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boosted their
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likes it or not...*



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Stuart
Codling
Editor



Is it sprint and be damned for F1?

“I don’t have the answer. I know what we have today needs tuning.” Christian Horner’s thoughts on Formula 1’s troubled and much-disliked sprint format won’t be taken by the commercial rights holder as a particularly useful interjection on the subject. But if pronouncements such as these are lacking in specific and actionable proposals to improve the format, they certainly chime with the majority opinion in the paddock: it’s not working.

The drivers think the sprints are pointless and so do the teams they represent. And, crucially, they’re not shy about expressing their contempt for the concept. Horner again: “It’s like you’ve won a long run [ie in a practice session] and got a medal for it.”

Nevertheless, F1 remains committed to the concept. You have to wonder why. Promoters remain divided over its draw in terms of ticket sales and this, theoretically, was the point – extending the spectacle over the whole weekend. Eliminating ‘pointless’ practice sessions where drivers circulated as a car-fettling exercise was also (quietly) intended to introduce unpredictability. But this has had unintended consequences, as in the US where lack of running on full tanks in practice was fingered as the likely cause of the plank wear which resulted in Lewis Hamilton and Charles Leclerc being DSQ’d.

I have a suspicion – this based on a weekend of having to play dodge-the-selfie in the Austin paddock – that at least part of the motivation for tinkering with the weekend format is to bolster the highly lucrative (for F1) VIP/Paddock Club ticket

offering on Saturdays. As such we can expect more sprints, rather than fewer, as the years progress.

Could sprint fatigue also be related to one driver’s domination? Winning the world championship hasn’t quenched Max Verstappen’s thirst for victory and when one individual takes pole on Friday, another pole and a race win on Saturday, then another win on Sunday, the reaction of the mainstream media and the punter in the street is to shrug their shoulders and say “meh”.

One way forward which would benefit the category as a whole is if the other competitors could be prevailed upon to get their acts together. One such is Ferrari, which has endured another troubled season after promising so much at the dawn of the second ground-effect era. This month we consider one half of the driver line-up, Carlos Sainz; the combination of Carlos with Charles Leclerc is rightly considered to be one of the strongest in F1 and yet, as recently as this summer, word was that Maranello’s movers and shakers had cooled their enthusiasm for Carlos somewhat.

While that picture has changed once more, what we *really* need is for Ferrari to get itself into a place where both drivers are in the mix on a given weekend rather than just one...

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your podcasting platform of choice

Contributors



OLEG KARPOV

Oleg managed to corner AlphaTauri boss Franz Tost for a final interview (p56) and tried to find out why Oscar Piastri remains so calm (p44)



ANDREW BENSON

BBC Sport’s chief F1 writer has analysed the performances of Carlos Sainz and why the Spaniard remains a good fit at Ferrari (p32)



ALEX KALINAUCKAS

What does an F1 team do to prepare itself ahead of a visit to a circuit for the first time? Alex provides the answers on page 52



MATT KEW

In addition to his fantastic Flat Chat column (p106), Matt reveals what is on Mercedes driver George Russell’s radar (p42)

Team principals

Editor
Stuart Codling
President, Motorsport Network
James Allen
Vice President of editorial
James Dickens

Drivers

Managing editor
Stewart Williams
Art editor
Frank Foster
Staff writer
Oleg Karpov

Pit crew

Principal photographer
Steven Tee
Columnists
Ben Edwards
Pat Symonds
Mark Gallagher
Maurice Hamilton
Matt Kew

Photo agency
Motorsport Images
Publishing director
Sunita Davies

Advertising

Tandem Media
Catherine Rowe
T: 01233 228750
M: 07775 705856
catherine.rowe@tandemmedia.co.uk

Subscriptions

Email: help@asm.secureorder.co.uk
Customer hotline/back issues
0344 848 8826
Subscriptions marketing executive
Matt Sleight



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It started with a kiss...

It might no longer be the only US-based race on the calendar but the US GP continues to sell out on race day and break new ground – although, given the sheer volume of ticker tape filling the air in the podium ceremony, you'd need a keen eye to pick out one of the new elements this year. Race sponsor Lenovo laid on the first kiss-activated trophies... I kid you not.

The Pininfarina-designed, recycled aluminium trophies were designed to light up with the national colours of the winning driver when kissed in a specific spot. I somehow doubt Lewis Hamilton, present in this shot, was in a kissing frame of mind after being disqualified...



Photographer
Mark Sutton

Where Austin, USA
When 3:58pm, Sunday
22 October 2023

Details Nikon D6
180-400mm lens, 1/1000th @ F8





All aboard the Hülkenberg train

Every year you try to breathe some new life into established locations, so in Mexico I looked for a slightly different angle in the Foro Sol stadium. It's the biggest spectator enclosure in Formula 1 and has a suitably charged atmosphere, though I arrived some time after the football-style fight between Ferrari and Red Bull fans...

I wanted to get a shot over the fence at *parce fermé*, hence I got here about 10 laps from the end. It was slightly cross-lit thanks to the late afternoon sun and, though 'Checo' Pérez had long since checked out, the crowd was really getting into watching Nico Hülkenberg defend 10th place against this pack of cars.



Photographer
Steven Tee

Where Mexico City, Mexico

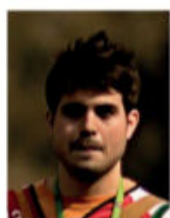
When 2:59pm, Sunday
29 October 2023

Details Canon EOS R3
24-70mm lens, 1/2000th @ F5.6

Panning for orange gold

During the lull in the race while the track workers proceeded surprisingly unhurriedly to sweep up various bits of debris left over from the first-corner shunt, I started playing around with slow shutter speeds to see if it would be possible to do a panning shot with the pit-exit railing framing the cars on track.

Once the race restarted I found I couldn't quite make it work with the cars on the track itself. But it was much more successful with cars coming down the long road out of the pits, framed by barriers on each side – which lead your eye through the frame. McLaren's colours worked especially well; this is Lando Norris leaving after his first pitstop.



Photographer

Zak Mauger

Where São Paulo, Brazil

When 3:04pm, Sunday

5 November 2023

Details Canon EOS R3

70-200mm lens, 1/15th @ F32





Another one for the highlights reel

Among the privileges of being Aston Martin's photographer this season has been the opportunity to work alongside Fernando Alonso and experience first-hand the energising effect he has on the team. The last few races have been tough on the whole organisation, with upgrade packages not working as expected and various on-track incidents costing opportunities to score points.

So Fernando's performance in Brazil was utterly electrifying. And you can tell how much it meant to everyone. He's won 32 grands prix but fought for this third place equally hard – and the passion and emotion he displayed afterwards were fantastic to capture.



Photographer
Zak Mauger

Where São Paulo, Brazil

When 4:03pm, Sunday
5 November 2023

Details Canon EOS R3
16-35mm lens, 1/1250th @ F4






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LAS VEGAS

NEXT RACE LAS VEGAS





Winning isn't a sombre-o occasion

The Mexico City Grand Prix podium is a tricky one to shoot because it's set up to work best for TV and the on-site crowd. Parc fermé is off to the left and moving around is tricky – especially once the crowd have been set loose onto the 'floor' of the stadium. Then before you know it, the whole podium assembly rotates in the *Numberwang* style to reveal a DJ and then the party begins. So I thought I'd 'suck it and see' by shooting the podium side on.

Here Max is sitting on his car wearing his victor's sombrero as the whole ensemble is hoisted up. The crowd was remarkably generous considering they wanted his team-mate to win...



Photographer
Zak Mauger

Where Mexico City, Mexico

When 4:17pm, Sunday
29 October 2023

Details Canon EOS R3
600mm lens, 1/1000th @ F4

SPRINT EVENTS LOOK SET FOR FURTHER CHANGE

01 **Two and a half years since** the introduction of the sprint concept Formula 1 is still struggling to home in on the right format to justify having two races on some race weekends. The current rubric is once again coming in for criticism – and potential changes have become one of the most debated topics in the paddock.

As has often been the case lately, Max Verstappen placed himself at the forefront of the debate. Since becoming world champion, the Dutchman has increasingly used his influence to steer discussion in the direction he feels is right. His main argument is that the current sprint format robs the main event of its intrigue. He'd rather see Formula 1 get rid of the concept altogether.

"Once we do a sprint race you get the big picture anyway for the main race," he argued in Qatar. "You know more or less

which cars are going to be really good in the race or the ones that are going to drop back. So it takes away the excitement, from when I remember I was a fan and outside of the F1 world – that sense of not knowing which car is particularly amazing in the long runs or have they nailed the race setup. You watch qualifying and you say,

ANOTHER RADICAL IDEA IS FOR THE SPRINT GRID TO BE SET IN REVERSE CHAMPIONSHIP ORDER

'Wow, OK, but it might be that one car is in front but will drop back in the race.' The result is unclear and then you wake up for the Sunday race and you see it all unfold – but because of the sprint race it takes that away. So if nothing happens and they don't crash, then they are going to win the race."

His view is broadly shared by other drivers but some of them believe that if F1 is so keen to keep the sprints, it should go as far as adopting the reverse-grid format often used in the junior series. This is one of the scenarios being discussed in F1's sporting advisory committee meetings; not just outside observers but increasingly those involved in the sport, too, feel the current format and weekend schedule are far from ideal.

Sprint races were introduced for the first time in 2021. The short Saturday heats initially acted as a sort of interlude between qualifying and the main race, although the result then determined the grid for the grand prix. It quickly became obvious this arrangement wasn't working: there was a

perception that drivers were reluctant to take too many risks in the short Saturday races, for fear of jeopardising their grid positions for the main race; and, since the sprint tended to reshuffle the cars into pace order, the formula wasn't conducive to increased spectacle. Another reason to change the format was the devaluation of the Saturday morning practice session, which was being held after qualifying under parc fermé conditions (ie the teams were unable to work on car setup).

The new format introduced this year at the Azerbaijan weekend enshrined the sprint as a separate event within the main weekend programme. The grid for the sprint is now determined by the results of the shootout that precedes the sprints, replacing the Saturday practice session. This means the sprints no longer influence the grid for the main race, theoretically reducing the incentive for drivers to be overly cautious. But this format was immediately labelled "repetitive" by Fernando Alonso, who didn't like the fact that, despite the catchy title, the shootout was essentially a re-run of qualifying only with slightly shorter segments. Some also find the weekend's schedule a little confusing.

"I think it needs tweaking a bit more," noted Aston Martin's performance director Tom McCullough during a press conference in Brazil. "Even my Dad, who's quite an understander and follower of Formula 1, sometimes says, 'So just remind me, is it qualifying on Friday for the main race?' And I just think if somebody at that level is having

The Circuit of The Americas hosted its first sprint race this year but its chairman reckoned the extra race didn't increase the demand for tickets over the weekend



02 ELLIOTT PHONES HOME

Merc parts company with tech leader

questions, the fans are going to get confused. So our job is to put a simpler, better, more understandable format, still have the excitement of two races, I think.”

McCullough also pointed out that sprints had been introduced “for a reason”, and that reason was “the fans” – but the main, and essentially only, metric F1 relies on to conclude that these “fans” really like sprints is TV ratings data. They show that sprint weekends do indeed attract bigger audiences than regular weekends. This, in turn, is still F1’s main motivation for continuing the experiment.

Not everyone, however, is convinced the public is really excited about the sprints. Bobby Epstein, chairman of the Circuit of The Americas, which hosted one of the sprints this year, claimed the addition of a short race to the weekend schedule hadn’t increased demand for tickets.

“It didn’t help,” Epstein said in a media briefing ahead of the US GP. “It’s a surprise. You have to decide at what point



Max Verstappen admitted in Qatar that he’s no fan of the sprint format and, if he had his way, he would ditch them altogether as it takes away the excitement for the main race

03 WAR THREAT IN MIDDLE EAST

are people coming for the event, and I think our fans *are* coming for the event as much as they are for the sport. So I think it still remains to be seen whether the sprint race is something the fans are embracing, or it’s more controversial. You’ve got people that are proponents of it and advocates, and you have others that say, ‘I like it the way it was.’ It’s still an experiment at this point.”

One way or another, it looks like the exact shape of the sprint weekends will change again next year – and the only question is how radical the update will be. One of the options is to split the sprints off into a separate championship that will not count towards the main championship – the motivator will be a prize fund of up to \$1 million for the winners.

Another radical idea is for the sprint grid to be set in reverse championship order. This option would not only lessen the problem of the short Saturday races acting as ‘spoilers’ for the main events, since the leaders would start from the back rows, but it would also give the teams at the bottom of the standings an extra chance to fight for points more regularly. Still, this would be sure to displease purists and traditional fans – and add to the debate over Formula 1’s growing reliance on gimmicks to spice up the show.

The most likely option at the moment, though, is for F1 to keep the current format but change the weekend schedule, moving qualifying from Friday evening to the traditional Saturday afternoon slot. The sprint would then be held on Saturday morning, with the shootout on Friday



determining the starting order. At the same time, there is also talk of changing the parc fermé rules to allow teams to make changes to their cars after the sprint, giving them the opportunity to improve their setup before qualifying and the main race.

What can be said with more certainty is that Formula 1 has no intention of abandoning sprints for the foreseeable future – despite all the criticism, including that levied by its current champion.

MORE TECH TUMULT AT MERCEDES

02

When a Formula 1 team fails to achieve its goals for the season – especially when those goals include winning the championship – the subsequent departure of its technical leader is a fairly common story. But in the case of Mercedes and Mike Elliott, despite this theoretically obvious cause for the HR department to draw up a P45, the circumstances seem a little different.

It was under Elliott's leadership that Mercedes developed the W13, the first car to be designed under the new regulations and the first to fail to earn a constructors' title for the team since 2013. The "zero-sidepod" car proved to be as different from the designs put forward by the other teams as it was problematic. It took Mercedes almost a year to make progress with the concept, but George Russell's victory in Brazil last autumn contributed to a longer-term misstep, as Mercedes eventually decided to stick with the same design over the winter – before realising at the beginning of this year that it was a mistake.

Back in Bahrain, Mercedes boss Toto Wolff announced



It was under the lead of Elliott (above) that Mercedes developed the concept behind the W13 (above, right). Both man and concept are now history at the team



that the concept had been abandoned for good. Elliott then stepped down as technical director, a position he had held since 2021, in April. The team moved him to the position of CTO, 'castling' as he and James Allison exchanged roles. Then, in the autumn, a few weeks before the end of a season in which Mercedes had yet to win a single race, it was announced that Elliott would be leaving the team.

"I have decided that now is the right time to make my next step beyond Mercedes," he was quoted as saying in the team's press release, "first to pause and take stock, after 23 years of working flat-out in this sport, and then to find my next challenge. I would like to thank my teammates for a fantastic 12 seasons together and wish them every success for the years to come."

In the spring Wolff insisted that the reshuffle was not a direct result of the decline in results over the past two years. The suggestion to swap roles with Allison in the spring was said to have come from Elliott himself – as this latest decision apparently did, too.

"Mike was my number one employee for many, many years in terms of how he performed," Wolff told Sky Sports, commenting on Elliott's departure. "We are going to miss one of the most clever people in the industry. It was just a hard toll on him over those years. And I find it very remarkable that somebody can say, 'You know what, I need to do something else', rather than holding on to this."

Wolff, who has repeatedly stressed the importance of a no-blame culture at Mercedes, reiterated that Elliott cannot be held predominantly responsible for the team's recent struggles – since it wasn't just him who decided to pursue the wrong concept and then stick to it. ▶

NEWS IN BRIEF... NEWS IN BRIEF...NEWS IN BRIEF...

DRIVERS



LUKE BROWNING, the 2022 Aston Martin Autosport BRDC Young Driver award winner, completed his first F1 test in late October as part of the AMABA prize package. Browning completed 44 laps of Silverstone's GP circuit in an AMR21.

DRIVERS

Formula E champion Jake Dennis and Zak O'Sullivan, the 2021 AMABA winner, will both get their first taste of an F1 practice session in Abu Dhabi. Zak will step in for Alex Albon at Williams, whilst Dennis will get his chance in one of the two Red Bulls.

ACADEMY

The all-female F1 Academy, which ended its inaugural season at the US GP in Austin, will support F1 for all of its seven events in 2024, starting in Jeddah and finishing in Abu Dhabi. Each F1 team must supply one driver to the series and feature its livery on a car.

KARTING

Former Williams and Ferrari engineer Rob Smedley has launched the Global Karting League, which aims to cut costs for guiding a child through karting and is based on a state-of-the-art all-electric karts. See: www.globalkartingleague.co.uk/gkl-uk

PICTURES: ZAK MAUGER; MARK SUTTON; JAKE GRANT



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“It’s never the decision of a single person,” Wolff said. “As a group, we’re trying to build the quickest race car and we were so far down the route with that concept of a car that we thought maybe we got on top of it. We didn’t. That’s why we changed it.”

“It’s not always a single person’s fault if a car doesn’t perform, and not one single person that makes the car faster.”

He also mentioned that losing Mike should not constitute a problem for Mercedes, as it has “such a strength in the organisation that you can take one out and everybody else is going to cover that”.

Elliott, though, is hardly the first high-profile specialist to have left the team in recent years.

WAR THREAT TO MIDDLE EAST RACES

03 Formula 1 insists there’s no likelihood of the Abu Dhabi GP being cancelled, despite the conflict in the Middle East.

The final round of the championship at the Yas Marina circuit is scheduled for November 24-26, but speculation about a cancellation ensued after the UK’s Foreign & Commonwealth Office updated its terrorism alert level for the United Arab Emirates at the end of October, saying “indiscriminate” attacks were “very likely”, including in places “visited by foreigners”.

The FCO noted: “Terrorists continue to issue statements threatening to carry out attacks in the Gulf region. These include references to attacks on western interests, including residential compounds, military, oil, transport and aviation interests as well as crowded places, including restaurants, hotels, beaches, shopping centres and mosques. You should maintain a high level of security awareness, particularly in public places and at public events.”

The announcement was linked to the Israeli-Palestinian conflict, but Formula 1 was quick to allay fears, reassuring teams that there was no risk of the race being called off. In fact, the FCO’s update places the UAE on the same terror status as France, Belgium and Bahrain, which have all recently hosted F1 races.

Last year, F1 cancelled the Sochi race following the start of the military conflict between Russia and Ukraine. However, the same year Saudi Arabian GP went ahead despite a missile strike on a nearby oil facility during the first practice session of the race weekend and subsequent pushback from drivers who discussed the possibility of boycotting the event.

In other calendar news, São Paulo will remain on the F1 calendar until at least 2030. A new five-year deal was announced during the race weekend at the Interlagos circuit.

Abu Dhabi will host the final race of the season, as it did last year and has done so on 10 other occasions, despite an updated terror alert



FORMULA 1 WAS QUICK TO ALLAY FEARS, REASSURING TEAMS THAT THERE WAS NO RISK OF THE RACE BEING CALLED OFF

F1 MASTERMIND

Your chosen specialised subject: the world’s greatest motorsport

- Q1** How many laps in 2023 GPs has Max Verstappen completed when outside the top 10: 7, 16 or 25?
- Q2** Who won both of the Belgian GPs held at the Nivelles circuit in 1972 and 1974?
- Q3** Yuki Tsunoda is the third Japanese driver to claim a fastest lap. Who are the other two?
- Q4** In 2010 Jenson Button, Fernando Alonso, Lewis Hamilton and Sebastian Vettel all led the world championship, but who led it for the most races?
- Q5** True or false: Ferrari supplied engines to both Red Bull and Toro Rosso in 2006?
- Q6** Who am I? I started 74 GPs from 1974 to 1980 for March, Surtees and Alfa Romeo, winning once and claiming one pole position and one fastest lap.
- Q7** In which two seasons did Valtteri Bottas finish as runner-up to world champion Lewis Hamilton?
- Q8** Excluding those drivers who have won a race since, which current drivers have not been on a podium since 2020?
- Q9** Nico Hülkenberg recorded his 200th GP start in Mexico, but where and when was his first?
- Q10** 16 drivers have won GPs with Williams, but who are the five that didn’t win with any other teams?



1 16 Emerson Fittipaldi **3** Satoru Nakajima, Kamui Kobayashi **4** Fernando Alonso (10) **5** False (it was only Red Bull) **6** Vittorio Brambilla **7** 2019, 2020 **8** Lance Stroll, Alex Albon **9** Bahrain 2010 **10** Keke Rosberg, Thierry Boutsen, Jacques Villeneuve, Ralf Schumacher, Pastor Maldonado

PICTURES: SAM BLOXHAM; MARK SUTTON; JAMES SUTTON; MOTORSPORT IMAGES ARCHIVE

INTRODUCING A2RL: Autonomous racing at 300kph



Cutting-edge racing cars line up on the Yas Marina grid, turbocharged engines idling restlessly, tyres sticky, heat waves shimmering, the stage is set. It all seems familiar, but there is one key difference, there are no drivers at the wheel. Welcome to the inaugural Abu Dhabi Autonomous Racing League (A2RL).

A NEW ERA OF RACING

This new evolution of motorsport has been designed to test and encourage the forefront of autonomous and racing technology while demonstrating the capabilities of advanced safety systems found in the road cars of today. Every year, ten teams from the world's best universities and research institutions will battle it out to claim a stake in the US \$2.25 million purse. A2RL is part of a series of challenges created by ASPIRE, a key element in the country-wide drive within Abu Dhabi to put itself at the forefront of innovative technology development.

"A2RL integrates artificial intelligence, autonomy, and extreme sports to push the boundaries of future mobility. It will be the largest autonomous racing league in the world and make Abu Dhabi a global hub for these advanced technologies," explained Dr Thomas McCarthy, Executive Director – ASPIRE – Lead of A2RL.

REAL CARS, REAL RACING

The new series makes the best use of the blisteringly quick Super Formula SF23 racing car. The fastest racing outside of Formula 1, Super Formula has been a long-established finishing school for some of the world's best drivers. Recent alumni include F1 race winner Pierre Gasly and Red Bull reserve driver Liam Lawson.

McCarthy adds, "The SF23 platform is fast, capable, and highly respected within the motorsport industry. From the beginning, the cars will be able to drive tracks with a base level of performance but it will be up to the teams to optimise, refine, and outperform one another in a highly-competitive racing spectacle."

The inaugural event will take place on 28th April 2023 at the Yas Marina Circuit. Ten international teams have been announced, from institutions across North America, Europe, Asia and the UAE.



THE ENGINEERS ARE THE STARS

McCarthy believes that the computer scientists, programmers, and engineers behind the cars will become the stars, injecting personality and rivalry into the competition. All teams will take part in two weeks of training at Yas Marina ahead of the annual race to fine-tune their algorithms, but under racing conditions, the only human input is an emergency kill switch.

"Our aim is to harness the ultimate combination of collaboration and competition, with institutions and academics sharing breakthroughs, and expanding humanity's collective knowledge. Eventually, we see A2RL becoming a key part of the OEM development cycle; an opportunity for them to develop, test, and prove cutting-edge AI," concludes McCarthy.

A2RL will be an annual global racing circuit fixture. The event spotlights global priorities like pioneering transport's future, inspiring next-gen STEM talent, and ensuring a tangible impact beyond the racetrack - it is sure to provide quite a spectacle as well.

To find out more go to a2rl.io



THE F1 ANALYST

BEN EDWARDS

@benedwardstv

PICTURES  motorsport IMAGES

Thankfully for him, a non-finish for Lauda meant Ferrari retained the advantage to claim the constructors' trophy for the fifth time in eight years; Rosberg's calm fifth-place finish on the road secured the first of his family's pair of world titles, followed up by his son Nico in 2016.

Mario's son Michael did not manage to repeat his father's glory in F1 as a driver in 1993, but he has reconnected the Andretti name with F1 in recent months. Of the seven organisations that pitched to become an 11th team in F1, it was only Andretti Formula Racing that got approval from the governing body to continue the bid to the next stage of the process. That is surely a buzz for many of the fans attending Las Vegas with the prospect of an American team connected to a US manufacturer in the form of Cadillac and GM playing a part in the show in a couple of years, yet there are no guarantees so far.

That initial process was tough enough; the historic connection with the sport had very little to do with the approval which was deeply analysed in technical and financial ways. The next step is to make a deal with F1's commercial rights holder to become a team alongside the established line-up, and there are objections being expressed both privately and publicly from those other teams. F1 might have

hit the jackpot recently but not everyone is willing to share. When Keke Rosberg won the title in 1982 he was driving for Williams, a group which has changed in ownership and is trying to update itself, and which is unhappy about having another entrant added to the list. Current team principal James Vowles expressed his opposition some weeks ago: "My thoughts are very clear. Williams is against the addition of an 11th team and very strongly against."

The main objection is about finances and how an extra team could deplete earnings for those that already exist. Yet it feels strange that a sport, growing in quantity and quality around the world and drawing in huge numbers of spectators to areas that in the past have shown very little interest, would not be able to gain from additional entries, more drivers, and more unpredictability in the races.

Fundamentally it is all about making deals that settle the discordancy and ensuring that a new organisation will be able to perform at the level required. But for the future of Las Vegas, just imagine the extra boost an Andretti team could bring. This is a location where legendary music artists from all over the world bring crowds flocking to their high-profile residencies, one recent example being Kylie Minogue. Her songs such as *On A Night Like this* and *Spinning Around* will be the perfect backdrop for the event while Andretti's dogfight to join F1 could be suitably themed by her US chart-topper *Get Outta My Way...*

F1 AIMS TO HIT THE JACKPOT

Las Vegas has launched itself onto the scene with the aim of becoming one of the key Formula 1 weekends of the next decade and a big earner for the sport. A revenue of \$500 million is expected in this first year with more to come in the future, generated by rising F1 passion in the USA combined with the unique mix of entertainment the city presents: from gambling to dining out, from concerts to one-offs such as the opportunity to buy a Lewis Hamilton Mercedes F1 car at auction. It all adds to the thrill and cash outlay.

It seems like a different world from the last time F1 raced in Las Vegas, when the crowd size of around 30,000 was pitiful despite the fact that a superstar American was back on the grid. Mario Andretti was standing in for the injured Didier Pironi at Ferrari in the last two races in 1982 and, having taken pole position at the penultimate round on Ferrari home territory in Monza, might have expected a huge turnout of fans at Caesars Palace in Las Vegas – especially since the constructors' and drivers' titles were still live.

Instead, the hotel car park-based track did little to tempt people either within the cars or watching from outside. With tight hairpins and constant



The track in the Caesars Palace car park for races in 1981 and 1982 was not one of F1's finest

turns that were gruelling on the neck, it was a venue first used in 1981 – Carlos Reutemann lost the championship by just one point there, dropping inexplicably from pole position to finish a lowly 8th. Nelson Piquet was the man who stepped up by grabbing fifth to earn vital points and the title. When 1978 champion Mario Andretti was contesting what would prove to be his last ever GP some 11 months later, he was under pressure as Ferrari needed to stay ahead of McLaren in the constructors' battle. He worked hard at it, outqualifying key rivals John Watson and Niki Lauda even though all of them were a bit further down the grid than they would have hoped.

In the race Mario jumped ahead of Keke Rosberg, the man who was playing safe with the drivers' title within reach, and Andretti was running in a solid fifth place until a rare Ferrari suspension failure ended his F1 campaign.



Demo events in Las Vegas have already proved popular and the venue is a big part of Formula 1's future plans

Mario Andretti's F1 career came to a close in the second of the Caesars Palace GPs when he stepped in to race for Ferrari



As Ferrari and McLaren battled for the constructors' title, fifth in 1982 was enough for Rosberg to claim the drivers' crown

In the first Vegas race in 1981 polesitter Reutemann finished a lowly eighth and missed out on the championship as a result



Michael Andretti will be hoping that his team is on the grid at a Las Vegas GP before too long

PICTURES: ALEXANDER TRIENITZ; MOTORSPORT IMAGES ARCHIVE; FORMULA 1. ILLUSTRATION: BENJAMIN WACHENIE.



UNDER THE HOOD

PAT SYMONDS

PICTURES  **motorsport** IMAGES

CUTTING LOSSES ISN'T SCIENCE F(R)ICTION

It is well known that in order to get power from an engine one needs to get a lot of air into it and use that air to combust the fuel as well as you can. What's often less appreciated is that power can be significantly increased if you minimise the many losses involved in running the engine. So let's examine this, the second side of the equation.

A kilogram of fuel contains around 43 Megajoules of chemical energy and, when we boast that an F1 engine is over 50% efficient, it's the same as saying that somewhere around 21 MJ of that energy is going to waste. So where does it go and what can we do about it?

Much of the losses are heat losses in the exhaust and the best way to recover this energy is with a turbocharger – which will use some of this energy to drive a compressor and feed more air into the engine, increasing its power. Unfortunately, this doesn't come totally for free since some losses occur in what's known as the gas exchange process: the filling of the cylinder with a combustible charge and subsequent emptying of the products



In 1989 Ferrari ran a four-bearing crankshaft to reduce frictional losses but this set up vibrations which regularly caused the new semi-automatic gearbox to fail

of combustion. To empty it you want nice unobstructed flow and the turbocharger turbine obstructs this flow, increasing back pressure and robbing some performance. But it does provide a net gain and is almost standard on engines today.

Friction is an obvious loss and oil plays a significant role in this. The main sources of friction are the piston skirts and rings, the crank and cam bearings, the cam followers, the cam drives and their bearings, the valves sliding in their guides, and the friction of the many rotating seals. The engine ancillaries such as the oil pressure and

scavenge pumps and the alternator are also culprits.

The oil, while reducing friction, also adds to losses both from the shearing of the oil and the parasitic losses of spraying into moving parts, particularly the pistons where it is deliberately aimed at the underside to try and cool the piston. Most people think of oil just as a lubricant, but it has an important cooling function. The oil coming out of a main bearing can reach 300°C so the oil needs a very high temperature shear strength – and as much care needs to be taken in designing an exit path for the oil as is used in ensuring the oil gets into the right places. Keeping it cool is a double hit as, with somewhere around 45kW to dissipate, large coolers are required which in turn adds to drag and a further efficiency loss.

A race engine relies on high piston pressures and these lead to a high side load on the piston which tends to increase the ring and skirt friction. A neat way to reduce this is to offset the crank slightly from the bore centre line so that at maximum combustion pressure the conrod is more upright, reducing the side load.

The engine designer also needs to minimise distortion, not an easy thing to do when the engine is very hot (which reduces the material stiffness) and when a light engine is also part of the design criteria. Distortion increases friction and is both variable and less predictable.

Coatings and surface finishes also play a part. Oil relies on hydrodynamics to maintain a thin film between moving parts but, when a piston is at the extremes of its stroke, it is stationary, leading to a breakdown of the oil film. Coatings such as DLC (Diamond Like Carbon) were developed in racing and, while their use is ubiquitous in pistons, the crank and the valve train (where the contact pressures between the cam and the follower are extremely high) of a race engine, they are now in use in several production engines. As far as surface finishes go, honing has always been used on cylinder bores to produce a surface smooth enough to reduce friction and yet rough enough to retain oil; but today, laser honing is also used where microscopic pockets are created on the bore using a laser beam after a first honing process. A finish hone then removes the melt protrusions arising from the laser ►



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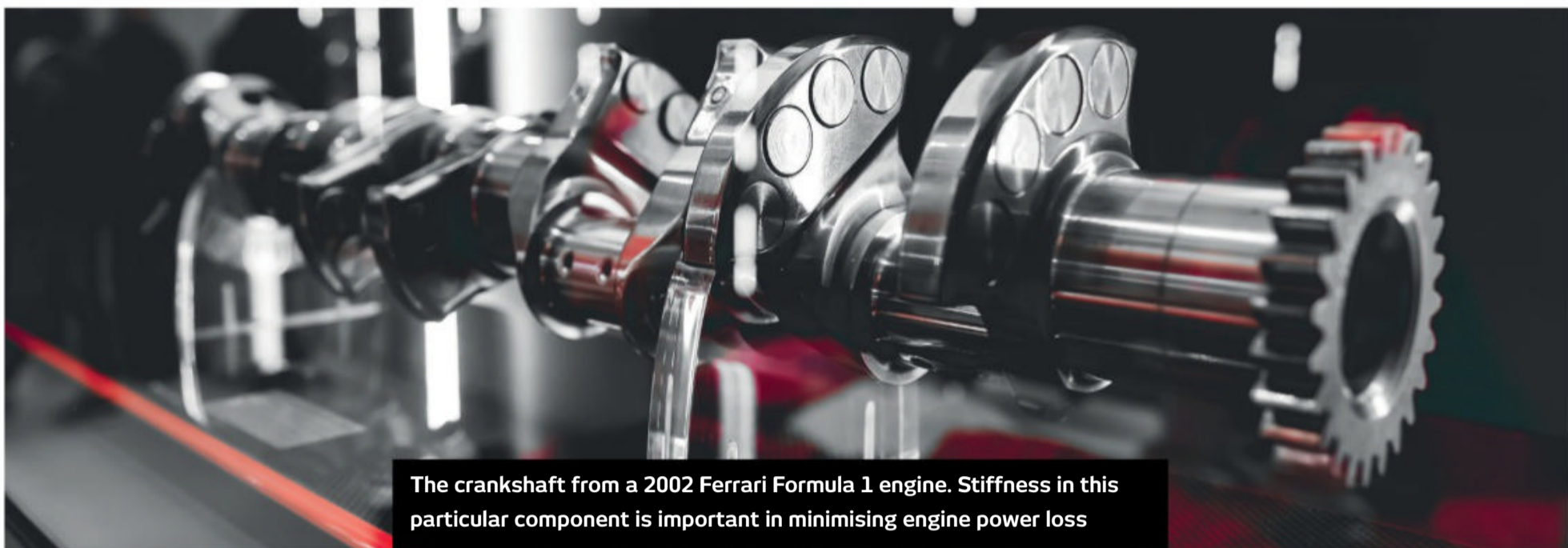
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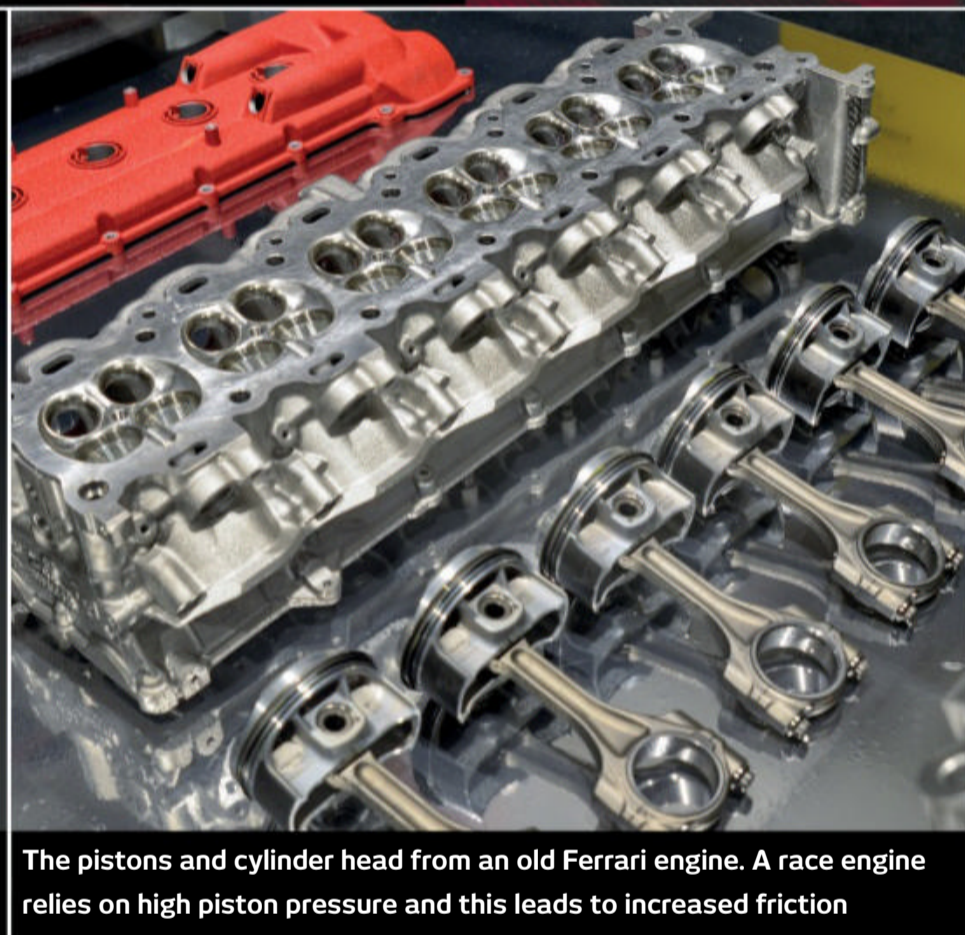
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HOSPITALITY



The crankshaft from a 2002 Ferrari Formula 1 engine. Stiffness in this particular component is important in minimising engine power loss



Mercedes' original 2014 hybrid turbo. A turbo recovers heat loss to drive more air into the engine and, overall, will provide a net performance gain



The pistons and cylinder head from an old Ferrari engine. A race engine relies on high piston pressure and this leads to increased friction

process to create an extremely fine but well-defined surface finish.

So what can we do to mitigate these losses? Firstly, we need stiff components. A light crank, for example, will deform more and lose power at the bearing edges. While it may seem logical that a three-bearing crank for a four-cylinder engine might have less friction than a five-bearing crank, this isn't necessarily so since the increased bending in a three-bearing crank might lose more than the theoretical gain. Similarly, to increase stiffness in the valve train, the camshaft base diameter should be kept as large as possible, and bearings should be placed either side of each cylinder. Piston ring design needs careful consideration as the combustion pressure behind the ring allows it to seal but too much pressure and the friction goes up, too little and blowby occurs which again loses power.

The seals on the crank, various pumps, air springs and valve stems all have to be

THE SEALS ON THE CRANK, VARIOUS PUMPS, AIR SPRINGS AND VALVE STEMS ALL HAVE TO BE DESIGNED TO PERFORM THEIR FUNCTION AND NO MORE

designed to perform their function and no more. Even the negative pressure which is encouraged in the crankcase to minimise windage losses doesn't come for free. Generating it requires power and that is power not available to drive the car.

Many years ago I was involved in an early five-valve engine which produced exceptional power. This was put down to the five-valve design but

analysis showed that the engine breathing was nothing special. All the improved performance came from an exceptionally well-designed bottom end where the parasitic losses had been slashed.

Of course, power comes from combustion but there will always be losses – minimise them and it has as much effect as improving combustion efficiency – it's just the other side of the equation.



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Keeping History Alive



STRAIGHT TALK

MARK GALLAGHER

X @_markgallagher

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is anything wrong with having a dream, but because Formula 1 did not offer a business model that stood any realistic chance of survival. All of them became a nightmare, particularly for unpaid suppliers.

That was then, of course, and this is now. As we reach the end of 2023 Formula 1 is in rude health financially, the 10 teams operate profitable franchises in all but name, and those who possess a bit of business acumen have potential sponsors climbing all over them.

The groundswell of opinion among fans on social media and certain specialist press is that it is inconceivable for an entry from Andretti to be even questioned. Equally, that the existing teams are led by nasty, greedy gatekeepers who don't want anyone else invited to their party.

The teams have a point, however, and it is one Formula 1 supports. Considering that half of them courted existential challenges in recent times, specifically Williams, Sauber, Haas and the teams now known as Alpine and Aston Martin, it's easy to understand why team bosses are not exactly falling over themselves to let a new team in at precisely the moment

Formula 1 has become both stable and financially attractive.

Sharing the prize money 11 ways instead of 10 is one thing, but it's also worth considering that the US sponsorship marketplace is particularly vibrant at the moment. An Andretti team will necessarily target the self-same companies that Red Bull, Mercedes, Ferrari *et al* also want to court.

Ultimately the solution will come down to the thing that fuels F1: money. This means Andretti's ability to show it has enough money to not only enter Formula 1, but to be entirely self-sustaining for a sufficient number of years in order to demonstrate genuine staying power.

One view is that, rather than focusing on the team paying a one-off anti-dilution fund of USD\$200m, Andretti should not be eligible to receive prize money for a period of, say, five years. This should already have been covered since the FIA's Expression of Interest document for new entries included the requirement for a detailed business plan, including financial projections, for the first five years of the project.

What those projections show in terms of any assumption of a share of prize monies will be telling, for therein lies the dilemma facing Domenicali. If a new team is in any way reliant on a share of the prize fund for its survival, whether wholly or substantially in part, it will be difficult for F1 and its constituent teams to accept it.

HOW TO SOLVE THE NEW-TEAM RANCOUR

Formula 1 CEO Stefano Domenicali cannot have been hugely thankful when FIA President Mohammed Ben Sulayem announced in early October that the sport's governing body had approved Andretti Formula Racing's entry application, thus handing the poisoned chalice to Formula 1 in order to discuss commercial terms. A toxic game of pass the parcel.

As is always the case, the FIA had followed a process. These processes are always described as 'strict' or 'stringent', yet the last time the FIA followed its own path to determine the viability of new F1 teams things really didn't work out.

As the person at Cosworth responsible for supplying engines to USF1, Campos Meta, Manor Grand Prix and Lotus Racing in 2010, it soon became apparent to me that one of them had no clue, another had a wonderful dream without sufficient backing, and the final pair had money but underestimated both the scale and relentless nature of the challenge.

All are now a distant memory, not because there



USF1 (top) was granted a 2010 slot, but never materialised as a team. Andretti's entry is a totally different proposition but Domenicali and Ben Sulayem (above) have differing views on it

THIS MONTH

Martin Whitaker

Chief Executive
Officer, Saudi
Motorsport Company

Martin Whitaker has enjoyed a four-decade career at the forefront of motorsport which has spanned the FIA, Formula 1, McLaren, Ford, and in recent years the operational and promotional activities of the Bahrain and the Saudi Arabian Grands Prix. As CEO of the Saudi Motorsport Company, he explains how F1 has helped raise the profile of the Middle East

CV

2021-present

Chief Executive
Officer, Saudi
Motorsport Company

2012-2020

Motorsport Consultant,
Australian Supercars

2010-2012

Chief Executive Officer,
Australian Supercars

2004-2010

Chief Executive
Officer, Bahrain
International Circuit

1996-2003

Director of Motorsport,
Ford Motor Company

1993-1996

Media Delegate, FIA

1990-1993

Media Delegate, McLaren

1988-1990

Media Delegate, FIA

1983-1988

Media Delegate, RAC
Motorsports Association

GP Racing: Where did your interest in motor racing begin?

Martin Whitaker: A family friend, Alan McKechnie, ran local driver Bob Evans who won the Formula 5000 championship in 1974. The Lola was run from the fruit orchard close to my family home on the Herefordshire/Gloucestershire border. A 'test' track ran through the apple orchards and one day I went to see a new driver test.

On arriving at the farm, I remember a chassis with Evans' name taped over with that of Keijo Rosberg. Somewhat shorter than Bob, "Keke" had wooden blocks bolted to the pedals so that he could reach them. After a stint as a journalist at *Motoring News* I headed to the RAC Motorsports Association.

GPR: What was your remit at the MSA?

MW: We looked after the media and PR for all the major series in the UK. It was while working at the British Grand Prix that I received a call from Bernie Ecclestone offering me a role with Formula 1. In short, Bernie sent me off to Paris where I worked for the FIA under then-president Jean Marie Balestre. "You'll be in Paris for six weeks," said Bernie and 18 months later I was still there. After time at McLaren and back with the FIA, I went to work with the Ford Motor Company in F1 and the World Rally Championship.

GPR: In your role with Bahrain, how difficult was it to make a new race in the Middle East credible?

MW: Looking back, it's clear that Bahrain was a catalyst for change in the way in which F1 circuits and much of the sport were run. With the backing of the Bahraini Crown Prince we were able to help establish a new vision for the way in which circuits were run. No longer was it a case of just running a race. Bahrain began to develop a new range of entertainment designed to create an exciting F1 race weekend and how the sport could engage with the fans.

What Bahrain gave to Formula 1 was reciprocated in what the sport did for Bahrain. The global coverage of the race highlighted the Kingdom and helped raise the awareness

INTERVIEW JAMES ROBERTS

and profile of the country. There's little doubt in my mind that Formula 1 in Bahrain changed the dynamics of sport in the region 20 years ago. It helped transform people's perceptions about the Middle East and demonstrated the rich culture and hospitality of the region.

GPR: Do you think a similar thing is happening with Saudi Arabia at the moment?

MW: Definitely. In a few months the Kingdom of Saudi Arabia will be hosting its fourth Grand Prix and in that time Saudi Motorsport Company (SMC) will have run Formula E, Dakar and Extreme E on a number of occasions. It's been a rapid course of progress. Saudi was in a different stage of its development compared with Bahrain, but in the past five or six years the Kingdom has transformed how it's seen by the outside world, and sport has been a major contributor.

We've gone from having a circuit that wasn't here two years ago to a track that is active almost every day of the week – with corporate events, product launches, track days, manufacturers and teams establishing bases here and now the circuit is very much part of the community; open every night for people to run or cycle it.

GPR: Next year Jeddah will be a Saturday night race, how did that come about? And with current tensions in the Middle East, what discussions have been had over security?

MW: Firstly, the F1 landscape has changed. We now have promoter meetings twice a year and we've seen that F1 is far more flexible today. It was a suggestion from F1 that allowed the change to a Saturday night. One of the inhibiting factors of the Middle East is the weather. Running in April after Ramadan would have been difficult due to the heat so it's better if we stay early.

With regards to security, I would suggest it's not just focused on the Middle East, the whole world is conscious of security right now. We've done a lot of work in Saudi to make sure the teams, drivers, spectators, sponsors and guests are as safe as they can be. Sport is a high-profile business, so security is at the forefront of everything F1 and we do.





STAND AND DELIVER



Whisper it, but for a while it was looking as if Ferrari wasn't quite as keen for Carlos Sainz to stay on as Carlos was to sign a new contract – but he's turned it around this year and, as **Andrew Benson** explains, *that* Singapore win is only part of the reason Carlos has convinced the powers that be at Maranello that he's the man for the job...

WORDS ANDREW BENSON PICTURES  AND FERRARI

IN THE MIDST OF ANOTHER TOUGH YEAR for Ferrari, Carlos Sainz has had his best season yet for the team, and it looks as if it will secure him a long-term future at Maranello.

Just after the summer break, Sainz's position at Ferrari looked less guaranteed. He wanted to stay beyond the end of his current contract, which finishes next season, but the team wasn't as sure.

There were questions about the dynamic between Sainz and team-mate Charles Leclerc; about some of the ways the intense competition between them had occasionally frayed more than the matey official Ferrari social media posts would suggest; about whether Sainz really was the best long-term partner for Leclerc, who remains the team's primary driver in heart and mind, even if Ferrari doesn't designate them as one and two, and both are treated equally.

But Sainz – who still has other options outside Ferrari for 2025, particularly at what will become Audi – has changed minds in his favour. As the season comes to its close, his desire to stay is matched by Ferrari's wish to keep him. Things can change, of course, but for now it looks as if Sainz and Leclerc – for whom a new contract is a given – will be continuing together at Maranello for some time to come.

It's easy to see why. On the face of it, on the basis of pure results alone, Sainz has been Ferrari's stronger driver this year at the time of writing.

In the aftermath of the US Grand Prix, Sainz was ahead in the championship by 20 points, and he had won a race, which Leclerc had not, with a superb defensive drive from pole position at Singapore. There, the team's quiet progress on race tactics this year under new boss Frédéric Vasseur became very clear as the pitwall managed both drivers, used Leclerc as a blocker and sacrificed him to manipulate the race to ease Sainz to victory.

It was the sort of grand prix that previous iterations of Ferrari might have fumbled in the past – indeed had fumbled. Think back to Monaco 2022, where it managed to turn a front row lock-out for Leclerc and Sainz into fourth and second through terrible strategic choices that placed the race in Red Bull's lap.

That Sainz was the man who benefited from the intra-team tactical approach in Singapore was simply down to the fact that he had been the one who had narrowly come out on top in qualifying. Just as he had the race before in Italy, to earn himself the chance to go head-to-head with Max Verstappen for victory, even if his valiant struggle was ultimately in vain.





With Leclerc as his tail gunner Sainz secured Ferrari's first win of 2023 in Singapore after a superb defensive drive. That win has gone a long way to convincing Ferrari to extend his current contract



ROOM AT THE TOP

"It's been a decent season overall," Sainz says. "I was feeling good with the car straight away from the beginning of the season. Then, going through this first phase of the year, where we were trying to understand where we were, why we were suddenly half a second off Red Bull, why at other circuits we were nearly on pole, understanding what was going on and what had Red Bull done to all of us, which was to, all of a sudden, dominate the way they were doing."

"First part was obviously a bit under expectations, but then we put our heads down and we started working well, and we nailed the opportunity when it came in Singapore. And that means a lot for us this year."

The successes of Monza and Singapore, Sainz's strongest races of the season, came after an analytical breakthrough typical of the man.

Sainz has long been known for the thoughtful way he goes about his racing. His technical inputs are highly valued by the Ferrari engineers and, in his nearly three years at Maranello, his grasp of live race strategy from inside the car has been crucial to the team on a number of occasions.

Take that race in Monaco in 2022, for example, where his insistence on staying out on wets rather than switching to intermediates before an eventual move to slicks – as the team had disastrously done to Leclerc – prevented Sainz from suffering the same fate as his team-mate and kept him ahead of at least one of the Red Bulls.

And at Silverstone last year, where his decision to reject the team's order to protect Leclerc, who had been left out in the lead on fading worn tyres during a late-race Safety Car, was key in securing a win for Ferrari – and Sainz's own first – rather than potentially letting another one slip through the team's fingers by trying to compensate for the mistake it had already made with Leclerc's race.

Sainz headed into the summer this year determined to take stock of a season which he felt was going well but was not quite delivering in terms of actual results.

He recalls: "I sat down with my engineers and said: 'OK, what do we do to start putting the whole weekend together better? Because clearly we have a lot of pace. We're doing some good things but not putting the whole thing together. What can we do to improve that and have consistent performances?'"

"Zandvoort was a very good weekend, Monza was almost perfect ▶



THE CAR FACTOR

Ferrari's season can be separated into three separate phases when it comes to development of the SF-23.

The team started 2023 far from where it expected to be, with a car with a fundamental aerodynamic instability that led to vicious handling. Ferrari realised it had taken a wrong path, and the first product of this was new bodywork and sidepods – much more in the direction of Red Bull's – for the Spanish GP, aimed at improving high-speed rear stability. A new front wing for Austria fed into that.

As those developments came on stream, Ferrari had a test at Barcelona after the Spanish GP. Nominally a Pirelli tyre test with Sainz driving, it allowed the team to try something on the car.

Understeer was introduced into the setup to try to tame the car's capricious nature. It worked, up to a point. But understeer is a balance Leclerc despises, while Sainz is comfortable with it. So it's little surprise that Sainz had a run of form where he was just about on top of Leclerc – through the Dutch, Italian and Singapore GPs.

A new floor in Japan, the next major upgrade, changed things again. It achieved its aim of creating more stability, keeping the aerodynamic flow more consistent, and that has allowed Leclerc to edge back towards a setup with which he is more comfortable, dialling some oversteer back into the car. Since Japan, Leclerc has re-established what many would consider his natural advantage.

The step change the floor made to Leclerc was stark. In Singapore, where Sainz out-qualifying him by just 0.079s defined which Ferrari driver was going to win the race and which was going to be sacrificed to ensure that happened, Leclerc was talking about being "not completely comfortable with the car at the moment".

"A bit too much understeer for my liking and I struggle to drive around it," he said. "Because of the unpredictability of the car, I cannot have the oversteer I want."

The Suzuka upgrade, Leclerc said in Austin, "helped me to gain a bit more confidence and to set up the car in a way that I prefer, and to have a bit of a stronger front, which normally is something I enjoy.

"I feel more at ease with the car since then. But there's still quite a few races left. And there's still quite a lot of work to do. So we need to keep pushing, but we did some steps forward for sure."



In Monaco last year Sainz ignored the team's call to pit for intermediates from the full wets, a wrong call as it turned out, and this decision kept him ahead of at least one of the Red Bulls

and Singapore was perfect. When you work and analyse and you have the speed, it pays off."

Sainz's performances, though, do not come in isolation. The comparison between him and Leclerc this year has revealed some of the trends the team has gone through on the performance front.

The naked results hide some bad luck and mishaps for Leclerc that have skewed the picture of a year in which the Monegasque has, on balance, for the third year running, been Ferrari's stronger driver. Sainz might have won a race but, after Austin, Leclerc had four on-track podiums to Sainz's two (although Leclerc's disqualification in Austin made it three-all). And three grand prix poles – and one in a sprint – to Sainz's one.

On balance, across the season so far Leclerc has been faster but more ragged; Sainz a smidge slower but more consistent. Sainz was outstanding in Monza and Singapore; Leclerc in Bahrain, Saudi Arabia, Azerbaijan, Belgium and Japan.

In terms of their one-lap head-to-head, Sainz has had his best season yet up against the man some consider to be potentially the out-and-out fastest driver on the grid. The score was 15-10 to Leclerc across all sessions where a fair comparison could be made at the time of writing.

But there is a statistical quirk, in that the average gap between them has actually been the biggest of their three years as team-mates.

In both 2021 and 2022, it was around 0.12secs in Leclerc's favour; this year it is 0.186secs. Although all of that offset is accounted for by Baku, where Leclerc was especially strong – as always – and beat Sainz, who struggled, by 0.8secs and 0.4secs in the two qualifying sessions. Take out Azerbaijan and the average gap goes down to a more 'normal' 0.106secs. ▶



CAR TROUBLE

Ferrari's car has also impacted on the intra-team battle. The team headed into 2023 confident it had made significant progress and was in a shape to battle Red Bull for honours, but it took not much more than a day or so of the Bahrain pre-season test for Ferrari to realise that would not be the case.

The car was unstable to the extent of being nasty, and both drivers struggled with it in the first part of the season. In those early races, Leclerc refused to dial back his own aggressive style or compromise on his preferred oversteery setup, and sometimes paid the price because that made it easier for the car to bite the driver – such as in his ragged weekend in Miami, where the car's weakness in long-duration corners was brutally exposed.

Since then, the SF-23 has gone through two phases of development which have caused the dynamic between the two drivers to shift (see sidebar). It's not a coincidence that, since the Suzuka update, Leclerc has been in the ascendancy – faster in every qualifying session from Japan to Austin other than the sprint shoot-out in Qatar, and at an average of just over 0.2secs a lap.

This ebb and flow between Sainz and Leclerc has led some observers to question whether there is a fundamental flaw in Ferrari's line-up. Some argue that because the two

Vasseur has had a big effect on Sainz and the whole of the Ferrari team since his move from Alfa

drivers so clearly want different things from the car, only one of them can be happy on any given weekend. There is even the question of whether this could have a detrimental effect on car development.

But Vasseur dismisses this notion. He argues that the differences are not significant, and certainly not so large that they cannot be dealt with by individual setup preferences, once Ferrari has a car that is more benign. And he points out that, even when the car was being set up with deliberate understeer, Leclerc was still competitive.

"We can fine-tune and find a compromise and a good solution and a good balance for both sides of the garage," he says. "We don't have to do a conclusion on P4 or P5 when we are speaking about hundredths of seconds."

"Charles was on pole in Spa in front of Carlos with the old package, but we have to take it easy and each weekend from Spa we are speaking about hundredths of seconds."

"When we're doing the pole, it's by thousandths or hundredths and when you're P4 and you're a bit disappointed, sometimes it's for 0.1 or 0.2secs."

"It's not a drama. It's not that we are changing completely the approach. Sometimes it's a driver mistake, sometimes it's a setup mistake."

Vasseur's impact on both Sainz and the team as a whole this year should not be underestimated. The Frenchman is a racer at heart, with a long experience of running teams in the junior formulae and in F1, and his straightforward approach has not only begun to get the team on the right track strategically. It has also helped calm down the tensions that over the previous two years popped up occasionally between the drivers. ▶



WHO GOES WHERE FOR 2025?

As the 2023 season moves to a close, Ferrari's future driver plans seem to be taking a recognisable shape.

The team was always set on keeping Leclerc, and he on staying, despite interest from rivals including Aston Martin. Sainz's future was less clear through the mid-summer, but Ferrari's feelings as the season came to its run-in were to keep him, too, after both drivers' contracts expire in 2024.

Regardless, there is the potential for plenty of movement in the driver market at the end of next year.

Among the top teams, Max Verstappen is locked into Red Bull until the end of 2027 and Lewis Hamilton and George Russell at Mercedes to the end of 2025. At McLaren, Lando Norris is contracted to the end of 2025 and Oscar Piastri a year later, following his impressive rookie season.

But the second Red Bull seat, where Sergio Pérez is looking vulnerable, is open. Fernando Alonso is out of contract at Aston Martin at the end of next season. And there are two potentially attractive seats at what is currently called Alfa Romeo, but which by 2026 will be the new Audi factory team.

Audi's Formula 1 effort is being run by Andreas Seidl, the former McLaren team principal. Seidl is known to be interested in both Sainz and Norris, both of whom impressed him when they were working together.

Could one of them yet be tempted by an Audi drive, even if it's likely not to be competitive immediately?

Alonso's future is also intriguing. He is still operating at an exceedingly high level, but he will be 43 next year, which is a psychological barrier for a team, even if he feels age hasn't withered him. And it means Aston Martin would be committing to a driver who will be 44 halfway through the 2025 season if it keeps him.

On current performance, there's no reason not to. But some might see that as a leap of faith. The sort of which Alpine wasn't prepared to make last year, which is exactly why Alonso left.



Could Norris (right) or Sainz be tempted by Audi (below)? And what does the future hold for Alonso (left) and Pérez (centre)?



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At Silverstone in 2022 Sainz's desire to prove his worth to Ferrari caused some obvious friction between himself and Leclerc in qualifying, but the GP ended with his maiden win

FRIEND OR FOE

Sainz knew the deal when he signed – Leclerc was the ‘main man’, the brilliant talent who after just one season with the team in 2019 was signed to one of Ferrari's longest-ever contracts to lead its charge into the future. While Leclerc was A-list, along with Verstappen and Lewis Hamilton, Sainz was there as a strong back-up – a kind of A- driver, if you like.

Inevitably, perhaps, it led to an element of insecurity in Sainz, a desire to prove his worth to the team – to establish that he, too, should be considered a potential champion.

Perhaps it has manifested itself in moments such as in qualifying at Silverstone this year, where the team had discussed and agreed beforehand who would go out first in the queue after a red flag, but still Sainz came on the radio as they left the pits to question why it had been Leclerc and not him, emphasising that he was slower at the time and

therefore more vulnerable to being knocked out.

That little episode ended with Sainz overtaking Leclerc around the last corner as they both opened their final laps in that session. Leclerc was unimpressed. There was notable tension between the two in the media pen afterwards – they did not even look at each other, let alone fist bump, as they passed with one leaving one section of the pen and the other entering it.

But as the season has gone on, there looks to have been a shift. The drivers still want to beat each other, but they are more accepting of team orders, trusting that Vasseur is open and honest and transparent with them, but also firm when necessary.


The way he handled Monza was a key example. Vasseur took a very atypical Ferrari decision in letting them race each other for third in the closing laps even though the team had nothing to gain. They repaid him with a gripping but fair fight, on the edge, but never actually risking their cars, just as he had hoped.

Likewise the pragmatic tactics of Singapore. Sainz was on pole; Leclerc third on the grid. If Ferrari was going to win the race, the only way to do it was by protecting Sainz. The plan was methodically laid out, and executed to perfection.

Within Ferrari there is a feeling it has one of the strongest driver line-ups in F1, even if impartial observers would doubtless argue that Hamilton and George Russell at Mercedes takes some beating.

Ferrari knows that, on balance, Leclerc is quicker, in qualifying and race, but recognises Sainz is much more than a number two, more than capable of keeping Leclerc on his toes, winning races and mounting his own challenge in the right circumstances.

“I’m comfortable,” Sainz says. “I’m happy in Ferrari. I trust the team. And I see positive steps being taken in the right direction. I see a committed team working in the right direction.

“And I’ve always said, I’m happy here and that the winter was going to be a good time to sit down and see if we can come to an agreement for the future. Which, if they’re happy with me, and I’m happy with them, shouldn’t be too much of a problem.” 

Andrew Benson is BBC Sport's chief F1 writer



There has been a change in the relationship between Sainz and Leclerc as, although they obviously still want to beat each other, the pair are now more willing to accept team orders

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GEORGE RUSSELL

Once again Mercedes has turned around a troubled season but George Russell is a man in a hurry to win races and titles – and, as a director of the GPDA, he's got plenty of opinions on other F1 business too...

You scored 35 points more than your team-mate last season. This year you're on course to finish behind Lewis Hamilton. How do you feel you've compared at the second time of asking?

In terms of pure performance, I feel that this season has been my best-ever. But I reckon there's over 60 points that we've lost for a number of different reasons. When I put it in contrast to last year, I think we were in the top five in 19 of 22 races and we just kept on collecting those points.

It was quite clear this year from the beginning that we weren't going to be fighting for a championship. I don't know if that's had an impact on my mentality or not. But once we're in the position to fight again for a championship, I'm sure I'll be back to the ways I know to fight for a championship.

A sweltering Qatar Grand Prix put cockpit conditions in the headlines. Gerhard Berger and Christian Danner reckon the current grid is more concerned about uploading a picture of the perfect six-pack than physical conditioning. What's your reply?

I train substantially for the heat. I train with three layers of clothes on ahead of hot races. I do a huge amount of saunas to adapt to the heat. These guys who are commenting on this, we're driving laps 20 seconds faster than they were, going through corners pulling 5G in every single aspect.

Anybody can say what they like but also the race cars in the 1990s and '80s, they didn't have all the electronical boxes around the cockpit heating it up. They didn't have the power steering system that is running at 50, 60°C radiating heat.

We have hydraulic lines running all around the cockpit, which is at 120 degrees. We have thicker fireproof underwear than they ever wore since the [2020 Bahrain, Romain] Grosjean crash. It's like wearing a fleece. So, people can say what they like, but things are different now.

Won't you be grateful of that fleece in Las Vegas, though? The forecast indicates temperatures could drop below 10°C...

I don't think we'll be cold, to be honest. The tyres are going to be the biggest factor. There's going to be a real challenge, especially because we'll have the three softest compounds of tyres. Graining is going to be a huge issue.

Perhaps drivers will spend less time in the casinos now the FIA has hiked the maximum fine it can dish out to F1 competitors to €1million.

What was your reaction to the inflation?

I think it's pretty ridiculous a driver could be fined €1,000,000. In my first year of F1, I was on a five-figure salary and actually lost over six figures in that first year from paying for my trainer, flights, and an assistant. That's probably the case for 25% of the grid now. We're doing what we love. So, we're not complaining about that. If they truly

believe a €1,000,000 fine is worthwhile and it's going to be reinvested into the sport, then maybe one of the drivers who's being paid a lot is happy to pay that fine. But it seems obscene.

Has the FIA given any indication regarding which crimes will merit a six- or seven-figure slap?

We just want transparency and understanding. I think already the fines are getting out of control. Max being fined €50,000 for touching a car [Brazil 2021]. Lewis being fined €50,000 [suspended, crossing the track, Qatar 2023]. It feels like these numbers are being plucked out the air. When there's a lot of great global issues going on and so much poverty around the world, how can a federation just make up these fines?

The governing body has also been questioned over recent races for awarding five-second penalties to drivers who overtake by running off-track. Some say it's not enough of a deterrent, others are dissatisfied with how (in)consistently the punishment is applied. What's your take?

At the end of the day, we're all racing to the same rules. Naturally, if you're racing in Monaco, you can't go beyond the limit because you'll end up in the wall. When you race in Japan, you can't go over the limit because you'll end up in the gravel. Whereas at other tracks, your only consequence is running off onto a bit of Tarmac. Monza, for example, coming out of pits, I went over the limit knowing that I've got a 'Get Out of Jail Free' card. The same in Barcelona. You don't want to have a 'Get Out of Jail Free' card, so the FIA need to find a way to avoid that. You sort of worry about the consequences after. I don't enjoy racing like that. Something does need to change.

WE JUST WANT TRANSPARENCY AND UNDERSTANDING. I THINK ALREADY THE FINES ARE GETTING OUT OF CONTROL



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KEEP CALM AND CARRY ON

Since Kimi Räikkönen hung up his helmet, Formula 1 has had a vacancy for a super-quick, super-chilled superstar. It's early days yet for Oscar Piastri but the McLaren rookie is as cool as you like while being blisteringly quick...

WORDS OLEG KARPOV PICTURES



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NO SCREAMS, NO GASPS, NO UNINTELLIGIBLE exclamations, no tearful hyperbole for the commercial rights holder to splash across its social channels. Just the usual calm and measured message from Oscar Piastri to his engineer on the team radio – only this time it was in response to securing his first-ever F1 podium, at Suzuka, one of the most challenging tracks on the calendar. To be fair, there was also a bit of a “woohoo”, but it was more befitting of getting a tricky pub-quiz question right than reaching a career milestone.

Kimi Räikkönen might appear an impulsive extrovert at times compared with McLaren’s Australian rookie.

“He’s very methodical,” Mark Webber, Piastri’s compatriot and manager, tells *GP Racing*. “The way he won all the championships... he’s just very clinical. Very clinical. And so that level of sophistication and class, and incredible humbleness too, the calmness that he displays, is what puts him in good stead.

“He has to still learn a lot. That’s obvious. You saw that in Suzuka, you know – Lando [Norris] has five years [in F1], Max eight years. All the guys he’s racing, they all have so much experience. And that’s great for him to race against them because he’s a big sponge, and he will continue to learn how to do things better in the future.

“And that level of composure to learn is reflected on the comms on the radio. It’s something that seems to come naturally to him. And, I say, it’s a beautiful burden. It’s a beautiful burden to carry. It’s a nice thing to have in your top pocket.”

These are all traits familiar to those who have known Piastri for a long time. His natural talent allows him to adapt quickly to new machinery, as evidenced by his triumphs in his rookie seasons in Formula 3 and Formula 2. But his main asset, according to those who worked with him during

his junior years, is his ability to stay calm and improve himself.

“We had a difficult Barcelona the pre-season test in Formula 2,” recalls René Rosin, Piastri’s team boss at Prema. “We were really struggling on day one and day two, but I never saw him stressed or anxious to achieve a certain lap time. He was just calm, working with the engineers. This is something that always impressed me about him. Other drivers, even good ones, when things aren’t clicking straight away, they start getting anxious and eventually they start to overdrive. He was always cool and calm.

“For sure, he feels pressure, but he’s just able to manage it. He’s got quite a cool personality that makes him not be affected by that pressure, at least from what you see from outside. But because he’s also very intelligent, he’s able to reflect and analyse stuff, which is very important when there’s a change.”

PANDEMIC PANDEMONIUM

Piastri’s junior career looks perfect on paper, but it hasn’t been easy. Preparations for his debut season in Formula 3 were disrupted by the pandemic – and the championship itself was eventually compressed into a three-month period from July to September. Oscar’s campaign was hampered by a DRS problem, which Prema resolved by mid-season, but which had still managed to ruin some of his qualifying sessions – and when he finally secured the title, it was largely because he had scored points more consistently than his main rivals.

It was Piastri’s 2021 F2 campaign that left no doubt as to the exceptional nature of his talent.

His team-mate Robert Shwartzman was the favourite, having stayed in F2 for a second year after finishing fourth in the previous season. But Piastri started the season by consistently scoring points and put himself in contention for the title, then was in a class of his own in the latter half of the year.

“From Silverstone onwards, I raised my hands and said, ‘Guys, this is incredible,’” says Rosin. “The quali lap he did in Silverstone... We were looking at each other, like, will there be a ‘lap time deleted’ message because of track limits or something? And after that he won every feature race: Monza, Sochi, Jeddah and Abu Dhabi, all from pole position. He was just outstanding.”

It’s one of those occasions when words alone can’t tell the whole story.

“Wow,” Webber brings his fists towards his temples and unclenches them swiftly, mimicking an explosion, to illustrate how he felt about

Piastri’s F2 season. “You keep in mind, some people go from Formula 3 and do these last few races in F2 the year before to get ready for the next season. He didn’t have the chance to do that. Because we didn’t really have the budget. So, I had to tell him, ‘Oscar, sorry, man. You’re gonna have to learn in the first few races.’ And he did. But when he got on a roll, he just destroyed that field. Five poles in a row, all these feature race wins, it was incredible.”

Not everyone was as impressed. Alpine, for which Piastri had been a junior driver from the start of 2020, signed a new three-year contract

with Esteban Ocon in June 2021, confirming that there was no race seat for the Australian in its F1 team for the foreseeable future. Oscar’s reward for winning the title was a place on the bench and the now-legendary ‘term sheet’ offered to him in lieu of a proper contract.

Since Piastri racked up his biggest victories after Alpine had already decided on its line-up, there is an argument that this run of form worked against him rather than for him. But Webber doesn’t buy it.

“The year out was completely unacceptable. Just completely unacceptable,” he says. ▶



Oscar and Lando battle it out in Japan. Piastri has not been fazed by having the more experienced and established Norris as his team-mate



Piastri with his first trophy (left) and with manager Webber (above). The nine-time GP winner has committed himself fully to Oscar’s F1 career



“There was just, unfortunately, a lack of education. And that was their problem. They were even nervous to give him a Friday. I mean, can you believe it? It’s just extraordinary. So that was really heartbreaking.

“I mean, I was explaining things in ’21 to the people involved [at Alpine] in the middle of the year, at Silverstone. You know, ‘Come on!’ – ‘No, it’s OK, it’s OK.’ And then... the clock ticks and, before you realise, it [the window of opportunity] is over.”

What happened next is well-documented, as Piastri and Webber found themselves at the centre of the craziest silly season in recent years. Having ended up not just without a concrete plan for the future from Alpine, but crucially without a binding contract, the Aussies went looking for alternatives in the summer of 2022.

RISKY BUSINESS

The McLaren deal was a straightforward one for the team. Although Zak Brown had to agree to a substantial payout to Daniel Ricciardo, it wasn’t as wild a move as some had felt at the time. After all, the team would have paid Ricciardo his millions anyway. The choice was between watching him continue to try to rediscover his old self or forcing a change. The chance to snatch one of the hottest young talents of recent years away from a direct rival, without having invested a penny in his development up until then, was in fact a no-brainer.

But for Piastri himself it was a risk. It was reported at the time that Alpine had tried to secure a place at Williams for Oscar – for him to spend a couple of seasons in a lower-ranked team. This route – a stealth baptism in a less exposed position – may have had its advantages. George Russell used his three years at Grove to pave his way to Mercedes. And Webber himself

Piastri claimed pole position for the Qatar sprint race and then became the first non-Red Bull driver to win a sprint race in 2023

had, after all, started his career with Minardi, as had Fernando Alonso.

But you can understand Mark and his protégé growing frustrated with the way Alpine was handling its “nice problem” of having three drivers for two seats and waiting for something concrete to – literally – come out of the blue.

Yet, the McLaren option had its obvious perils. Not only did Piastri have to reconcile himself to the fact that he was targeting his compatriot’s seat, it also meant settling into a garage next door to Lando Norris, who’d been destroying Ricciardo. A huge risk, even for a talent of Oscar’s calibre. A few years earlier

Stoffel Vandoorne’s F1 career had been ruined by Fernando Alonso in the very same garage.

But none of that frightened Webber, and he claims that it wasn’t even on Piastri’s mind.

“Every time you put Oscar in deep water he delivers,” Mark shrugs. “It’s Formula 1, he was ready. And people thought we had a lot of choices. We didn’t, actually. And McLaren were fantastic. They were very clear, and Oscar just loved that. ‘OK, here’s someone that really wants me.’ Easy decision.

“Of course, Daniel was having a very tough time, and if it wasn’t Oscar replacing Daniel, it was someone else. Oscar said at the time, of course, [taking a seat from] his fellow Australian, it’s... there’s not many of us to have raced in F1. But what can you say? I mean... it was a McLaren decision, and in the end the right one.”

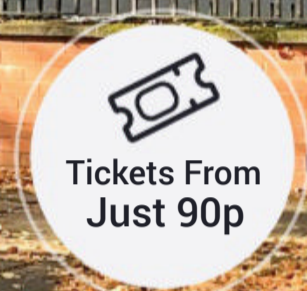
There is pressure on every rookie in F1. Needing to perform against the best in the world, having to learn how to work with hundreds of engineers instead of a dozen, and dealing with the greater public attention. On top of all this, in Piastri’s case it also entailed going head-to-head with the fast, experienced and embedded-in-the-team Norris while under greater scrutiny because of the controversial split with Alpine. As Team Enstone suddenly found itself with one driver instead of three, Oscar was publicly accused of a “lack of loyalty”.

There was a lot to withstand. But McLaren discovered the same measured and absorbent Piastri Webber and Rosin are talking about. And a very calm character, too. ▶



For a long time it seemed Piastri’s first race seat would be with Alpine, but after being benched in 2022 he split from the French team for 2023

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LETTING THE PERFORMANCES SPEAK

“It’s a big advantage,” McLaren boss Andrea Stella tells *GP Racing* about Oscar’s apparent unflappability. “It’s an advantage because he can keep himself in the condition in which he performs the best without getting too excited or too depressed.

“These personal qualities Oscar is showing, the capacity to stay in the space in which the driver performs the best without getting overexcited or demoralised, are a real strength of his. And this makes the difference in some situations, for example, when it comes to putting the lap together in qualifying or when it comes to staying calm if somebody overtakes him at the start. For a rookie, this is quite impressive.

“Oscar is very calm and focused on himself – he’s not affected by what’s happening around him. There is no external noise in his brain. He doesn’t dissipate or dilute his talent into things that aren’t useful or functional, and that was apparent to us relatively early on.

“We’ve been impressed by how he assesses where he is in terms of performance: knowing what’s working and what isn’t when it comes to the car and his driving. He’s been able to identify these weaknesses and collaborate with his engineers on what needs to be improved and changed – he can then go out onto the track and do it. For me, this is the purest definition of talent.”

There’s no question now as to whether the right choice was made, both by the team and Piastri’s camp. Front row and a ‘podium’ in the sprint at Spa, and a sprint victory and second place in the main race in Qatar are highlights representative of what has been a wholly impressive rookie season.

“It’s been a very special year,” says Webber. “I think we had nine wet weekends so far. For a rookie there are so many opportunities to make errors. At Spa he had his first dry laps in qualifying and then it was a front row for the sprint. Yeah, he’s doing just fine.

“I think unfortunately, for all of us in the industry, we’ve got quickly used to this abnormally high standard, because we’re doing it with him without big bells and whistles. He just wants to keep his head down. And we do the talking on the track.

“You know, one of the most incredible situations I saw this year was when Lewis Hamilton went to him in Monza, after the race, before the scales [to apologise for a crash]. That is really an ultimate feather in Oscar’s cap, to say

“I HAD OTHER OPPORTUNITIES TO MANAGE DRIVERS, BUT I DON’T NEED TO BE HERE. WHEN OSCAR DOES WHAT HE DOES, I HAVE TO BE HERE NOW. WHEN SOMETHING LIKE THIS HAPPENS TO A SPECIAL TALENT LIKE THAT – THERE’S THIS RESPONSIBILITY TO COMMIT TO HIM AS WELL. THAT’S WHAT I’M DOING” MARK WEBBER


that this guy... for Lewis to give you 20 seconds, it’s the Michael Jordan of our sport. That’s a huge endorsement for a rookie. He doesn’t need to do that. Classy of Lewis, of course, and not unusual for him. But they’re the big little things that I notice, that the industry, and his peers, they know he’s here. He’s arrived.”

Webber is under no illusion that the biggest challenge is somehow already behind them; he knows better than most how unpredictable F1 is. And if anything, he feels it’s his duty to help Piastri with whatever curveballs come next.

“I mean, I had other opportunities to manage drivers,” he says. “But I don’t need to be here, [in the F1 paddock]. But when Oscar does what he does, I have to be here now. Because it’s my commitment to him as well. And I told that to

the people we work with. When something like this happens to a special talent like that – there’s this responsibility to commit to him as well. That’s what I’m doing.

“I think it’s very important we don’t get carried away. It looks like he’s doing it effortlessly. He isn’t. He’s working hard. He never said to himself that he’d arrived, of course. And after Suzuka did we hear him say that he’s arrived? No. Not at all.

“He’s so far from the finished product. Of course. He knows it. He’s still been very humble and working hard. He’s a personable guy. Very economical with his words. I’m not saying he’s a robot. He’s not. Oscar is not that. But he knows we have to do the work, we have to do the talking in the car. And that’s what he’s doing. He talks in the car.” 



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LOST VAGUENESS

Behind the glitz, glamour, noise and speed, Formula 1 is an engineering process through which uncertainty is rigorously eliminated. But what happens when it visits a new track and has to face the unknown? Nobody in F1 likes to gamble, even in Las Vegas...

WORDS ALEX KALINAUCKAS PICTURES SHUTTERSTOCK, MERCEDES, McLAREN, EA SPORTS, LAS VEGAS GP

Getting any useful info from advance looks at the circuit has been tricky given the Las Vegas roads are used throughout the day and night



S **IN CITY.** A race location to sum up motorsport's intrinsic contradictions, especially at the very top. In just a few days' time, the planet's best and most complex single seaters will be racing around the monolithic buildings where all manner of indulgence can be found.

Las Vegas and gambling are synonymous. So too, really, are F1 and unpredictable entertainment. Except, of course, there are thousands of people dedicated to making the championship's entertainment spectacle as dull as possible in the pursuit of victory: the teams. For the 10 F1 squads, planning and optimisation are the preferred buzzwords. Surprises are generally not welcomed...

The teams have known since last spring they would be racing again in Vegas; not on a hastily converted car park like the two unloved Caesars Palace GPs in the early 1980s, but centre-stage in a night race set on a 3.9-mile track including the city's iconic Strip. It was revealed as Formula 1's first Saturday race since the 1985 South African Grand Prix at Kyalami (discounting the sprint events held since 2021), while the midnight start time for qualifying and 10pm getaway for the race stand out too.

Since last summer, starting with its giant pit/paddock building (see sidebar), the dedicated Las Vegas Grand Prix company that is organising and running the race in conjunction with the city authorities has been building the event. This involved shutting down areas in stages, sometimes even single road lanes at a time, around the track layout to add in the base infrastructure.

But for the teams, the track already exists – in their circuit simulators. For any new F1 race, the FIA (this information specifically distributed by race director Niels Wittich) supplies the teams with track edge and 3D centreline information as a CAD data file and a PDF. There is no set cut-off date for this enshrined in F1's rules, but the FIA's final event reference plans come in at a maximum of 30 days out from any new race occurring. The supplied data includes pit entry and exit locations and angles, so the teams can validate the accuracy of their circuit simulations and get race strategy models working early. This is important because pitlane length can influence race strategy. At the 2022 French GP, the pitlane exit boundary was extended two days before the race – as a consequence the cars had to remain at the speed limit for longer, turning what was ▶

WHAT HAPPENS IN VEGAS...

After the Brazilian GP, the typical 2,000 metric tonnes of freight headed for Nevada and slotted into the triple-decked, 300,000 square foot, \$500m paddock building Formula 1 has constructed under a mile from the Bellagio fountains. This will house the typical garage set-ups, as well as being open all year round. Talk of team hospitality units being over a mile away from the pits ended up wide of the mark thanks to F1's land purchase for building the permanent paddock complex.

To get the approximately 2,000 paddock personnel in and out every day, let alone the thousands of corporate guests who are expected to sample this new race, three temporary vehicle bridges have been constructed, with one dedicated to serving the paddock only. This is aimed at getting the teams in getting in smoothly and on time to create the spectacle for which F1 is longing. But the event is still predicted to create local traffic chaos – to avoid exacerbating the problem, F1 media were specifically warned not to book hire cars – so there are new considerations even for well-drilled team operations.

"We don't know how we're going to travel from A to B, from hotel to the track," says Mercedes team boss Toto Wolff. "But I'm sure we'll we're going to find solutions."

"We're quite excited," adds Aston team principal, Mike Krack. "Vegas itself – there will be a lot of distractions. It's important to focus when it is the right moment."

This raises another important question. In an entertainment-focused city catering to all manner of vices, how do the teams plan on keeping their staff focused on the competition?

"The racing is [on] late, but Vegas never sleeps!" says Haas team boss Guenther Steiner. "You can get anything at any time, so I think [the team staff] need a speech to keep them in check. But I'm pretty sure someone will be doing something stupid!"

Wolff, meanwhile, has a more solid, if gently presented plan: "We're going to keep everybody out of the casinos. I don't play. So, I'm going to make sure nobody plays!"

expected to be a two-stop race into a one-stopper.

Once the teams built their simulator models, they could plan their drivers' first taste of the Vegas track. The timings on this have varied across the grid: Ferrari, McLaren and Williams were among those holding Vegas-focused sim sessions between getting back from Japan and heading to Austin. Haas, meanwhile, opted to wait until after the Brazilian race because "the drivers aren't going back to Europe [in the late 2023 triple header] until after Brazil", according to team boss Guenther Steiner.

Surface tension

There are no restrictions on sending team staff to any new site ahead of a new event to try and gain knowledge of the true nature of a circuit's surface. But in this case the roads the track is based upon are open to local traffic right through the build-up (aside from specific forecasted closures) and even on the race weekend. This made it tricky for the teams to take measurements ahead of the first event on the Strip.

When the track is locked down on the day before the first practice sessions take place – this



After receiving track data from the FIA teams created their own Vegas simulator models, which will be crucial for this first race

THE OTHER BIG TALKING POINT AHEAD OF THE NEW RACE HAS BEEN HOW VEGAS'S NOVEMBER TEMPERATURES MIGHT IMPACT CAR PERFORMANCE – AGAIN, SPECIFICALLY, THE TYRES. SOME PREDICTIONS HAVE THE MERCURY GOING AS LOW AS 4°C

will be done so the FIA and FOM staff can run through the usual track systems checks using the Safety and Medical cars – the teams will first have the chance to complete full track scans to assess surface roughness and joins, and capture accurate elevation changes. They have been supplied with estimations of the aggregate surface types (typically asphalt and stone) and the bitumen levels. But only the scans will reveal the true nature of the track surface.

"That combination of the track surface, which we know very little about the moment, and how that will interact with the tyres will dictate much of how the weekend pans out," says Williams' head of vehicle performance, Dave Robson.

"One of the main things will be that we go with a clear starting position, but that we also have a whole host of options lined up ready to cover whatever actually happens."

Once the scans are in, the teams feed that data back to the factories and update their sim settings so dedicated drivers can sample how the track surface really is interacting with the Pirellis and in the confirmed event temperatures. But it's understood that even at the very top teams, updating a simulator can take time – so there's every chance the Vegas track scans are more valuable for 2024 than at the inaugural event on this layout. This will add to the jeopardy.

Track walks would aid drivers in understanding the real nuances of the new circuit. But there is no official time set aside for these in the current event timetable, due to the need to keep so many public roads open for as long as possible. Dodging traffic while inspecting the track would be even more disruptive than when Jeddah joined the calendar in 2021. There, as the drivers went out at night ahead of the first track sessions to avoid the blazing daytime sun, their inspections were regularly interrupted by pre-race event entertainment rehearsals that plunged another of





Players of F1 23 were able to get an advance sighting of the Las Vegas track as early as June when the game was launched

F1's fully lit circuits into random darkness.

But however the drivers are able to move about, Vegas is a city famously for its nightlife – something that has been enhanced in 2023. All through Turns 5-9, the track winds its way around the Sphere – the gone-viral concert venue opened in September. At the time of writing, it's understood that F1 is currently in discussions over how the world's largest spherical building and its gigantic wraparound LED screen might be incorporated into the weekend's show. The conversations include possible use in track sessions, which might present a concern to drivers should the main colour of a massive yellow emoji leave them thinking an incident has occurred ahead...

Desert chills

The other big talking point ahead of the new race has been how Vegas's November temperatures might impact car performance – again, specifically, the tyres. Some predictions have the mercury going as low as 4°C, although other sources point to an event more closely matching the (still nippy) 2020 Eifel GP.

“[The temperature] will dictate largely how we are going to run qualifying, how are we going to run the car spec, etc,” says Haas's trackside engineering director, Ayao Komatsu. He's referring latterly to each car's cooling vents, which would be expected to be closed in cold temperatures, with a drag-cutting benefit.

But the drivers have another specific concern: how low temperatures will impact their bodies. Haas driver Nico Hülkenberg recalled winter testing at Barcelona in 2018, where snow

stopped the track action. When things did get going, “After a few laps your hands, your fingers, get so cold they're kind of stuck in position and you lose feeling.”

“You need your hands to work well when you're driving,” adds McLaren's Lando Norris. “So being on top of that is something we're already looking into. Just simple things sometimes, with hand warmers and gloves and whatever.”

Yet while the body's outer extremities are the first to lose feeling in the cold, stable core temperature plays a major part too. Therefore, might drivers take to inflatable hot tubs for late-



The potentially low temperatures for qualifying and the race could mean drivers resorting to using hand warmers before they get in the car




Whatever obstacles the teams are faced with and overcome, the inaugural Las Vegas GP promises to be a hell of a spectacle

night session preparation rather than Singapore-style pre-race ice baths? In any case, this race's late timetable will bring many references to the famed Singapore sleep schedule – albeit here lacking a handy time difference to the teams'

European basis to plan around.

“We'll be going to bed super-late and waking up super-late,” says Williams driver Logan Sargeant. “If you don't, you'll be tired by the time qualifying comes around...”

Vegas might be the ‘Capital of Second Chances’, but F1 only has one shot at nailing what is surely its most eagerly anticipated new event of the Liberty Media years. No pressure, then... 

THE LONG INTERVIEW

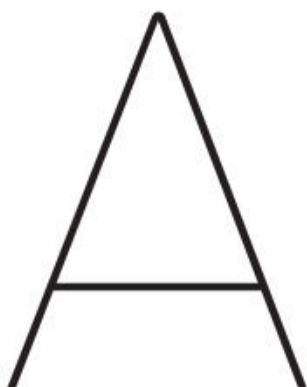
He was tasked by Red Bull founder Dietrich Mateschitz with developing young talent. 18 years, five GP winners and two world champions later, the man usually first in and last out of AlphaTauri's factory every day is stepping aside. But if there's one thing this loyal team man doesn't like, it's talking about himself...

WORDS OLEG KARPOV
PORTRAITS ALPHATAURI

THIS IS

FRANZ TOST





long, rose-tinted farewell interview? No way, he's not going to do it. A sentimental rewind through 18 years at the helm of Red Bull's junior team, a key role in developing young talent into grand prix winners and world champions, memories of his own racing career... Franz Tost is not available for any of this. He still has a job to do before he clocks out and melts away from Formula 1 into a quiet retirement in the Austrian Alps.

"He will refuse to talk about himself." Fabiana Valenti, AlphaTauri's communications director, has been with the team since its Minardi days and well knows how its boss rolls. He might make an exception for us, though, because we're friends, she says. But only if we want to talk about the team. After all, representing it is part of his job.

So our request is amended. And it is approved. Dare we push our luck a little bit on the day? Well, it would be remiss of *GP Racing* to let someone who has quietly contributed so much to F1 slip away unacknowledged...

GP Racing: Franz, let's start with a rather difficult subject. In the spring, the floods in the Emilia Romagna region affected many of your colleagues. How are they doing now?

Franz Tost: It was a big shock for the whole team. Because 23 of our employees lost almost everything. I've never seen so much water – some houses were flooded up to the first floor. And I think it will take at least two years for everything to be rebuilt in an acceptable way. I was talking to one of our guys last week who lost his house. And he was waiting for

GP Racing grills Tost – who, as a committed company man, always has some Red Bull product close at hand...

the building authorities to come and see if the house could be renovated or if he'd have to tear it down because there's nothing to hold on to. It was a huge shock for all of us.

GPR: Is it under your personal control now?

FT: It's under the control of the team. Fortunately, people worked very closely together, they helped each other. I must say that our HR department did a fantastic job. Because we immediately took care of the families, organised hotel rooms, apartments, clothes, money, all those things.

GPR: You've been with the team for 18 years now. You know the date by heart, 8 November 2005. What do you remember about that day?

FT: It was a beautiful autumn day. And that day I went to Italy, to Faenza. That was the day I started working at what was then Scuderia Toro Rosso. It was a good day and I enjoyed it. I remember talking to my wife and she said, "Well, Italy, how long do you think we'll be there?" And I said, "Maybe three years. Four years maximum." And now it's 18 years and I have to say it's been a fantastic time. I met fantastic people. Emilia Romagna is a very nice area to live. Warm, beautiful weather, great landscape, vineyards. You can't find a bad restaurant there. And the people are very friendly.

GPR: You said that in 2005 you found 85 people at Minardi who had a lot of passion but not much else – no money, no infrastructure. Laurent Mekies was one of them, aged 28 at the time. And soon, after a few years at Ferrari, he'll replace you as team principal. Are you happy to hand over to him?

FT: Laurent joined us as a young engineer and has done a very good job. He's a very smart guy. And so he moved up and became chief race engineer. And I remember joking with him at the time, saying, "You should go to another team now, learn something new, get more experience and then come back to us." But now that's exactly what has happened. And it's good because he knows the team very well, some of the people he worked with are still there. And that, of course, is a good starting point because the trust is there.

Tost was brought in by fellow Austrian Dietrich Mateschitz who, after buying Jaguar and renaming it Red Bull Racing, also rescued the moribund Minardi, to form a team to develop young drivers. The principle was for both teams to share a common chassis, as regulations allowed at the time, so Tost's job was initially just to run a racing team, with the chassis designed and built in Milton Keynes. Before that, he had spent a few years as BMW Motorsport's track operations manager and Ralf Schumacher's personal supervisor during Ralf's junior career. So he knew how to run a team and handle young, talented drivers.

But after Sebastian Vettel's victory at Monza in 2008,





Laurent Mekies at Minardi back in 2005. Meikes is returning as Tost's replacement for next season...



Toro Rosso became a victim of its own success. 'Customer cars' were banned, Mateschitz's one chassis, two teams concept was no longer viable and Tost suddenly found himself building a brand new factory in Faenza, which opened in 2012 and continues to expand.

GPR: Dietrich Mateschitz. How different was this image of a great businessman and entrepreneur from the person you met?

FT: I met Dietrich Mateschitz for the first time, I think it was 1993, at the Nürburgring, and I immediately had a very good impression. And then, in 2005, he said to me: "Franz, you go to Italy now to build the team, use the synergies with Red Bull Technology and train young drivers." And we did that. He was very easy to work with. There was no contract, just a handshake. And whatever he said, he stood by his word. If I needed something, I called him and he said "yes" or "no". The decision was made in five seconds. He was a visionary. But being a visionary is just one thing. He also made all the projects he had a success. You will never find another person like Dietrich Mateschitz.

GPR: From the very beginning he said the team should develop

Tost loves the Emilia Romagna area, which has Imola (above) at its heart, and which suffered dreadful flooding in May

With Red Bull founder Dietrich Mateschitz (above, left) in 2005, when Tost was with BMW

young drivers, which meant there was never a goal to win races and championships. Have you ever tried to change that?

FT: No, it was very clear. He said: 'Look, the philosophy of the team is firstly to use the synergies with Red Bull Technology and secondly to develop young drivers. And that is your goal.' It was clearly defined and I never tried to change it, no. Because I think it's a clear vision.

And it worked well. Too well, in fact, because we won in Monza. And, you know, there are two sides to every medal. One side is that we won, fantastic. But the other side is they changed the regulations. That had a big impact on our team because we didn't have the infrastructure, but suddenly we had to design and produce the monocoque ourselves, the nose, front wing, floor, diffuser, rear wing and bodywork.

First of all, we had to find workspaces for the people. I remember we got the containers from Red Bull to accommodate the engineers. Then we had to set up a design group, find people for production and for the aerodynamics department. All at the same time. I have to say it was a tough, demanding time. People had to work a lot of hours because otherwise we wouldn't have had cars to put on the grid... It was tough. But looking back now, it was also fun! The team has got better and stronger.

GPR: Mateschitz had to sign it off, right? He had to invest. How did he feel about it? Because at first the concept was different...

FT: Yes, he understood. Because Bernie [Ecclestone] explained it to him. Max Mosley also talked to him about it. Of course, he wasn't happy because it wasn't the philosophy he had in mind. Fortunately, Red Bull was dramatically increasing the number of cans they sold year on year. That meant the cashflow was there. So we got the money. There was no

HE ALSO MADE ALL THE PROJECTS HE HAD A SUCCESS. YOU WILL NEVER FIND ANOTHER PERSON LIKE DIETRICH MATESCHITZ



negativity. It was always easy with him. I think I can only remember one time he got upset with me.

GPR: Why was that?

FT: Because I made a decision to cut down a tree. There was a park and there was this big old tree and... I needed more working spaces. So we cut it down. But he loved trees. He said, "Why, Franz? Why did you cut down this fantastic tree?" I said I needed working spaces, not trees. And he got upset. But that was the only time he ever got upset with me.

GPR: It is still difficult to recruit staff, isn't it? Your technical director, Jody Egginton, spends four days a week in Faenza and then flies home for the weekend. How many people on the team do that?

FT: Yes, much more now than in the early days. When I started, I wanted all the people to be in Faenza, with their families and so on. The experienced engineers are about 35-40 years old. Most of them are English and have families. And when you ask them at the beginning, "Do you want to come to Italy?" they're all happy because they like Italy, but they have an image of holidays.

Following the regulation changes that were brought in after Vettel won in 2008, the first fully built and designed Toro Rosso car was the STR5 for 2010

The Faenza factory in 2022. Originally built in 2012, it is still being improved. A new facility for the British workforce is being built in Milton Keynes



OF COURSE, IT'S MUCH EASIER TO FIND ENGINEERS IN ENGLAND THAN IN ITALY. BUT FAENZA WILL ALWAYS REMAIN THE CENTRE OF THE TEAM



After two or three months, the holiday atmosphere flies away. I observed, for example, that the wives always had to stay at home and look after the children. And then, after six months, a year at the latest, the problems began. And when I saw that, I changed my mind. Now, if we take an engineer from England, I prefer he has maybe Friday and Monday off, that he stays longer in England and then comes to Faenza from Tuesday to Thursday. And only if necessary. Nowadays, with all the communication tools we have, they don't necessarily have to come every week.

I've seen during these years that if people want to work together, they can work together, even if they're 2000km apart. If people don't want to work together, they can sit next to each other and just exchange emails, but they don't talk to each other. At the moment I think we have that under control because we also have a base in Bicester. We now say, OK, the engineers from England don't need to come to Faenza every

week because they can work from Bicester. And they just communicate via Zoom or whatever. It works.

GPR: So the plan for the future is to expand the UK base...

FT: Of course, it's much easier to find engineers in England than in Italy. But Faenza will always remain the centre of the team. However, with Bicester, and in the future with Milton Keynes – because Bicester is getting too small now and the team is building a new facility – we will have space to have more people in England.

When Tost says “people had to work a lot of hours” during the team's transformation, the implication is those staff spent very little time at home during that period. He often comes across as being uncompromising, perhaps a little unreconstructed, with his half-joking remarks about his ▶





staff's families being his "biggest problem" and that "people should be happy to work in F1" rather than complaining about calendar expansion. But ask anyone at AlphaTauri and 'demanding' won't be the first word they use to describe him. He is a caring, considerate and even kind boss.

But as someone who is usually the first to turn on the lights at the Faenza factory in the morning, he does sometimes find it hard to understand why people don't want to spend all their time building cars and going to races.

GPR: Is your wife interested in motorsport, Franz?

FT: My wife... she watches the start of the race and then the chequered flag, because she wants to see the results to know if I get the bonus or not. That's the only thing she's interested in when it comes to motorsport.

GPR: But does she read the motorsport press? It's interesting to know what she makes of your comments about every weekend away from the track being a waste of a weekend...

FT: No, no, there's no problem with that. I told her that

“**MY WIFE... SHE WATCHES THE START OF THE RACE AND THEN THE CHEQUERED FLAG, BECAUSE SHE WANTS TO SEE THE RESULTS TO KNOW IF I GET THE BONUS OR NOT**”

Tost with Vettel and Mateschitz celebrating Vettel's win for Toro Rosso at Monza in 2008



from the very beginning. When we met – I was studying in Vienna and she was studying there too – I said, “Look, I’m going to work in motorsport, I’m not going to be at home at weekends.” I told her right away that I didn’t want to have children because I wouldn’t have time for them. I said, “I’m just telling you now so you know.” And fortunately she didn’t want children either. So that was easy. And the rest was no problem because she has her own business and when I’m not there she takes care of it. So it’s all good. We have a very, very good relationship. Also because I’m not at home all the time.

GPR: That probably makes the relationship stronger, right?

FT: Exactly. It’s much better! But I spend a lot more time at home now than I did. When I was at BMW, sometimes after a race we would fly back to Munich and just go to the next gate to catch a flight to Jerez or Barcelona. We didn’t come home. Not just me, but other engineers too. It was normal.

GPR: So all this talk about 24 races...

FT: It’s a joke. Because, you know, nowadays at the track, I wouldn’t say it’s anything like a holiday. But... There’s a curfew. And the mechanics can go to the hotel at 9 or 10 o’clock, it depends. Hey, in the old days, for example, at BMW we changed an engine every day. On Friday we had the Friday engine, then we had the qualifying engine, then we had the race engine. And we never came back to the hotel before one or two in the morning. That was normal. And then at six or seven in the morning we had to get up and go to the track. Nobody complained. ▶



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GPR: No burnouts.

FT: People didn't know what it was. The real people still don't know what it is. Burnout is for lazy people. The real people who like to work don't have it. But I would say now 23, 24 races is kind of a limit. When I look at the schedule now, we go from Austin to Mexico, from Mexico to São Paulo – that means the team is away for about four weeks... For me, that's absolutely no problem. But there are others. The mechanics have days off after the race weekend, but the engineers have less leisure time – because they come back after the race, then analyse everything, then they prepare everything for the next race. And if you have a family at home, it's a different story.

GPR: Why don't you want to stay in a consultancy role?

FT: It's not decided yet. We're still discussing it. I don't want to be a consultant and have more work than I have now. We'll see. I'll definitely not come to all the races. I'll not be at the side of Peter [Bayer] and Laurent telling them to do this and that. No. They're smart enough and experienced enough. And they have to do it on their own, because otherwise everything would continue in the same way and that should not be the case. They should come up with new ideas.

GPR: You once said that when you took this job you promised

I TOLD DIETRICH MATESCHITZ TWO, THREE YEARS AGO THAT WE HAD TO FIND SOMEONE TO SUCCEED ME BECAUSE I WASN'T GOING TO STAND ON THE PITWALL AT THE AGE OF 70




The second win Tost has enjoyed as team principal of Red Bull's junior outfit came in 2021 when Pierre Gasly triumphed for AlphaTauri at, where else, Monza

yourself not to forget to recognise the day when it's time to step down. But that's not easy. And how can you be sure the moment is right?

FT: I told Dietrich Mateschitz two, three years ago that we had to find someone to succeed me because I wasn't going to stand on the pitwall at the age of 70. And he said, "Stay with us for another two or three years." That time is over now. And you're right, I said when I was younger that I wasn't going to glue myself to the seat and I wasn't going to wait for them to take me out with it or throw me through the window with it. And I think the team needs new leadership now.

There will be a new regulation in 2026. All the work for this change has already started. And you can't be team principal until the last moment and then, five minutes before the new regulations come into force, say, "OK, now someone else should take over." No, it has to be prepared well in advance.

That's why I decided two years ago I was going to stop. And that is now the case. 



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BEST SEAT IN THE HOUSE

Mercedes reserve driver **Mick Schumacher** explains all the features of a Formula 1 cockpit

INTERVIEW OLEG KARPOV
PICTURE MERCEDES

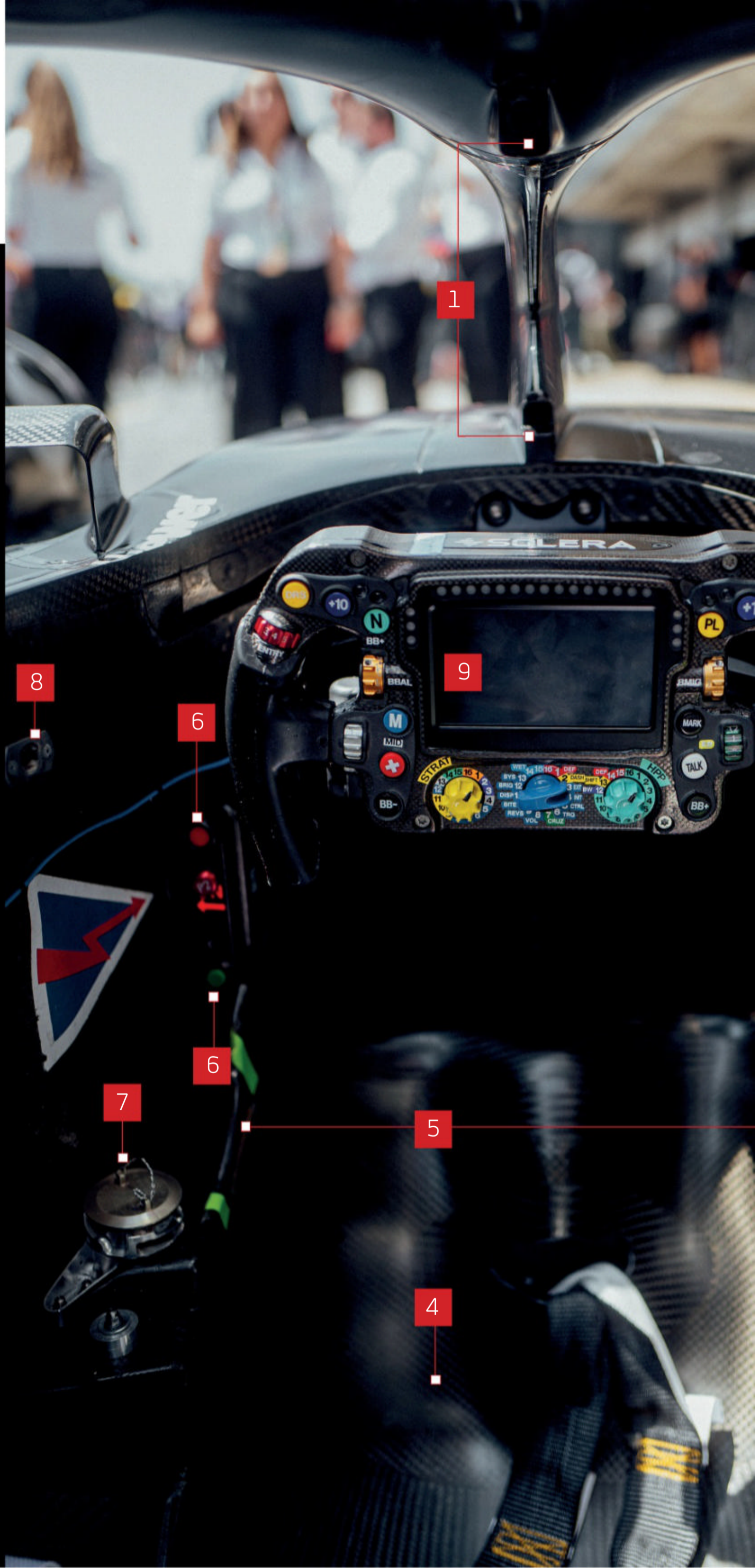
1

"There are two cameras facing the driver in the cockpit – both built into the Halo structure.

"The top one is a safety camera. You won't see any footage from it during the broadcast, since it's only accessible to the FIA for incident analysis – I've never seen any footage from it myself. The one at the bottom, on the other hand, is used during the broadcast but, as a driver, you never really think about it."

2

"On the right you can see some stickers. The one closest to the wheel has a map of the track, in this case Barcelona. This may seem strange, but it's actually very useful. Obviously it's not there to remind the driver which corner is next, but it's very handy when talking to the engineers. For example, after a run in practice, when describing the car's behaviour, I'd always look at this map to make sure





we're talking about the same corners, since each one is numbered on this map. Barcelona is perhaps not the best example because all the drivers know it like the back of their hand. But in places like Jeddah, for example, it's essential.

"Also, different teams use different numbering. Some number the chicanes as one corner, others as two. Fast kinks, such as the one before the start-finish straight in Brazil, may or may not be counted as a corner by different teams. So to avoid confusion, there's always this map in the cockpit to be 100% sure you're talking about the right corner.

3

"The ones next to it provide information about the chassis. The team sticker is the chassis number, and the FIA sticker is proof that it's homologated and has passed all the necessary checks. Obviously, since the cost cap was introduced, teams don't produce as many chassis as they used to. Let's say when my dad used to drive in F1, they would have eight to ten chassis per team per year, but now they tend to produce three or four for the season – and each chassis has its own number.

"The teams rotate the chassis from time to time because sometimes they need to be refurbished or just checked. Normally they should all be the same, but as a driver you can sometimes feel a slight difference."

4

"The seat itself is tailored to the driver's preferences. Ideally, you'd like to have the edge as high up as possible to give your legs more support. Then in the middle I usually have a pad that I put around my knee so that my legs don't move so much. You can have them for both legs or just one.

"Then, of course, there are the seatbelts. In the middle you've got the crotch belts, then you've got the side belts, and then then the ones that go over the shoulders."

5

"These arms on both sides are also for safety reasons. You can see these green markings – these are for the marshals, so they can clearly see where to attach the special straps from their kits to extract the driver from the cockpit with a seat in case of suspected injury after an accident."

6

"On the left are a number of buttons and switches. The red button is for the fire extinguisher.

"The switches in the middle are basically for starting the car. There's a toggle switch for P1, which you can't really see in the picture, but it turns on the electrical system, and then P2 – the red one – is for starting the engine.

"When you hear the teams asking the drivers to 'switch off the car' or 'go to P0', it means he has to turn these two switches off so the marshals can access the car.

"The green one is for the MGU-K start – in case the car has stalled and the driver needs to restart it without the team's assistance."

7

"This is the connector for the umbilical cord, which is plugged in when the car is in the pits. It allows you to stop all the communications, the radio messages, from being broadcast. So you can talk to the team in private, and the car is on garage power – so it's being charged and not draining the car's battery.

"Then, just before the car leaves the garage, they unplug it. You can sometimes see on TV when the number one mechanic is holding the car, he'll make a gesture to unplug before he releases it into the pitlane."

8

"These slots are for the pins that secure the headrest. This picture is taken without it, but when it's placed over the driver's shoulders it's secured with special pins with metal rings on them. You can still get in and out of the car with the headrest on – but it's just more difficult and, because the headrest itself is made of a very soft material, you can actually damage it by squeezing yourself in."

9

"Finally, the steering wheel, which is not only there to steer the car, but also to control and manage all the many systems in a Formula 1 car. And that's a whole other subject..."

Mick will explain how the Mercedes F1 steering wheel works in the next issue of GP Racing.

NOW
THAT
WAS
A
CAR

No. 123

WORDS
STUART COOLING
PICTURES
JAMES MANN

MCLAREN MP4-24





2023's MCL60 isn't the first F1 car McLaren has transformed from lemon to race winner...



Out of the gate, the car that would become Formula 1's first hybrid-powered grand prix winner looked peculiar and was embarrassingly slow. When the MP4-24 pulled out of McLaren's garage at the Autodromo do Algarve on a wet January morning in 2009, rival engineers rolled their eyes when they clocked it was sporting an incongruous 2008-spec rear wing – all the more noticeable given the impact of the sweeping rule changes F1 was adopting.

"The track is so wet we need all the downforce we can get," explained the team's chief spin doctor, former *GP Racing* editor Matt Bishop. Nice try, Bish.

Afterwards the recently crowned world champion Lewis Hamilton made all the right noises about the feel of the car but the mood within McLaren was downbeat, as reflected by the



MCLAREN MP4-24

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MP4-24's disappointing lap times relative to the hotch-potch collection of other machinery in action that day. After a further tests at Jerez and Barcelona, and straightline runs at Kemble Airfield, team principal Martin Whitmarsh convened a crisis meeting at McLaren's Woking HQ to seek a resolution path to the aerodynamic issues plaguing the car.

"I don't think we've done a good enough job," Whitmarsh admitted, crowning a troubled first two weeks in a job he had only recently inherited from Ron Dennis, who remained

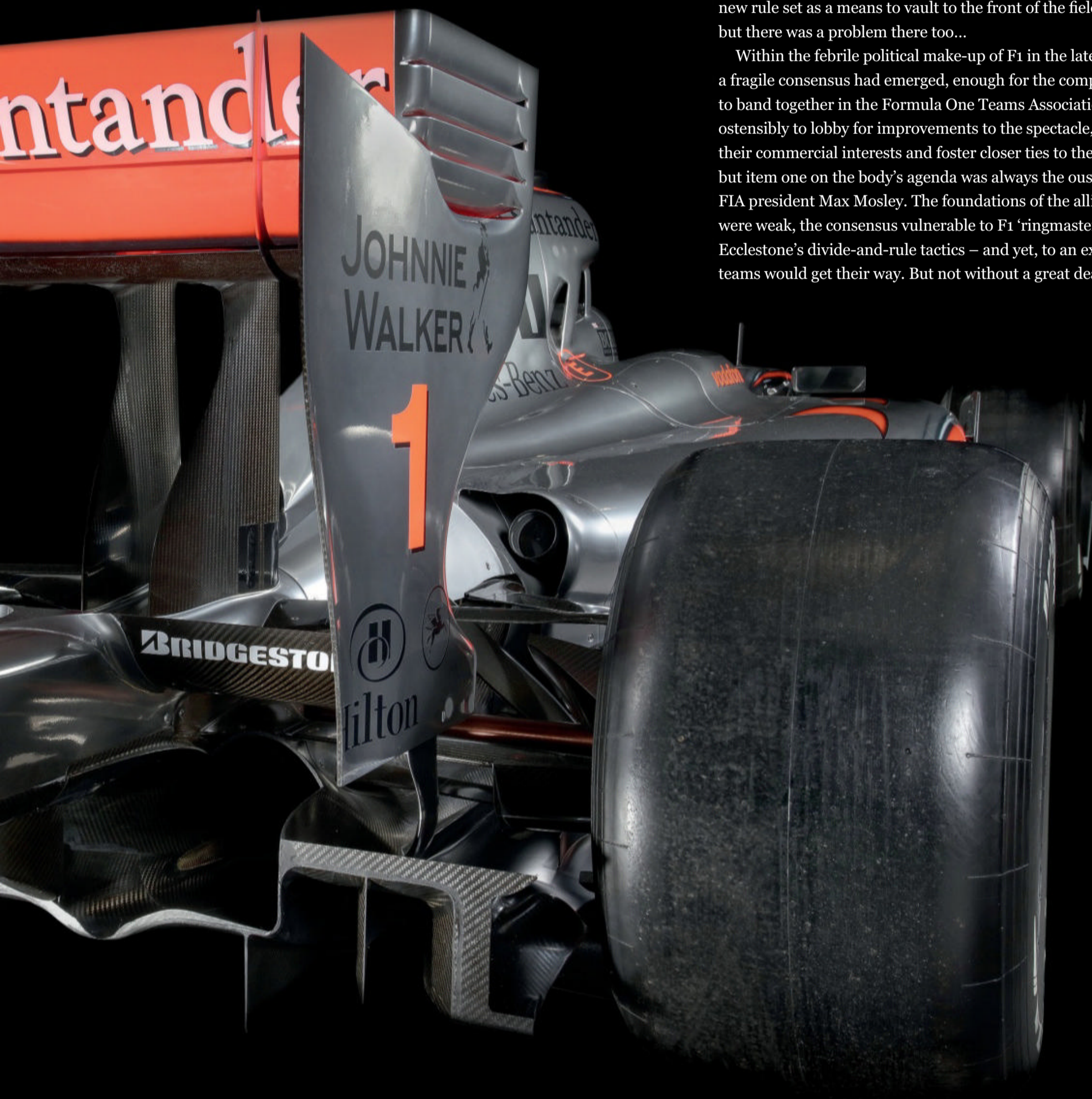
ever-present in his executive chairman role.

Large regulatory changes are often seen as an opportunity for visionary engineers to take great leaps and shake up the running order. 2009 would prove to be a case study in this as McLaren, runner-up by a whisker in the 2008 constructors' championship and with the '08 drivers' champion in car number one, slipped to the tail of the grid. Red Bull, with former McLaren technical director Adrian Newey firmly installed behind the drawing board, had targeted 2009's

MARTIN WHITMARSH CONVENED A CRISIS MEETING AT McLAREN'S WOKING HQ TO SEEK A RESOLUTION PATH TO THE AERODYNAMIC ISSUES PLAGUING THE CAR

new rule set as a means to vault to the front of the field – but there was a problem there too...

Within the febrile political make-up of F1 in the late 2000s a fragile consensus had emerged, enough for the competitors to band together in the Formula One Teams Association – ostensibly to lobby for improvements to the spectacle, defend their commercial interests and foster closer ties to the fans, but item one on the body's agenda was always the ousting of FIA president Max Mosley. The foundations of the alliance were weak, the consensus vulnerable to F1 'ringmaster' Bernie Ecclestone's divide-and-rule tactics – and yet, to an extent, the teams would get their way. But not without a great deal of pain. ►



The 2009 technical regulations emerged against a background of rancour over F1's governance and commercial arrangements (the Concorde Agreement, for instance, had expired at the end of 2007 but a new one was over 18 months in the making). Though they had been developed in consultation with the teams, via the Overtaking Working Group committee, the rules arrived half-baked and failed to deliver on the promise of facilitating greater overtaking. Worse, one team had a massive advantage.

Lack of overtaking had been a perceived weakness in F1 for several years. The 2009 rules proposed to change this by lowering and widening the front wings (after years of trying to slow cars down by fitting narrower and higher front wings, the governing body recognised this made them prone to disruption from the car in front). Making the rear wings taller and narrower was intended to reduce wake turbulence for following cars, as was the ban on complex bargeboards and other aerodynamic furniture ahead of the sidepods. Straightline speeds would be boosted by adjustable front wing flaps and additional power from a driver-activated Kinetic Energy Recovery System. Another welcome touch: slick tyres again after over a decade on sketchy, graining-prone grooved rubber.

Three of the teams had spotted a loophole in the regulations and had exploits in their back pockets. One of these, Honda, had shelved development of its basket-case 2008 car early

DEVELOPING THE MP4-23 DEEP INTO THE 2008 CHAMPIONSHIP RUN-IN TO KEEP HAMILTON'S TITLE HOPES ALIVE HAD COME AT A COST

to focus on '09 research in a hugely extravagant programme encompassing three independent aerodynamic research teams feeding in to the principal engineering group. Though the onset of the global financial crisis pushed the parent company



to quit F1 unexpectedly at the end of '08 (soon to be followed by Toyota and BMW), team principal Ross Brawn, having evaluated several unsuitable suitors – mostly distressed-asset ghouls and other shysters – put together a management buy-out. Whitmarsh, statesmanlike in his FOTA role, facilitated a Mercedes engine supply to keep the renamed Brawn team on the grid. It was a decision he and McLaren would come to regret as Brawn cleared up in the opening races of the season.

The new technical format proved to be a bust. The cars were uglier and the adjustable wings proved useless except to trim out understeer as the tyres wore. And the effect of the 80bhp for 6.7s a lap produced by the KERS was negated by the weight and packaging implications of the technology.

Brawn, along with Toyota and Williams, had exploited the loophole in the wording of the new rules governing the dimensions of the diffuser, adding a second plane fed by a slot. This not only restored the effectiveness of the diffuser in terms of downforce production to around 2008 levels, it was far less prone to 'stalling' than a single-plane design constructed within the new limits. What Honda/Brawn then did better than everyone else, including Williams and Toyota, was complement this gain with other aerodynamic furniture, including winglets on the rear brake assemblies and a much more powerful front wing.

The degree of optimisation on the Brawn BGP001 was such



MCLAREN MP4-24

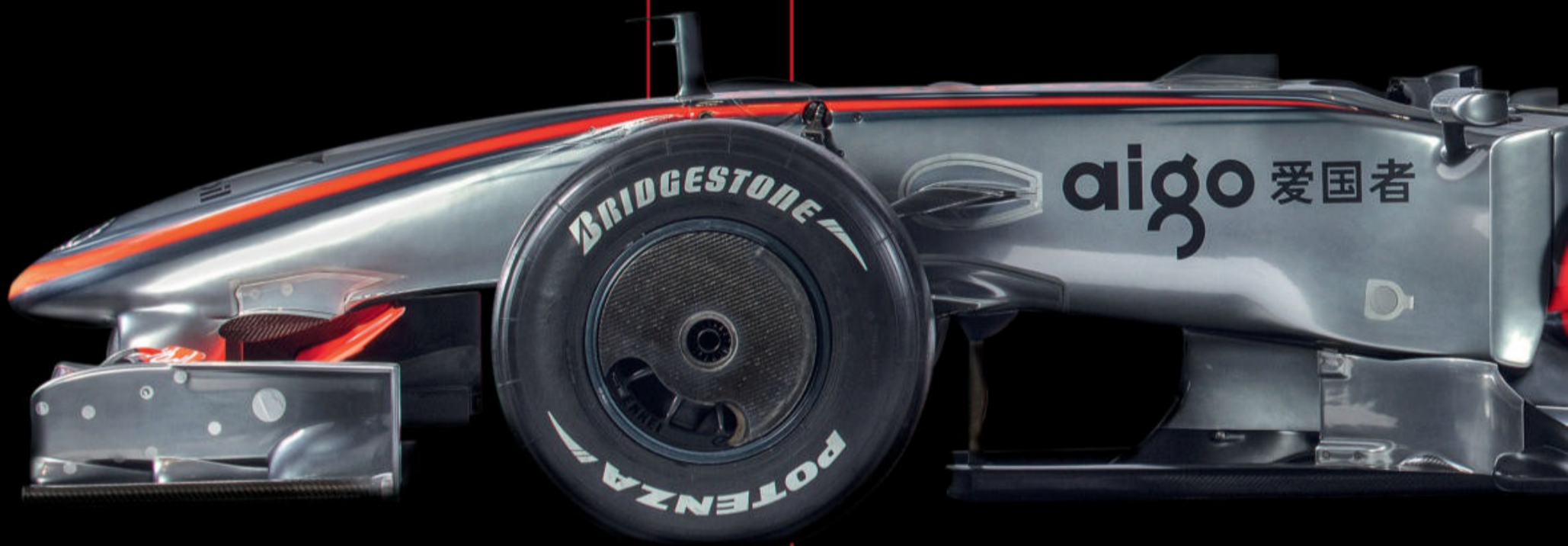
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that teams who had simply 'legalised' their 2008 designs and proceeded from there were left at a considerable disadvantage. Although McLaren hadn't done this – the MP4-24 was a clean-sheet piece of work, apart from the engine – it was still struggling to resolve the diffuser-stall issue. The need to keep on developing the MP4-23 deep into the 2008 championship run-in to keep Hamilton's title hopes alive had come at a cost of focus on the '09 project.

Initially, McLaren's sub-par performance in practice and qualifying for the season opener in Melbourne – both Hamilton and team-mate Heikki Kovalainen achieved lowly grid spots outside the top 10 – was but a sideshow to the developing ▶



McLAREN MANAGED TO GET A FIRST ITERATION READY FOR ROUND THREE, IN CHINA, BUT THE MP4-24 REMAINED INCONSISTENT AND SLOW

David Ryan was fired and Dennis announced he was stepping away from the team to focus on McLaren's new road car business. This pre-emptive mitigation worked: accused of five counts of breaching the International Sporting Code, the team came away with a suspended three-race ban and Hamilton received no further punishment.

As 'Lie-gate' slid from the agenda and McLaren knuckled down to fast-tracking developments on the MP4-24, the double-diffuser argument commanded the headlines. To the confusion of most stakeholders the FIA declared the concept legal. Newey's theory is that this was a punishment measure against Ferrari and McLaren for challenging Mosley's power; whether you believe this or not, and it's most certainly plausible, the upshot was that the remaining teams had to

find a way to reverse-engineer the design onto their cars in short order, and it was more challenging for some than others because of baked-in design features in that area (such as Red Bull's pullrod rear suspension).

McLaren managed to get a first iteration ready for round three, in China, but the MP4-24 remained inconsistent and slow. It had decent mechanical grip and was competitive in slow corners, while the well-executed KERS gave a boost advantage over teams who had already removed the technology or declined to use it entirely. But in high-speed corners an instability persisted.

In readying a completely new floor to be introduced at the mid-season German Grand Prix, McLaren grasped what was only dawning on some rival teams: for all the excitement and controversy surrounding it, the double diffuser wasn't worth half a second or more of lap time in and of itself. It merely opened the door for other possibilities upstream. At Hockenheim, then, the team introduced a new and more sophisticated front wing, revised cooling architecture and exhaust piping within redesigned sidepods, and a new engine cover as well as the new floor. Having qualified 19th for the previous race, on home ground at Silverstone, Hamilton started fifth and was making a bid for the lead when he suffered a puncture in contact with Red Bull's Mark Webber.

The following round, at the Hungaroring, Hamilton went from fourth on the grid to claim the first victory for a KERS-equipped car. While this track's proliferation of slow-speed corners undoubtedly played to the MP4-24's pre-existing strengths – mechanical grip and KERS punch – there was more to come in what was proving to be a topsy-turvy season.

After dominating the opening rounds, Brawn's Jenson

McLAREN MP4-24

NOW THAT WAS A CAR


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Button failed to register another victory after round seven in Turkey, and team-mate Rubens Barrichello contributed just two more as the slimmed-down team fought a rearguard action to maintain its ascendancy in the championship. Red Bull's RB5, a winner as early as round three in Sebastian Vettel's hands, emerged as the strongest car in the second half of the season with the revitalised MP4-24 not far behind. Hamilton set pole in Valencia and finished second, qualified on pole again at Monza, then won from yet another pole in Singapore. He followed that with podiums in Japan and Brazil and might have bagged another from pole in the Abu Dhabi season finale, but for brake problems which eliminated him from the race.

Lewis had recovered his mojo after an emotionally and competitively bruising start to the season; he would later admit the 'Lie-gate' affair had moved him to consider retiring. On

the other side of the garage, Kovalainen paid the price for his inability to parlay strong qualifying pace into good results, and he was 'let go' in favour of new world champion Jenson Button.

Having stood by the KERS philosophy, removing it for just one round, McLaren pushed back against moves for the whole grid to voluntarily shelve it for 2010. In this it failed. And, though Whitmarsh and FOTA were able to celebrate as Mosley yielded to pressure to end his tenure as president, once this unifying goal had been achieved the teams body began to split under the pressures of its internal rivalries. The season would end with McLaren in the ascendant again – but not for long... 

RACE RECORD

Starts 34
Wins 2
Poles 4
Fastest laps 0
Podiums 3
Championship points 71

SPECIFICATION

Chassis Carbonfibre monocoque
Suspension Double wishbones with pushrod-actuated inboard torsion bars
Engine Naturally aspirated Mercedes FO 108W V8
Engine capacity 2398cc
Power 810bhp @ 19000 rpm
Gearbox Seven-speed semi-automatic
Brakes Carbon discs front and rear
Tyres Bridgestone
Weight 605kg
Notable drivers Lewis Hamilton, Heikki Kovalainen



GUENTHER STEINER



10 THINGS I LOVE

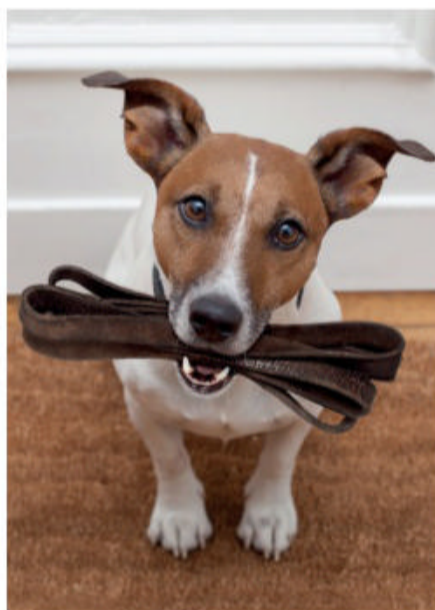


The Haas Formula 1 boss enjoys cigars, giving back to society... and chainsaws



Hiking

I started quite late, in my mid-20s, with my wife – we did quite a lot of hiking. When I moved to England I stopped. But now I do it whenever I have the time. When I go to the mountains, it's just nice. When you're walking, you don't usually talk, because in the mountains you have to breathe. Heights don't scare me – I never thought I could fall. When you're exposed to heights all the time, you get used to them. And that's a good thing, because if you do fall, at least you're not scared – you're just dead.

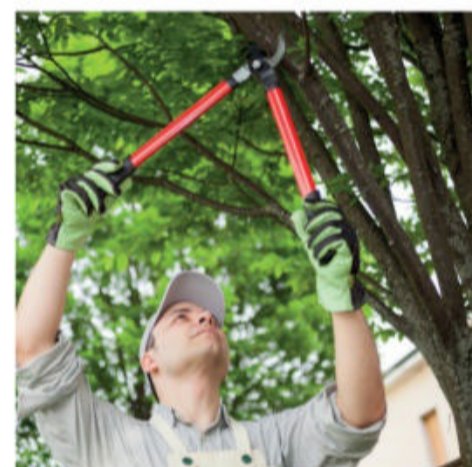


Walking the dog

When I'm at home, I walk our dog every day. But I don't just do it for the dog! It's good for me too. At least I get some exercise. Of course, there are days when I can't because I have too much to do, but usually we walk for about 45 minutes every day. Ask my neighbours, "Do you see that idiot with his wife and dog walking?" and they'll confirm. We have a rescue dog now. He's a mix between a rat terrier and a Jack Russell. Cute thing.

Tree pruning

In spring, when the trees need cutting back, I do it myself because I don't want to spend money! And I love it. So I bought the equipment – the chainsaw and all that. If you came to my house, you'd be amazed at how much stuff I have.

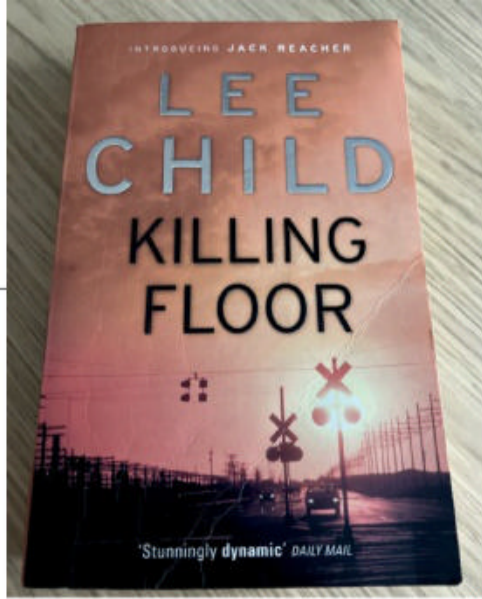


PICTURES: STEVEN TEE; SHUTTERSTOCK



Cigars

It's on and off. Sometimes I smoke almost every day for a month and then I don't smoke for two or three months. In the summertime it's nice to sit outside in the evening. You know, just have a cigar, relax, think about the day and things like that... But in the winter I don't go outside – I don't smoke in the house, of course – and I wouldn't sit outside freezing to smoke a cigar, because then it's not enjoyable, it's just painful. And I have to enjoy it.



Reading

I read all sorts of things. Books about local politics, stories from the old days. I read thrillers, a lot of them, the simplistic ones, Lee Child and all that stuff. I've read everything by William Burroughs.

I like Jack Kerouac too, books like 'On the Road', stuff like that – you might not have heard of it, it's from the 1960s. Pretty cool stuff. You should read it. But again, I have periods where I'll read for maybe two or three hours every night and then I might stop for a month and not read anything.

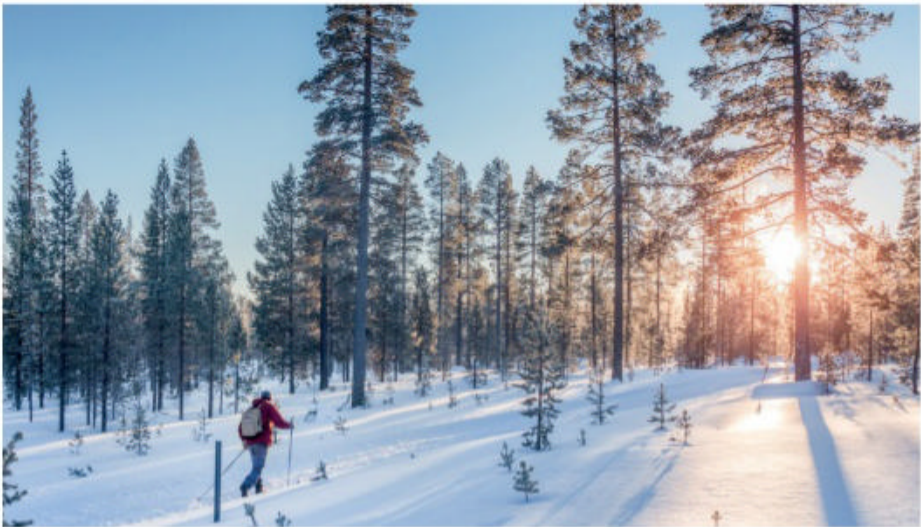
Cooking

When I'm at home, I like to cook for the family. I like pasta dishes. Well, pasta is pretty easy, but sauce can be tricky. And I also like barbecue. I learned how to do it a bit better in the States. A lot of people think it's just burning meat, but it's not that simple. When you smoke things, it takes hours and hours – even to prepare meat. You have to put a bit more effort into it!



Deep sea fishing

This is what I'd do if I had more time. I haven't done it too often but, when I have, I've enjoyed it a lot. You just go out, 20-30 miles out in the boat, you don't see anybody... I'm not an expert, but that's probably what I'd do if I had more time.



Cross-country skiing

I used to do it when I lived in northern Italy, and I think I'm getting a bit too old for it now! But I really enjoy it. If you've got the time and you know a good place, it's great exercise. It's actually quite demanding, but it's a nice sport. You get tired, but you enjoy the feeling. I don't like running, for example, because... it's just running. And it's the same with cycling – it's just for your legs. Skiing makes your whole body work.

Ice hockey

I played until I was 15 – and the next time I played was when I was 58. So quite a gap! But I watch it sometimes at home. Not that I watch it too often, but when I'm not reading or cooking, you can find me watching some NHL games.



Business interests

Apart from F1, I have my own business interests. It's something I've always wanted to have in life. I grew up in a family that had a business, a butcher's shop. It wasn't a big business, but you grow up and you see the kind of independence it gives you – and that's very important to me, to have something that's my own. Not to be, let's say, independent of anybody, because you're always dependent on somebody in almost everything you do, but at least to know that you're in control of it a lot more than when you were an employee. That's why I always wanted to have my own business in life. Of course, my business, Fibreworks Composites, is a joint venture with my business partner, so I can't take all the credit for it – or he'll be pissed when he reads this. But I enjoy running it together. We've got 200 people. And you know, it's also nice to give something back to society, to create jobs. It's not just about money, it's also about doing something for other people because I can.

SHOWCASE

ABU DHABI GP

Firmly positioned as F1's season closer, it's a race that's seen a few goodbyes...

▼ *In 2009 the Yas Marina circuit hosted its first GP, which also happened to be F1's first day/night race, starting at dusk and finishing under floodlights. Sebastian Vettel was the venue's inaugural winner*





◀ Manor (in various guises) survived the longest of the teams granted entries for 2010, outstripping the other two – Campos and Lotus Racing – that made it to the grid. It competed in 131 GPs, but Esteban Ocon (31) and Pascal Wehrlein were the drivers in Abu Dhabi in 2016, the team's last race

▼ The 2021 Abu Dhabi GP was probably the most controversial race in F1 history but at the end of all the shenanigans Max Verstappen was crowned world champion for the very first time. And, as teams are wont to do now, Red Bull celebrated its success with gusto in the pitlane



◀ Called Lotus Racing when it entered F1 in 2010, and then Team Lotus, the Tony Fernandes outfit became Caterham from 2012 to 2014. In October 2014 Caterham went into administration and the team missed two races, only returning for a last hurrah in Abu Dhabi after a crowdfunding appeal

▶ When Jenson Button walked to the grid for the 2016 Abu Dhabi GP he received this guard of honour from his McLaren colleagues, in the knowledge that it would be his 305th and final start. And then Fernando Alonso decided to race in the 2017 Indy 500 and Button was called back to deputise in Monaco





▲ Nico Rosberg's determination to win a world championship paid off in 2016 after the German changed the way he approached his battle with Mercedes team-mate Lewis Hamilton. The effort took its toll though. Five days after this celebration in Abu Dhabi Rosberg announced his retirement

▼ Charlie Whiting in pensive mood at the 2018 Abu Dhabi GP. The race marked Whiting's 22nd season as the FIA's race director, safety delegate and permanent starter. Sadly, it would prove to be Whiting's final F1 race as he died of a pulmonary embolism just ahead of the 2019 Australian GP



▼ Bridgestone won the first exclusive contract to be F1's sole tyre supplier after 11 years in the sport. This agreement lasted from 2008 to 2010 but, with the marketing benefit not justifying the cost, the Japanese manufacturer withdrew at the end of the deal. The 2010 Abu Dhabi GP was its final race





This was the moment that, without doubt, changed the destination of the 2021 drivers' world title. Nicholas Latifi's late-race crash in Abu Dhabi, and the subsequent Safety Car, allowed the passing Max Verstappen to pit for new tyres. The rest is history...



▲ On the slowdown lap of the Abu Dhabi GP it's become de rigueur for the world champion, if the title has already been decided, to stop on the pit straight, perform a few donuts and then take in the adoration of the crowd. In 2017 Lewis Hamilton was joined by race winner and Mercedes team-mate Valtteri Bottas, and the retiring Felipe Massa

► They say never go back and Fernando Alonso's return to McLaren in 2015 was even less successful than his first stint with the team. At the end of 2018 he stepped away from both McLaren and F1 at the Abu Dhabi GP, only to reappear at Alpine in 2021





▲ On the first lap in 2010 Mercedes team-mates Nico Rosberg and Michael Schumacher tangled at Turn 6, with Schumacher turned round to face the rest of the pack. Unfortunately the Force India of Vitantonio Liuzzi was unable to avoid Schumacher and came to rest atop the Merc

▼ The building of the Yas Marina circuit was the centrepiece to developing Yas Island, just to the east of Abu Dhabi, as a tourist destination. The track was designed by Hermann Tilke and construction started in May 2007. Completed in October 2009, it held its first GP a month later

▼ The 2012 Abu Dhabi GP will always be remembered for race winner Kimi Räikkönen's famous radio message. On lap 23 leader Kimi was given gap information by race engineer Simon Rennie. Kimi's classic response to this: "Just leave me alone, I know what I'm doing"





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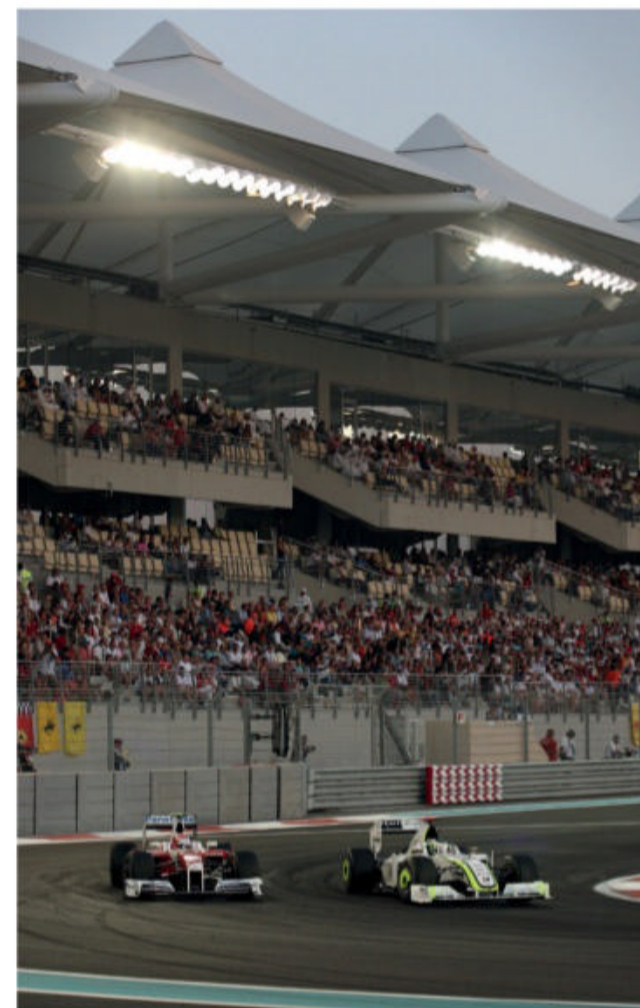


⚠ Although the closing stages of the 2021 Abu Dhabi GP were full of controversy, it was not surprising there was also trouble on the opening lap. At Turn 9 championship protagonists Lewis Hamilton and Max Verstappen jostled for the lead. But that was just the hors d'oeuvre...

⚠ The relatively wide open spaces of most of the Yas Marina circuit means that big accidents are thankfully few and far between. However, in 2018 Nico Hülkenberg was tagged by the Haas of Romain Grosjean at Turn 6, flipping the Renault upside down and into the barrier



By the end of 2009 Toyota's attempt to conquer F1 had run its course. The season-ending Abu Dhabi GP would turn out to be its final race – the official announcement came three days later – and this was also the case for title winners Brawn, sold to Mercedes in mid-November



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LISTA

MAURICE HAMILTON'S ALTERNATIVE VIEW

It's a good thing there were no penalties for changing engines 40 years ago – even for a season finale...

PICTURES  **motorsport**
IMAGES

“LIFT AND COAST.” Expect to hear that command as tyres and power unit supplies are eked out in the final races. As you know, each driver is expected to get through a season on four engines. Which is a bit like asking the FIA president if he wouldn't mind limiting his TV cameo appearances to 50. It's a tough call. Things were more free and easy in the championship shoot-out 40 years ago.

For the final race of 1983, BMW came to South Africa with no fewer than 13 engines. For one team. Or to be perfectly honest, for one driver. Nelson Piquet was BMW's man as the Brabham number one went head-to-head with Renault's Alain Prost (Ferrari's René Arnoux was an outsider in this championship mathematical mix).

BMW had need of that engine roster when

Piquet and team-mate Riccardo Patrese blew two of the four-cylinder turbos on the second day of a test immediately preceding the GP weekend. Another unit let go in first practice. You begin to understand why FIA president Max Mosley set out to slash this profligacy when BMW allegedly manufactured 600 engines in one season. We've since gone from one extreme to the other. But that's the way it was at Kyalami in 1983.

Renault-Elf ignored Prost's pleas to do something about its fragile turbo. Why worry? Prost had been leading the championship since May and had won four races to Piquet's three. Renault was confident enough to fly in a mob of French media on a chartered plane. Many of the reporters, new to motorsport, expected as a matter of course to witness the crowning of the first French F1 world champion.

Brabham and BMW had other ideas. Piquet qualified on the front row, with Prost back on row three. Patrick Tambay had confirmed his pace throughout testing and practice by putting his Ferrari on pole. Which gave the Maranello management something of a dilemma.

Ferrari had just told Patrick he would not be required in 1984. And now Arnoux, Ferrari's main man, had struggled onto the second row. When asked to help Arnoux during the race, the normally mild-mannered Tambay told team manager Marco Piccinini where he could stick his request. Patrick then happily repeated what he had said to anyone who asked.

All of which compounded Arnoux's woes. The little Frenchman was nursing a bruised ankle, caused by a marshal having accidentally pushed the Ferrari over René's foot after the 126C3 had



A reasonably relaxed Prost during practice. When a turbo failure – which he'd warned Renault about – forced him to retire, handing Piquet the title, he wasn't quite so calm

MOSLEY SET OUT TO SLASH THIS PROFLIGACY WHEN BMW ALLEGEDLY MANUFACTURED 600 ENGINES IN ONE SEASON



After a stunning opening few laps and a switch in strategy, Piquet eventually finished second behind team-mate Patrese, but it was enough to clinch his second world title

relationship with Renault, already in choppy waters, ran aground right there. (His future would be decided not long after when a chance meeting with Ron Dennis in the helicopter queue would lead to six seasons with McLaren.)

Elf was furious because, in its view, BMW had brought a special rocket fuel, allegedly to help deal with running at Kyalami's altitude. But there were no protests, no checks by the FIA. 'Relaxed' doesn't make a start.

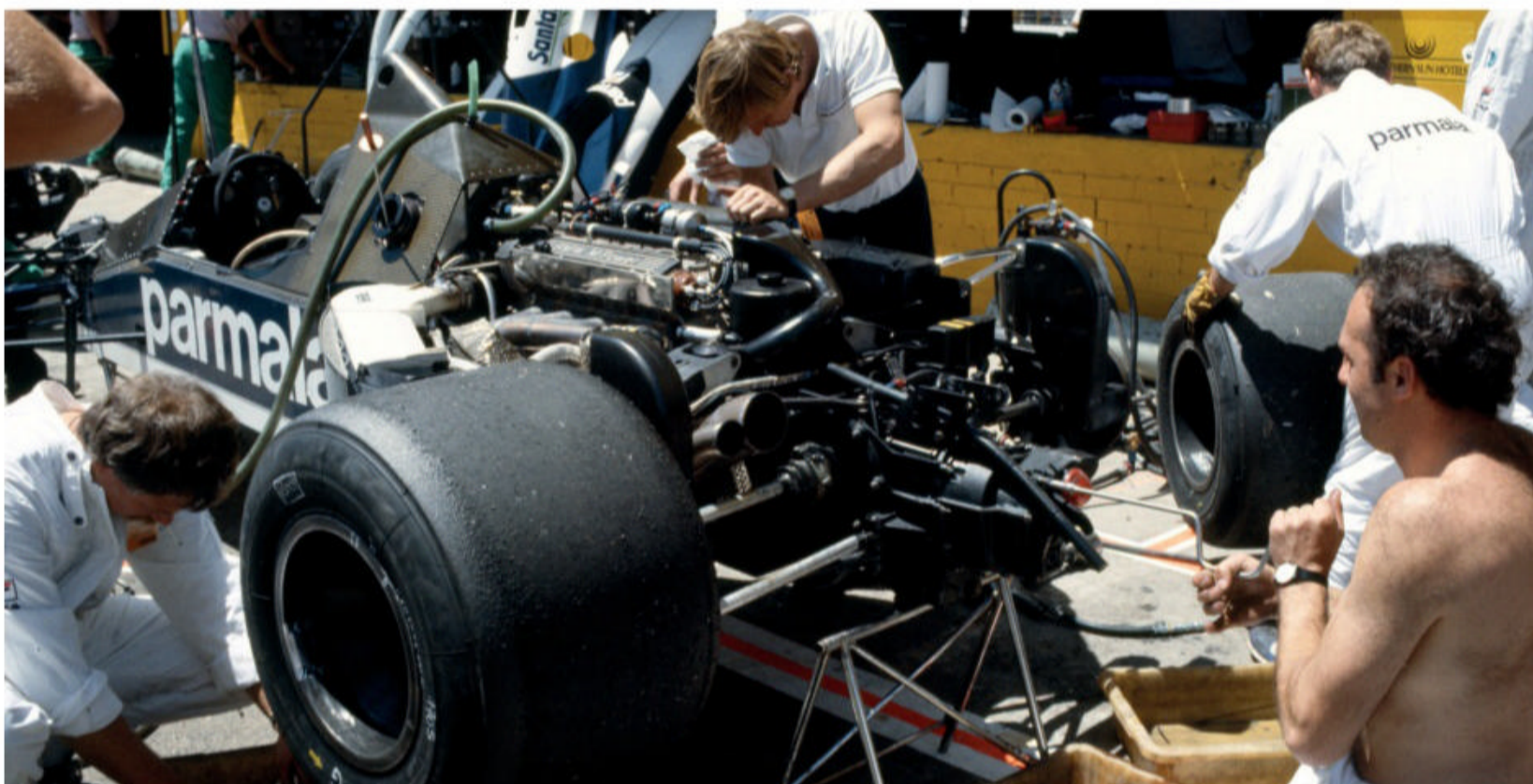
On the eve of the race, for example, Paul Rosche, the brilliant brain behind BMW's 4-cylinder grenade, had ambled, beer in hand,

into the Williams garage and taken a good look at its latest engine, Williams having switched from Ford-Cosworth V8 to Honda turbo. Strange as it may seem today, a change of engine supplier during the season was not seen as unusual. But it could lead to problems elsewhere. I speak from experience.

Filing a race report in the days before computers involved dictating your newspaper story down the phone – usually in a busy press room full of clacking typewriters. This

having been a Saturday race, I bawled my report across to *The Observer* in London. Through a combination of my Northern Ireland accent, the background din and an uninterested sub editor, *The Observer* on Sunday 16 October 1983 informed the world that Keke Rosberg had been racing a 'Humber-engined Williams for the first time'. This was a surprise to many – not least the author – since the British manufacturer of luxury cars had shown no interest in motor racing since competing in the Tourist Trophy in 1914.

Just as well we have the precise filing of online stories today. It does away with the need for reports bellowed across continents and creating the possible mystery of a race engineer apparently asking his driver for a "lift to the coast".



Brabham took an amazing 13 BMW turbo engines to South Africa for the test and GP in 1983. It meant a hell of a lot of work for the mechanics but it paid off in the end

ground to a halt with an electrical problem. The irony was that the marshal had been eagerly responding to Arnoux's advice that the Ferrari should not remain parked in a dangerous place.

Brabham, meanwhile, was hatching a plan. This was when race-day strategy amounted to deciding where and when the drivers and mechanics ought to have lunch. Brabham had set a daring new trend by introducing refuelling. The usual plan was to run long but, on this occasion – on the suggestion of team boss Bernie Ecclestone – they did the opposite.

Piquet took off like a scalded cat, pulling a couple of seconds on the rest in each of the opening laps. This had the additional advantage of running in clear air while the opposition did

their turbos and tyres no good in the sultry conditions. Piquet, helped by Patrese robustly defending second, made a stop (9.2s – a record at the time) and rejoined without losing the lead. His second title was all but assured when Prost, as he had predicted, suffered a turbo failure.

Seasoned members of the French media were not surprised. Their visiting brethren, having come all this way for nothing, were outraged. A lasting memory is of Alain sitting in the garage with an equally pale and wan Gerard Larrousse as the driver and team boss tried to explain the unexplainable in easily understood phrases. It was difficult to decide which was the more unpleasant; the surrounding fug of Gauloises smoke or the choking inquisition. Prost's



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FINISHING STRAIGHT

RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 19

THE UNITED STATES GP IN 5 KEY MOMENTS

1 Brakes issues can't halt Max's 50th win

Starting the final lap of the United States Grand Prix, Lewis Hamilton was just 1.8 seconds behind leader Max Verstappen. Fifteen laps earlier the Mercedes – on the medium tyre, the softer of the two preferred race compounds – was 7.5s in arrears. Hamilton had passed a spirited Lando Norris for second place seven laps from the flag and, for a brief moment, it looked as if he could challenge Verstappen for the win.

But this is 2023. Max crossed the line to record his 15th victory of the year and the 50th of his career. His points tally of 466 eclipsed his own previous record for the most scored in a season. However, the tone of his voice while communicating with his engineer Gianpiero Lambiase in the latter stages of the race implied he had to fight for this one.

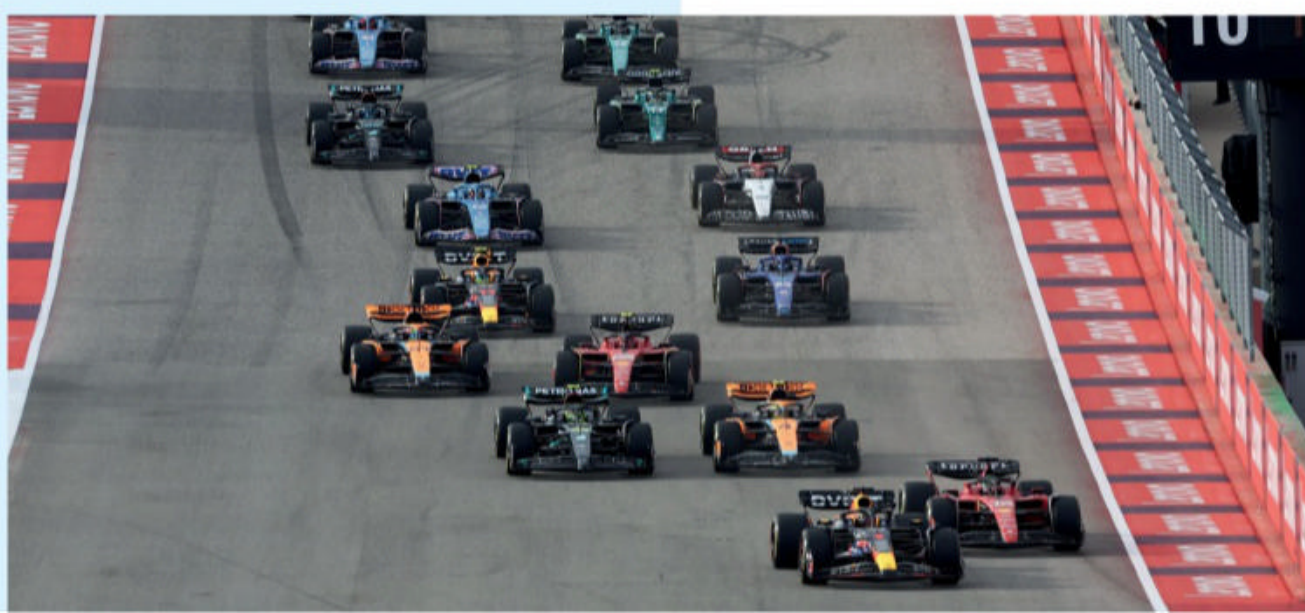
Verstappen was a little unfortunate to line up sixth on the starting grid at the Circuit of The Americas. He'd set a time good enough for pole position but was stripped of P1 for breaching track limits at Turn 19. After a reportedly heated drivers' briefing on Friday night the FIA decided to increase the width of the white line at Turns 9, 12 and 19 to allow a bit of extra margin and reduce the (by then borderline ridiculous) number of infringements. Had this been a normal weekend with qualifying on the Saturday, Max might therefore have been on pole...

A rare spin during qualifying for the sprint shootout didn't hinder the Red Bull man too much; he duly took the sprint win from the front in an encounter so insipid it has prompted F1 to weigh up changes to the format. But with the Ferrari of Charles Leclerc on pole for the main event and both Hamilton and McLaren's Lando Norris looking quick, Verstappen had to be smart if he were to emerge on top in Austin.

Cautious at Turn 1, Max drove conservatively in the first stint, managing his tyres well, while Norris



The wins just keep coming for Verstappen, even from sixth on the grid after a track limits violation in qualifying. In the sprint (below) he won from pole after a robust defence into the first corner



got by Leclerc and galloped off into an early lead. When Verstappen pitted at the end of lap 16 he was a little over six seconds behind the McLaren man, having passed both Ferraris.

Tyre characteristics then played their part. McLaren felt the MCL60 worked best on hards and had reserved two new sets, while Red Bull kept two sets of new mediums for Max. After a full weekend of track activity with three support series laying

rubber down, the degradation characteristics of the hard and medium were the same while the medium offered more grip.

Thus Max, after putting on new mediums, undercut Hamilton and was able to catch and pass the hard-shod Norris into Turn 12 on lap 28. But this would be no easy and straightforward canter to the flag. After a (perfectly legal) change of brake material in parc fermé, Verstappen found his anchors acting inconsistently, sapping his confidence and interfering with his ability to manage his tyres properly.

From mid-race onwards Max was to be heard regularly and vociferously bending Lambiase's ears about the quality of the brakes and directing his engineer not to talk to him while his car was in the braking zone. All the while Hamilton, revelling in the medium tyres after two troubled stints on hards, was closing in after passing Norris.

We've been used to some grandstand finishes under the big blue Texan skies at COTA, but it wasn't to be this year. Verstappen clung on for the win – ahead of his old foe by 2.2s at the line.

2 The case of two (not so) thick planks

The two-second margin at the finish led to a post-mortem at Mercedes to see if victory might have been possible. When Verstappen pitted on lap 16, it was a surprise to see Hamilton not come in the next time round, or the following lap, to guard against the undercut. In fact he didn't come in until lap 20, by which time the damage had been done.

Mercedes had been hoping to make a one-stop race work but a sharp drop-off in tyre performance, plus a lock-up by Lewis at Turn 11, prompted a shift to a two-stopper. A slow change on the right-front, in which Hamilton slightly overshooting his marks was a contributory factor, cost more time (he was stationary for 3.6s and the second stop on lap 39 was also tardy at 3.4s). He also had to fight his way past the one-stopping Leclerc. "Still a big gap ahead..." Lewis said with 12 to go.

The diminishing margin between the top two teams is partly due to Red Bull turning the development taps off – in contrast Mercedes brought a new floor design to Austin. The W14 was recalcitrant in the high-speed Esses at Suzuka, while on the similar sweeps of COTA the Mercedes now looked nailed on. But the performance improvement was overshadowed by a post-race inspection that found the car illegal.

Second-placed Hamilton and Leclerc (sixth) were both disqualified after it was discovered the skid planks underneath their cars had worn beyond the limited tolerance for wear. Wood – a somewhat Luddite material in such a high-tech world – was introduced to the underfloor of F1 cars in 1994 to prevent teams from running ultra-low ride heights; each plank has a number of holes by which wear



Hamilton (above) couldn't take heart from a close second as he, like Leclerc (below) was disqualified for illegal skid plank wear



can be measured with a tool which works like a tyre tread depth gauge. The FIA hearing on Sunday night noted that the high wear was "probably a result of the unique combination of the bumpy track and the sprint race schedule that minimised the time to set up and check the car before the race."

Mercedes explained Hamilton's car hadn't run with a full fuel load in FP1, owing to the schedule limiting track time, and this, combined with the

bumpy track, led to greater wear than expected.

Time constraints also mean the FIA cannot survey every competitor – checks are made at random or if the telemetry and on-board footage suggests a car is bouncing or striking the ground repeatedly. For the record both Verstappen and Norris's cars were scrutinised and found compliant – but there could have been more which were not, and escaped sanction. ▶



FINISHING STRAIGHT

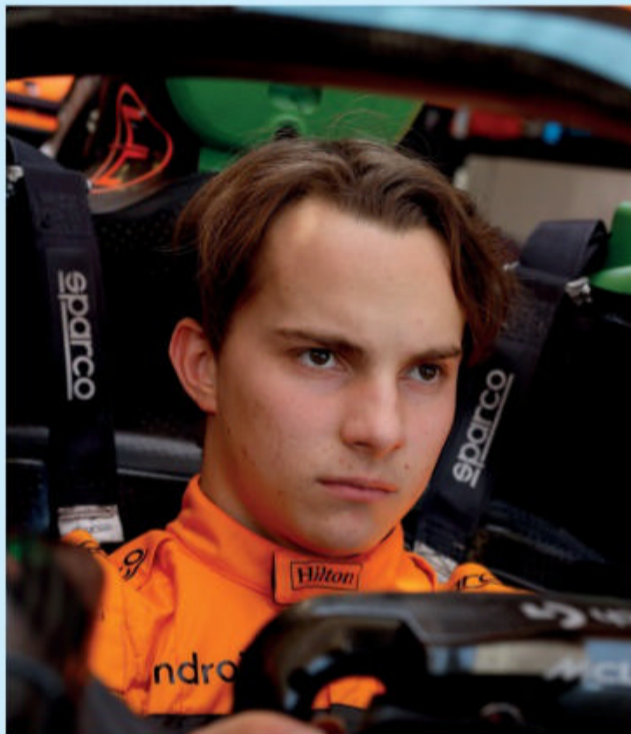
RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 19

3 A scrappy weekend for the young hotshoes

It's a sign of McLaren's recent form that Lando Norris appeared slightly disappointed with his sixth podium of the year – and another second place (following Hamilton's disqualification). Significantly the points haul at Austin took the Woking team ahead of Aston Martin for fourth in the constructors' championship.

While one of the stand-out stars of the season has been Oscar Piastri, the lack of track time offered by a sprint weekend put the Australian on the back foot in comparison with his team-mate.



A lack of track time hampered Piastri in Austin and his weekend ended badly after contact with Ocon in the GP itself

Contact between Piastri and Esteban Ocon's Alpine on the opening lap of the grand prix forced both cars to retire with damage. In the sprint the day before, Piastri was fighting with George Russell for seventh when the Mercedes driver ran wide, off-track, at Turn 15 in his quest to muscle past. The inevitable "leaving the track and gaining an advantage" penalty came Russell's way in the form of five seconds.

Like Piastri, the Mercedes racer endured a scrappy weekend in comparison to his team-mate. It was Russell's second misdemeanour of the day, after he'd impeded Leclerc in the Saturday morning shootout and he was given a three-place grid drop for the sprint (to line up 11th)

Starting the grand prix in fifth, Russell lost three places at the start and, like Hamilton, was hamstrung by tyre choice and finished seventh (although he was elevated to fifth with the disqualifications). He likened his COTA weekend to his season as a whole.

"It feels like a missed opportunity, on the back foot from the beginning and then making a bad start. I was off the pace in qualifying and it just feels like the story of the year," said Russell. "Last year I don't think we missed an opportunity in 22 races, whereas this year it feels like 50% of the races we've been far from maximising the points."

After outscoring Hamilton in 2022, Russell is 58 points – and five places – behind his team-mate

in this year's standings.

"To be fair, Austin's always been a bit of a bogey track for me," admitted Russell. "Always struggled a bit here and [this circuit] has probably been one of his [Hamilton's] strengths."

4 AlphaTauri takes the soft option

With the deep scar on display from his unfortunate metacarpal break from Zandvoort two months ago, Daniel Ricciardo was back in the AlphaTauri, at one of his favourite events of the year.

But Ricciardo's return to the cockpit wasn't the fairytale he'd dreamed of. While the high-speed sweeps would have placed a lot of strain on his left hand, Daniel refused to blame his injury for the disappointing result. In the event, Ricciardo finished the US GP as the last classified runner; attempting a one-stop strategy didn't help his cause, and he struggled in traffic even after a late change to soft-compound tyres. The team attributed his car's lack of pace to a damaged floor, potentially as a result of running over debris or through wheel-to-wheel combat with Lance Stroll's Aston Martin.

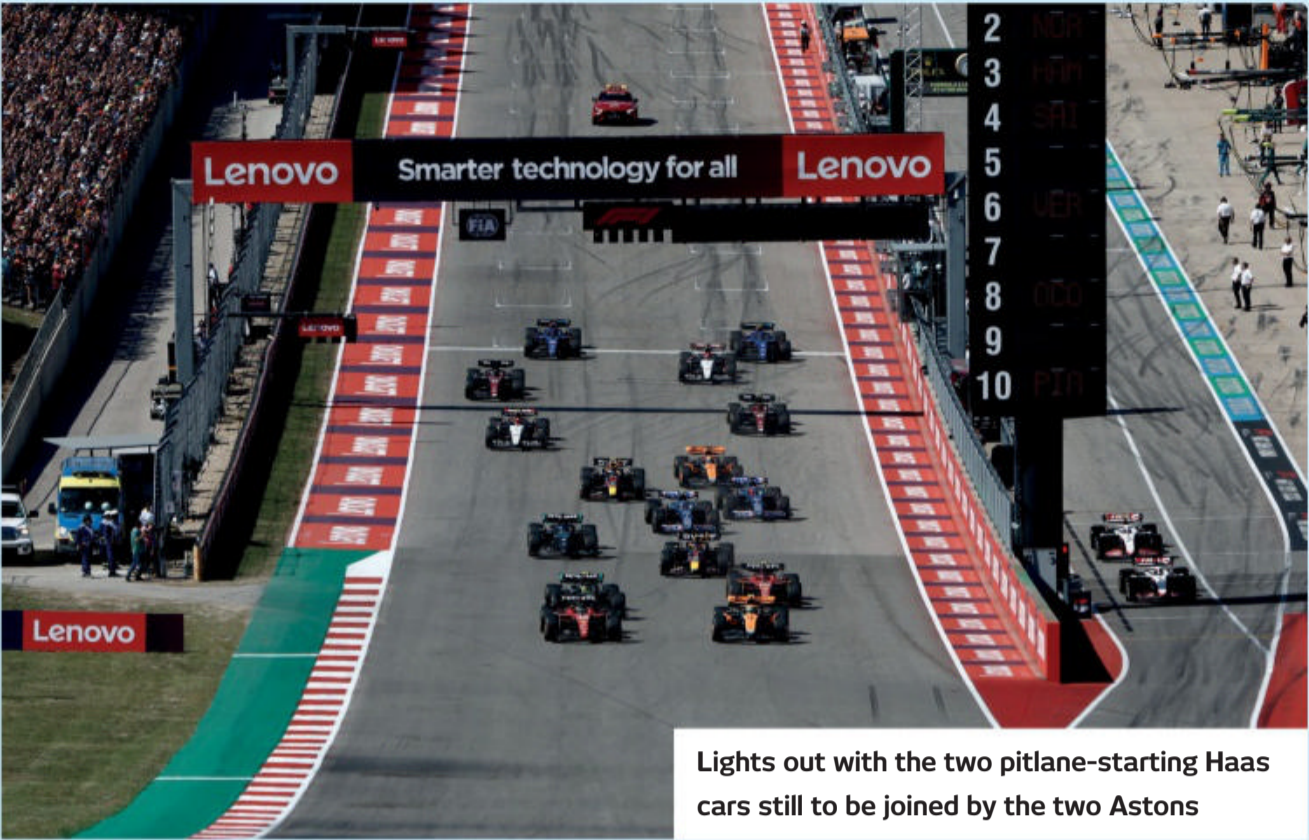
The AlphaTauris were the only two cars to run the soft tyre in the grand prix (Carlos Sainz was the sole driver to try the red-marked Pirelli in the sprint). Ricciardo ran eight laps on the soft at the end, while his team-mate Yuki Tsunoda came in at the end of lap 54. Since Alex Albon, running behind Tsunoda, had picked up a penalty for track limits, it was an opportunity to bag another world championship



Russell (left) with Ocon after the sprint race. Neither driver had a particularly successful GP with Russell struggling and Ocon retiring



PICTURES: STEVEN TEE; ZAK MAUGER; MARK SUTTON



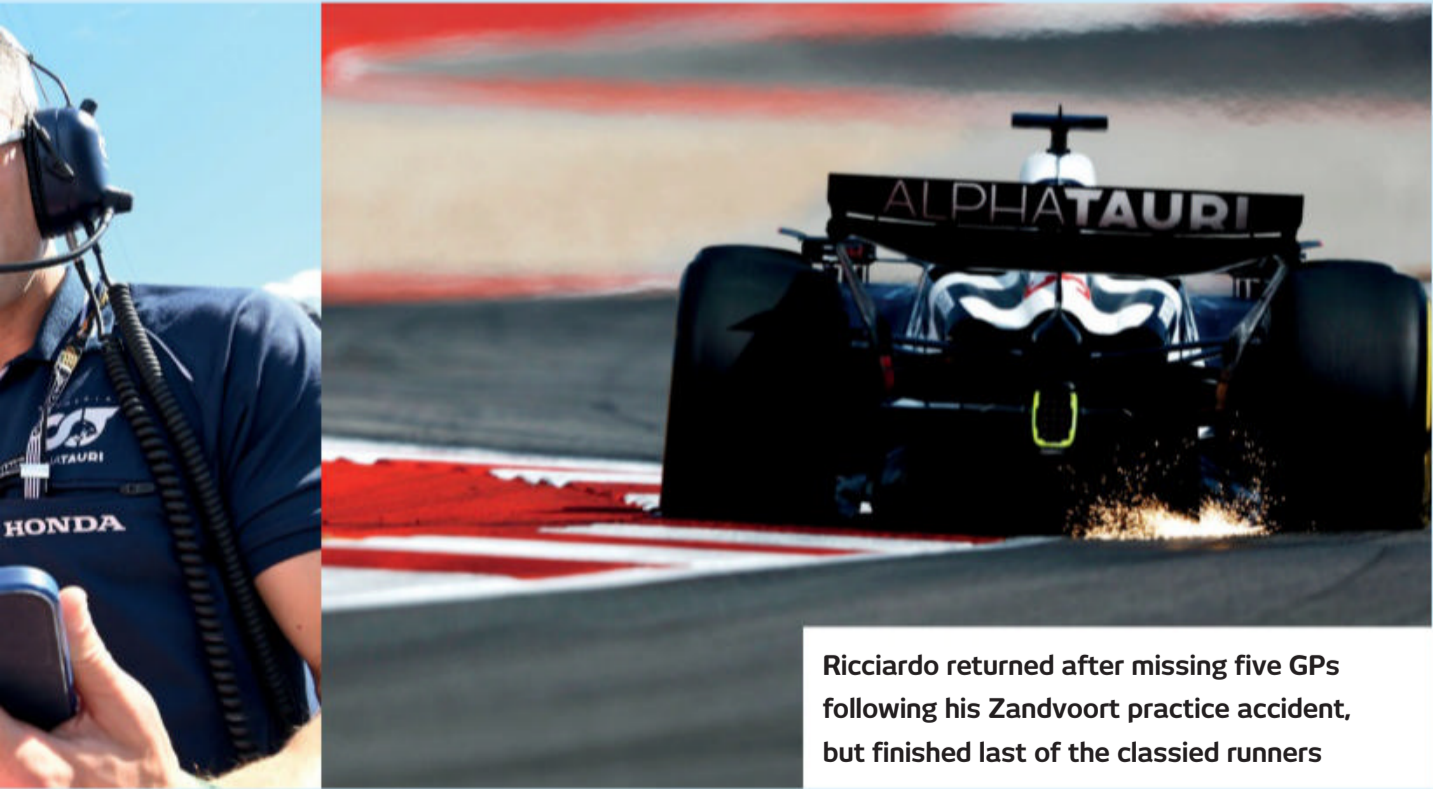
Lights out with the two pitlane-starting Haas cars still to be joined by the two Astons

point for fastest lap (while running tenth).
Tsunoda's 1m38.139s became the fastest lap of the grand prix, making him only the third Japanese driver to record such a feat in the history of F1. He follows in the footsteps of Satoru Nakajima (Australia 1989) and Kamui Kobayashi (China 2012).
It's also worth noting another record following the disqualification of Hamilton and Leclerc. Having passed Nico Hülkenberg's Haas for 12th late on, Williams' Logan Sargeant was promoted into the points. 10th place – at his home race – marks the first point scored by an American driver since Michael Andretti clinched a podium at Monza in 1993.

5 Limited track time impacts updates

Only 16 cars lined up at the start of the grand prix in Austin after both the Aston Martin and Haas teams made changes in parc fermé and had to join the fray from the pitlane. Although the memo

to Stroll might have been lost in the post as he missed the pit entry on his reconnaissance lap to the grid and had to be wheeled off by his mechanics through a gap in the pitwall.
Aston Martin team boss Mike Krack subsequently admitted that bringing updates to a sprint weekend was a calculated risk. Brake fires for both cars in practice – a simulation error led the team to apply too much blanking to the front ducts – limited track time to evaluate the updates in the only practice session and neither driver got out of Q1.
Changes were needed and Fernando Alonso reverted to an older specification, while Stroll kept the updates. Come the race, Alonso was forced to retire with a damaged floor, but Stroll scored his first points since the summer break.
Haas came to Austin with a big update to the floor, sidepods and engine cover, but had to change downforce levels in parc fermé. Chief designer Andrea de Zordo described the upgrade as “a little better than the old package” but it wasn't enough to get Nico Hülkenberg or Kevin Magnussen into the points.



Ricciardo returned after missing five GPs following his Zandvoort practice accident, but finished last of the classied runners

RESULTS ROUND 19

CIRCUIT OF THE AMERICAS /
22.10.23 / 56 LAPS



1st	Max Verstappen	Red Bull	1h35m21.362s
DSQ	Lewis Hamilton	Mercedes	+2.225s*
2nd	Lando Norris	McLaren	+10.730s
3rd	Carlos Sainz	Ferrari	+15.134s
4th	Sergio Pérez	Red Bull	+18.460s
DSQ	Charles Leclerc	Ferrari	+24.662s*
5th	George Russell	Mercedes	+24.999s
6th	Pierre Gasly	Alpine	+47.966s
7th	Lance Stroll	Aston Martin	+48.696s
8th	Yuki Tsunoda	AlphaTauri	+74.385s
9th	Alex Albon	Williams	+86.714s**
10th	Logan Sargeant	Williams	+87.998s
11th	Nico Hülkenberg	Haas	+89.904s
12th	Valtteri Bottas	Alfa Romeo	+98.601s
13th	Zhou Guanyu	Alfa Romeo	+1 lap
14th	Kevin Magnussen	Haas	+1 lap
15th	Daniel Ricciardo	AlphaTauri	+1 lap

Retirements

Fernando Alonso	Aston Martin	49 laps/floor damage
Oscar Piastri	McLaren	10 laps/damage
Esteban Ocon	Alpine	6 laps/damage

Fastest lap

Yuki Tsunoda 1m38.139s on lap 56

F1 Sprint – 19 laps

1st	Verstappen	2nd	Hamilton	3rd	Leclerc
4th	Norris	5th	Pérez	6th	Sainz
7th	Gasly	8th	Russell		

TYRE COMPOUNDS USED



CLIMATE	AIR TEMP	TRACK TEMP
Sunny	32°C	44°C

DRIVERS' STANDINGS		
1	Verstappen	466pts
2	Pérez	240pts
3	Hamilton	201pts
4	Alonso	183pts
5	Sainz	171pts
6	Norris	159pts
7	Leclerc	151pts
8	Russell	143pts
9	Piastri	83pts
10	Gasly	56pts
11	Stroll	53pts
12	Ocon	44pts
13	Albon	25pts
14	Bottas	10pts
15	Hülkenberg	9pts
16	Tsunoda	8pts
17	Guanyu	6pts
18	Magnussen	3pts
19	Lawson	2pts
20	Sargeant	1pts
21	De Vries	0pts
22	Ricciardo	0pts



FINISHING STRAIGHT

RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 20

THE MEXICO CITY GP IN 5 KEY MOMENTS

1 Home is where the art isn't

Competing at a home race can be a double-edged sword. If you think of Nigel Mansell at Silverstone or more recently Max Verstappen at Zandvoort, they both thrived on the adulation of racing in front of their faithful fans. In contrast the pressure to perform can frustrate even the greatest champions. It took Ayrton Senna eight attempts to triumph in Brazil. Sebastian Vettel was desperate to win at Hockenheim in 2018... and he crashed while comfortably leading.

Ever since Mexico City returned to the F1 schedule in 2015, the support for Sergio Pérez has been off the scale. In the past two seasons that he's had a car at the sharp end, the Mexican has scored two thirds. Heading into this year's race, though, podiums have been in rather short supply.

After starting the season as a potential contender to Max Verstappen, Pérez has subsequently under-performed in the best car on the grid. In Mexico, Verstappen broke his own record to win 16 races in a season – that's one more

than Jenson Button won in his entire F1 career – in contrast, Pérez hasn't finished on the rostrum since Monza in early September.

This has had little effect on crowd numbers at home: weekend attendance at the Autódromo Hermanos Rodríguez was 400,639 and the loudest cheers were reserved for Checo. In qualifying he finished Q3 just 0.16s behind his team-mate to line up fifth on the grid. But splitting the Red Bulls was an interloper: the AlphaTauri of Daniel Ricciardo.

Off the line Pérez made a great start and was soon in the tow of polesitter Charles Leclerc. In the 811 metre dash from pole to braking for Turn 1 (the longest of the season) Pérez pulled out of the Ferrari's slipstream and moved to the grippier racing line, on the left of the track.

Thinking the job done and not expecting Leclerc or a fast-starting Verstappen to still be alongside, Pérez began to turn into the right-hander. Contact was inevitable and he was flung high into the air after riding over the front-left wheel of the Ferrari.

The gasps around the track confirmed the worst possible outcome: the home hero was out after less than half a mile of the 2023 Mexico City Grand Prix.

"I had a tremendous start and the gap was there," said Pérez, who forlornly returned to the pits at the end of the first lap.

"I knew I had a chance to take the lead. I went for it. To be honest I wasn't expecting Charles in the middle to brake as late as he or Max did, and there was no room for three cars. But I wanted to give my all and I went for it."

Pérez's DNF and a combative second for Lewis Hamilton closed the gap between the two to 20 points. At what stage does Red Bull boss Christian Horner make a decision on the team's future?

"Absolutely gutting," was Horner's view. "You can't blame him for going for the lead of his home race. He's got 13 years of F1 experience and when going through a difficult moment, it's important to support him. He was having a great weekend up to that point – but three into one didn't go."



Desperate to win his home race, Pérez took advantage of a great start to try to grab the lead around the outside of Turn 1 on the opening lap. Contact with Leclerc was almost inevitable

PICTURES: STEVEN TEE; ANDY HONE; MICHAEL POTTS

2 Ferrari's pace was all over the place

As the field emerged from the Turn 1 incident Verstappen led while Leclerc scrambled through the grass with a deranged endplate. Leclerc escaped sanction for the damage when part of the left-front came loose and he could continue with a mangled front wing.

Leclerc had taken a surprise pole (with team-mate Carlos Sainz completing the front-row) thanks to the vagaries of racing at 2,240 metres above sea level. The rarefied atmosphere leads to sudden differences in track temperature after just a small shift in ambient. A two-degree change in the air can result in a ten-degree swing in track temperature.

Since the softest C5-compound Pirelli was acutely sensitive to track temperature the conditions at the end of Q3 were optimum for the Ferraris and they suddenly went a second quicker than they had all weekend. In contrast Alex Albon – who had shown impressive pace in practice – was suddenly struggling for grip in his Williams.

The two Ferraris were happy with their Plan A one-stop, but Lewis Hamilton was more aggressive strategically. He switched from the medium to the hard compound on lap 25 (seven laps earlier than Leclerc and six laps before Sainz) and in that period he was able to gain time on both scarlet machines.

After the race was red-flagged on lap 35 following Kevin Magnussen's high-speed impact with the Turn 8 barriers, Hamilton opted for a medium at the restart, while the Ferraris stayed

Hamilton's move to take second from Leclerc was highly committed as he touched the grass on the run down to Turn 1 on lap 40



committed to the hards. Despite Hamilton conceding it was "going to be a tough stint" and "a long way on this tyre" he managed to claim second after passing both Ferraris. His move on Leclerc was particularly spectacular – the edge of his right-hand tyres touched the grass at over 200mph on the run down to Turn 1.

It was a move that clearly impressed both Leclerc and race winner Verstappen when the three of them watched the highlights of the race in the 'green room' before the podium celebrations.



For the restart on lap 36 Mercedes put Hamilton onto mediums and he managed them to the end to claim second place

3 Norris delivers drive of the day

McLaren team principal Andrea Stella has received an increasing number of plaudits as the year has progressed. Calm, intelligent and thoughtful, Stella has done much to unlock the team's latent potential and this has manifested itself in a resurgence over the second half of the season.

And while rapid rookie Oscar Piastri has caught the eye in recent races, in Mexico Lando Norris served up a reminder of his prodigious talent. Stella worked with both Michael Schumacher and Fernando Alonso at Ferrari; on Sunday after the race he described Norris's drive thus: "Not only was it one of his best races, but also one of the best races I have been part of."

High praise indeed. After starting Q1 on the medium tyre Norris was summoned unexpectedly to the pits, which compromised his run plan. He was ▶



FINISHING STRAIGHT

RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 20

knocked out and started a lowly 17th on the grid.

Thereafter he drove superbly. One of the main issues for all the teams in Mexico was cooling. The thin air at high altitude means brake and PU temperatures quickly get critically high, forcing drivers into mitigation measures such as pulling out of the slipstream to maximise airflow to the radiators, while also lifting and coasting to ease the PU load as well as fuel consumption (over half the lap is full throttle).

Norris was the only driver to start on the soft tyre and pitted early to the hard to gain time in free air. He was able to undercut a swathe of cars and then hunted down more on track.

He executed 14 on-track overtakes and in the latter stages they included some brilliantly judged on-track positioning to round Daniel Ricciardo at Turn 4 for sixth. He outmanoeuvred George Russell's Mercedes for fifth at Turn 6, four laps from the finish.

The red flag was a hinderance rather than a help

and, as temperatures were running high, Norris had to keep the revs low at the restart – losing four places as a result – and couldn't launch away from his pitstops.

Team boss Stella likened Norris's P5 to Alonso's Valencia 2012 victory, where he won after starting 11th, saying the drive was a "masterpiece".

4 Renaissance man Ricciardo revels in lower drag

Coinciding with Mexico's annual Day of the Dead festivities, in a weekend where one of the incumbent Red Bull drivers suffered a nightmare, returnee Daniel Ricciardo enjoyed something of a resurrection. The characteristically draggy AlphaTauri's key weakness was masked by the rarefied air of Mexico City and, with drafting help from team-mate Yuki Tsunoda (who had a

PU-related grid penalty), Ricciardo charged into Q3 and lined up fourth on the grid.

"It's definitely more fun fighting at the front," said Ricciardo. "It just feels better, feels right. So happy with the weekend and we'll try to keep this thing rolling."

In the final laps the Australian might even have passed Russell's Mercedes to claim sixth but, despite falling short, Ricciardo elevated AlphaTauri two places (from tenth to eighth) in the constructors' championship. The organisation basked in the wisdom of its decision to bring Ricciardo back from exile.

"You couldn't fail to be impressed by Daniel this weekend," noted Red Bull boss Christian Horner. "His qualifying was outstanding. He showed his maturity, experience and pace in the race. Fighting a Mercedes in an AlphaTauri for their best result of the year was a great performance. And as we see often in sport, his confidence is coming up and it was great to see Daniel looking his old self."

Knocked out in Q1, Norris carved his way through the field from 17th. Despite losing places at the restart he climbed up to fifth



PICTURES: MARK SUTTON; ANDY HONE



Tsunoda was another driver to fall foul of the current craze in F1 of drivers demanding the right of way around the outside of a corner in an overtaking move. Like Hamilton at Turn 1 in Qatar and Pérez in this race, Tsunoda went to the outside in an attempt to pass McLaren's Oscar Piastri as they battled over P7 on lap 49 into Turn 1 – but contact between the pair sent the AlphaTauri spinning off the track.

5 Magnussen's Haas can't take the heat

The cooling issues with power units extended to brakes and, in the case of Kevin Magnussen, was the likely cause of the suspension failure which led to his race-halting shunt on lap 34. The lap before his off, Kevin had run wide out of the final corner.

Magnussen was unhurt after the shunt that caused the race to be stopped and Haas found no issue with Hülkenberg's car



With the AlphaTauri's main weakness hidden by the Mexican conditions, Ricciardo made it into Q3 and finished an impressive seventh

He kept up his momentum while running on the dusty, bumpy apron on the outside of the track.

As he rounded the left-hander at Turn 7 and entered the right at T8 the team confirmed a left-rear track rod broke and that pitched his Haas straight into the Techpro barriers. The damage to the car was significant, with a fire starting on the left-rear brakes. He also hurt his hands in the impact.

Just moments before the shunt, Magnussen had radioed his team with the information that the "rear left has completely gone" and was told by his race engineer to try and bring brake temperatures under control.

Haas found no sign of a similar issue for the sister car of Nico Hülkenberg and, despite a strong run in the points, the team couldn't take much solace after it was usurped by AlphaTauri, falling to last place in the points standings.



RESULTS ROUND 20

AUTÓDROMO HERMANOS RODRÍGUEZ /
24.09.23 /71 LAPS



1st	Max Verstappen	Red Bull	2h02m30.814s
2nd	Lewis Hamilton	Mercedes	+13.875s
3rd	Charles Leclerc	Ferrari	+23.124s
4th	Carlos Sainz	Ferrari	+27.154s
5th	Lando Norris	McLaren	+33.266s
6th	George Russell	Mercedes	+41.020s
7th	Daniel Ricciardo	AlphaTauri	+41.570s
8th	Oscar Piastri	McLaren	+43.104s
9th	Alex Albon	Williams	+48.573s
10th	Esteban Ocon	Alpine	+62.879s
11th	Pierre Gasly	Alpine	+66.208s
12th	Yuki Tsunoda	AlphaTauri	+78.982s
13th	Nico Hülkenberg	Haas	+80.309s
14th	Zhou Guanyu	Alfa Romeo	+81.676s
15th	Valtteri Bottas	Alfa Romeo	+85.597s*
16th	Logan Sargeant	Williams	+1 lap/fuel pump
17th	Lance Stroll	Aston Martin	+5 laps/damage

*includes 5s penalty for causing a collision

Retirements

Fernando Alonso	Aston Martin	47 laps/damage
Kevin Magnussen	Haas	31 laps/accident
Sergio Pérez	Red Bull	1 lap/damage

Fastest lap

Lewis Hamilton 1m21.334s on lap 71

TYRE COMPOUNDS USED

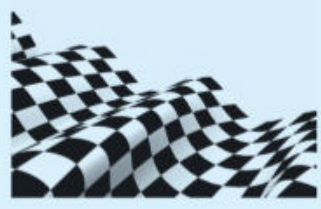


CLIMATE	AIR TEMP	TRACK TEMP
Sunny	32°C	52°C

DRIVERS' STANDINGS

1 Verstappen	491pts	12 Ocon	45pts
2 Pérez	240pts	13 Albon	27pts
3 Hamilton	220pts	14 Bottas	10pts
4 Sainz	183pts	15 Hülkenberg	9pts
5 Alonso	183pts	16 Tsunoda	8pts
6 Norris	169pts	17 Ricciardo	6pts
7 Leclerc	166pts	18 Guanyu	6pts
8 Russell	151pts	19 Magnussen	3pts
9 Piastri	87pts	20 Lawson	2pts
10 Gasly	56pts	21 Sargeant	1pt
11 Stroll	53pts	22 De Vries	0pts





FINISHING STRAIGHT

RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 21

THE SÃO PAULO GP IN 5 KEY MOMENTS



PICTURES: ZAK MAUGER; MARK SUTTON; DOM ROMNEY; STEVE ETHERINGTON

1 Alonso thrills with defensive masterclass

Fernando Alonso arrived in Brazil with a point to prove. He'd been annoyed by a scurrilous rumour (supercharged by a needlessly cryptic Tweet from a Spanish journalist) that suggested he was heading to Red Bull in 2024 to replace Sergio Pérez. The implication was that Aston Martin's steady downturn – from the highs of scoring regular podiums, to failing to reach Q3 – was starting to fracture the harmony within the team.

Having struggled to optimise the latest upgrades introduced at the previous sprint weekend in the USA, Aston approached the Interlagos race with a hybrid car spec, only using 'new' elements it felt certain would suit this circuit. The result was a more encouraging display in both the qualifying sessions and the two races, capped by Alonso's outstanding drive to the final podium position on Sunday.

Not only did the Aston Martins reach Q3 at Interlagos, but the sudden arrival of a violent storm midway through the session meant there was only one timed run. By getting their laps in early the drivers secured the second row of the grid, with Lance Stroll 0.043s ahead of Alonso.

The smiles were back at Aston (below, left) with a podium and a fifth in the GP. Alonso's superb defence of third from Pérez (below, right) had the Spaniard in a jubilant mood after the race (above)



Saturday was more low-key as Alonso tangled with Alpine's Esteban Ocon during the sprint shootout and Stroll was compromised by the red flag that ensued, consigning them to lowly grid spots in a sprint race characterised by little in the way of decisive passing. But Sunday panned out better despite both cars being slow off the line in what turned out to be the first of two starts.

Alonso should have had a clear run into Turn 1 in the unexpected absence of Charles Leclerc (see over the page) but bogged down with wheelspin and lost out to the fast-starting Lando Norris and

Lewis Hamilton. Critically, though, Alonso passed his own team-mate and then got by Hamilton into Descida do Lago on lap four after the restart, which gave him the free air to begin one of the best drives of his distinguished career.

Polesitter Max Verstappen and Norris were well out of reach and, after Alonso's first stop on lap 28, his attention focused on the threat from the second Red Bull of Pérez – now in fourth and starting to catch Fernando on their medium-tyre stint. Six laps later and the gap remained static at the 1.5s mark as Alonso combined strategic battery deployment



The GP was a disaster for Mercedes and it wasn't all down to a raised ride height. And Russell (below) didn't even make it to the end

to keep Pérez out of DRS range while running conservatively enough to manage tyre wear.

As an example of the latter, Alonso would take a different line on the exit of the last corner, Junção, running wide of the apex to straighten his car earlier and preserve the rears. He'd also swap lines from lap-to-lap to generate turbulence for his rival.

"He [Pérez] was struggling to be close to me in Turns 10, 11 and 12," said Alonso. "That was the game we were playing. Those corners were crucial. I was making sure I didn't make a mistake in those corners, otherwise Checo would be too close."

Five laps from the finish Pérez began to close the gap and then, at the end of lap 69, he got enough of a run out of Turn 12 to pass the Aston Martin into Turn 1 as the penultimate lap began. As emphatic as this pass seemed, Pérez was then unable to shake Alonso off. Fernando feinted in several corners to rattle his rival but reserved his biggest effort for the final lap.

"I thought that my chances were gone," said Alonso. "But he missed the apex [at T1] by one metre and that gave me the run into Turn 4." As the Red Bull moved left to defend, Alonso jinked right, got ahead and braked in front of Pérez to claim the corner. Out of Junção there was one final chance to out-drag the Aston, but Alonso held on for a fabulous photo finish to keep third by just 0.053s.

2 Mercedes baffled by loss of performance

In this discombobulating season of peculiar performance swings, Aston Martin's resurgence in Brazil coincided with a terrible three days for Mercedes, described by team boss Toto Wolff as, "the worst weekend in 13 years." Both Lewis Hamilton and George Russell struggled for speed in qualifying and were off the pace in the race – quickly falling into the clutches of the chasing pack as they couldn't retain life in their tyres.

Hamilton finished seventh in the sprint and eighth in the grand prix, but was nearly 63 seconds off Verstappen after 71 laps. Russell also struggled and was called into the pits on lap 58 due to rising oil temperatures Mercedes said would have led to an "imminent PU failure".

"Inexcusable performance," harrumphed Wolff. "It's the same car that finished second last week and the week before and whatever we did to it, it's horrible. It's unacceptable for all of us. I feel for both of them driving such a miserable thing."

Mercedes had raised the W14's ride height in Brazil, to prevent a repeat of the worn skid block issue which led to Hamilton's disqualification in



Austin. But Wolff said that alone wasn't enough to cause the issues with the balance and tyres.

After making a second pitstop on lap 47 (to return to the softs) Hamilton suggested on team radio that even the hard compound – not used by anyone else in racing conditions all weekend – might have been a better option.

In the early laps Lewis was running fourth with his team-mate and a DRS train of cars behind. When Hamilton briefly pulled more than a one-second gap to Russell he left his own team-mate vulnerable to an attack from Sergio Pérez – who



RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 21

then made short work of both Mercedes.

"Are we working together here or doing our own race?" said the frustrated Russell, his sole Formula 1 victory at this circuit a year ago now a distant memory.

"Really strange, probably the slowest weekend of our year," lamented Russell after his retirement. "We need to understand why because we had high expectations coming into this race."

3 Norris loses out to Verstappen again

You could be forgiven for thinking the Austrian national anthem is the second verse of the Dutch anthem, such is the regularity of hearing both pieces of music together this year. Verstappen's win in Brazil meant they followed a GP for the 17th time this season but, perhaps more significantly, the Dutchman broke yet another record.

His win tally of 77.27% of the grands prix held so far in 2023 eclipses the 75 per cent win record Alberto Ascari achieved in 1952, when

the Ferrari ace triumphed in six out of the eight world championship races. But before the national anthems came a new musical moment – in the form of an impromptu bit of karaoke.

Max belted out a few lines of the 1966 hit *Green, Green Grass of Home*, which is an unlikely favourite of the Verstappens – Max's father Jos regularly played Tom Jones in the car when father and son were driving in their karting days. On hearing the crooning, Max's engineer Gianpiero Lambiase dryly suggested that he shouldn't give up his day job.

In the end Verstappen comfortably triumphed in both races but there were brief moments when his dominance was under threat. Lando Norris took his first pole in the sprint shootout, clinched his first fastest-lap point in 2023, and scored his fourth second place in the last six grands prix.

On Sunday Norris made amends for his poor sprint start by diving down the inside of Alonso to claim second place after starting sixth on the grid. And he had the world champion in his sights in the opening laps. On lap eight, with a boost of DRS along the Reta Oposta, the front wheels of the McLaren drew alongside Verstappen in the braking zone for Turn 4.

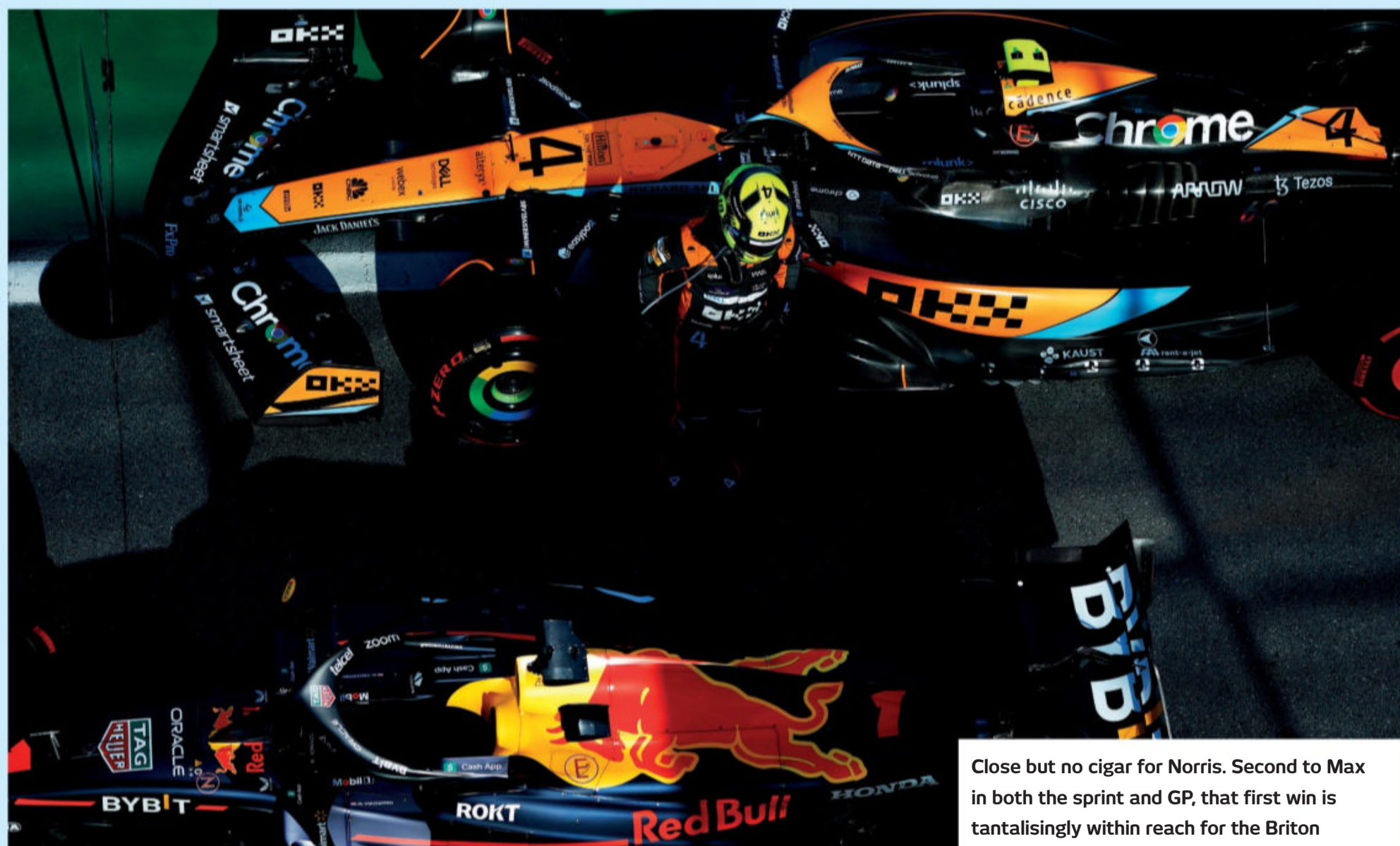


But the charge didn't last. On the next lap Max accelerated over a second clear to fend off any further DRS threat and thereafter Norris had to settle for runners-up spot once again.

"Max seemed to have an answer for everything," said Norris. "Which is a shame." Beaten for now, but Norris's first F1 victory is getting closer...

4 Launch time chaos brings on red flag

The São Paulo GP became the fourth race this year to be red-flagged, after an incident at the start involved a number of drivers. Starting 11th, Nico Hülkenberg was squeezed on the run to Turn 1 and



Close but no cigar for Norris. Second to Max in both the sprint and GP, that first win is tantalisingly within reach for the Briton

PICTURES: ZAK MAUGER; MARK SUTTON; ANDY HONE; SIMON GALLOWAY



Albon heads towards the barriers after contact from Hülkenberg pushed him into the, now sideways, Magnussen. The subsequent red flag at least allowed repairs to Piastri and Ricciardo's damaged cars

contact put his Haas team-mate into the wall.

On his left was Kevin Magnussen, while Alex Albon (who had started 13th and made a decent getaway) was positioned to his right. They were running straight but not quite straight enough. As he ran out of room, Nico lifted but it was too late: his right-front clipped Albon's left-rear, which spun the Williams around and into the side of K-Mag. On its way to the tyre barriers, the Haas also struck the rear of Oscar Piastri's McLaren.

Meanwhile a tyre carcass from Magnussen's car played a cameo role as Hülkenberg's twitching VF-23 ran over it, spitting it out into the path of Daniel Ricciardo's AlphaTauri. The casing struck hard enough to cause major damage.

"I felt I was getting through [the debris] then I saw a tyre off the rim, frisbeeing through the air. I remember ducking my head and I didn't feel anything hit me," recalled Ricciardo. "Then I checked my mirrors and I saw the rear wing pretty much off."

With debris at Turn 1 and extensive repairs

Leclerc bemoaned his bad luck when an electrical issue shut his Ferrari's hydraulics and engine off on the formation lap



needed to the barriers, the Safety Car was superseded by a red flag. During the half-hour stoppage, impressive work in the McLaren and AlphaTauri garages to repaired both damaged cars.

Since they pitted at the end of the first lap and the stoppage wasn't until lap three, both Ricciardo and Piastri (who still carried significant damage into the race) were able to take the restart from the pitlane but were classified a lap down.

5 Horseshoes are only lucky for some

One of the beneficiaries of the violent storm in qualifying which ripped canvas roofs off grandstands and turned the São Paulo day into night was Ferrari's Charles Leclerc. He described his lap as "weird" when the wind suddenly whipped up, prior to the torrential downpour. His time was good enough for a front-row start.

But he never made the grid after a technical glitch caused him to lose control of his Ferrari at Turn 6. "Why the fuck am I so unlucky?" Leclerc asked rhetorically over the team radio. While some cultures believe horseshoes to have lucky properties, the scene of Leclerc's accident – a corner named after the Portuguese word for horseshoe (Ferradura) – clearly did not.

It's believed an electronic issue caused the hydraulics and the engine to switch off simultaneously. As Leclerc approached the corner he lost power steering and the rear wheels locked, causing him to spin. For a moment it looked as if he might be able to resume, since only the front wing was damaged, but then his steering and power unit went into shutdown again.

Ferrari couldn't take advantage of the red flag to effect repairs because the rules state that any car abandoned on the circuit for a mechanical issue is considered to be "withdrawn from the session".

RESULTS ROUND 21

AUTÓDROMO JOSÉ CARLOS PAGE /
05.11.23 / 71 LAPS



1st	Max Verstappen	Red Bull	1h56m48.894s
2nd	Lando Norris	McLaren	+8.277s
3rd	Fernando Alonso	Aston Martin	+34.155s
4th	Sergio Pérez	Red Bull	+34.208s
5th	Carlos Sainz	Ferrari	+40.845s
6th	Lance Stroll	Aston Martin	+50.188s
7th	Pierre Gasly	Alpine	+56.093s
8th	Lewis Hamilton	Mercedes	+62.859s
9th	Yuki Tsunoda	AlphaTauri	+69.880s
10th	Esteban Ocon	Alpine	+1 lap
11th	Logan Sargeant	Williams	+1 lap
12th	Nico Hülkenberg	Haas	+1 lap
13th	Daniel Ricciardo	AlphaTauri	+1 lap
14th	Oscar Piastri	McLaren	+2 laps

Retirements

George Russell	Mercedes	57 laps/overheating
Valtteri Bottas	Alfa Romeo	39 laps/technical issue
Zhou Guanyu	Alfa Romeo	22 laps/technical issue
Kevin Magnussen	Haas	0 laps/accident
Alex Albon	Williams	0 laps/accident
Charles Leclerc	Ferrari	did not start/hydraulics

Fastest lap

Lando Norris 1m12.486s on lap 561

F1 Sprint - 24 laps

1st	Verstappen	2nd	Norris	3rd	Pérez
4th	Russell	5th	Leclerc	6th	Tsunoda
7th	Hamilton	8th	Sainz		

TYRE COMPOUNDS USED



CLIMATE	AIR TEMP	TRACK TEMP
Sunny	23°C	41°C

DRIVERS' STANDINGS			11 Gasly	62pts
1	Verstappen	524pts	12 Ocon	46pts
2	Pérez	258pts	13 Albon	27pts
3	Hamilton	226pts	14 Tsunoda	13pts
4	Alonso	198pts	15 Bottas	10pts
5	Norris	195pts	16 Hülkenberg	9pts
6	Sainz	192pts	17 Ricciardo	6pts
7	Leclerc	170pts	18 Guanyu	6pts
8	Russell	156pts	19 Magnussen	3pts
9	Piastri	87pts	20 Lawson	2pts
10	Stroll	63pts	21 Sargeant	1pt
			22 De Vries	0pts



FINISHING STRAIGHT

RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 23

ABU DHABI GP

24-26 November 2023

Yas Marina

PICTURE: STEVEN TEE. ILLUSTRATION: ALAN ELDREDGE



RACE DATA

Venue Yas Marina**First GP** 2009**Number of laps** 58**Circuit length** 3.281 miles**Race distance** 190.253 miles**Lap record** 1m26.103s

Max Verstappen (2021)

F1 races held 14**Winners from pole** 9**Pirelli compounds** C3, C4, C5

CAR PERFORMANCE

Downforce level Medium**Cooling requirement** Medium**Full throttle** 60%**Top speed** 208mph**Average speed** 124mph

TIMETABLE (UK TIME)

Friday 24 November**Practice 1** 09:30-10:30**Practice 2** 13:00-14:00**Saturday** 25 November**Practice 3** 10:30-11:30**Qualifying** 14:00-15:00**Sunday** 26 November**Race** 13.00**Live coverage** Sky Sports F1**Highlights** Channel 4

THE MAIN EVENT

A curiously polarising venue, Yas Marina is certainly glitzy – the day-into-night racing format is augmented by spectacular light effects after the sun goes down – and it's delivered on the original brief of operating as a successful business in its own right, busy with activities all year round. Sadly, 2021 season finale aside, the fireworks have largely been confined to the skies after the chequered flag.

A revamp of key areas of the circuit ahead of that controversial race aimed to improve the flow of the track and create overtaking opportunities. They have been a qualified success, especially the removal of the ridiculous chicane ahead of what's now Turn 5 and the reprofiling of the complex after Turn 9 into a continuous, slightly banked curve. But still, like last year, this season finale is very much a dead rubber with the championships long since decided.

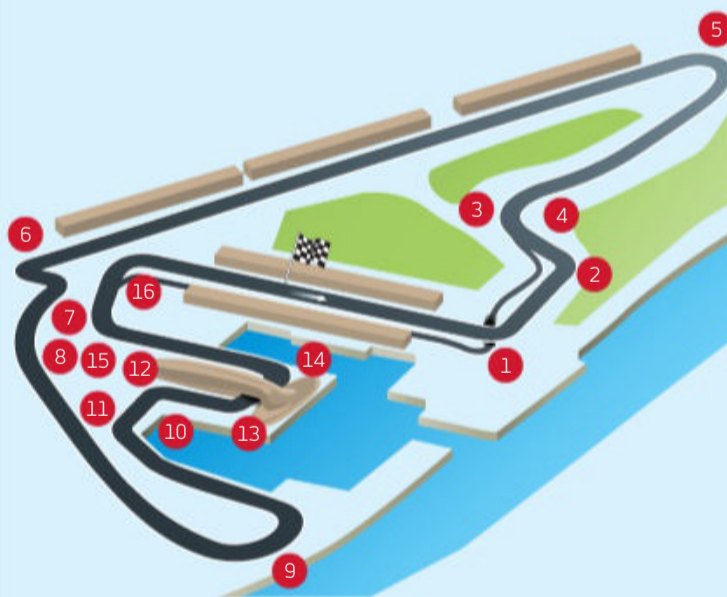
2022 RACE RECAP

Max Verstappen and Sergio Pérez annexed the front row in qualifying and Max led comfortably from pole to record a decisive victory. Behind him, though, the other podium positions were fiercely contested. Lewis Hamilton ran over a sausage kerb on lap one while battling with Carlos Sainz, later retiring with a hydraulics issue.

Sainz's team-mate Charles Leclerc proved the biggest challenger to Red Bull's dominance and, while the one-stopping Verstappen was well out of reach, a two-stop strategy left Pérez having to make up ground in the final third of the race. Despite the advantage of fresher tyres he was unable to get the better of Leclerc in the closing laps.

KEY CORNER: TURN 6

Coming at the end of the long straight, this is a key overtaking point with lots of different entry lines to add into the mix. However, sausage kerbs wait to punish those who violate track limits...



THE PAST FIVE WINNERS HERE



2022

Max
Verstappen
Red Bull

2021

Max
Verstappen
Red Bull

2020

Max
Verstappen
Red Bull

2019

Lewis
Hamilton
Mercedes

2018

Lewis
Hamilton
Mercedes



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BENETTON – REBELS OF FORMULA 1

Author Damian Smith

Price £60

evropublishing.com

From the pen of *GP Racing* contributor and former editor-in-chief Damian Smith comes this immaculately researched history of the Benetton team, F1's bad boys of the 1980s and 1990s. Featuring interviews with the likes of team principal Flavio Briatore, engineering gurus Pat Symonds and Rory Byrne, and Alessandro Benetton himself, the book chronicles the team's transformation from moribund Toleman outfit into a title winner.

There are plenty of other voices here, including Toleman stalwarts Alex Hawkridge and Chris Witty and Benetton insiders such as Paul Seaby, the mechanic captured emerging from the flames in Steven Tee's iconic photograph of the 1994 pit fire. The revelation that another member of the pit crew had to resort to putting his foot in a toilet and flushing it repeatedly to sooth the burns is just one of many fresh insights into the life of this maverick organisation.

Benetton REBELS OF FORMULA 1



Damien Smith
Foreword by Pat Symonds



TAG HEUER CARRERA CHRONOGRAPH

Price £18,750

tagheuer.com

The legendary Swiss watch brand has been celebrating the 60th anniversary of its racing-themed Carrera collection with a number of new models and the grand finale is this, plated in 18K 3N yellow gold with panda-style contrasting sub-counters. Even the pin which fastens the calf-skin strap is gold-plated; little wonder the manufacturer

describes it as "thrilling on the wrist".

A vertically brushed dial face under the domed sapphire glass contrasts subtly with the polished effect on the bezel and case; within you'll find the venerable TH20-00 33-jewel movement. It's waterproof to 100m but you'll have to supply your own Brasso afterwards if you venture into the ocean...

PEDALMAFIA AMF1 COLLECTION

Price £139 (jerseys) £209 (bib shorts)

peddlemafia.cc

Aston Martin's Formula 1 team continues to break new ground in its licencing partnerships – it's just welcomed the Australian cycle clothing brand Pedal Mafia as its "official cycling apparel partner". We look forward to seeing Lawrence Stroll and his inner circle riding into the paddock garbed thus...

Based on Pedal Mafia's Pro Vapour jersey and bib shorts and

available in cuts for men and women in nine different sizes, the AMF1 collection marries team colours to the company's ultra-light and breathable fabrics. The woven construction is claimed to offer enhanced moisture-wicking properties and high compression "for increased blood flow and efficient cooling" (for the lay person, this generally means a snug fit and no flapping in the wind).



ORIENT STAR AVANT GARDE SKELETON

Price £989.99-£1,199.99

orient-watch.com

Orient's two new timepieces are the flagship models in its Sports Collection and feature the brand's first automatic movement with a low-friction silicon escapement wheel. The workings take on even greater significance since it's a 'skeletonised' design in which much of the dial is stripped back in order to afford a view of the mechanism. Inspired by automotive components, the dial

has a complex two-layer format with subtly contrasting colours offset by large, boldly etched hour markers.

A notched 43mm metal bezel with a contrasting aluminium outer ring augments the mechanical effect. The more expensive model ramps up the sportiness with a red and black colour theme and a perforated strap. Both have a claimed 50-hour power reserve and are water-resistant to 100m.



FINISHING STRAIGHT

THE FINAL LAP

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FLAT CHAT

{ FULL THROTTLE MUSINGS WITH MATT KEW }

PICTURES



HOW McLAREN GOT MORE BANG PER BUCK

Fernando Alonso grew bored with Alpine not offering a long-enough contract, so he signed for Aston Martin in double-quick time when Sebastian Vettel announced his retirement. McLaren won the court case to recruit rookie sensation Oscar Piastri. Haas thought Mick Schumacher crashed too often so recalled qualifying ace Nico Hülkenberg. Last year's Formula 1 driver market 'silly season' was especially turbulent. But of all the shuffles and switcheroos, 2023's star appointment is surely found outside the cockpit.

When news leaked over the winter that Andreas Seidl – the team principal who oversaw McLaren's constructors' championship climb from ninth to third, plus a 2021 Italian Grand Prix victory – was to leave for Sauber, it felt as though the team's progress was in serious jeopardy. The chief architect had left, so would the Woking recovery plan crumble?



Stella with drivers Norris and Piastri after the US GP. The Italian has proved to be a wise choice as McLaren's team principal

Not a bit, thanks to Andrea Stella, who appears to have great swathes of the paddock falling at his feet. Since taking the top job, his hair might have turned a touch more silver, but he's presently F1's golden boy. McLaren staff love that the new boss is one of their own rather than an external appointee. Stella, who joined the team in 2015, is a familiar face and his promotion has set an aspirational precedent.

He is a captivating orator. Prior to promotion, he gave the media a wide berth. Then acting as

executive director, Stella felt his job was solely to make McLaren faster. Time spent speaking into a microphone was time wasted. But clearly, the team principal role comes with a public profile. Now, his attitude is that talking to the media presents an opportunity. When he sits down for a Q&A session, there's no rolling the eyes like some of his colleagues, who do little to disguise the fact they'd rather be anywhere else. Instead, he is at pains to explain technical intricacies in detail rather than allow misinformation to spread.

He isn't guarded to a fault, nor gets tied up in knots as he switches between agendas. Stella keeps it simple and tells the truth – at least as far as the boss of an F1 team can. He didn't equivocate at the start of the year. Stella made it plain that McLaren had missed its winter development targets and would struggle out of the blocks with the setup he'd inherited.

It's thanks to his dramatically overhauled technical structure that McLaren has transformed from that sorry state into a team which has the pace to make Red Bull sweat. The new hierarchy might appear needlessly complex with three heads of department (aerodynamics, performance, engineering), but that division of labour was conceived to give experts their own space in which to flourish. Stella wants competing ideas to be presented and the best cherrypicked. It seems to be working. The on-track gains so far have come without the new windtunnel but by better allocating the same resources available to the previous regime when designing a car that started the year abysmally.

If Stella was to read this appraisal, he'd hate it. He objects to being singled out for praise: 'There's no I in McLaren', he would say. But as the new face of an upwardly mobile Formula 1 team, by default he is getting a lot of credit.

As much as Alonso has done the heavy lifting for Aston in the points this season and his unrelenting determination has driven engineers to up their game, at 42 years of age, his impact as a driver will have a limited legacy. It's easy to think that Stella's candle will burn bright for quite a bit longer.

PICTURE: SAM BLOXHAM. ILLUSTRATION: BENJAMIN WACHENJE



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