's B-spec second season, 1968, Graham Hill was a suitably fully stressed Lotus member who bore the brunt of carrying Chapman and his stunned team through the devastating aftermath of Jimmy Clark's death, killed in April in a Formula 2 race at Hockenheim. Hill's second world title, following his first earned with BRM in 1962, turned into a grind, but started with two spirit-lifting consecutive wins in May, at Jarama and Monaco. At the British GP, privateer Rob Walker rolled back the years to the Stirling Moss era when Jo Siffert steered his blue 49 to a famous Brands Hatch victory, in the wake of a fire that destroyed the team's original chassis. Then as the summer progressed the two Jackie/Jackys (Stewart and Ickx) loomed in Hill's mirrors, and reigning champion Denny Hulme even drew alongside in his bright orange McLaren. But Graham held his considerable nerve to win the



Following Clark's death Chapman (left) brought in Oliver (right) to join Hill, but it was Hill who won a second title (below)





Oliver (left), a mechanic, and the remains of Oliver's 49 after his 1968 Rouen practice shunt

Mexico finale. This was a fine championship win, especially in such traumatic context.

It was a title that would surely have been Clark's had he lived, claimed in a maturing 49B in its red and white Gold Leaf colours. Sacrilege! But while the engine-chassis-suspension combo was now more robust, the opposite was true of the spindly, plain frightening aerofoils on stalks that had sprouted over the fat rear Firestones. Harnessing downforce was the new rage and on this occasion Chapman was following the lead of both Ferrari and Brabham, which pre-dated Lotus on the use of inverted wings. But he cottoned on to the massive potential, attaching aerofoils to long struts bolted on the rear suspension to convert 'download' directly into traction. A shame they were also lethal. At Rouen for the French GP, young Jackie Oliver discovered just how much when the slipstream of another car unsettled his 49 and catapulted it into a brick gatepost at 140mph. His dazed expression as he stood unharmed next to the wreck was likely as much for the prospect of facing Chapman as it was for what he'd just survived. Colin could be scathing, unfairly so, about the future Arrows boss.

But inexperienced Oliver was far from the only one to struggle with the Old Man. In 1969, tough, ambitious Jochen Rindt left the comfort of trusted Brabham to put his faith in Chapman and Lotus –

but this was an uneasy and volatile alliance. At the South African season opener, an additional high-rise wing over the nose supposedly offered some sort of balance to the downforce being created at the rear – but this was getting ridiculous. Then at hair-raising Montjuïc Park both Hill and Rindt suffered near-identical wing collapses and huge accidents as the aerofoils 'topped out' over the fast hump after the pit straight. In a letter to Chapman dated 9 May, a seething Rindt wrote: "I have been racing F1 for five years and I have made one mistake... otherwise I managed to stay out of trouble. This situation changed rapidly since I joined your team... Honestly your cars are so quick that we would still be competitive with a few extra pounds used to make the weakest parts stronger... I can only drive a car in which I have some confidence, and I feel the point of

no confidence is quite near." Jim Clark had never been this much trouble...

But Rindt had a point, and on spindly wings motorsport's governing body called time – mid-practice at Monaco. It didn't stop Hill, 'Mr Monaco' himself, scoring his then-record fifth win at the Principality, his 49B fitted with a fudged wedge-shaped rear end. Wings were here to stay, but in a profile that would quickly develop into something we recognise today.

The Chapman-Rindt tension didn't stop Jochen from bouncing back in spectacular style, engaging his friend Stewart in one of F1's greatest duels at Silverstone's British GP, and at season's end Rindt finally became a grand prix winner at Watkins Glen, winning from pole. But the victory was overshadowed by the accident that would end Hill's Team Lotus career (even if he would ►

JOCHEN RINDT LEFT THE COMFORT OF TRUSTED BRABHAM TO PUT HIS FAITH IN CHAPMAN AND LOTUS – BUT THIS WAS AN UNEASY AND VOLATILE ALLIANCE

A LITTLE MORE THAN TWO YEARS AFTER CLARK, TEAM LOTUS WAS THROWN BACK INTO TURMOIL

obstinately race on elsewhere for another six years), Graham thrown from his cartwheeling 49B and badly smashing up both legs. The season had been another fraught one, Rindt's frustrations rising further at Chapman's latest obsession to harness the grip advantages of four-wheel drive – on the bulky, heavy Lotus 63 (so much for “simplify, then add lightness”). Both Hill and Rindt point-blank refused to race the car at the British GP, forcing an embarrassed Chapman to recall a 49 he'd sold to Jo Bonnier, who was lent a 63 as recompense. Mario Andretti, the Italian-American Indycar and dirt oval hero, was called upon to race the 4WD at the Nürburgring following his stunning pole position at Watkins Glen on his F1 debut in a 49B the year before. But Andretti's car grounded out on full tanks early on and crashed, while clever John Miles fared little better in his appearances.

Following a heart-to-heart with Chapman in Germany, Rindt raced the 63 at the non-championship Oulton Park Gold Cup, finishing second to Stewart – the car's best result. But the vogue was fading as aerodynamics held greater rewards than all-wheel traction. Instead, Chapman and designer Maurice Phillippe turned to finally creating a successor worthy of the aging 49 – and its promise was just enough to keep Rindt. If you want to become world champion,

reasoned his manager Bernie Ecclestone, stay put; but if you want better odds of surviving...

Like the 25 and 49 before it, the Lotus 72 reset the bar after Rindt got his hands on it at the 1970 Spanish GP. Lessons from the Indy 500 campaigns shaped its wedge profile, its side-mounted radiators setting the template for F1 cars forever after. Like the 49, it was far from perfect from the start: its initial rising-rate torsion bar suspension, featuring anti-dive on the front and anti-squat at the rear, made it a handful, while inboard brakes on each corner required a rethink because of overheating. Such were the early headaches, the 49 was called back into action at Monaco, where Rindt scored its 12th and final win when his old boss Jack Brabham slithered off at the final turn. When the 72 was recalled for Zandvoort, Jochen embarked on a four-race winning streak. He was lucky at Brands Hatch, where Brabham lost out at the last gasp again, this time out of fuel. But at Hockenheim Rindt and Ickx engaged in a thrilling duel, Lotus beating Ferrari by just 0.7s. By Monza, the Austrian had one hand on the title. Once it was done, would he race on? He'd been shaken by the gruesome death of his friend Piers Courage at Zandvoort. Perhaps he would retire and go into business with Ecclestone. It all seemed to be ahead of him.

In Saturday morning practice at Monza, Lotus



Once sorted, Rindt took the 72 to four consecutive wins and a posthumous world title in 1970

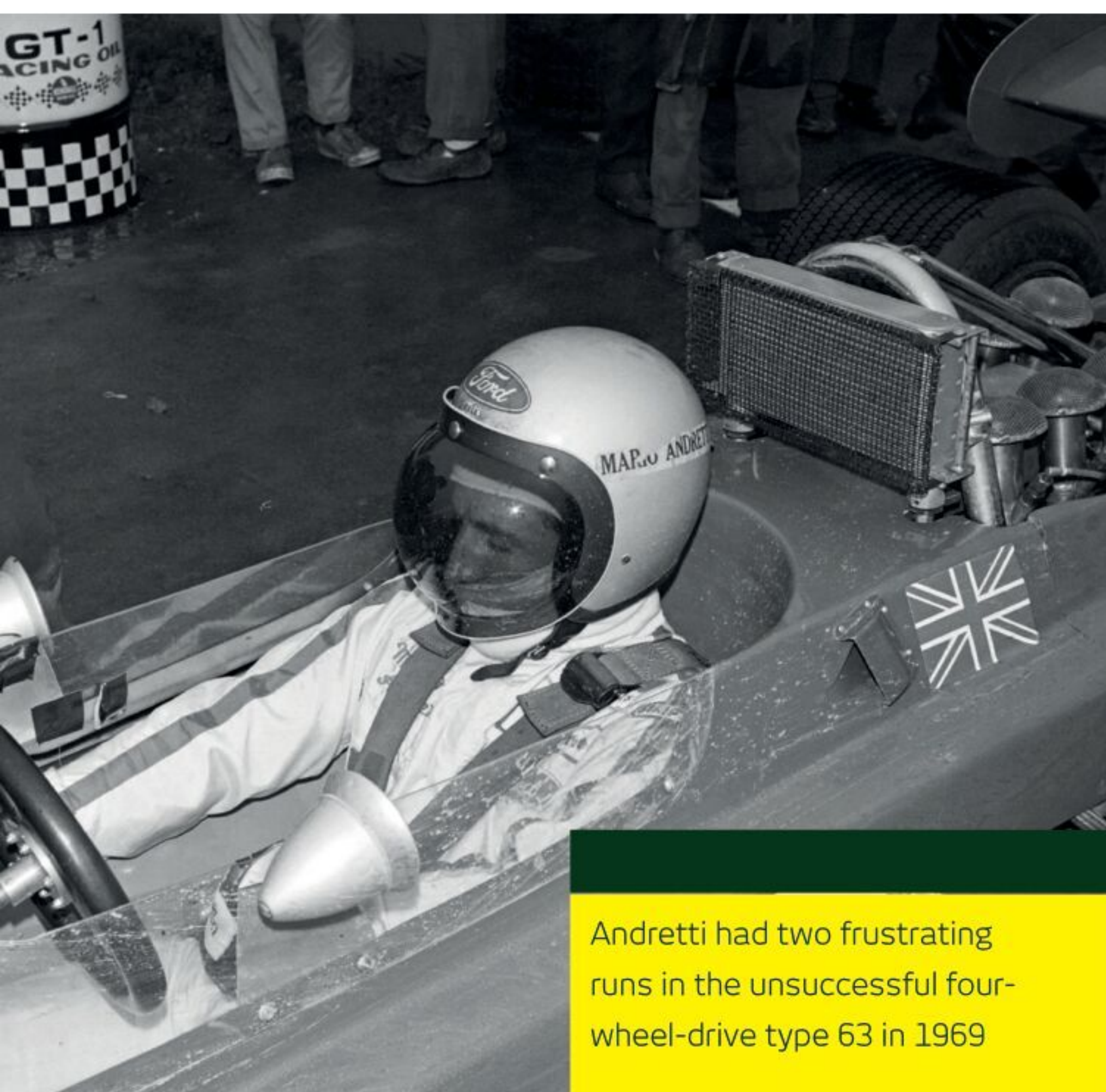


Hill and Rindt suffered almost identical wing collapses on their 49s at Montjuic Park in 1969

ran the 72 in experimental form without wings for minimum drag. Rindt crashed at Parabolica, struck a guardrail mounting post at close to 170mph, and submarined down the car because he hadn't done up his uncomfortable crotch safety straps. A front brake-shaft failure was the given cause, although years later an Italian court ruled the safety barriers were installed improperly. A little more than two years after Clark, Team Lotus was thrown back into turmoil – and yet once again, the obsessional racing instinct to keep going kicked in. Young Emerson Fittipaldi, who'd made his F1 debut in a 49C at the British GP, won at Watkins Glen – just his fourth start – and thereby ensured Rindt became a unique posthumous world champion.

What's strange is that Lotus still contrived to follow this up with its first winless season since 1959. Fittipaldi was knocked back by a road accident mid-1971 and once again Chapman found distraction in a tempting cul-de-sac: this time the turbine-powered Lotus 56B.

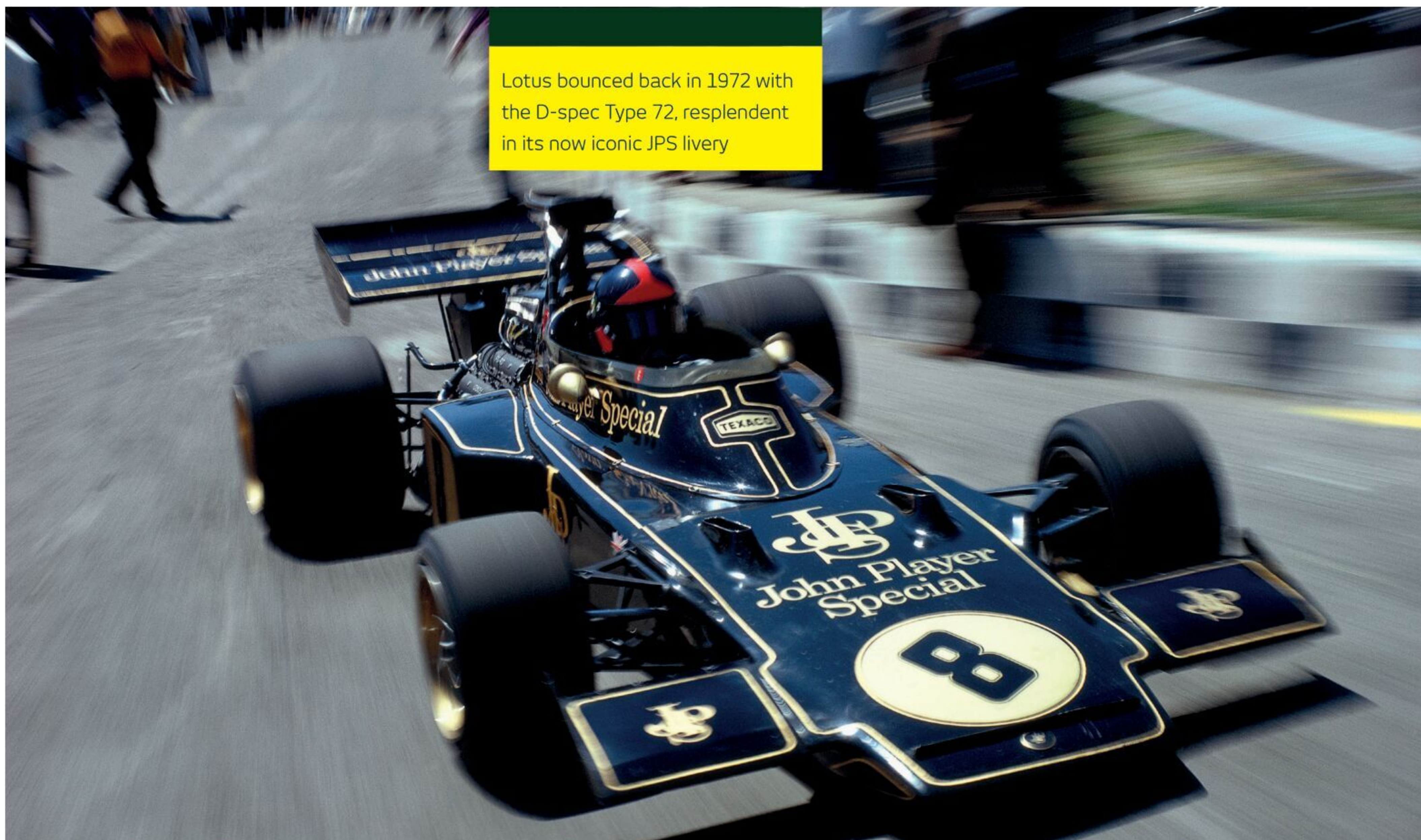
The potential of a turbine racer on a road course had been percolating in Chapman's grey matter since Graham Hill had been fast in one at a Mosport USAC round back in 1968. The problem was slowing for tight corners and throttle lag on the way out. Still, Chapman commissioned Pratt & Whitney to produce a 3-litre equivalent for F1. For a US company with no interest in European racing, it was never a priority, but the engine was ready by the end of 1970 and tested in an unused 56. The first turbine F1 car made its debut in Fittipaldi's hands at the Race of Champions the ►



Andretti had two frustrating runs in the unsuccessful four-wheel-drive type 63 in 1969



Fittipaldi struggled gamely in 1971 with another Lotus innovation that bombed, the turbine-engined 56B

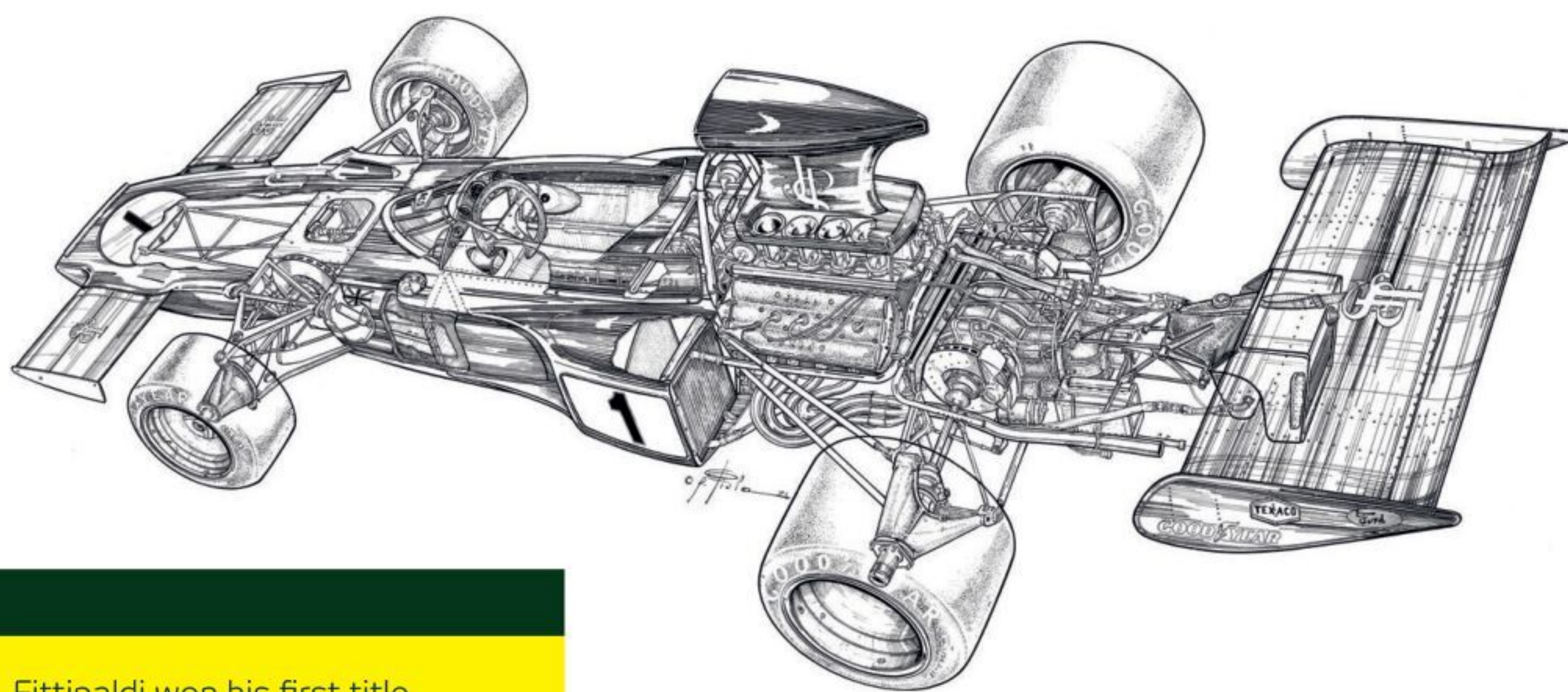


Lotus bounced back in 1972 with the D-spec Type 72, resplendent in its now iconic JPS livery

following spring, while Reine Wisell and Dave Walker gave 56B further outings at Silverstone and Zandvoort. The turbine's whistle and whine was a novelty among the shrieks of DFVs and V12s, but after Monza the experiment ran out of gas... A year after becoming world champions, Team Lotus slumped to fifth.

But 1972 would be a year of rejuvenation, for Lotus in JPS black and gold for the first time, for Fittipaldi and for the D-spec 72. Twin victories for the Brazilian at the Race of Champions and International Trophy foreshadowed the world title campaign, 'Emmo' winning in Spain, Belgium, Britain, Austria and Italy to become the youngest champion yet, at 25. Look what Lotus could do when Chapman kept his focus.

Another drivers' world title should have followed in 1973, only for Stewart – recovered from the illness that had undermined his 1972 campaign – to spring back to his best for Tyrrell. Fittipaldi also had a new team-mate to worry about. Lotus had never been great at running two top-liners at the same time. Ronnie Peterson was well loved by all, Fittipaldi included, but his nine poles and four wins unsettled the champ – especially at Monza where victory for 'Super Swede' ended Emmo's title hopes. Furious with Chapman, Emmo accepted a big-money switch to McLaren. Good move: he'd win his second title in 1974 as Lotus began an odd mid-'70s slump. ►



Fittipaldi won his first title with Lotus but left for McLaren before claiming his second



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The 72 was used again in 1974 when the 76 didn't work, and Peterson won three times in it



Jacky Ickx started 1974 well with a win at the Race of Champions, complete with daring pass on Ferrari's Niki Lauda. But the season was undermined by the type 76 (or the John Player Special Mark 1, as Chapman insisted on calling it), an overly ambitious misfire bristling with innovations that didn't work. Beyond the extreme wedge shape, heavily contoured rear bodywork and bi-plane wing, the 76 initially featured four foot pedals – and a gear-knob button to operate an electronic clutch. The clutch pedal on the far left was used for leaving the start line, then could be withdrawn through a hydraulic system. Twin brake pedals gave an excited Peterson the option to left-foot brake – but the system was quietly dropped. As Chapman put it: "The trouble was its systems didn't work – fuel, oil, cooling, brakes – and the steering wasn't very good. Nothing very serious!" Peterson still won three races, in Monaco, France and Italy – but in 'old faithful' 72E. His patience was wearing thin, while a bemused Ickx appeared to check out early. The bright spark that lit up Ferrari was barely recognisable – except when racing sportscars.

Lotus hit rock-bottom in 1975 as the 72E was rolled out for the model's sixth season. By this time 'Trigger's broom' syndrome had really kicked in: there was little on the car Rindt would have recognised. Standardised Goodyear radials

BY THIS TIME 'TRIGGER'S BROOM' SYNDROME HAD REALLY KICKED IN: THERE WAS LITTLE ON THE CAR RINDT WOULD HAVE RECOGNISED

better suited to Ferraris, McLarens, Tyrrells and Brabhams influenced a shift to a more conventionally sprung 72 while the wheelbase was stretched. Team Lotus was creaking. In the 1960s the group had been a small specialised company making attractive road cars, largely from proprietary parts sourced from bigger manufacturers. Now this was a true empire with diversifying strands, including a car company that made many more components than even larger brands committed to. There were two boat-building concerns and a plastics company as well.

No wonder Chapman's attention was diverted, especially after 15 years of sustained F1 success.

But the competitive spirit that drove this remarkable man – not to mention his pride – galvanised an ambition to claw back the ground lost to Ferrari and McLaren in 1976. Andretti, long-admired since Watkins Glen in 1968 and burned by his own disappointments at Vel's Parnelli Jones, committed full-time to Lotus to crack F1 once and for all. Meanwhile, the type 77 (or JPS MkII as Chapman still insisted) was a step in the right direction. Yes, the oversized cast-magnesium front brake calipers that doubled as structural suspension supports were another diversion, and Peterson stalked off to March in frustration. But with a motivated Andretti and Tony Southgate joining from Shadow to aid reliability and consistency, Lotus's form began to turn. At the Fuji finale, as Lauda and James Hunt's title climax played out, Andretti saved his tyres and won by a lap. Lotus and its John Player Special lived up to its name, just as it used to.

Meanwhile back in Norfolk, something new was cooking, bubbling nicely under the expert gaze of Chapman, aerodynamicist Peter Wright, designers Martin Ogilvie and Ralph Bellamy, plus ex-BRM man Tony Rudd. In the best Lotus traditions, it was gripping stuff... a recipe that would change the F1 world forever. 

NIGEL ROEBUCK'S FORMULA ONE HEROES

PETER COLLINS

PICTURES  **motorsport
IMAGES**

PETER COLLINS
HAD IT
ALL...

Blessed with movie star looks, and charm to match, he was everyone's idea of what a 1950s racing driver should be, and for a time – sadly brief – he was among the best in the world.

The son of a motor dealer, Collins began racing in 1949 with a Formula 3 Cooper, and quickly made his mark. By 1952 he was into the world championship with HWM, at the same time joining the Aston Martin sportscar squad.

Back then drivers took part in all manner of events, and Collins drove many different cars, his performances in Tony Vandervell's Thinwall Special leaving no doubts of his ability to handle power.

In 1955 Collins won the International Trophy at Silverstone in the Owen Racing Organisation's Maserati 250F, and later that year gave the company's first 2.5-litre BRM its debut at the Oulton Park Gold Cup. The car didn't last long, but while it did Peter ran third, behind the factory 250Fs of Stirling Moss and Luigi Musso, but ahead of Mike Hawthorn and Eugenio Castellotti in Ferrari-entered Lancias.

After a one-off drive for Mercedes in the Targa Florio (where he shared the winning 300SLR with Moss), Collins was invited to a meeting with Enzo Ferrari, which put him in a competitive Formula 1 car for the first time.

In 1956 Peter truly arrived, scoring a first GP victory at Spa, his second at Reims. By Monza, the final race, Collins was in contention for the world championship, but if anything defines the man it was his selfless behaviour that afternoon.

When Juan Manuel Fangio retired, his day seemed done, leaving the title fight between Moss, leading in his Maserati, and Collins. After Musso made a routine stop, and declined to hand over to Fangio, Peter came in, and when he saw his idol sitting on the pit wall he immediately climbed out. That gave Fangio the points he needed for his fourth title, and when I interviewed Fangio, more than 20 years later, his eyes filled with tears as he remembered his young team-mate.

Collins, though, saw his action as nothing remarkable, as Louise, his widow, told me.



There was more to Collins than just Hollywood good looks. A title contender in 1956, he was able to match and beat the best

"Maybe it was easier to be a sportsman in those days, because there wasn't the money – that wasn't why those boys raced – but Peter revered Fangio, and he was only 24, and didn't feel there was much urgency about winning the championship. Team spirit was important to him – what mattered, above all, was that someone in a Ferrari won the title. Probably that doesn't make sense to the drivers today."

This was the moment at Monza in 1956 that Collins, still in the title race, handed his car over to Fangio



This was a terribly perilous time to be a racing driver, particularly if you were with Ferrari. In March 1957 Castellotti was killed while testing at Modena, and two months later, in the Mille Miglia – which Collins was on course to win until his car failed late in the day – Alfonso de Portago died, together with several spectators.

"It's odd what the mind can do," said Louise. "There was always this justification – this belief that it could never happen to anyone else. Peter once started to say something about, 'If anything ever happens to me', and I said, 'Oh, shush...' I know it's a cliché to talk about living for the moment, but that's what we did. The world was a different place back then."

The relationship between Ferrari and Collins



**RACING WAS SO
DIFFERENT THEN
– MUCH MORE
DANGEROUS, AND
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– BUT IT SEEMS
TO ME THERE WAS
MUCH MORE
JOY IN IT**

LOUISE COLLINS



was unusually close. “Enzo looked upon Peter as a surrogate son, and it was the same with his wife, who always wore black – they’d lost their only son, Dino, in the summer of 1956, and went to the cemetery every day. I don’t mean to sound hard, but it struck me as very theatrical somehow. Eventually Peter went to see Ferrari, said he was neglecting the company, and in effect told him to snap out of it. People couldn’t believe that anyone would dare to say something like that to Ferrari, but actually he accepted it, and was much lighter after that.”

In terms of results, 1957 was a poor year for the team, but for Collins there were compensations: for one thing, his friend Hawthorn had rejoined Ferrari; for another, this was the year he married Louise, a Broadway actress, a week after meeting her.

Ferrari was in better shape in 1958, Collins beginning the season with victories in the International Trophy and – partnering Phil Hill – the Buenos Aires 1000 Kms and the Sebring 12 Hours.

His friendship with Hawthorn was a close one. Some suggested it compromised Ferrari against the onslaught of a Vanwall team comprising Moss, Tony Brooks and Stuart Lewis-Evans: such good mates were they it didn’t seem to matter which won.

“There was something in that,” said Moss. “Of the two, on his day Mike was quicker, I think – but he didn’t have that many days, and overall I’d put Pete ahead. He was also very good company.”

Hill concurred. “Peter was just a charming guy, whereas Mike was hard for anyone to get along with – although I was quickly on to him, and never had any problems with him.”


As 1958 unfolded, Vanwall had slightly the edge, and it wasn’t until July that Ferrari won a world championship grand prix. Hawthorn led all the way at Reims, but there was more tragedy for the team, for Musso crashed early in the race and was killed.

Next on the schedule was Silverstone. Hawthorn and Collins qualified only fourth and sixth, but Peter made a fantastic start, at Becketts passing Moss for a lead he was never to lose. Louise remembered a perfect day: “The weather was great, and Silverstone had an English garden party atmosphere back then. Once Peter was in front, no one could challenge him. Wonderful.”

Now it was on to the Nürburgring, where the year before Collins and Hawthorn had fought an unforgettable, if unsuccessful, battle with Fangio on his day of days. This time around the scenario was uncannily similar, the two of them swapping the lead – and being caught by an inspired driver from another team, in this case Brooks and his Vanwall. “They had me on top speed,” Tony recalled, “so my only hope was to snatch the lead early in the lap, and pull out enough that they couldn’t pass on the long straight at the end of it. Eventually that worked out, and the tragedy was that Peter, trying to stay with me, overdid it...”

Collins went off at Pflanzgarten, and was thrown from his somersaulting car against a tree. His death, only two weeks after the Silverstone victory, caused enormous grief, for the debonair Peter had personified all that was good about sport.

For Louise Collins, married only a year, it was an unimaginably awful time, but she had no bitterness as she looked back.

“Racing was so different then – much more dangerous, and not highly paid – but it seems to me there was much more joy in it. There was a feeling that the boys were all doing something they loved, and weren’t they lucky? Peter and I weren’t together very long, but it was the happiest time of my life.” 

Collins at the Nürburgring in 1957, the scene of his great battle with Ferrari team-mate Hawthorn and Collins’s idol Fangio





NOW THAT WAS A CAR

No. 99

WORDS
STUART CODLING
PICTURES
JAMES MANN



MCLAREN MP4/1

Pioneering by choice, a McLaren by chance



The story of McLaren's pioneering carbonfibre car predates McLaren as we know it. Had the chips fallen differently it might not even have been a McLaren – but, at the turn of the 1980s as it is now, money was the essential lubricant that greases the mechanisms of Formula 1.

And F1 was where, in 1979, gifted engineer John Barnard and going-places F2 team boss Ron Dennis wanted to be. Driven, ambitious, detail-minded and egotistical, both quietly carried chips on their shoulders regarding their lack of formal qualifications. Dennis the mechanic-turned-entrepreneur embraced the modish cod-self-improvement of Edward de Bono's thinking hats and the exhaustively abstruse phraseology which came to be known as 'Ronspeak'. Over one or two glasses of wine too many after a chaotic Ferrari test in the late 1980s, Barnard would confide to a *Sunday Times* journalist that in the company of engineers blessed with doctorates and such he still feared being seen as an "uneducated blacksmith with oily hands". Indubitably Dennis and Barnard shared tendencies which drew them together and ultimately pushed them apart. As a partnership they would kick down the door of F1 and change it forever.

Where were they coming from? Like many engineers of his era Barnard had entered motor racing via Lola. He then had a spell at McLaren, working on details of the M23 F1 car and M16 IndyCar before leaving, creatively frustrated, and becoming involved in the abortive Vel's Parnelli Jones F1 team, working alongside ex-Lotus designer Maurice Philippe. When Jones closed up shop and retreated to Indycars with scarcely any



notice, Barnard followed and threw himself into the IndyCar scene, carving out a reputation as an innovator in whatever task he set himself to – chassis layout, gearbox construction, even turbocharging the Cosworth engine. Learning on the job would provide the foundations for what was to come.

Dennis's Project 4 operation enjoyed high-profile Marlboro backing for its Formula 3 and Formula 2 activities. In 1979 a profitable piece of work had come its way in the form of the BMW M1 Procar championship, a one-make series which had made its way onto the support bill at various F1 rounds owing to connections between BMW and March, whose proprietor was one Max Mosley. It was to be a high-profile affair in which the fastest F1 drivers in practice contested a race in modified M1 supercars. Lamborghini had been contracted to build the M1s, but industrial and financial woe over at Sant'Agata Bolognese prompted BMW to look elsewhere, and much of the work fell into Ron's lap. But still there was a barrier Dennis had failed to breach effectively: the gateway to F1. Motorsport insiders are only half joking when they say Project 4 was named thus because of the failures of the first three.

Barnard returned to the UK having changed the IndyCar game with the Chaparral 2K, an exquisitely neat racer which harnessed the ground-effect aerodynamics which were also disrupting F1. Unlike many other engineers, he'd grasped the principle of what Lotus was doing on its pioneering 79 – and benefitted from the input of his mate Patrick Head, who was beaver away in the Imperial College windtunnel on a Williams which would better it. Although Chaparral boss Jim

Hall had made a land-grab for credit, those in the know knew – and Dennis persuaded Barnard to meet. “I’m not interested in F2,” said Barnard. Fine by Dennis – neither was he. Barnard’s demands were simple: he wanted creative freedom to design the most advanced F1 car ever, in a hitherto scarcely used material, and he wanted undisputed credit as its author. All Dennis needed to do was find the money for it.

Let’s nail the business of who got there first with carbonfibre in F1 right now. Barnard wasn’t the first to identify the potential of what was considered to be a wonder material, the stuff of rocket science, and neither was he the first to use it. Ex-Lola man Andy Smallman got there first with the wing struts of the otherwise uncelebrated 1975 Embassy Hill GH1. Gordon Murray claims to have spent at least two years trying to make carbon brake discs work before racing them on the BT46 in 1976; on the BT49 raced in 1979 and beyond he sought to ‘add lightness’ by using carbon panels in place of aluminium ones in the monocoque. As Barnard would go on to prove, this just wasn’t the right way to deploy the material.

Carbonfibre couldn’t simply be used as a like-for-like replacement for the aluminium honeycomb lurking beneath the bodywork of contemporary F1 machinery. The properties of metal were well known and easily calculated. It’s a relatively sympathetic and straightforward material with which to work. Carbonfibre arrives in a roll, like a carpet, and its effectiveness relies on rigorous design and perfect construction quality control. As a fibre it’s only strong in one direction, a property the designer has to manipulate by understanding the load

MCLAREN MP4/1

**NOW
THAT
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paths the finished component will be subject to, specifying exactly the right number of layers, and avoiding joins. Crafting the component involves great expertise in excluding air pockets between layers and ensuring proper bonds.

One more kicker: by weight, carbonfibre is 10 times more expensive than aluminium. Imagine trying to account for this in 1979 when inflation was running at over 13%, diminishing teams’ spending power almost as they watched.

What Barnard understood – in a way not even Lotus’s Colin Chapman did at the time – was that chassis strength was a key factor in taking ground effect to the next level. His friend Head did – which was why the Williams FW07 was lighting up racetracks as Lotus foundered. Chapman’s blunder was to prioritise maximum downforce, creating loads his cars’ flexy inner structures couldn’t handle. Barnard saw that carbonfibre, properly exploited, could deliver a strong core chassis no wider than the Cosworth DFV engine, leaving the rest of the car’s width free to accommodate ground effect venturi.

Initial contacts with British Aerospace at Weybridge led to an introduction between Barnard and aeronautical engineer Arthur Webb, who combined the material design expertise Barnard required with an old-school slide-rule approach Barnard loved. As the design came together, another challenge hovered into view: who would build the structural elements? UK composites specialists laughed Barnard out of the room on the grounds that it was too complex a task. The only company willing and able to take it on was American: Utah-based Hercules Aerospace, which also built rocket engines. ▶

“WHAT BARNARD UNDERSTOOD WAS THAT CHASSIS STRENGTH WAS A KEY FACTOR IN TAKING GROUND EFFECT TO THE NEXT LEVEL”





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championship-winning M23, Coppuck ran aground while trying to advance McLaren into the ground-effect era. After leading the design of three unsuccessful cars in 18 months he was exhausted as well as out of political favour.

The MP4 – it gained its /1 later as its replacement took shape – made its race debut in Argentina in 1981, three races in, and its initial promise was masked by teething troubles and a new FIA dictat banning the sliding skirts teams were using to seal the underfloor. Michelin's radial tyres had a tendency to deform inwards under load rather than ballooning outwards like cross-plyes, adding to the complications of choosing ride heights in the fixed-skirt era. Dennis also had to factor in the presence of young, inexperienced and slightly wild Andrea de Cesaris rather than his preferred choice, Alain Prost, who had decided McLaren wasn't the team for him after the miseries of 1980. De Cesaris wasn't trusted with MP4 until round six...



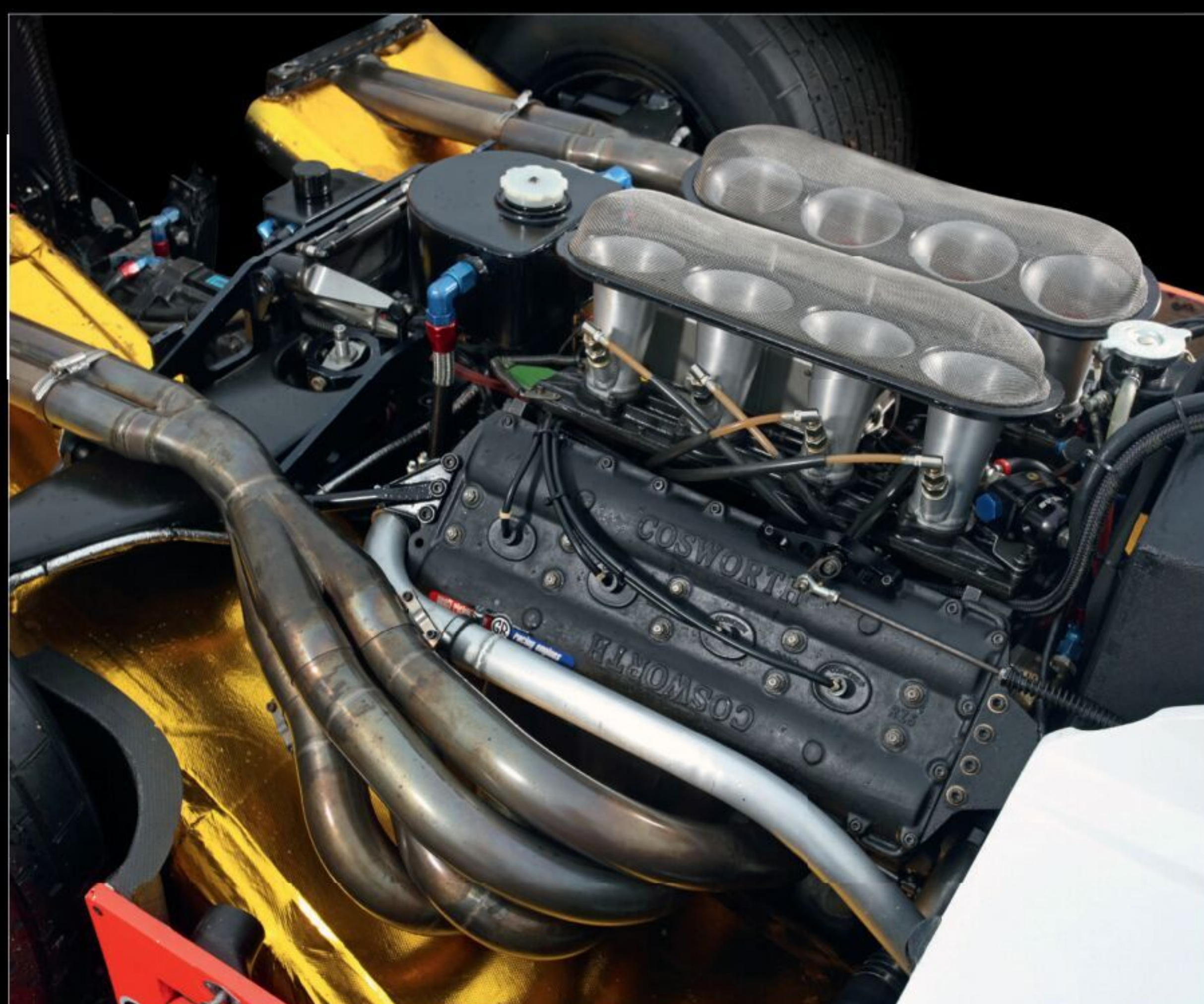
The final obstruction seemed insurmountable: who would bankroll the Project 4 F1 team? Not long-time sponsor Marlboro – it already supported a team in F1, albeit one which was on its uppers. McLaren had lost James Hunt as it slipped from its mid-1970s pomp, and continued to endure misery on-track as its M28 made heavy weather of the ground effect era. Relying on a huge plan area of underfloor bodywork to generate downforce but not strong enough to carry it, the M28 was also overweight and too bluff to be fast in a straight line. Team boss Teddy Mayer described it as “ghastly”. The press described it as “wretched”. Subsequent redesigns and sequels – the moribund M29 and M30 – proved little better.

Dennis, naturally, thought Marlboro should drop McLaren and back him instead. Marlboro sponsorship guru John Hogan, mindful of the Hunt-flavoured brand equity invested in McLaren, saw otherwise. He proposed a merger, a prospect equally disagreeable to Dennis and Mayer, but in September 1980 they grudgingly went to the altar. Barnard's high concept would wear red and white but carry the McLaren badge.

The fall guy at McLaren was Gordon Coppuck, who had joined the design office in 1965. Responsible for the neat, effective M16 IndyCar and its F1 derivative, the 1974 and 1976


“BARNARD WORKED TIRELESSLY TO DEBUG THE MP4'S VULNERABILITIES – IT WAS BADLY DISCOMBOBULATED BY BUMPS, AND OCCASIONALLY PRONE TO AERODYNAMIC PORPOISING”

John Watson was the safe pair of hands who scored McLaren's first win since the 1977 Japanese GP, and Watson did so on home soil – if assisted by the retirement of the car in front. He was also the first to demonstrate the strength of carbonfibre construction when he ran wide at Monza's second Lesmo and spun heavily into the inside barrier. The impact sheared off most of the car's rear end, but of the pile of dust the carbon naysayers were expecting there was none. ‘Wattie’ unbelted himself from the intact monocoque and walked away.



Next season, armed with a B-spec MP4, Watson won two grands prix and finished third in the drivers' championship. Niki Lauda, lured out of retirement by Dennis to replace the erratic De Cesaris, won on his third time out at Long Beach, and again at Brands Hatch. Barnard worked tirelessly to debug the MP4's vulnerabilities – it was badly discombobulated by bumps, and occasionally prone to aerodynamic porpoising – with a single-mindedness which earned him the nickname “Prince of Darkness” from departing shareholder Tyler Alexander.

Two years after the ‘merger’, Barnard and Dennis bought out Mayer and Alexander at the end of the 1982 and set an unfettered course towards the McLaren of recent times. Rivals were still fumbling to understand the principles of MP4's game-changing design – not helped by the FIA's late imposition of mandatory flat bottoms for all cars.

This closed the door on ground-effects – but Barnard's next game-changer was imminent, presaged by a turbo-powered MP4/1 appearing towards the end of 1983... 

RACE RECORD

Starts 79
Wins 6
Poles 0
Fastest laps 5
Podiums 11
Championship points 130

SPECIFICATION

Chassis Carbonfibre monocoque
Suspension Lower wishbones with upper rocker arms actuating coil springs/dampers (f/r)
Engine Ford Cosworth 90-degree naturally aspirated V8 / TAG-Porsche 90-degree turbocharged V6
Engine capacity 2993cc / 1499cc
Power 500bhp @ 10,500 rpm / 700bhp @ 11,000 rpm
Gearbox Five-speed manual
Brakes Discs f/r
Tyres Michelin
Weight 585kg
Notable drivers John Watson, Andrea de Cesaris, Niki Lauda



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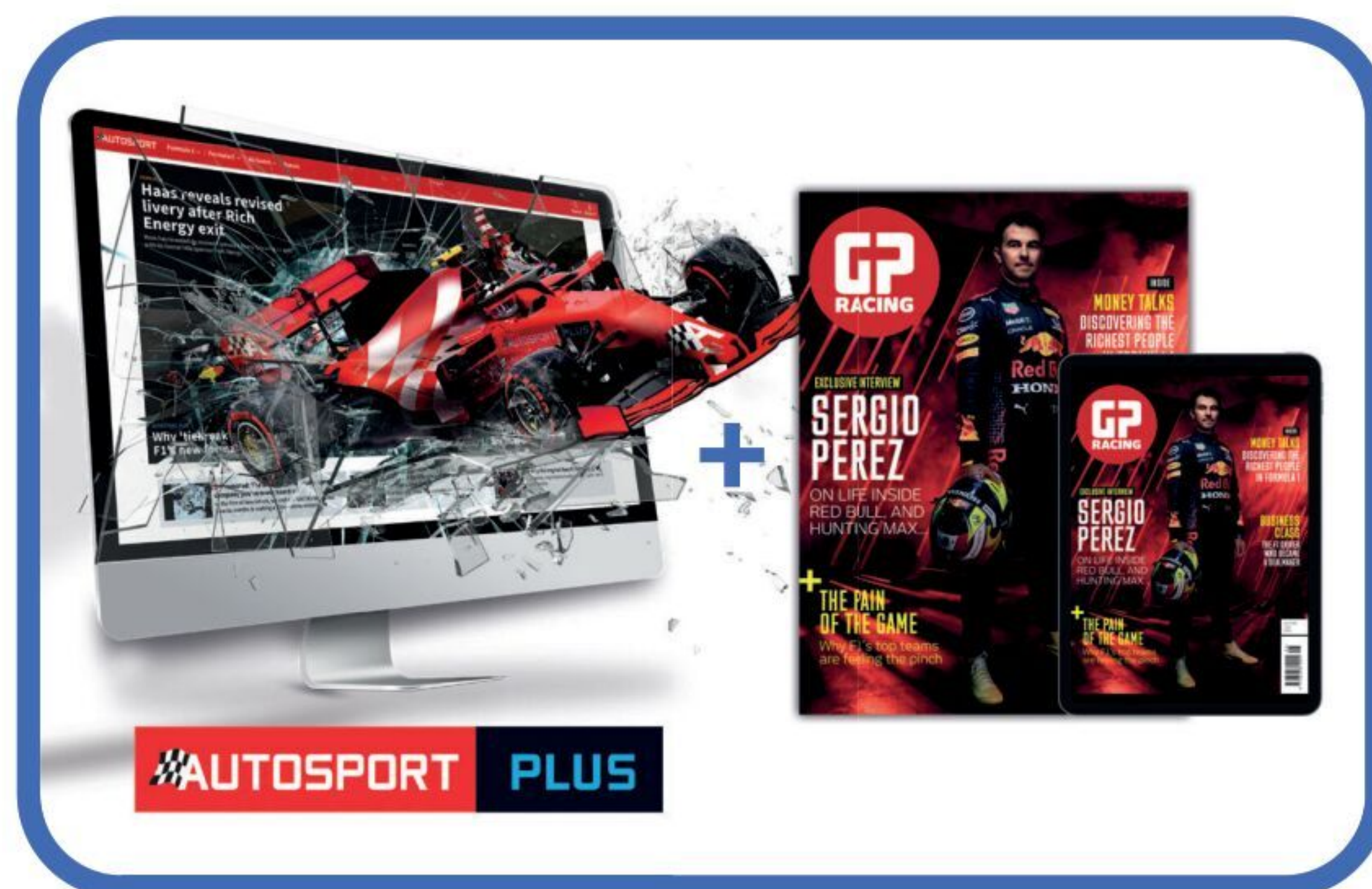


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F1 IN THE USA

With a second US race in Miami recently announced, F1's on-off relationship with America is firmly back on track

▼ After a break of nine years following the last of three GPs at Phoenix in 1991, F1 finally made a return to the US for the 2000 season. To promote the race, at Indianapolis, F1 newbies Jaguar decided to take a car for trundle around New York's Times Square





When the engine in Clay Regazzoni's Ferrari 312B3 blew up during practice for the 1974 US GP at Watkins Glen, the Swiss driver was forced to park his car out on the circuit. Temporarily abandoned, it drew attention from local law enforcement



Only in America would running a race in the car park of a casino seem like a good idea. Yet the Caesars Palace GP in Las Vegas happened not once but twice, and the first race in 1981 – won by Alan Jones – was one of two US races that year



Michael Schumacher and Rubens Barrichello on the Indianapolis banking in 2002. When Schumacher tried to stage a perfect team finish he slowed too much at the line and handed Barrichello the win...



► Riverside became the third track in the US to hold an official world championship F1 race after Indianapolis (through the Indy 500 from 1950-1960) and Sebring in 1959. And like Sebring, the Californian circuit would hold just a single GP, in 1961, won comfortably by Stirling Moss in a Rob Walker-entered Lotus 18

▼ In 1976, for the first time, the US got to hold two GPs in a season, the first of which was the imaginatively titled US GP West. The venue was a street circuit in Long Beach, California, and Ferrari's Clay Regazzoni mastered the undulations and bumps better than anyone else to claim victory





▼
Detroit, America's self-proclaimed 'Motor City', was the seventh US venue (including Indianapolis) to host an F1 race and the seven races it held, from 1982-1988, were called simply the Detroit Grand Prix. John Watson famously won the first race on the street circuit, based downtown along the Detroit River and characterised by 90-degree corners, from 17th on the grid

▲
Despite having first raced in F1 way back in 1968 when he claimed pole for the US GP at Watkins Glen, Mario Andretti only fully committed to the world championship in 1975. By 1977 he was the team leader at Lotus and, at Long Beach that year became the first, and to date only, American to win a non-Indy 500 world championship GP on home soil





▲ Rain, like everything in Texas, is big and the deluges that hit Austin's Circuit of The Americas in 2015 were epic. Half of Friday's running was cancelled and Saturday's wet practice was run without spectators. Qualifying, postponed until Sunday morning, was ended after Q2 because of the weather and even the race started in the damp...

◀ In the roulette wheel that was Formula 1 in America in the 1980s, the ball stopped on Dallas for 1984, a replacement for Long Beach as the second race alongside Detroit. With the Dallas TV series at the height of its popularity the event itself was pure showbiz, but the Fair Park track and the heat proved very unpopular with the teams and drivers, and so the race proved to be a one-off

◀ The iconic New York skyline was to be the backdrop to the proposed Grand Prix of America, to be held on a street circuit in New Jersey. In July 2012 Red Bull hosted a media event where Sebastian Vettel drove the 'track' in a road car, and the race was pencilled into the 2013 calendar. Swiftly postponed when Bernie Ecclestone and the organisers disagreed over contracts, the race quietly sank into New York's Hudson River...



The battle for the 1976 world title between James Hunt and Niki Lauda was tight by the time it reached Watkins Glen for the penultimate round, yet the McLaren mechanics were still able to have a laugh. Their new driver, one Mickey Mouse (USA), wore a note saying 'I saw James Hunt win the British Grand Prix', in reference to Hunt's belated disqualification from the race



At the Circuit of The Americas in 2018 Kimi Räikkönen grabbed a surprising 21st GP victory, a long 15 years after his first. Kimi hadn't won in almost five seasons back at Ferrari, despite 23 podiums, and had never been successful in America, so it looked as if his days on the top step of the podium were over. A year later, back at Sauber/Alfa Romeo, he couldn't even finish in the points...





Phoenix, in the Arizona desert, is known for its year round sun and good weather. Yet in 1990, when the city held the second of its three US GPs, Saturday qualifying around the street circuit was rendered pointless due to unexpected torrential rain. With even the pitlane resembling a river, Ayrton Senna was one of only 14 drivers to venture out. The grid was based on Friday qualifying and Senna, who started from fifth, would go on to win



Watkins Glen, in New York state, first held the US GP in 1961 and did so on a further 19 occasions. However, in the early seventies the GP became known as much for what went on in the 'Bog' as the on-track action. The Bog was a large, cheap spectator area outside the circuit with a stream running through it. If your car – or this Greyhound bus in 1974 – got stuck in the mud it was pounced upon, set on fire and completely destroyed by the boisterous crowd



The 2005 US GP at Indianapolis was, incontrovertibly, the low point in F1's relationship with America. Fans streamed out of the circuit moments after the start of a race which featured only six cars, all using Bridgestone tyres. Despite various attempts at compromise, all 14 cars using Michelin rubber had pulled off at the end of the formation lap, due to safety concerns over the ability of their tyres to withstand loads through the banked corner, following two big tyre-related accidents in Friday practice

THE END OF AN ERA

The curtain comes down on the hybrid era at this year's

Abu Dhabi Grand Prix

YAS ISLAND - ABU DHABI

Yas Marina Circuit

10th - 12th December 2021

Formula 1 racing is set for major changes in 2022. Sweeping regulation changes will come in that are designed for closer racing, more action, and create a tighter field. But the changes will come as the 2021 season looks to be one of the most exciting in recent memory.

Since the hybrid era began in 2014, there has been one team at the top. Mercedes has won the last seven consecutive championships, with Lewis Hamilton winning all-but-one. But 2021 is already building towards an epic send off for the hybrid machines.

Max Verstappen looks as fast as it's ever been the Red Bulls look to take the title challenge to the Silver Arrows for the first time since their last championship in 2013. As the season moves on, neither Hamilton nor Verstappen look like they're going to take their foot off the gas as the season goes down to the wire.

And all signs are pointing to an epic season finale in Abu Dhabi. The Yas Marina circuit has been the site of some epic title-deciding races of the past – including Red Bull and Mercedes' maiden championships.

It's a fitting setting for the final race, as the incredible Yas Marina circuit tests the drivers who will require the upmost skill and bravery to make key overtakes. Only the victor will be spinning donuts under the bright lights before lifting the winners' trophy.

With the race taking place in mid-December, fans will be able to witness not just the final race of the era, but what might be an era-defining battle between two greats. Tickets are now on sale for premium hospitality packages which not only get you closer to the grid, with priceless views of the chequered flag moment, but the opportunity to get the inside line from teams.



Aerial view of the Yas Marina Hotel. A key feature of the Yas Marina Circuit.

Yas Island - Abu Dhabi

EPIC FINALES AT ABU DHABI

2010

The duel in the desert saw four drivers – Lewis Hamilton, Sebastian Vettel, Fernando Alonso and Mark Webber – all with a shot at the championship at the final race. It was Vettel who prevailed with Red Bull, and became the youngest ever world champion.

2011

Having won the first two Abu Dhabi races, it looked a dead cert that the pole man and newly-crowned double world champion Vettel would walk away with another win. But a puncture saw him out before turn 3, and Lewis Hamilton held off Alonso for the win.

2014

Double points were on offer for the first and only time ever as Nico Rosberg chased down teammate Lewis Hamilton for the title. The German put it on pole, but Lewis led the first lap, and mechanical issues for Rosberg means Hamilton was crowned a double-champ.

2016

The Silver Arrows were back at it again, but this time Rosberg had the upper hand. Hamilton led from pole, and would slow his pace to allow other drivers to catch his rival, but it was Rosberg who took 2nd and the title.

2020

The end of a Mercedes-dominated season saw Max Verstappen and Red Bull lay down the gauntlet. Mercedes had won every Abu Dhabi race of the hybrid era, but Verstappen's pole and win proved there was plenty to come in 2021.



Max Verstappen winner of the 2020 Abu Dhabi Grand Prix
Yas Island - Abu Dhabi

SEE THE RACE IN STYLE

Check out the array of hospitality options, including team-specific packages, available for the race.

Formula 1 Paddock Club

The premium way to watch F1 in style, Paddock Club experiences, and includes a prime viewing spot above the pit building, open bar with champagne, gourmet luncheon, truck tour of the circuit and more to take fans closer to the action.*

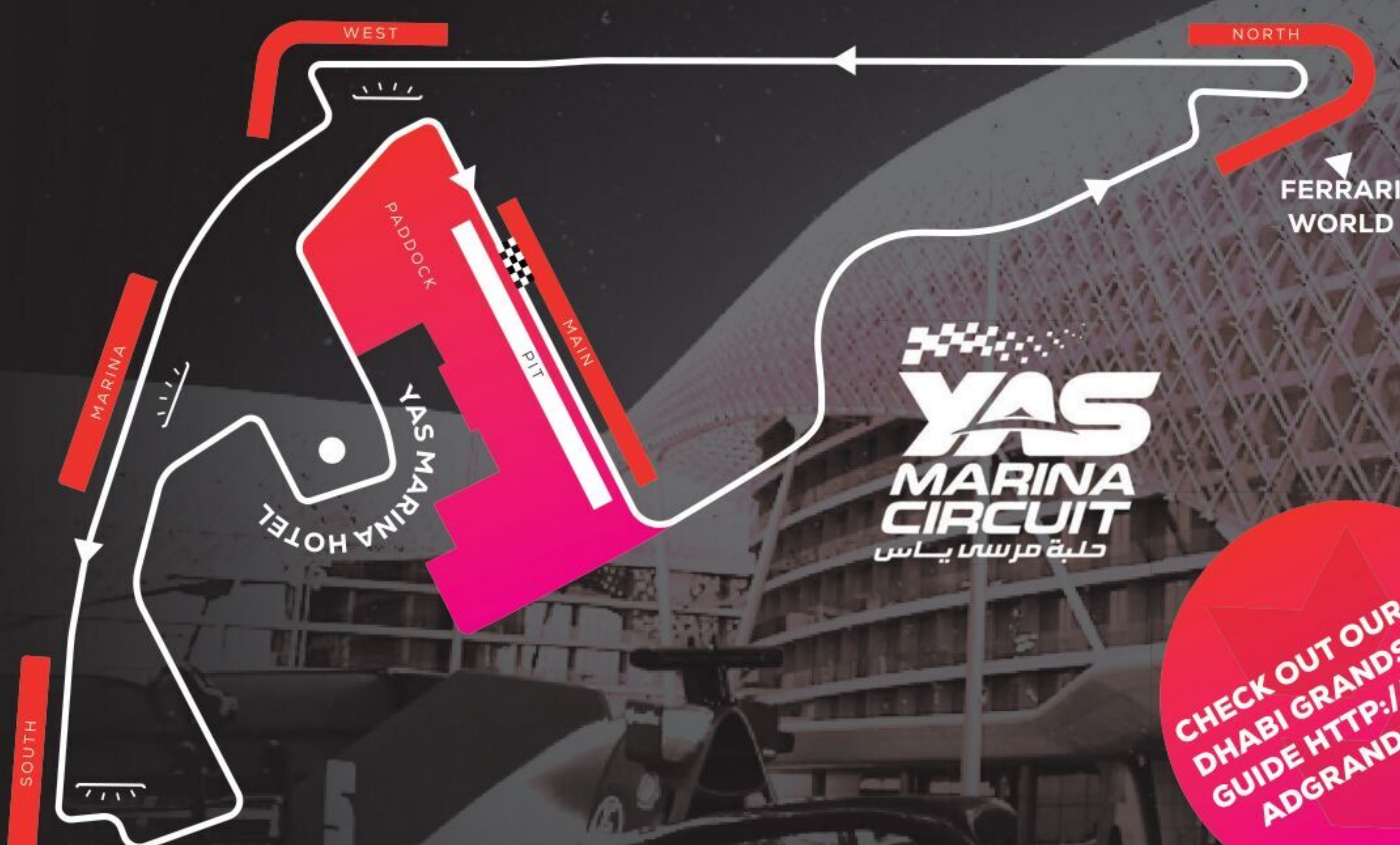
Red Bull Racing Paddock Club

It could be a crowning moment for Max Verstappen and Red Bull Racing. The team allow fans to get closer to the garage with exclusive Live Pit Links with the garage as the car is being prepared, plus exclusive interviews with the team and a Red Bull goody bag.*

McLaren F1 Experience

The team in Papaya look locked in a battle with Ferrari in 2021, which will surely come to a head in Abu Dhabi. Join the team as they offer an exclusive experience with appearances from Lando and Daniel, behind the scenes tours of the garage and get kitted out in McLaren gear.*

*Some experiences are subject to change depending on COVID restrictions, and some access to drivers and garages may be virtual.



CHECK OUT OUR ABU DHABI GRANDSTAND GUIDE [HTTP://BIT.LY/ADGRANDSTAND](http://bit.ly/adgrandstand)

GET BEHIND THE WHEEL

As if the action on track wasn't enough, Abu Dhabi offers plenty of driving experiences in Yas Marina and beyond.

Ferrari World

At the heart of Yas Marina is Ferrari World, a theme park owned by the Italian giants. Experience 4.8Gs as you hurtle from 0 to 240kmh in 4.9 seconds on Formula Rossa – the world's fastest rollercoaster. Or, fulfil a life-long dream and take a Prancing Horse out for a spin around Yas Marina during an unforgettable driving experience.



Dune Buggy

Take control and spend an afternoon exploring the desert behind the wheel of a 4x4 dune buggy or quad bike. Controlling the machines on the soft sand is a challenge, but one never to be forgotten.

Emirates National Auto Museum

Sheikh Hamad Bin Hamdan Al Nahyan hold the record for largest collection of 4x4 vehicles (718) and an array of his machines are on show at this museum. That includes the world's largest truck – a 50 tonne Dodge Power Wagon – and a rainbow collection of Mercedes.

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(Prices correct at time of publication)



View from Yas Suite
Yas Island - Abu Dhabi

WHY GO?

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- Curtain call on current era of racing
- Big name entertainment acts
- Circuit built to guarantee exemplary views
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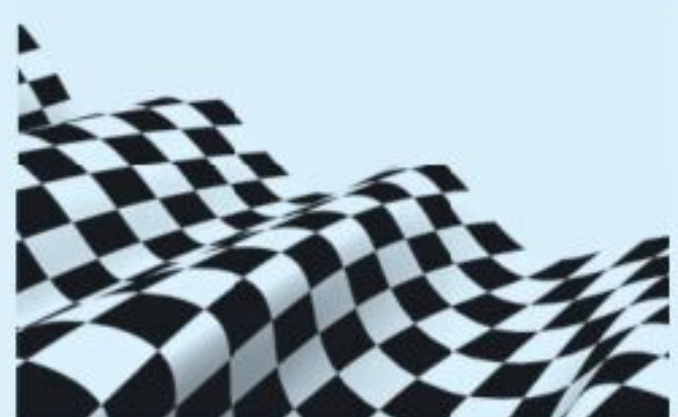
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FINISHING STRAIGHT

RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 4

THE SPANISH GP
IN 3 KEY MOMENTS

Hamilton celebrates a victory that, after he lost out at the start, looked highly unlikely

PICTURES: JERRY ANDRE; CHARLES COATES; STEVE ETHERINGTON

1 Déjà vu for Verstappen as Hamilton snatches victory

A counter-intuitive two-stop strategy enabled Lewis Hamilton to catch and pass Max Verstappen after ceding the lead of the Spanish Grand Prix at the start – on a circuit where track position is king and processional racing is the norm. From second on the grid, Verstappen made a good start and asserted himself in a typically aggressive move into the first corner.

Ordinarily in Barcelona that would have been that barring incidents or potential undercuts around the pitstops, but two key factors enabled Mercedes to execute a virtual repeat of the 2019 Hungarian GP, where Lewis made an extra pitstop and was able to hunt Max down for the win. Firstly, while both started on Pirelli's soft tyres, Hamilton had two further sets of mediums while Verstappen could only count on one, having used his other set in FP3.

Secondly, and crucially, both drivers' team-mates were in absentia, facilitating a huge gap

behind the lead duo which gave Hamilton flexibility for a second stop. At the Hungaroring in 2019 Verstappen's former team-mate Pierre Gasly qualified and finished a distant sixth while Valtteri Bottas had a scrappy race, picking up damage from impacts with Hamilton and Charles Leclerc. This time around it was Sergio Pérez leaving Verstappen to fly solo, qualifying eighth and spending the opening phase sixth, bottled up behind the McLaren of Daniel Ricciardo. Bottas made a decent start but was mugged by Leclerc's Ferrari around the outside of Turn 3 in a move he said he didn't see coming. As the leaders broke clear Bottas then failed to get back past the Ferrari.

In fairness, Pérez was suffering shoulder pain on Saturday but his absence from the leading battle was noted by his team-mate and his boss. "In the end I am always alone in the fight," complained Max. "They can easily just make another stop because

there is a gap behind them."

"We need him [Pérez] to be in that gap," said Red Bull team principal Christian Horner, "so Mercedes don't have the strategic options they had."

Hamilton was beginning to put Verstappen under a lot of pressure when Max – misunderstanding a radio communication – broke for the pits at the end of lap 24. The crew, expecting him a lap later, didn't have all the new wheels in place. Despite a slow stop, Verstappen was quick enough on his out-lap to prompt Mercedes not to mirror his strategy.

"We would have dropped out just behind him and had a repeat of the [first] stint," said Merc's director of trackside engineering, Andrew Shovlin. "When you can't take position, you look to get an offset."

Mercedes engineered that offset by leaving Hamilton out for another four laps before pitting him for fresh mediums, knowing it had another set in the pocket. Hamilton duly charged back



Ferrari and McLaren are scrapping again just like they did in 2008. Ricciardo claimed sixth, just ahead of Sainz, but both were well behind Sainz's Ferrari team-mate Leclerc on this occasion

onto Verstappen's tail and stayed there for nine laps before pitting again at the end of lap 42. Verstappen had taken life out of his tyres fighting to stay ahead and now he could ill afford to pit again as he would be vulnerable to the undercut.

Hamilton's only obstacle to catching Verstappen again was his own team-mate. Bottas wasn't very obliging but Lewis made short work of him and then breezed past Max with DRS at the beginning of lap 60, completing the strategic checkmate.

2 Ferrari and McLaren rekindle spirit of 2008

They may not be doing so at the very front of the grid but Ferrari and McLaren are locked in combat again, if only for best-of-the-rest status. Ferrari's SF21 seems capable of a decent turn of speed in single-lap pace and over a race distance, and in Charles Leclerc's hands it again delivered a finishing position behind the Mercedes and a Red Bull.

Leclerc's opportunistic pass on Bottas at the race start for third place was audacious and mighty. He was unable to eke out a one-stop strategy, though, and was rather let off the hook when Pérez, who might have challenged him for fourth, pitted at the end of lap 57. Next time around Leclerc swooped in, the Ferrari crew did the honours, and Leclerc preserved his advantage to the flag.

Team-mate Carlos Sainz qualified sixth but shipped two places on the opening lap – one to McLaren's Daniel Ricciardo – which forced him to

commit to a two-stopper, such was the tightness of the midfield battle. Ricciardo just held off Sainz for sixth place at the flag, by less than a second.

Lando Norris had a lower-profile race to eighth behind Sainz, but he was able to pass Esteban Ocon, who was hamstrung by Alpine's persistence with a one-stop strategy.

3 Aston Martin pulls the two-stop-pin too early

It was another frustrating weekend for the team formerly known as Racing Point as both Lance Stroll and Sebastian Vettel struggled to reach the fringes of the top 10. Neither made it to Q3, qualifying 11th and 13th respectively, and they were among the earliest to pit, coming in at the end of lap 21 (Vettel) and 22 (Stroll) while still on the cusp of points positions.

They were in again on laps 38 and 39 having still not quite cracked the top 10, committing them to long stints to the chequered flag. On lap 60 Stroll made it to the head of the DRS train battling for 10th, as Alpine's Fernando Alonso gave up on his two-stopper and headed for the pits. But immediately he came under attack from the AlphaTauri of Pierre Gasly, who was on tyres eight laps fresher. Thus the green cars ended the race where they started, in 11th and 13th.

Early stops didn't help Aston Martin in Spain, and both cars finished outside the points



RESULTS ROUND 4

BARCELONA / 9.5.21 / 66 LAPS



1st	Lewis Hamilton	Mercedes	1h33m07.680s
2nd	Max Verstappen	Red Bull	+15.841s
3rd	Valtteri Bottas	Mercedes	+26.610s
4th	Charles Leclerc	Ferrari	+54.616s
5th	Sergio Pérez	Red Bull	+63.671s
6th	Daniel Ricciardo	McLaren	+73.768s
7th	Carlos Sainz	Ferrari	+74.670s
8th	Lando Norris	McLaren	+1 lap
9th	Esteban Ocon	Alpine	+1 lap
10th	Pierre Gasly	AlphaTauri	+1 lap
11th	Lance Stroll	Aston Martin	+1 lap
12th	Kimi Räikkönen	Alfa Romeo	+1 lap
13th	Sebastian Vettel	Aston Martin	+1 lap
14th	George Russell	Williams	+1 lap
15th	Antonio Giovinazzi	Alfa Romeo	+1 lap
16th	Nicholas Latifi	Williams	+1 lap
17th	Fernando Alonso	Alpine	+1 lap
18th	Mick Schumacher	Haas	+2 laps
19th	Nikita Mazepin	Haas	+2 laps

Retirements

Yuki Tsunoda AlphaTauri 6 laps - engine

Fastest lap

Max Verstappen: 1m18.149s on lap 62

TYRE COMPOUNDS USED



CLIMATE

Sunny

AIR TEMP

26°C

TRACK TEMP

32°C

DRIVERS' STANDINGS

1 Hamilton	94pts	11 Stroll	5pts
2 Verstappen	80pts	12 Alonso	5pts
3 Bottas	47pts	13 Tsunoda	2pts
4 Norris	41pts	14 Räikkönen	0pts
5 Leclerc	40pts	15 Giovinazzi	0pts
6 Pérez	32pts	16 Vettel	0pts
7 Ricciardo	24pts	17 Russell	0pts
8 Sainz	20pts	18 Schumacher	0pts
9 Ocon	10pts	19 Latifi	0pts
10 Gasly	8pts	20 Mazepin	0pts



FINISHING STRAIGHT

RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 5

THE MONACO GP IN 3 KEY MOMENTS

1 A nightmare weekend for Mercedes

To see Lewis Hamilton genuinely failing to reach the top six when it mattered in Monaco was difficult to compute given how flawless he and Mercedes usually are.

Hamilton struggled all weekend. Third in FP2, 0.390s off Charles Leclerc's Ferrari, was the closest Lewis came to being on the pace. He was 0.726s adrift in FP3, 0.684s off in Q1, 0.519s away in Q2 and 0.749s behind in Q3, classified only seventh in each of those sessions...

He called FP3 "a disaster", saying Mercedes "completely missed the ball" with its set-up evolution from Thursday to Saturday.

Monaco is a low-speed, low-energy circuit with a smooth asphalt. This makes it extra difficult for a car which has proved to be gentle on tyres to generate sufficient temperature. Add in Hamilton's natural propensity for protecting the rubber, on top of the W12's long wheelbase – making it less

nimble through tight turns than other cars – and the particularly cool ambient temperatures seen on Saturday, this created a perfect storm.

What confused Hamilton was how team-mate Valtteri Bottas generated better grip. Bottas was fourth in FP3 and never out of the top three in qualifying, setting the fastest time in Q1 and qualifying third, 0.255s off pole. But Bottas is naturally much tougher on tyres than Lewis, a disadvantage at many conventional circuits but a real boon at places like Monaco and Sochi – another smooth, low-energy track.

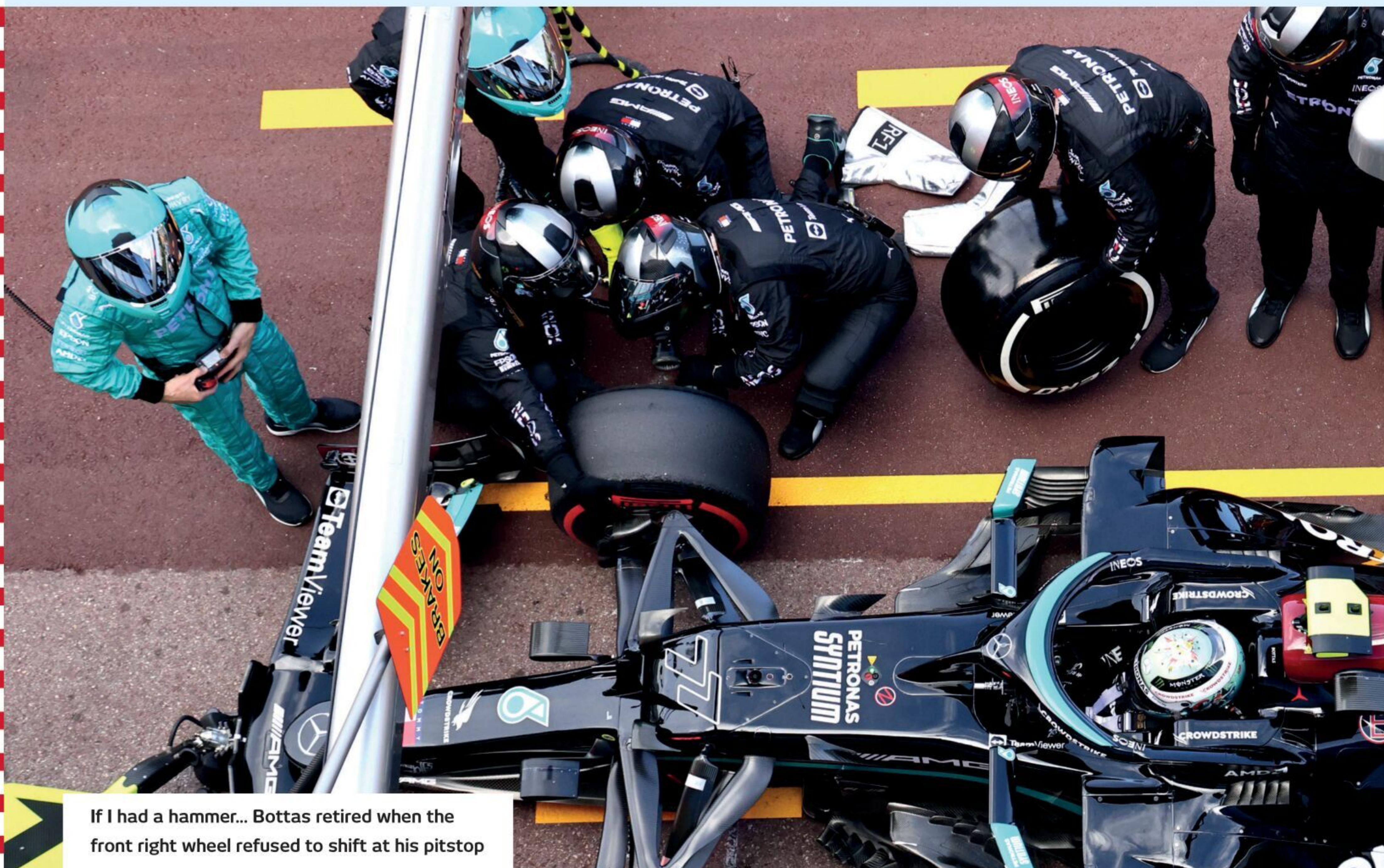
It should be noted Bottas was struggling too, just not as badly as Hamilton. "I would say tyre warm-up is the biggest issue we have and still balance-wise, a bit of understeer in sector two," confirmed Bottas. "It's not big things but the gaps are small and small things matter."

The race was worse. Hamilton was audibly

furious after spending the entire 78 laps staring at Pierre Gasly's AlphaTauri. Toto Wolff talked beforehand of taking "risks" with Hamilton's strategy, but trying to undercut everyone by stopping early backfired. Sergio Perez's Red Bull, which also struggled to generate tyre temperature in qualifying, leapfrogged Hamilton, Gasly and Sebastian Vettel's Aston Martin by running a longer first stint...

Lewis complained, but Wolff maintained it was the right call given Mercedes chose to heat its tyres more aggressively following Saturday's struggles. "We saw the tyre that came off, and there was nothing left," he said. "Similar to Valtteri's car".

An interesting point, given one of the tyres on Valtteri's car simply wouldn't come off. Bottas ran second until heading for the pits at the end of lap 29. He never returned, front right wheel jammed



If I had a hammer... Bottas retired when the front right wheel refused to shift at his pitstop

PICTURES: STEVE ETHERINGTON; MARK SUTTON; FIA POOL



Both Ferraris were contenders for victory in Monaco. Leclerc claimed pole, but was unable to start after his qualifying accident, and Sainz took his first podium for the Scuderia after qualifying fourth

and unremovable without factory tools.

James Allison explained the wheel gun chewed the wheelnut rather like a Phillips Head screwdriver mashes a screw when not aligned correctly. Poor Bottas really does have no luck at all. Allison described the mood in the camp afterwards as “lower than a snake’s belly.”

2 Sainz bags podium as Ferrari returns to form

The atmosphere was rather better at Ferrari, though joy at Carlos Sainz’s first podium for the team was tinged with regret at what should have been for Leclerc.

Ferrari’s low-speed prowess through Barcelona’s final chicane foretold its potential for Monaco and Sainz was fast from the earliest laps of FP1. When Leclerc topped FP2 despite losing nearly all of FP1 to a gearbox problem, then Sainz finished FP3 within half a tenth of Verstappen’s Red Bull, Maranello’s hopes crystallised further.

Leclerc took pole, but then crashed heavily at the Swimming Pool in the dying moments of qualifying after misjudging his angles and clipping the inside barrier. Ferrari salvaged the gearbox and repaired the car, but damage to the left-rear driveshaft hub wasn’t detected during overnight inspections. The hub broke during Leclerc’s lap to the grid, so he couldn’t take the start.

Once Bottas was eliminated during the pitstop phase, the way was cleared for Sainz to finish second and rescue a podium for the Scuderia.

“Immediately when I left the box on Thursday, I felt a lot of confidence with the car,” said Sainz, who was texted by former McLaren team-mate Lando Norris before the weekend, telling him he had a chance to win.

“The team managed to nail the set-up for Thursday – that gave me big confidence. The whole team needs to be proud of it, and take some self-confidence from this weekend.”

3 Verstappen ends Monaco curse (with Leclerc’s help)

Sainz did his best to threaten through the second stint, but Verstappen was untouchable. The most difficult moment came when starting from ‘pole’ in the second grid slot. Bottas was swifter away but Max closed the overtaking space, so that was that.

Amazingly, this victory was also Verstappen’s first podium at Monaco, after a penalty demoted him from second in 2019. This win also banished the demons of those expensive practice crashes that ruined genuine victory chances in 2016 and 2018.

Verstappen’s RB16B wasn’t well after FP2 on Thursday – too much understeer, said Christian Horner – but Max fought for pole on Saturday until locking up at Portier then aborting his final lap after Leclerc crashed. “We were a bit disappointed after qualifying,” said Helmut Marko. “According to our calculations, Max was already 1.5 tenths ahead.”

It didn’t matter. Verstappen won, and took the championship lead from Hamilton – a major statement after Lewis said Max’s aggression in their battles indicates he has “something to prove”.

“Actions always speak louder than words,” Verstappen countered. “You have to talk on the track. That’s what I like. We, as a team, so far, made the smallest mistakes. That’s why we are ahead.”

Max’s win meant he took the lead in the championship for the first time in his F1 career



RESULTS ROUND 5

MONTE CARLO / 23.5.21 / 78 LAPS



1st	Max Verstappen	Red Bull	1h38m56.820s
2nd	Carlos Sainz	Ferrari	+8.968s
3rd	Lando Norris	McLaren	+19.427s
4th	Sergio Pérez	Red Bull	+20.490s
5th	Sebastian Vettel	Aston Martin	+52.591s
6th	Pierre Gasly	AlphaTauri	+53.896s
7th	Lewis Hamilton	Mercedes	+68.231s
8th	Lance Stroll	Aston Martin	+1 lap
9th	Esteban Ocon	Alpine	+1 lap
10th	Antonio Giovinazzi	Alfa Romeo	+1 lap
11th	Kimi Räikkönen	Alfa Romeo	+1 lap
12th	Daniel Ricciardo	McLaren	+1 lap
13th	Fernando Alonso	Alpine	+1 lap
14th	George Russell	Williams	+1 lap
15th	Nicholas Latifi	Williams	+1 lap
16th	Yuki Tsunoda	AlphaTauri	+1 lap
17th	Nikita Mazepin	Haas	+3 laps
18th	Mick Schumacher	Haas	+3 laps

Retirements

Valtteri Bottas	Mercedes	29 laps - wheel nut
Charles Leclerc	Ferrari	DNS - driveshaft

Fastest lap

Lewis Hamilton: 1m12.909s on lap 69

TYRE COMPOUNDS USED



CLIMATE



AIR TEMP

21°C

TRACK TEMP

42°C

DRIVERS’ STANDINGS

1 Verstappen	105pts	11 Vettel	10pts
2 Hamilton	101pts	12 Stroll	9pts
3 Norris	56pts	13 Alonso	5pts
4 Bottas	47pts	14 Tsunoda	2pts
5 Pérez	44pts	15 Giovinazzi	1pt
6 Leclerc	40pts	16 Räikkönen	0pts
7 Sainz	38pts	17 Russell	0pts
8 Ricciardo	24pts	18 Latifi	0pts
9 Gasly	16pts	19 Schumacher	0pts
10 Ocon	12pts	20 Mazepin	0pts



FINISHING STRAIGHT

RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 7

FRENCH GP

18-20 June 2021
Circuit Paul Ricard

PICTURES: MARK SUTTON; CHARLES COATES; ILLUSTRATIONS: ALAN ELDREDGE



RACE DATA

Venue Circuit Paul Ricard
First GP 1971
Number of laps 53
Circuit length 3.630 miles
Longest straight 0.64 miles
Race distance 192.432 miles
Lap record 1m32.740s
Sebastian Vettel (2019)
F1 races held 16
Winners from pole 10
Pirelli compounds C2, C3, C4

CAR PERFORMANCE

Downforce level Medium
Cooling requirement Medium
Full throttle 58%
Top speed 213mph
Average speed 139mph

TIMETABLE (UK TIME)

Friday 18 June
Practice 1 10:30-11:30
Practice 2 14:00-15:00
Saturday 19 June
Practice 3 11:00-12:00
Qualifying 14:00-15:00
Sunday 20 June
Race 14:00
Live coverage Sky Sports F1
Highlights Channel 4

THE MAIN EVENT

Touching back down on the calendar after some pandemic turbulence – it was cancelled last year and has been shunted around again to enable the double-header in Austria – the French GP offers one of F1's most distinctive backdrops. Paul Ricard sits on a plateau in the coastal foothills of Provence-Alpes-Côte d'Azur, and its colourful striped borders of high-abrasion asphalt bear testament to its recent incarnation as a test rather than race track.

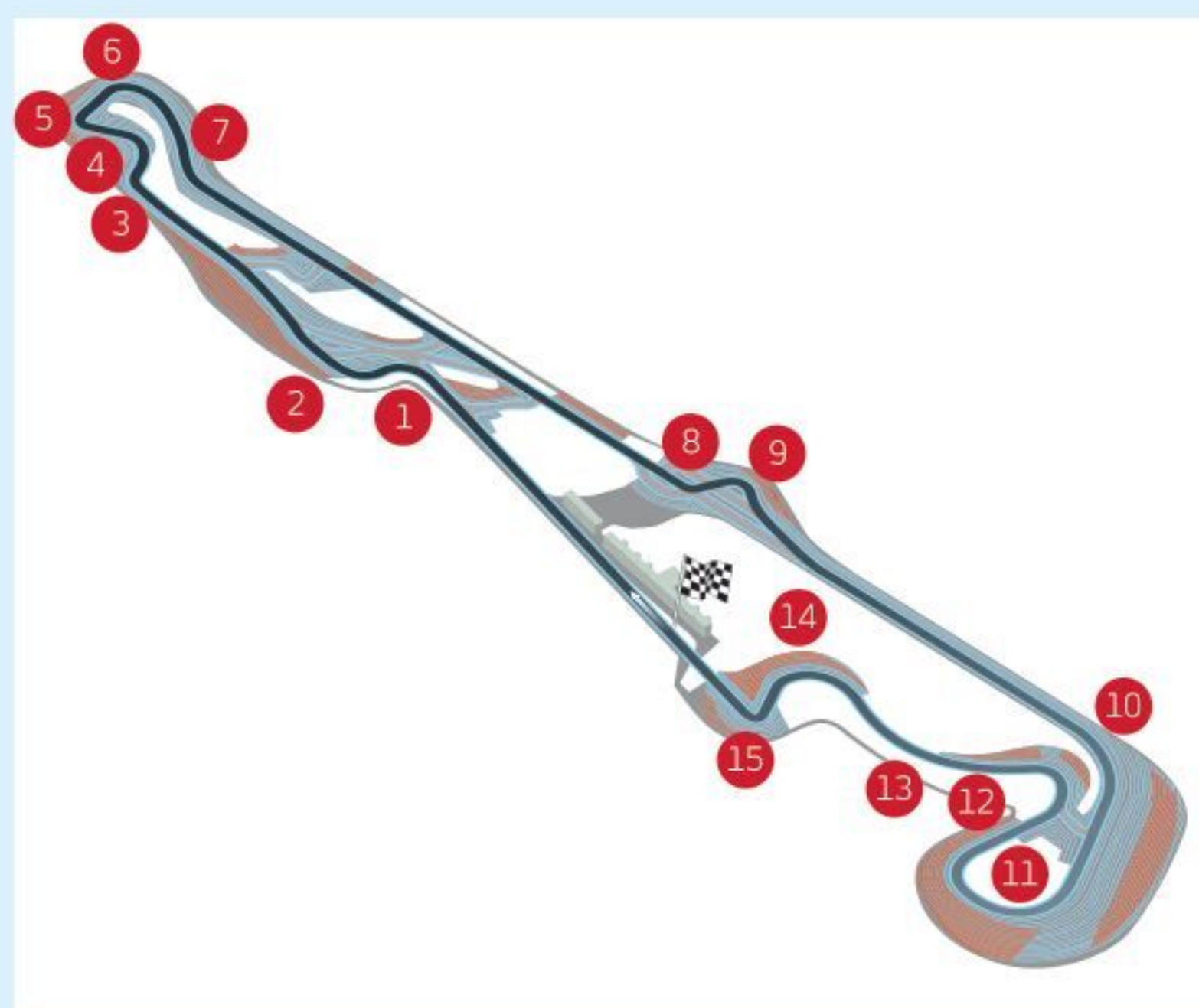
Since F1 returned in 2018 racing has been processional even though the circuit features a feisty combination of corners and high-speed straights. That may change since 70% of the track has been resurfaced ahead of the 2021 event, including all the corners bar one.

2019 RACE RECAP

Lewis Hamilton made it six wins from eight races as he won from pole despite a broken seat. Most of the action came at the beginning and end of the race, as Ferrari's Charles Leclerc attacked the second Mercedes of Valtteri Bottas through the opening corners and Red Bull's Max Verstappen tried to crash the party as well. There were signs, too, of the coming McLaren resurgence as Carlos Sainz and Lando Norris got involved in the battle for third.

Blistered tyres and a misfire on Bottas's car left him vulnerable to Leclerc after a late Virtual Safety Car and they duelled for second until the end, with Verstappen and Sebastian Vettel a more distant fourth and fifth. Sainz was sixth but Norris suffered late car dramas and slid to ninth.

KEY CORNER: TURN 5 Scene of one of the fastest accidents in F1 history (albeit one which started at Turn 3), this corner has been reprofiled in the recent works and now features a crest on the apex which could provoke mistakes.



THE WINNERS HERE...



2019

Lewis
Hamilton
Mercedes



2018

Lewis
Hamilton
Mercedes



1990

Alain
Prost
Ferrari



1989

Alain
Prost
McLaren



1988

Alain
Prost
McLaren



FINISHING STRAIGHT

RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUNDS 8/9

STYRIAN/AUSTRIAN GPs

25-27 June 2021 and 2-4 July 2021
Red Bull Ring

RACE DATA

Venue Red Bull Ring

First GP 1970

Number of laps 71

Circuit length 2.688 miles

Longest straight 0.539 miles

Race distance 190.848 miles

Lap record 1m05.619s

Carlos Sainz (2020)

F1 races held 34

Winners from pole 11

Pirelli compounds TBC/C2, C3, C4

CAR PERFORMANCE

Downforce level Low

Cooling requirement Medium

Full throttle 66%

Top speed 192mph

Average speed 140mph

TIMETABLES (UK TIME)

STYRIA

Friday 25 June

Practice 1 10.30-11.30

Practice 2 14:00-15:00

Saturday 26 June

Practice 3 11:00-12:00

Qualifying 14:00-15:00

Sunday 27 June

Race 14:00

AUSTRIA

Friday 2 July

Practice 1 10.30-11.30

Practice 2 14:00-15:00

Saturday 3 July

Practice 3 11:00-12:00

Qualifying 14:00-15:00

Sunday 4 July

Race 14:00

Live coverage Sky Sports F1

Highlights Channel 4

THE MAIN EVENT

F1 has played its joker in response to the COVID-related cancellations of the Canadian GP and its putative replacement in Turkey, scheduling back-to-back rounds in the bubble-friendly foothills of Styria. It used to be fashionable to dismiss the Red Bull Ring as a neutered copy of the glorious Österreichring but it has produced some compelling racing since rejoining the F1 calendar in 2014.

In 2020 the same compounds were used in the two rounds here, while changing them between Silverstone's races; as *GP Racing* closed for press it hadn't been decided whether a variation is necessary or do-able here this year.

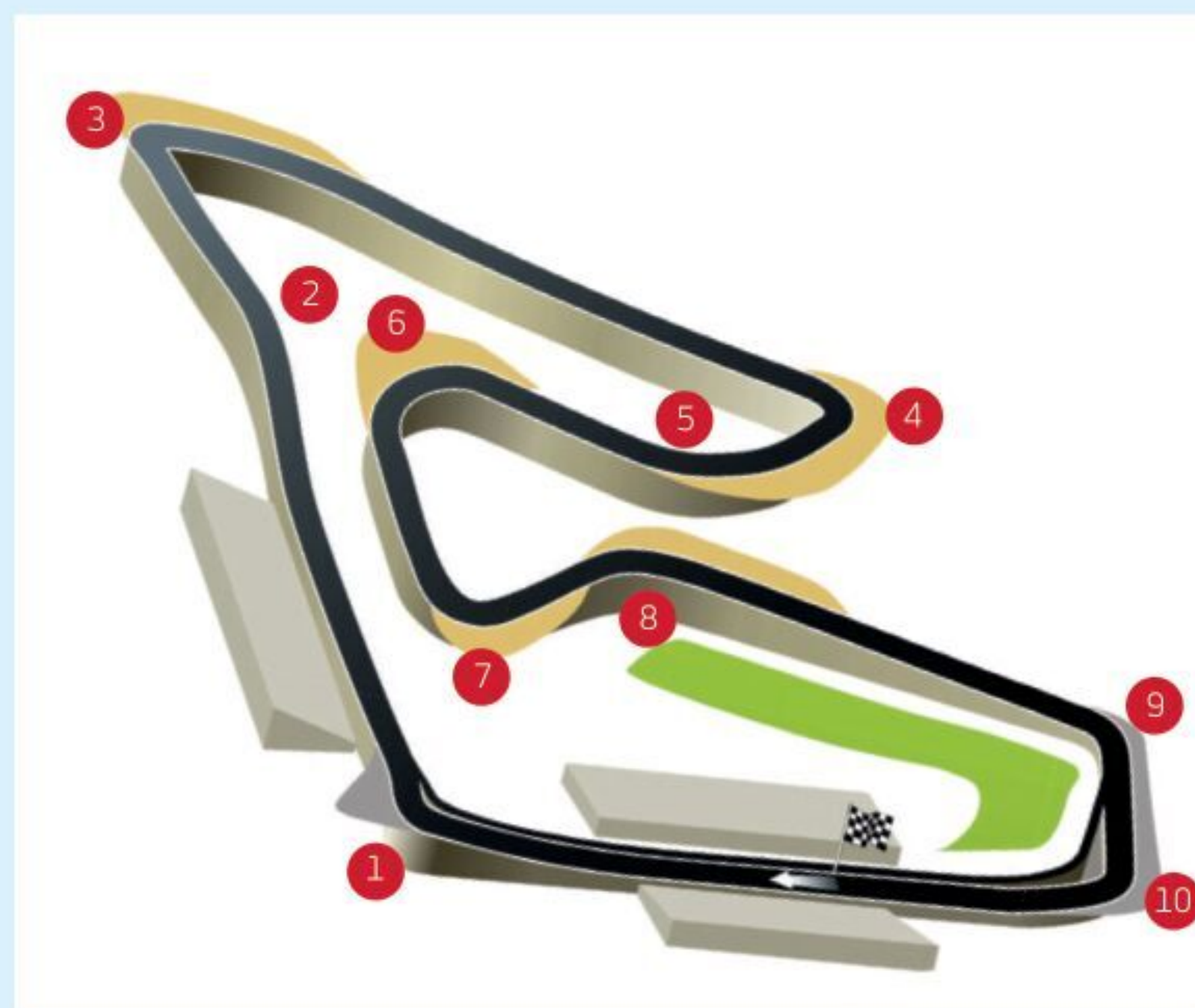
2020 RACES RECAP

Valtteri Bottas led the season-opening Austrian GP from lights to flag as Mercedes team-mate Lewis Hamilton finished second on track but was demoted to fourth due to a five-second penalty for clipping Alex Albon's Red Bull as they battled for second. Both Merc drivers had been urged avoid hitting kerbs to prevent damaging their gearboxes.

Charles Leclerc was second for Ferrari as McLaren's Lando Norris starred in the final laps, charging to earn a post-race promotion to third at Hamilton's expense.

A week later rain disrupted qualifying for the Styrian GP but Hamilton still secured pole, while Bottas started from fourth behind Max Verstappen and Carlos Sainz. An early Safety Car enabled Bottas to mug Sainz for third, and he bided his time to make a move on Verstappen – lap 66 of 71 – to snatch second behind Hamilton.

KEY CORNER: TURN 1 This tricky corner is on an uphill slope, adding to the difficulty of judging braking effort, and it requires a fast exit for optimal speed on the straight that follows. The kerb after the apex is also hard to judge.



THE WINNERS HERE...



2020

Lewis
Hamilton
Mercedes

2020

Valtteri
Bottas
Mercedes

2019

Max
Verstappen
Red Bull

2018

Max
Verstappen
Red Bull

2017

Valtteri
Bottas
Mercedes



FINISHING STRAIGHT

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Author Vic Norman

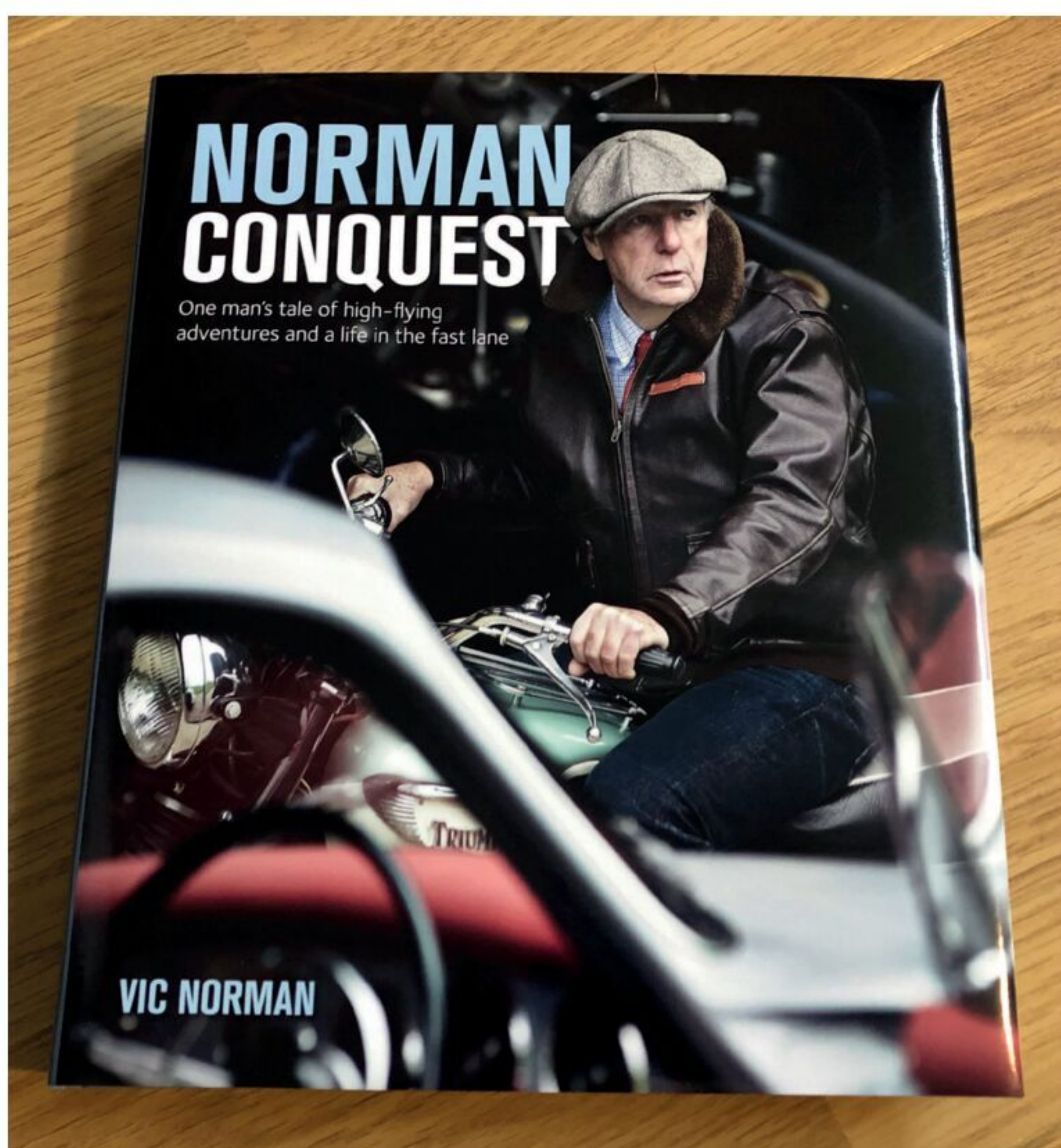
Price £45

porterpress.co.uk

Motor racing attracts some fascinating characters with eclectic connections. This illustrated memoir chronicles stunt pilot and sometime Ferrari dealer Vic Norman's colourful life, which included waterskiing as a youth with the likes of Stirling Moss and Donald Campbell. Norman's father, "an East End boy made good", made a fortune manufacturing US jukeboxes under licence in the 1950s. The book covers Vic's time in the RAF and the Red Arrows through to collecting and preparing racing cars, historic F1 racing, and latterly

a business providing aerial stunt displays and wing walking.

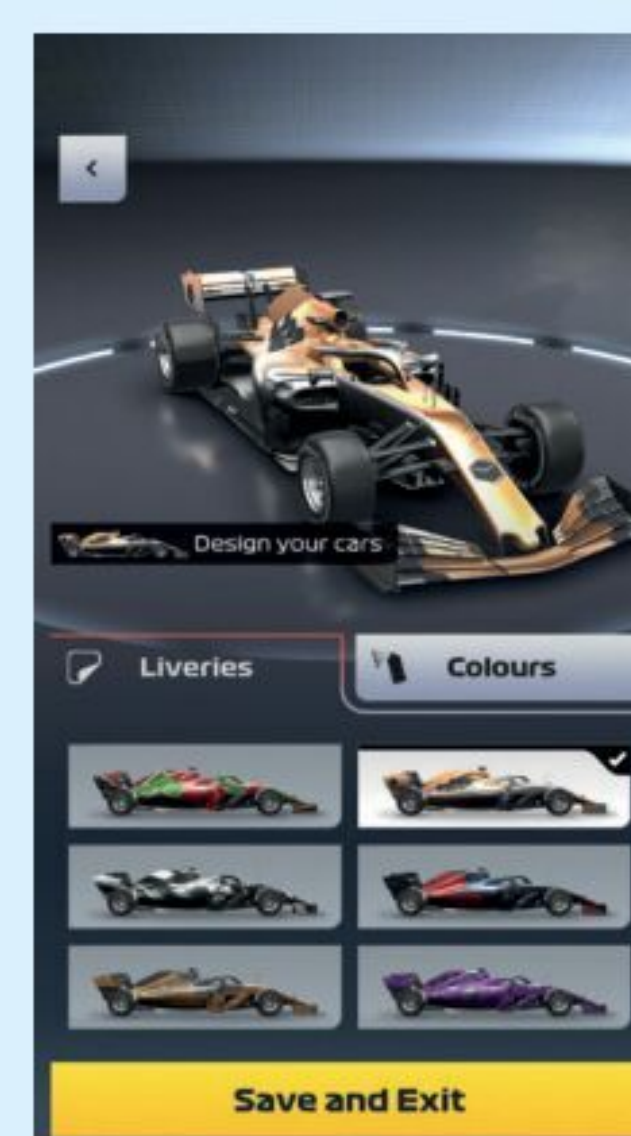
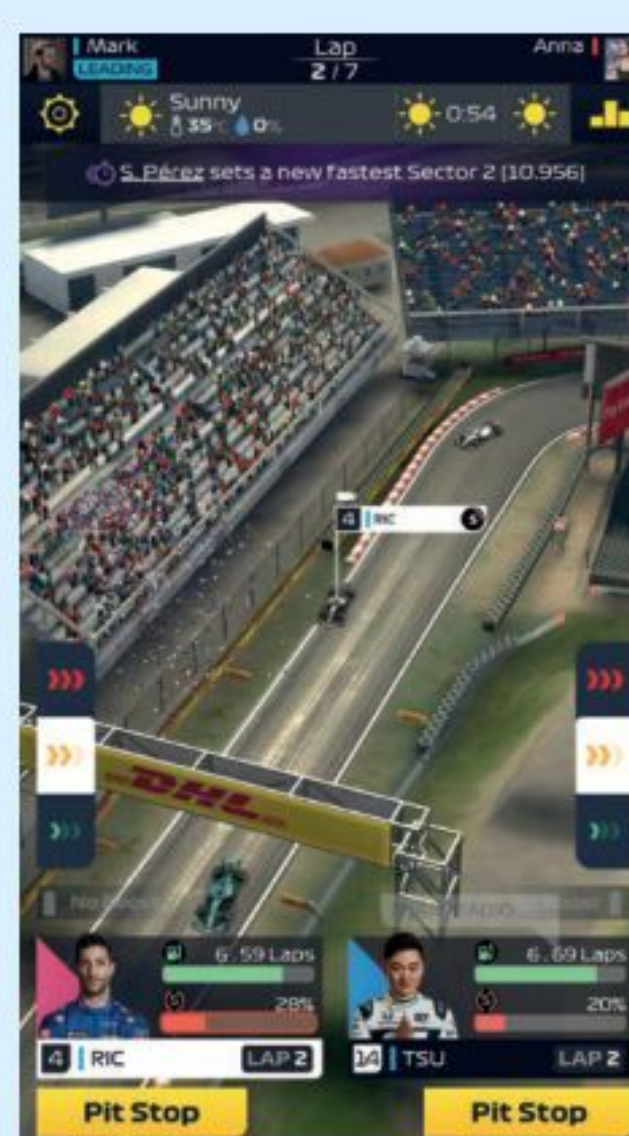
It's a life that's anything but dull. Norman was introduced to the Le Mans 24 Hours by – who else? – Alain de Cadenet, and he sold Pink Floyd drummer Nick Mason a Ferrari 250 GTO. He also prepared a Ferrari 512BB/LM for and raced with Pink Floyd manager Steve O'Rourke. Norman owned and raced a number of classic F1 cars including an ex-Fangio Maserati 250F and the P25 in which Jo Bonnier claimed BRM's first world championship victory in 1959.



TIP

Switch to wet tyres if you're expecting some rain to come in.

ID: 1231740f-488b-48f3-b0bd-78f9d3709159



F1 CLASH

Price Free

apps.apple.com/play.google.com

The popular 'freemium' mobile game F1 Manager has been updated and renamed F1 Clash for the new season. This latest iteration features all the teams and drivers competing in 2021 along with the latest liveries, and adds 48 new car components along with improved 3D graphics and a revised user interface.

As before, the game takes the form of a live strategic battle between equally matched players paired at

random. Winning races earns rewards which can be put towards buying new drivers and components, or upgrading your existing ones. While the game is free to play, loot crates can be unlocked with real money, expediting progression through the levels.

Existing players who participated in the 2020 season are able to spend their constructors' championship points on new drivers and components at the in-game store.

FORMULA 1 PORTRAITS – THE SIXTIES

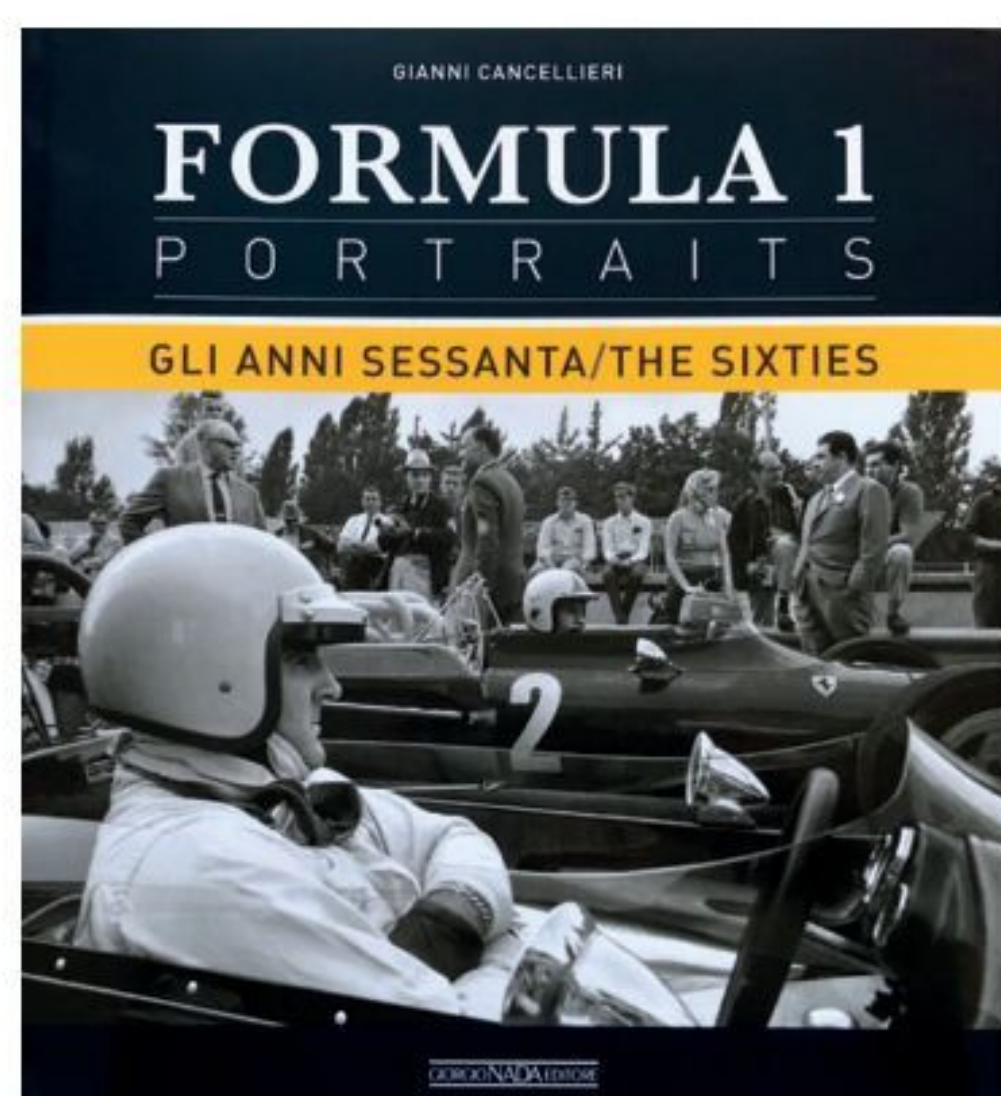
Author Gianni Cancellieri

Price €71.25

giorgionadaeditore.it

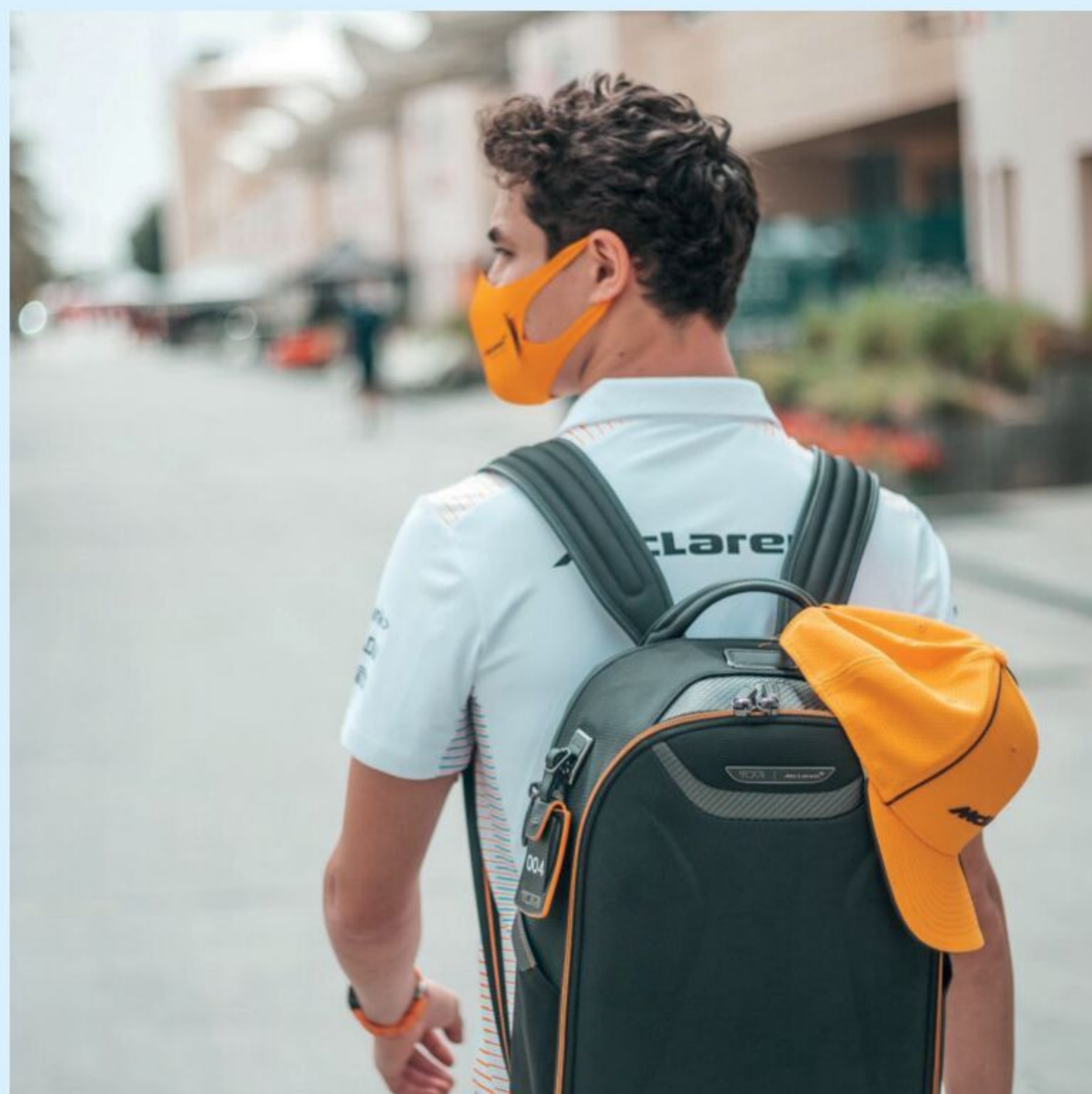
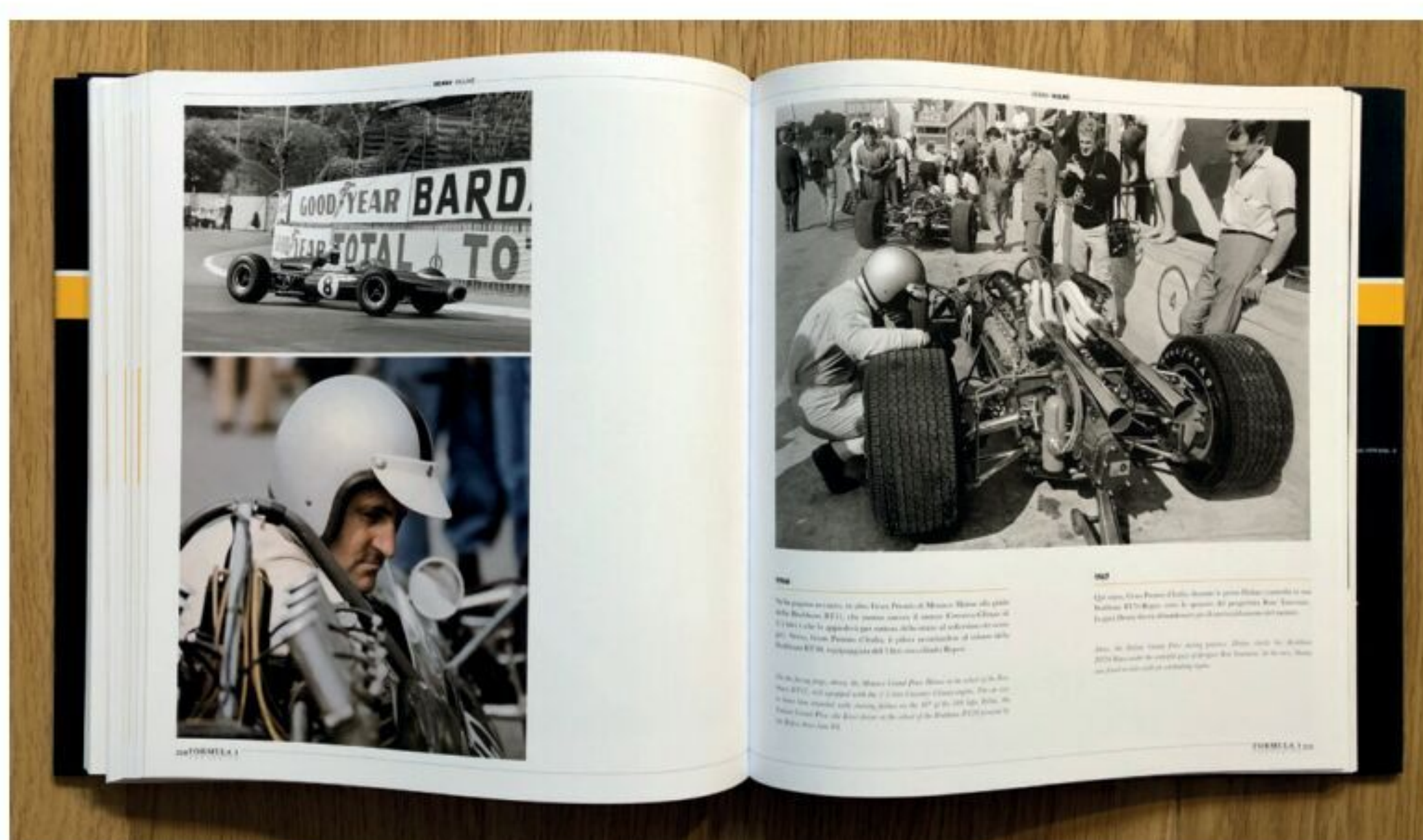
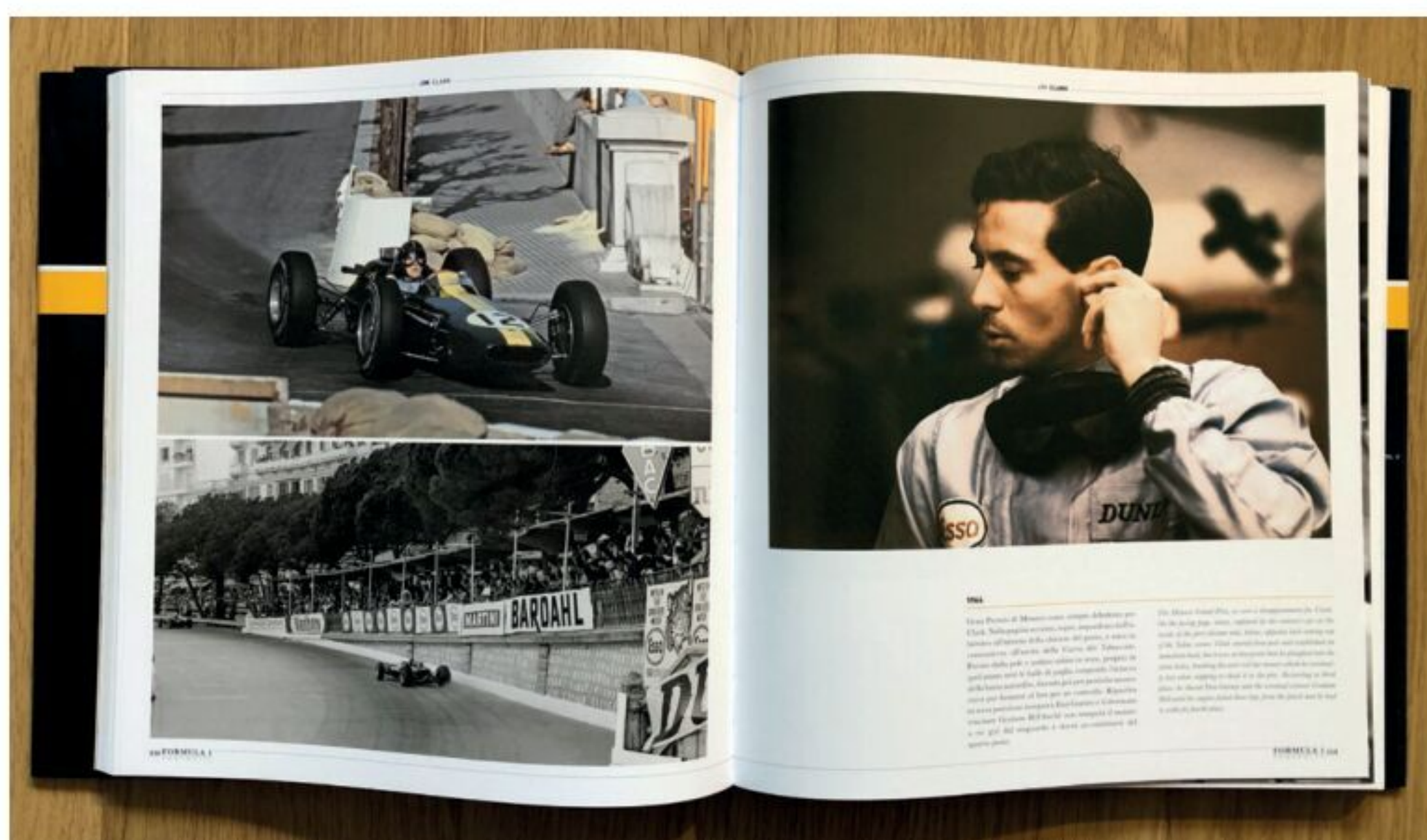
Another sumptuously produced hardback by Italian publisher Giorgio Nada, this is the first of a series which will offer rare and evocative portraits of Formula 1 drivers from each decade. Some of the pictures within are previously unpublished and many are truly remarkable. Author Gianni Cancellieri is a doyen of Italian motorsport journalism and his words are presented both in the original Italian and in English translation.

The majority of the book is given over to the leading drivers of the day, including Jack Brabham, Stirling Moss, Jim Clark, John Surtees and Jackie Stewart, and features action shots as well as candid portraiture which captures the atmosphere of the time. A smaller section entitled 'The supporting cast' features other



interesting characters from the time, including Chris Bristow, Piers Courage, Willy Mairesse, Johnny Servoz-Gavin and Lance Reventlow.

The standard edition of the book is limited to 1900 copies, and there's a collectors' edition of 99 copies signed and numbered by the author and presented in a slipcase.



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As travel restrictions ease, is your old carry-on luggage giving you the carry-on? McLaren partner TUMI has revealed a collection of automotive and racing-inspired luggage featuring high-tech materials and the distinctive McLaren papaya orange colouring.

The centrepiece is the Aero International Expandable 4-Wheel Carry-On, a hardshell case crafted in a mixture of materials including Tegr

thermoplastic, carbonfibre accents and moulded fabric. Like the Velocity Backpack it also features a USB port. The Trace Expandable Organiser co-ordinates with the Aero suitcase's design and features a pair of straps which enable it to slide over the case's handle when extended. The entry-level item in the range is the Orbit Small Packing Cube, a zip-top bag which weighs just 114g and is formed in ballastic nylon.



THE FINAL LAP

FINISHING STRAIGHT

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MUSINGS WITH
STUART CODDLING }

PICTURES



**motorsport
IMAGES**

F1'S TRICKY PLASTIC WASTE PARTNERSHIPS

In big business there will always be a tension between being seen to do the right thing and actually doing the right thing. Indeed, being seen to do the right thing has become a business in itself as global corporations partner up with organisations which can help them apply an environmental and socially responsible gloss.

You might argue a sport such as motor racing, largely dependent on the consumption of fossil fuels, both in terms of on-track operations and transporting personnel and equipment to venues, may as well just accept pariah status and get on with it. But that argument is not a great 'sell' to potential sponsors at the more investor-dependent end of the sport, particularly cash-hungry F1.

Eighteen months ago, F1 outlined a 'sustainability strategy' through which it aims to achieve a net zero carbon footprint. By its calculations, power unit emissions accounted for just 0.7% of F1's total carbon output with travel and logistics contributing almost three quarters.

To its credit, F1's strategy didn't depend solely on carbon offsetting, disparaged by environmentalists since it is essentially a displacement exercise.

Now F1 has announced a new facet of this strategy, eliminating single-use plastics from GP weekends by 2025. Well, not entirely new, since it had declared this back in March, along with the interim target of F1 staff ceasing to use single-use plastic bottles through 2021. What was presented in the run-up to Monaco was a re-announcement, with the addition of an invitation for fans to sign a pledge to reduce their own plastic use.

It's a laudable bit of recycling, but why? Perhaps because a few days earlier a new report revealed

Aramco, responsible for 4.3 million metric tons of single-use plastic waste in 2019, is a very visible presence at F1 races



that just 20 petrochemical companies, including three high-profile F1 partners, are responsible for manufacturing the so-called 'virgin' plastic polymers which make up 55% of the world's plastic packaging waste.

The worst offender named in the Plastic Waste Makers index is Red Bull fuel and lubes partner ExxonMobil, responsible for an estimated 5.9 million metric tons of single-use plastic waste in 2019. Number five, on 4.3 million metric tons, is F1 sponsor Saudi Aramco. Mercedes co-owner Ineos is also in the top 20. The figures are estimates but the analysis has credible bodies attached. It's published by the Australian Minderoo Foundation with partners including the energy research group Wood Mackenzie, the London School of Economics and the Stockholm Environmental Institute.

"Single-use plastics are getting the black flag in F1," proclaims

the news story on F1's website. And yet F1 continues to operate a high-profile partnership with the world's fifth largest producer of the raw materials that make them. Aramco has title sponsorship of two grands prix this year as well as pre-season testing, plus visibility on trackside signage. It also 'presents' the driver 'power rankings' published on F1's website after each grand prix. *GP Racing* received no reply to a request for comment from F1.

Mercedes' Toto Wolff was frank and admirably transparent on the subject, saying, "I'm not sure these numbers [in the report] are right. But we have a lot of responsibility, and also Ineos takes its responsibilities. The shareholders are very well aware that they need to be part of change as well. As a team, we have taken lots of initiatives such as banning single-use plastics from the factory our motorhome, our garages etc.

"But also, if there is demand for single-use plastics because some appliances simply can't be packaged in another way, that is how you will always do your business."

Certain single-use plastics simply aren't going to go away. That may not be what you want to hear – but it's better than a disingenuous silence, isn't it?

GP Racing has a podcast!

Search for 'Flat Chat with Codders' in your podcasting platform of choice.

PICTURE: ZAK MAUGER. ILLUSTRATION: BENJAMIN WACHENJE

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