





RICHARD MILLE

A RACING MACHINE ON THE WRIST



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SECTOR 1

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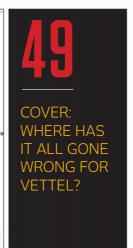
best F1 gear

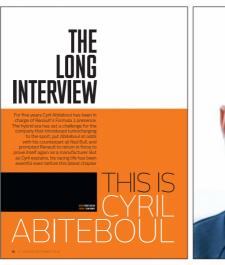
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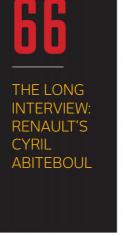
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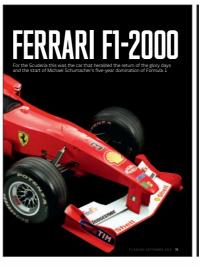






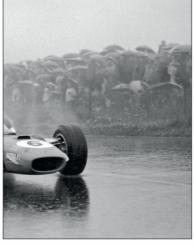














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IGNITION

SEPTEMBER 2019



Contributors



Anderson

ANDREW BENSON

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The BBC's man in the F1 paddock, Andrew Benson, got the chance to speak to Sebastian Vettel about his difficult season. See page 48



STUART CODLING

A little known fact is that Stuart 'Codders Codling's first job was for a TV listings company. Read his 'Flat Chat' column on p114



ANDY HONE

As a fan of TV's Alan Partridge, snapper Hone certainly appreciated the sarcastic humour of Guenther Steiner. Turn to page 88 for the fun



EDD STRAW

During the summer shutdown Straw boarded another plane to enjoy some football in Sweden. His nonfootie column is on p26



Vettel needs to answer his critics

There is talk of a generational changing of the guard in F1 right now, as tech-savvy youngsters schooled on simulators, who race online against random members of the public - and each other between grands prix, get set to take over the world.

At the forefront of this is Max Verstappen, doing his best to stick it to Lewis Hamilton in a Red Bull-Honda that, though rapidly improving, is not yet properly a match for Mercedes. Hot on Max's heels comes Charles Leclerc, seriously rapid yet still somewhat error-prone in a difficult-todrive Ferrari. Meanwhile, fresh-faced rookies Alex Albon, Lando Norris and George Russell have all emerged as potential stars over the first half of 2019 (their seasons so far are analysed on page 58).

Nico Rosberg rather pointedly thinks Hamilton is already over the hill at 34 years of age, and that Max is already now the best in F1. But Hamilton treats age as 'just a number' and is clearly up for the fight. Handily, he also has the tools to fend the next generation off, for now.

But what of his erstwhile title rival Sebastian Vettel? After two recent championship near-misses, Ferrari has fallen off a cliff this season and Vettel's own fortunes appear to have declined in kind.

Vettel looks a shadow of the driver who so effortlessly dominated grand prix racing for four seasons with Red Bull. That was nearly six years ago now, and Seb's struggles to reach anywhere

near the same heights with Ferrari will give succour to those naysayers who feel he was carried to glory by Adrian Newey's design brilliance and is now horribly exposed without it.

That is somewhat unfair on Vettel. You don't win four world championships and more than 50 races without being a damn fine driver. But Vettel has also been a relatively patchy performer since those heydays. Andrew Benson sat down with him recently (page 48) in an effort to unravel the mindset of a driver whose dreams of Ferrari glory seem to be ebbing away.

He is still one of the fastest out there, but you sense the doubt has crept in – both for him and Ferrari. Success is harder to find, mistakes more easily made, emotions trickier to control.

Vettel has too often come off second best in combat with Hamilton, which must dent confidence further. Meanwhile, others are on the rise and Vettel is no longer able to effortlessly assert authority even within his own team. All this set against a backdrop of a Formula 1 that is changing in ways Seb clearly doesn't like.

He has much soul-searching to do, and big questions to answer as he enters the final year of his contract in 2020. Vettel rates his own current performance at only 5 out of 10. That is nowhere near good enough for a driver of his calibre - or for Ferrari for that matter...

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Subscriptions



F1 Racing is published monthly in the above territories. Formula One, Formula 1 and F1 (trademarks of Formula One Licensing BV, a Formula One Group company) are used under license

Circulation queries Seymour Distribution Ltd, 2 East Poultry Avenue, London EC1A 9PT, Tel: +44(0)20 Printed by William Gibbons & Sons Ltd, 28 Planetary Road, Willenhall, Wolverhampton WV13 3XT. \odot 1996 Autosport Media UK

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Subscriptions F1 Racing subscriptions, Autosport Media UK, 3 Queensbridge, Northampton, NN4 7BF, UK. Email: help@asm.secureorder.co.uk. Tel: 0344 848 8826. Overseas Tel +44 (0)1604 251 454 F1 Racing (ISSN number 74597X) is published monthly by Autosport Media UK, 1 Eton Street, Richmond, TW9 1AG, UK. Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431. Subscription records are maintained at Autosport Media UK, 1 Eton Street, Richmond, TW9 1AG, UK. Air $Business\,Ltd\,is\,acting\,as\,our\,mailing\,agent.\,We\,abide\,by\,the\,Editors'\,Code\,of\,Practice\,and\,are\,committed\,to$ upholding the highest standards of journalism. If you think we haven't met those standards and want to make a complaint, contact 0203 405 8100. Autosport Media UK Ltd is a part of Motorsport Network LLC

Thanks to Louis Bourdes, Samantha Bourreau, Harry Bull, Marion Butet, Annick Daniel, Russell Day, Lucy Genon, Clarisse Hoffmann, Jane Holmes, Darren Jones, James Lloyd, Bradley Lord, Chris Marcus, Stuart Mawhinney, Stuart Morrison, Charlie Roper, Felix Siggeman







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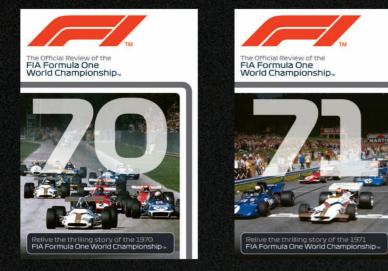
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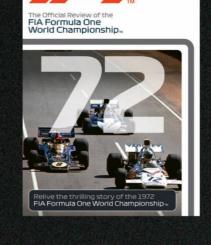


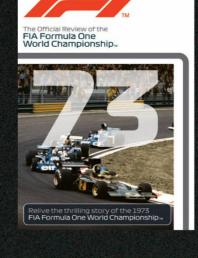




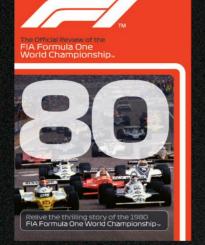


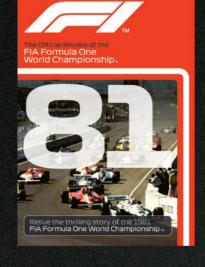


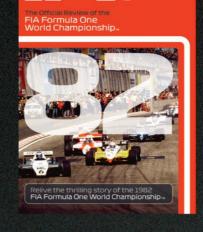


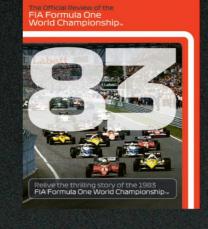


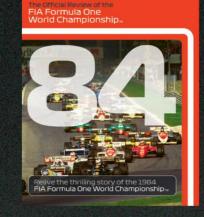


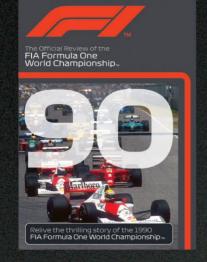


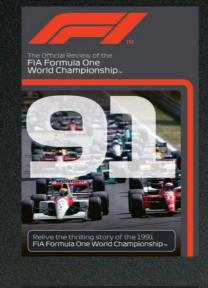


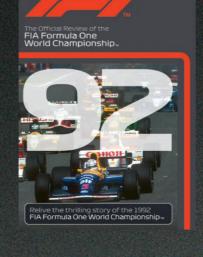


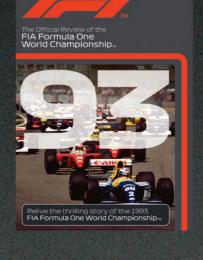


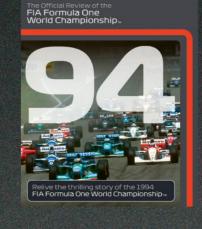


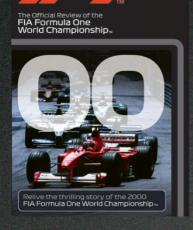




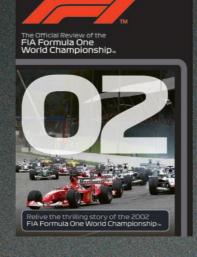


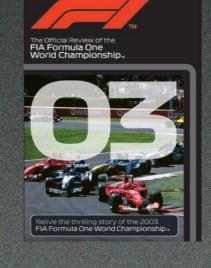


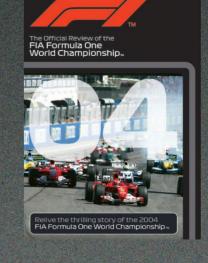












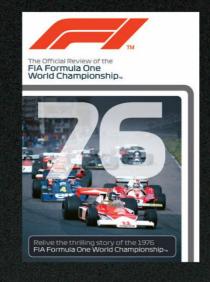


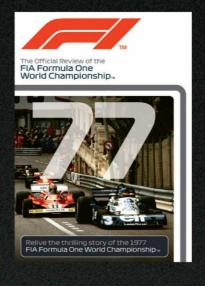


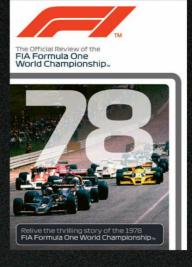


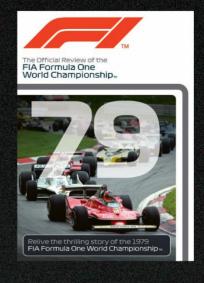


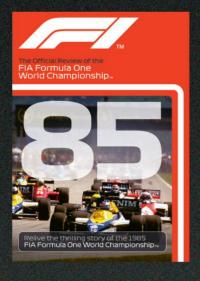


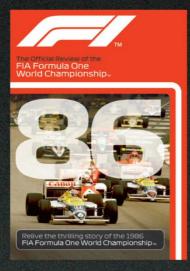




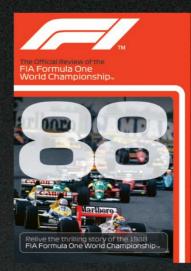


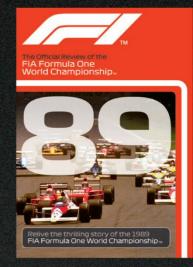




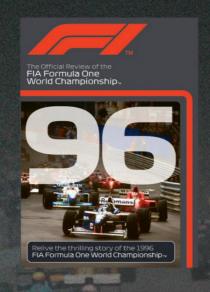


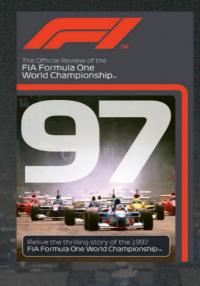




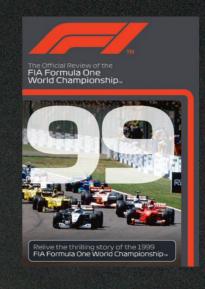








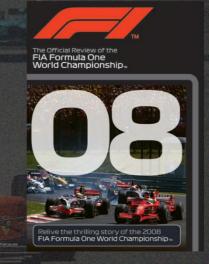














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Waiting for the dust to settle

There was a different timetable at the Hungarian Grand Prix with the Formula 2 feature race being held early on Saturday morning, swapping with the F3 race which moved to the post-F1 qualifying slot.

During the race, Ralph Boschung suffered an engine blow-up along the Hungaroring's back straight. As a result the fast left-hander at Turn 4 was covered in oil. That meant F1's FP3 was delayed by ten minutes as the marshals laid down white cement powder to help clear up the oil. One of the first drivers to run through Turn 4 was Daniil Kvyat, who sent plumes of white powder up into the air.



Photographer Sam Bloxham Where Hungaroring, Hungary When 12.15pm, Saturday 3rd August 2019

Details Canon EOS-1DX MkII, 560mm lens, 1/1250th @ F5.6



Mutual respect after a great fight

The Hungarian Grand Prix came down to an on-track duel between Lewis Hamilton and Max Verstappen, with the Brit passing the Red Bull driver in the closing stages.

Such was the nature of the victory that Hamilton was buzzing with joy when he parked his car at the end of the race, and his celebrations were more exuberant than usual.

During the weekend there was a lot of talk about him and Verstappen and whether they might one day be teammates. They certainly have a lot of respect for each other and that was captured in this spontaneous embrace they had in parc fermé.



Photographer Steven Tee

Where Hungaroring, Hungary When 4.42 pm, Sunday 4th August 2019

Details Canon EOS-1DX MkII, 200mm lens, 1/1000th @ F2.8









Mercedes team-mates wheel-to-wheel

For the first lap of the Hungarian GP, we had one photographer standing head-on at Turn 2, while I was situated about three quarters around the corner, on the outside.

Over the years it's typical to get cars using two different lines around the long hairpin and this is exactly what happened

with the field at the start with Lewis Hamilton overtaking Valtteri Bottas. Behind them,the McLaren is running parallel with the Ferrari.

The secret to this picture is to hold the 600mm lens rather than use a monopod. This gives you more versatility if something happens or if a car runs wide.



Photographer Steven Tee

Where Hungaroring, Hungary When 3.13pm, Sunday 4th August 2019

Details Canon EOS-1DX MkII, 600mm lens, 1/2000th @ F5.6



More misery for Ferrari's loyal fans

There is always a decent-sized crowd at the Hungaroring for the grand prix. Traditionally a lot of Finnish fans come to this race to support their nation's drivers, while this year there were quite a few Polish supporters for Robert Kubica.

Of course there are many
Dutch Max Verstappen fans
at every race now, but there
are still plenty of Ferrari
enthusiasts. From the
grandstand at the last corner,
I managed to capture the
moment Charles Leclerc made a
mistake in Q1 and hit the wall.

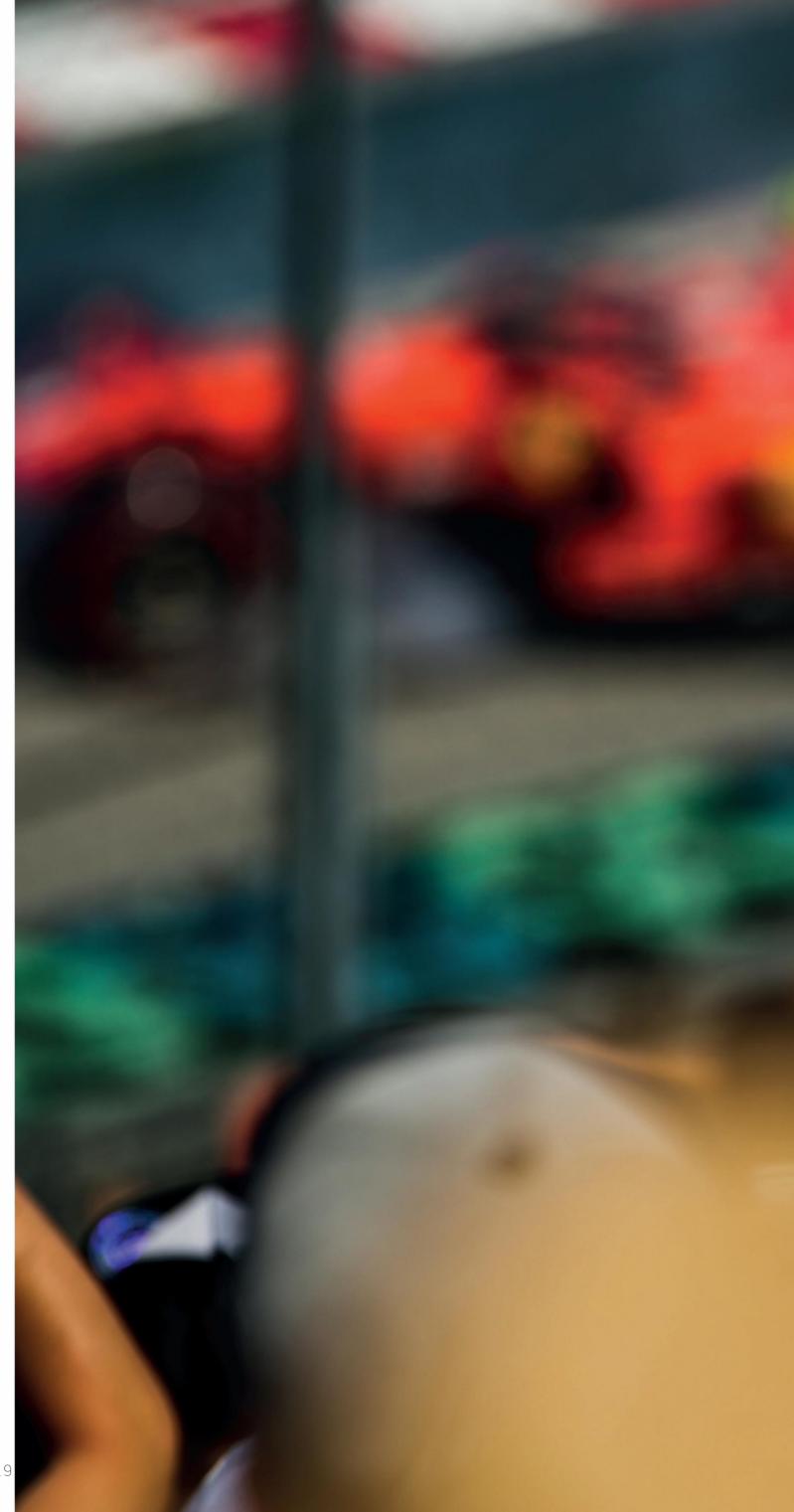
Just at that instant a Ferrari fan, with Sebastian Vettel cap, stood up in shock and disbelief, like he must have done many times during this season...



Photographer Zak Mauger

Where Hungaroring, Hungary When 3.10pm, Saturday 3rd August 2019

Details Canon EOS-1DX MkII, 280mm lens, 1/640th @ F5.0











Flying the flag for Great Britain

In some ways this image of Lewis Hamilton holding the Union Flag aloft and pointing into the crowd looks a little like he's charging into battle.

The picture I managed to capture reminds me of that famous French Revolutionary painting by Delacroix, Liberty Leading the People, as the flag (in that case a Tricolour) is fluttering on a long mast while the bearer is surging forward.

I took this just after the Mercedes team celebration in Hungary. Hamilton went running over towards the fans on the finish straight, grabbed one of their flags and was pointing at his supporters in the crowd below him. They cheered their hero in return.



Photographer Sam Bloxham

Where Hungaroring, Hungary When 5.11pm, Sunday 4th August 2019

Details Canon EOS-1DX MkII, 145mm lens, 1/1250th @ F4.0







The smiles before the storm

The ideas were great. Mercedes, sponsor of the German GP, decked its cars in a special livery to celebrate 125 years of Mercedes-Benz in motorsport and its 200th race. On race day team members, including the pitwall crew, added to the feelgood atmosphere by wearing 1950s clothing to commemorate the manufacturer's first entry into F1 in 1954.

Unfortunately, in a chaotic wet race Lewis Hamilton and Valtteri Bottas failed to read the script and Mercedes endured its worst outing of the season so far. "It shows that you shouldn't fool around with stuff,' said team principal Toto Wolff after the race. "You should concentrate on the job."



Photographer Sam Bloxham

Where Hockenheim, Germany When 11.15am, Sunday 28th July 2019

Details Canon EOS-1DX MkII, 50mm lens, 1/1250th @ F1.6



01

Ferrari restructures as Binotto admits 2019 failings



JONATHAN NOBLE

- ♥ @NobleF1
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FERRARI'S FIGHTBACK PLAN

For a team that headed in to the 2019 season as most people's favourite for success, Ferrari's failure to even win a race so far in 2019 has prompted some deep soul-searching inside Maranello.

After all, the winter move to push team boss Maurizio Arrivabene aside in favour of Mattia Binotto was supposed to have given Ferrari the impetus to make the final step from race winner to world champion. It has fallen far short of expectations.

Most of the reasoning for that can be put down to its car philosophy for 2019. Its pursuit of a more aero-efficient design has proved ill-suited for this season — where having the ultimate downforce appears best for overall lap time and switching tyres on.

As Binotto confessed to *F1 Racing* recently: "If I would come back one year ago, I would give more focus



RENAULI E-TECH

on the downforce compared to what we did, even to the disadvantage of some more drag. Can we call that a concept? Not too sure. I think it's an objective that has become more clear, certainly."

It's not just this car philosophy that has left the team struggling because the rate of progress has not been as good as other teams either. An update in Spain did not deliver the gain hoped for, and the failure of a floor update in France highlighted issues back at base.

"We brought a floor that didn't work as expected," explained Binotto. "Since then we understand the reason, and it helped us now in being more accurate when delivering parts to the racetrack. Often I said that we are still young as a team, because here are people with little time in the new role, and the know-how is something you build through the season, through the years.

"That's why I'm very happy when problems may happen, and we are addressing them. Obviously in the meantime you are missing opportunities of performance, but as we said before, I think the car is progressing, which is showing that the team is capable of delivering.

"I think that's why we need to stay calm, be focused and

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THROUGH
THE YEARS

MATTIA BINOTTO

passionate, because it's only by staying passionate and looking at the future that eventually, in the mid-to-long-term, if you've done the right investments, you will be competitive."

Then there are the reliability factors. Binotto's promotion to team principal prompted some to suggest Ferrari has been weakened by having his focus shifted away from car performance. That could explain its competitive struggles and the increasing reliability issues that have marred 2019. But Binotto does not agree that his change of position was a factor.

"I don't think anything has changed compared to the last year or the year before," he said. "It's true that we have never been too strong on the reliability in the past seasons, so it's something that should be, in terms of overall approach to the development, addressed. It's something on which we are all raised on back in the factory.

"Sometimes it's only a matter of priority, a priority on developments on reliability, [it] depends on where you are. But you don't fix reliability by only fixing the problems you have got, you fix reliability by having the right approach to the reliability, and that's something which, at the moment, we are brainstorming."

Binotto has realised that in stepping up to team principal he needs more support below him. That's why

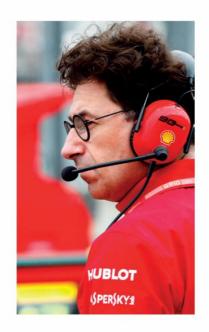
he's shifted the structure, and hired former chief designer Simone Resta who is returning to Ferrari from Alfa Romeo as head of chassis engineering. "What was important for me and the team is for myself to be supported in the role," Binotto added. "There are a few people which have been nominated or tasked with responsibilty with the various areas, whatever it is – chassis, power unit, supply chain.

"These people are the people that are the main pillars of our organisation. And

with them honestly I feel comfortable because they have become the main responsibility of the technical department. Simone Resta will join us on the first of November, and he will be one of those pillars. I believe that by then we [will] have completed our reorganisation."



Simone Resta (above, right) will be rejoining Ferrari in November as part of a restructure by Binotto (below)



F1 BRACED FOR 24 RACES

Formula 1 owner Liberty Media's chase for more profits means the calendar is set to expand to 22 races next year. But that could just be the first step in a rapid expansion, amid talks of 24 grands prix in 2021.

Having originally suggested F1 would stick at 21 races in 2020, a late deal to save the Spanish GP, allied to successful talks with Mexico, means the schedule will now expand. F1 teams were set to formally approve the plan over the August break, having received assurances the rules will not be changed to permit a return to four engines per season and thus costs will be kept in check.

But while one additional event, plus some trade-off with a reduction in testing, may not be that difficult to stomach, it is clear that teams are close to breaking point when it comes to adding more races to the schedule. And it has emerged that an expansion to 24 races in 2021 is being mooted, which could include new races in America, Saudi Arabia and Africa. Any move beyond 21 races would likely prompt some form of personnel crisis. It is already difficult to find staff who will commit to the full schedule, so teams could be forced to rotate staff to prevent burnout.

Ferrari team principal Mattia Binotto said teams could find themselves caught in a trap of needing to keep under F1's budget cap but also juggling the need for extra staff.

"Obviously there are business necessities," he said,

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PICTURES: GLENN DUNBAR; SAM BLOXHAM;



"but we cannot afford a season of 24 races with the same individuals. We will need extra people, to rotate them, from mechanics to engineers, even key people. There's little time to organise, because increasing the number is not something you do easily. So here is the risk. You may not afford the right number of people because you need to manage extra salaries."

One solution is to reduce GPs to just two days. This is not something that delights race promoters, eager to get Friday ticket sales. Mercedes boss Toto Wolff is also not convinced.

"We did that in the DTM and it felt like the weekend was not spectacular and special any more," he said. "If it's cut short to two days it takes some value out of a race weekend, and Formula 1 is the pinnacle of motor racing."

Any expansion of the calendar does require unanimous support from the teams.

RICCIARDO'S £10 MILLION COURT CASE

Daniel Ricciardo has found himself at the centre of a legal tussle with his former business adviser Glenn Beavis over a £10 million claim relating to Ricciardo's switch from Red Bull to Renault for 2019.

Beavis claims he is owed 20% of Ricciardo's Renault salary and various elements of the lucrative deal, and has lodged paperwork with the British High Court to explain his case. The key element of his claim is the alleged terms of a revised agreement that was established in mid-2015, which the



Ricciardo (above) is facing a legal battle following a claim from his former business adviser

former advisor believes entitled him to a monthly \$20,000 fee plus 20% commission on Ricciardo's earnings.

However, Ricciardo strongly denies any breach of agreement and has lodged his own defence paperwork.

In December 2018, Beavis claims Ricciardo wanted to terminate their agreement with immediate effect. This was delayed until the end of January 2019 as Beavis allegedly requested time to complete the long-form of the Renault F1 driver's contracts. However, according to the claim, these contracts were not finalised and signed by the end of January and Beavis continued to provide services to Ricciardo beyond that date. Ricciardo's Renault contract was eventually concluded on 7 March, 10 days before the Australian GP.

Ricciardo and the Whitedunes company that represents him argue the 20% commission was never agreed, and insist the matter was only raised once Beavis was informed last December that his services were being terminated. They argue the £10m+ sum is "expressly contradicted by a number of emailed exchanges" before and after establishing the most recent agreement between the parties in mid-2015.

The only admittance of a 20% commission relates to Ricciardo indicating in principle he would be willing to pay that regarding sponsorship and commercial deals, doing so on an ad hoc basis and never through a formal agreement.

The matter will now move through the British legal system, and a court case could follow. Ricciardo is clear, though, that he will fight the matter. "There is no substance to Glenn Beavis's claim," he told F1 Racing. "It is unfortunate that he has decided to bring this wholly unmeritorious claim which I intend to fully defend in the court process."

FIDIGEST THE MONTH'S BIG STORIES AT A GLANCE

26.07.19 Spanish Grand Prix set for calendar reprieve

29.07.19 Alain Prost becomes director of Renault F1 parent com



01.08.19 Alfa Romeo's German GP appeal to be heard in September 01.08.19 Unsafe pitstop releases to

incur time penalties rather than fines

04.08.19 Teams agree to 22-race calendar next season



04.08.19 Toto Wolff rules out George Russell for Mercedes seat in 2020



07.08.19 Sebastian Vettel rates his season so far as 5/10

08.08.19 Mexico City agrees three-year extension to grand prix deal

12.08.19 F1 announces campaign to promote efficiency of current engine formula



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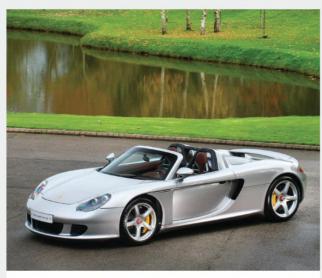
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& 1x Liquid Metal Chrome Blue



FERRARI 512M 1 of only 41 UK RHD examples & only 14,000m from new



PORSCHE CARRERA GT
Choice of 2: 1x UK registered in Black
& 1x Swiss registered in GT Silver



FERRARI 575 SUPERAMERICA
1 of only 63 UK RHD examples
& 12,000m from new



PORSCHE 991 GT3 RS GEN 2
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SHOCK SWITCH FOR ALBON



Albon, the last driver to be confirmed for 2019, is now in a Red Bull seat

CAN'T THANK
YOU ENOUGH FOR
BELIEVING IN ME
AND MAKING THIS
POSSIBLE. IT'S A
BIG JUMP INTO THE
DEEP END, BUT I'VE
GOT MY SWIMMING

SHORTS ON! 55

Alex Albon has been handed a dream drive at Red Bull for 2019's remaining nine races, following a surprise announcement from the team during the summer break.

Albon, who only made his debut for Red Bull's sister team Toro Rosso at the start of this season, will start his Red Bull career at the Belgian GP, replacing Pierre Gasly.

Gasly, who has struggled to match Max Verstappen since being drafted into Red Bull as replacement for Daniel Ricciardo, will return to Toro Rosso in a straight swap. Red Bull had previously suggested Gasly's seat was secure until the end of the season.

The move has been billed as a chance for the team to take a look at Albon with a view to next season. "Red Bull are in the unique position of having four talented F1 drivers under contract who can be rotated between the [main] team and Toro Rosso," said a team statement. "The team will use the next nine races to evaluate Alex's performance in order to make an informed decision as to who will drive alongside Max [Verstappen] in 2020."

Albon, meanwhile, was shocked but overjoyed. "Surreal to have been given this massive opportunity @ redbullracing!" he revealed on social media. "Can't thank you enough for believing in me and making this possible. It's a big jump into the deep end, but I've got my swimming shorts on! Thanks to all the guys at @ToroRosso, especially [team principal] Franz Tost for the massive opportunity in F1 and never-ending support throughout my first year! Now to focus for my first race with the team in Spa."

Gasly failed to finish on the podium in his half-year with Red Bull and is 118 points behind Verstappen – winner of two races – in the standings. However, Daniil Kvyat, himself relegated from Red Bull to Toro Rosso mid-season three years ago to make way for Verstappen, had been considered favourite to move up from Toro Rosso if Red Bull dropped Gasly. Kyvyat had scored the team's first podium since 2008 in the mixed-weather German Grand Prix and amassed 27 points to rookie Albon's 16.

F1 MASTERMIND

Your chosen specialised subject: the world's greatest sport

- Q1 True or false: Brawn is the only team to win the constructors' championship and then fail to score another world championship point.
- Q2 Who is the only Portuguese driver ever to stand on an F1 podium?
- Q3 Max Verstappen, Lance Stroll and Lando Norris are three of the four youngest drivers ever to start an F1 race. Who is missing from this list?
- Q4 The last non-championship Formula 1 race took place where and in what year?
- Q5 How long did Stewart Grand Prix compete in the F1 world championship for?
- Q6 Where did Jenson Button start his last F1 race from, when he stood in for Fernando Alonso at Monaco in 2017?
- Q7 With Zandvoort due to return to the F1 calendar in 2020, name the other two circuits beginning with Z that have held world championship F1 races.
- Q8 How many years, from 1980-2000, was the constructors' championship not won by either Williams or McLaren?
- Q9 Now that Max Verstappen has claimed his first pole in Hungary, who are the other two current drivers with a single pole position on their CV?
- Q10 Which small team did Jonathan Palmer, Christian Danner, Huub Rothengatter, Martin Brundle, Piercarlo Ghinzani and Bernd Schneider all start a race for during the 1980s?
- Q11 Which driver was on pole for every Indian Grand Prix and won all three races?
- Q12 How many podiums have Toyota-engined cars achieved in F1: 17, 27 or 37?

I False (Vanwallafter 1958) 2 Tiago Monteiro (US GP, 2005)
Jaime Alguersuari 4 Brands Hatch, 1983 5 3 season
(1997-99) 6 Pitlane 7 Zolder and Zeltweg 8 Five (Ferrari in 1982, 1983, 1999 and 2000 and Benetton in 1995 9 Vico Hülkenberg and Robert Kubica 10 Zakspeed 11 Sebastian Vettel 12 17

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CHEVROLET





THE F1 ANALYST

FDD STRAW



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have offered signposts, but Haas is still all over the place.

One works better in warmer conditions (the old spec), one in cooler conditions (the new). Twice in the last three races before the summer break, Magnussen's performance plummeted from Q1 to Q2 by a margin that can't be explained by variation in driving. Grosjean, meanwhile, put the old car in Q3 twice during that same run of grands prix, but couldn't convert for points in Hungary and arguably only did so in Germany thanks to the conditions. Puzzling.

By F1 standards Haas is a small team, which is possible thanks to a technical alliance with Ferrari that allows it to use as many 'non-listed' parts as possible – therefore meeting the minimum required level to be considered a constructor. In its early years, Haas struggled to match the analytical power of the big teams and often failed to recover if race weekends went wrong. It's possible this new problem is also challenging that capability. Data doesn't offer answers, you have to manipulate it to find those. The temperature variation is indicative

of something, perhaps that it's related to the performance of the floor given the sensitivity of anything close to the ground in different conditions, and Haas desperately needs to understand the weakness it has engineered in to avoid repeating it in 2020.

The driver line-up is also a problem, beyond even the fact they repeatedly clash on track and blame each other. Grosjean remains a maddening performer, as quick as anyone when everything is right. But the flipside of the Grosjean coin is the capacity for errors and struggles with an understeering car. Kevin Magnussen is perhaps a couple of tenths slower than peak Grosjean, but is more consistent and a more rounded driver than he was in his pre-Haas days.

It now seems likely Haas will change one of its drivers for next year, which is ostensibly bad news for Grosjean, who is on a one-year deal, and good news for Magnussen and his longer-term contract. But Grosjean is the one who has forced the issue by insisting he revert to the Melbourne specification car and, as a result, proved without question there is a problem with the car that has either been introduced, or most likely worsened, by subsequent updates. That insight might save Haas's season.

Haas would benefit from an absolutely proven, consistent quantity. Sergio Pérez would be the ideal driver, one capable of delivering consistently, with a rock-solid track record in F1's midfield. But he's set to stay on at Racing Point. There are tantalising other options, with Nico Hülkenberg, perhaps on his way out of Renault, a serious possibility

IT NEVER RAINS BUT IT POURS FOR HAAS

You have the fifth fastest car on average – on its good days the fourth quickest – but are only ninth in the constructors' championship. You have a pair of drivers with a magnetic attraction to each other on track and an unwillingness to take responsibility for avoiding clashes. You can't work the Pirelli tyres properly and that appears to be at the heart of your problems. But you can't rule out the possibility of a serious aerodynamic flaw, leading to extreme experimentation – with one driver running the latest car specification and the other running the one used for the season-opening Australian Grand Prix. Oh, and your title sponsor has become embroiled in a hilarious, and very public, farrago just to add to the chaos. You are Guenther Steiner, Haas team principal. Tough gig.

The serious problem, the one most vexing, is the one of performance. The Haas is a fundamentally quick car and has been since the start of pre-season testing, yet in qualifying it's hit and miss and in dry races it usually goes missing. Drivers complain that, at times, it feels like driving in the wet when on a bone-dry track. The revised Pirelli compounds



Team owner Gene Haas has every right to look puzzled with the performance of his cars this season

have taken the blame, yet engineers at rival teams privately scoff at suggestions it's all down to a tyre lottery because there is science underpinning this challenge – albeit with a very narrow window to aim for. So, has the team's tyre treatment gone completely awry, has its aerodynamic department gone wrong, or is it a bit of both?

F1 cars are complex beasts so the answer is 'both', and probably a lot more besides.

Troubleshooting is not an easy task because while a problem might be identifiable, is it symptom or cause? Working out what is going wrong is the start, understanding the why is key. And then you must come up with a fix. Three weekends running different specifications – Romain Grosjean driving effectively a car that's more than four months out-of-date and Kevin Magnussen the latest version –

The on-track antics of Grosjean and Magnussen have given Steiner and the team further headaches



with plenty of experience. And depending on who gets the second Mercedes seat in 2020, Valtteri Bottas or Esteban Ocon could be available. So, there are plenty of options out there.

The stakes are high for Haas. Established ahead of the 2016 season by Gene Haas as a means to promote his machine tools business, the intention was always to make the team selfsustaining. Sponsors haven't been falling over themselves to sign up, so the Rich Energy situation is a big problem. The question is how long will Haas himself be willing to make up the shortfall between income and budget, which stands at tens of millions of dollars?

Haas's on-track problems mean the target of finishing fourth in the

66 THE QUESTION IS HOW LONG WILL HAAS HIMSELF BE WILLING TO MAKE UP THE SHORTFALL BETWEEN INCOME AND BUDGET **55**

constructors' championship is not on this year. The difference between target and the reality, currently five places, could, depending on F1's overall revenue for 2019, be more than \$15million. That could mean big trouble for a business model that depends on a lean, mean, efficient team of less than 300 when it comes to signing up for 2021 and beyond.

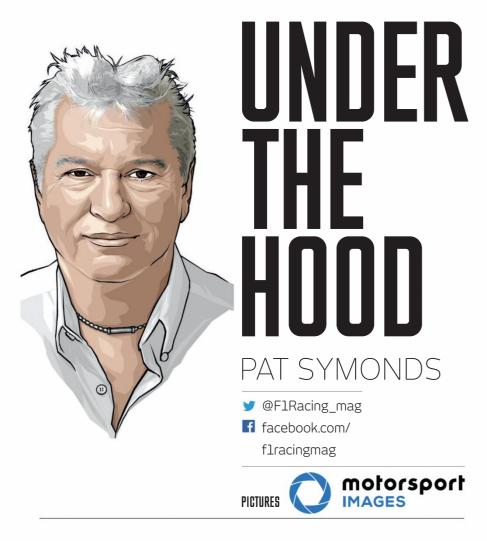
This is all bad news for F1. Haas is a poster child for new teams aspiring to join the championship. While the previous new wave in 2010 - HRT, Virgin (Marussia/Manor) and Lotus (Caterham) – all fell far more than Gene Haas himself needs it to...

with a total of two points finishes between them, Haas has shown sustained success is possible. How can it be that F1 doesn't allow a team that has done this well to be on firm, break-even ground?

This is the problem for F1 – it should be. Despite this year's problems, Haas has done a superb job and brought two competitive machines to the grid. By the measures of new teams, it has achieved far more than any other would be expected to do in its first three-and-a-half seasons. F1 needs it to work.







the chaos that characterised the wet, dry, wet German Grand Prix.

Tie-breaks generally take different forms to the format of the main event and are used when a draw is an unacceptable result, meaning they are normally employed in knock-out rather than league competitions. Motorsport is effectively a league championship and yet tied results are extremely rare. They have occurred in qualifying but never in a race itself. In spite of this we could perhaps learn something from the excitement that a tie-break can generate.

The FIA, F1 and the teams are in discussions at the moment about the possibility of introducing a small number of 'super weekends' where the event format may be different from that to which we are

accustomed. This may include sprint races and mixed-up grids. The purists may find this hard to swallow but I feel that while F1 cannot produce the occasional tie-breaker, we should learn from the psychology that such measures bring to the fans and exploit the well-known peak-end effect. To do this we need to bring the peak of excitement near the end of the race. Psychologists tell us this gives a positive cognitive bias, and hence fond memories, to the fans. This is why I fully support changes to formats that may make this possible.

Another feature of 2019 that has left an indelible stamp is the subject of stewarding, judgements and penalties. This has always been a difficult subject and early this year the FIA determined a policy of 'let them race' was preferable to draconian penalties for minor infringements. Not only did the earlier philosophy have the potential to adversely alter a race's outcome, worse still it encouraged risk-averse attitudes from drivers. No-one is suggesting we should allow dangerous driving or intimidation, but close racing is just that – close.

Unfortunately it's one thing to expound a policy but more difficult to ensure that under many different circumstances it is deployed in a fair and equitable manner. The stewards have a very difficult job and, just like the employment of VAR in soccer or Hawkeye in tennis, technology isn't always their friend.

There was a time when the word of a referee was law and the only opposition to it was purely partisan. Pundits now have at their disposal data and multiple videos that

F1 NEEDS THE PSYCHOLOGY OF TIE-BREAKERS

This year's British Grand Prix was a fabulous race that had the capacity crowd on its feet. Battles occurred throughout the field, but the winner wasn't in doubt after lap 20 when Lewis Hamilton pitted under the Safety Car. This ensured that the early stop made by Valtteri Bottas did not produce the undercut that may have extended his lead.

Unfortunately, great though the race was, as a sporting spectacle it was overshadowed by two other memorable sporting events that day that frayed the nerves of every sports lover. At Wimbledon Novak Djokovic beat Roger Federer in a fifth-set tie-break even though, perhaps just ten minutes from the end, the smart money would have gone on Federer for the win.

A few miles away at Lord's the cricket world cup final was building to an even greater crescendo as the teams, tied after the conclusion of the normal match, engaged in a 'super over' to decide the result. Again, just a short time from the climax New Zealand seemed to hold the upper hand but England fought back to tie again and win by a



Thrills and spills at the British GP, but can F1 get even better by changing the format of the races?

bizarre count-back system that relied on the number of boundaries achieved.

What made those games so exciting was that the result came down to a tie-breaker – something we don't have in motorsport. Occasionally we get races where the result is in doubt until close to the end. People still talk of the epic battle in the 1979 French GP at Dijon, when Gilles Villeneuve and René Arnoux slugged it out over the last two laps, albeit for second rather than the lead. Even this season, in Austria and Hungary the eventual winner did not take the lead until just a few laps from the end. Not surprisingly these two races have received almost the highest fan ratings of the year, beaten only by





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can be assessed with the comfort of time. Worse still, social media and speciality internet forums allow those with little knowledge and extreme bias to voice opinions which, hidden in the anonymity of the internet, allow them to make vile comments.

The role of the steward is a difficult one, made harder by the desire to allow a measured amount of rough and tumble. Without their version of the Sibylline books of prophecies, or even a permanent steward to offer guidance, they need to make logical decisions. Take the vexed subject of track limits. In spite of all the technology in F1 there is no system similar to Hawkeye to automatically detect if a car exceeds the circuit limits. The on-board GPS is nowhere near accurate enough but, even if it was, would it be right to penalise every transgression? The guidelines are that a difficult one, made harder by the desire by the desire to allow a measured amount of rough and tumble. Without their version of the through improvations system processing system increase of his further penalty it is in the judge operate in real signals a stopp in F1, which contains a difficult one, made harder by the desire to allow a measured amount of rough and tumble. Without their version of the through improvations again and tumble. Without their version of the through improvations again.

THE FIA, F1 AND THE TEAMS ARE IN DISCUSSIONS AT THE MOMENT ABOUT THE POSSIBILITIES OF INTRODUCING A SMALL NUMBER OF 'SUPER WEEKENDS'

through improper use of track limits. This means a timing system would have to be linked to an image processing system to ensure that a driver who made a genuine mistake, and suffered a consequential increase of his lap time, wasn't slapped with a further penalty. It could be done but at the moment it is in the judgement of the stewards.

Perhaps their biggest challenge is the need to operate in real time. In football the use of VAR signals a stoppage to play. This cannot happen in F1, which compounds the problem. It is vital

that, barring a technical infringement found in scrutineering, the drivers on the podium are those that finally finish in the top three. This forces the stewards to assess significant amounts of data in a short period of time while not actually hearing any witness statements from those involved.

In my opinion the stewards are extremely competent and operate in difficult circumstances. We should appreciate this and respect their decisions even if, like any referee, they can occasionally be wrong.





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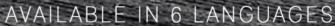
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Essential guide to the business of F1



STRAIGHT TALK

MARK GALLAGHER

🄰 @_markgallagher

facebook.com/flracingmag

It went like this: He would give me the sponsorship in cash. As in, in a bag, in Swiss Francs. All I had to do was give him 25% of the sum back, in cash, presumably in another bag, but in Euros. Simple.

Since this felt a bit Hollywood, I asked if he could 'show me the money', at which point his white-suited assistant opened a briefcase stacked with the aforementioned Swiss Francs. I'd have asked for a selfie with it, except that might have been an offer they could refuse.

As it's illegal to carry more than €10,000 within the EU without declaring it, not to mention the inconvenience of jail time associated with tax evasion, counterfeit currency and money laundering, lunch needed to end. They were very disappointed and I was never so glad to depart Malpensa Airport intact.

From *The Godfather* to *The Sting*.

A current team flew the president of an allegedly huge company (F1 rule: prospects are always 'huge') to Monaco from the USA, 5-star hotel and Paddock Club tickets included, only to have him disappear a few weeks later when the sponsorship contract was drafted. His assistant told the team he had suffered a serious stroke

and was not expected to survive. Deal off.

This sad story was relayed during a Formula 1 team meeting only for Tom Walkinshaw to explain he had entertained the same individual the year before. On that occasion the ill-fated president had been invalided out of the company following a freak accident in which a fire extinguisher spontaneously exploded.

Cue much laughter and red faces.
Establishing the credentials of your
potential sponsor is key. In sales parlance
this is known as 'qualifying the lead'. You
do this before wasting time or money
on them as a prospect. However, since
sponsors are rarer than sensible politicians,
eager sales staff sometimes short-cut this
all-important step in their desperation to
secure deals.

Finally, even when you verify that the company exists, your contact is the decision-maker and the prospect is serious, things can get complicated – as occurred when one of America's leading purveyors of online pornography offered a team \$10million, only for the other sponsors and engine supplier to threaten termination for bringing them into disrepute by association.

The prospect understood and by way of appreciation offered the team principal a full back-catalogue of DVDs. The subsequent forklift-truck load of premium adult content later provided an unexpected source of corporate gifts for surprised factory visitors.

THERE'S MORE TO IT THAN 'SHOW ME THE MONEY'

If you have been following the Rich Energy shenanigans, in which every twist and turn relating to its logo, contract with Haas and company ownership is played out on Twitter, there is no reason to be shocked. Behind every Formula 1 sponsorship you will find people, with

the full spectrum of behaviours and degrees of professionalism that can bring.

Haas will privately feel embarrassed, but should take heart. Bernie Ecclestone made Formula 1 hugely attractive to corporate sponsors, but it has also proven a strong magnet for less scrupulous opportunists keen to dabble in the glamour, celebrity and money with which the sport has become synonymous.

Lunching in Milan with an Italian businessman purporting to represent an Israeli diamond trading company, his love for F1 was clear – so much so that he wanted to give me several million in return for branding, passes and corporate hospitality. Oh, and some change.

Change?





THIS MONTH

Scott Young

Head of Sky Sports F1 After starting out in television production in Australia in the mid 1980s, Scott Young took over the day-to-day running of Sky Sports F1's coverage of Formula 1 last year. He talks about the challenges of the operation today and how Sky – one of Formula 1's biggest sponsors – is adapting to the changing media landscape

2018 - present

Head of F1 for Sky Sports UK

2008 – present

Founder, Executive Producer and Director of 5 Oceans Media,

2011 - Dec 2015

General Manager, Television & Content, V8 Supercars

1997 – Dec 2007

Executive Producer, Motorsport Network Ten Australia **1997 – 1998**

> Executive Producer, Channel V Australia

> > 1995 – 1996

Managing Director and Executive Producer, Beyond Imagination

> Producer, MTV Australia

1987-1990

F1 Racing: You took over running Sky Sports F1's TV operations in 2018. What is your background?

Scott Young: I've worked in motorsport television for 25 years, on both terrestrial and pay TV, which first started when I was part of the Channel 9 network and I found myself at the Australian GP in Adelaide. You can't predict what is going to happen in sport and so it's how you capture the storytelling and keep the audience informed and entertained that is the challenge. Live sport is the last body of television that is appointment viewing. You can't binge watch a whole season in one go and you can't record it and watch three weeks later. You need to be in position when it starts.

F1R: What is the scale of Sky Sports F1's operation during a grand prix weekend?

SY: For the UK we broadcast 14 hours of live television over four days. We have about 55 technical people – in addition to our 14 on-air presenters – who travel to every race and we also look after the technical operation that services Sky in Germany and Italy. Our balance of commentators, presenters and reporters – of which some are former drivers or world champions – try to capture and explain everything.

Our first production is *Welcome To The Weekend*, live on a Thursday at 6pm. That show will repeat until the beginning of FP1, then after both practice sessions we have *The Story So Far*, which in 30 minutes wraps up what happened in the three hours of track time. Saturday starts with FP3, an hour-long show before qualifying, and then the *The F1 Show*, which is a relatively new programme. The idea of that is to delve into a few of the personalities in the paddock.

On Sunday we have five and a half hours of live TV, which starts an hour and 40 mins prior to lights out. The unique part of what we have is a dedicated F1 channel, which during a weekend, includes F2 and F3 support races, plus IndyCar and classic F1 races. The UK broadcast goes to 60 markets, including Australia, New Zealand, Canada and the USA.

F1R: You are responsible for the content before you hand over to the world feed but can you shape those pictures?

SY: The broadcast of motorsport is very complex because it

INTERVIEW James Roberts is happening over a very large arena. There's a very close working relationship between Sky Sports F1 and Formula 1 and all the TV broadcasters meet every Friday at a race. F1 is an international product, but it's very easy for an English broadcaster because

everything is made for English language, English graphics. When you're in a non-English speaking territory you are translating on the run as well as commentating on the action.

F1R: Are you worried that having F1 solely behind a paywall and not on free-to-air television will reduce interest in the sport? How do you balance your offering with Channel 4?

SY: At a very senior level there's a relationship between Sky and Channel 4 that has allowed a highlights programme to exist and a simulcast of the British GP free-to-air (FTA). We know there's some impact because there is an obvious choice people can make this year – they are happy to wait. At what point does the championship create something where people say, 'I just can't miss this.' If the sport is not delivering the major headlines, then that's not driving them away from a FTA highlights programme. That's where we're having conversations at every race about how we can improve.

F1R: Sky paid £1.2 billion for exclusive rights in the UK until 2024, making the channel one of the sport's biggest sponsors. How do you react to F1's plans to offer an over-the-top (OTT) direct-to-consumer F1 channel?

SY: At Sky Sports we have so much sport that we're competing against our own platforms sometimes. You can watch on your traditional TV, on Sky Q, in Ultra HD or you can watch on Sky Go on your iPad, or NowTV, which you can subscribe to for a year or a day. You can also use our app, pick-up your phone and can watch either our main feed, onboards or the data channel with timing.

As far as OTT is concerned any sport needs to be careful about the rights it has sold and they intend to activate themselves, and how those two things interact. In the UK we own the digital and linear rights for the next six years. Other markets aren't as structured as ours and I can see why the sport has launched F1TV to potentially fill a void, as they don't have a broadcaster like us in those markets.





F1 RITUALS

The hours before a grand prix are vital for a driver to prepare both his physical and mental state. Nico Hülkenberg's performance coach Martin Poole explains the routine of both Renault drivers in the hours before the lights go out

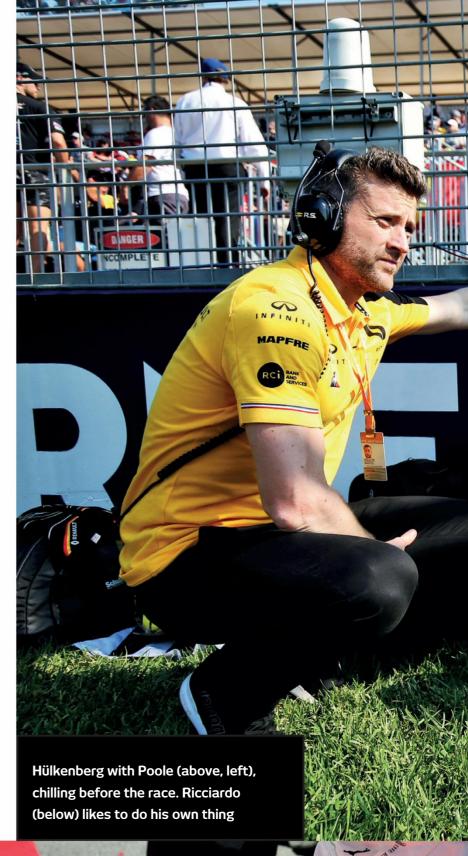
INTERVIEW JAMES ROBERTS
PICTURES RENAULT
MOTORSPORT

Sunday morning is different from the other days of a grand prix weekend because it is much more relaxed – the mood changes. On Saturday morning in particular, the build-up to qualifying is quite intense because of the nature of the session. Both Nico and Daniel Ricciardo have to perform at a high level for a short amount of time in qualifying, and you can't really approach a long race distance in the same way. Now most races start at 3.10pm local time, that makes Sundays quite drawn out.

Whatever happens on Saturday, it's important to draw a line under the result of qualifying. We know where we are starting and you can't change that, so it's important to focus on what is possible from that grid position.

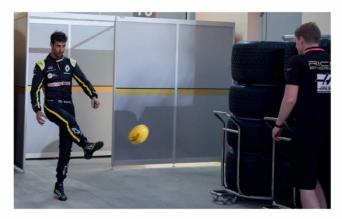
I've worked with Nico for three years now and he quite likes to get up and get going. Drivers will often start by doing some warm-ups and activation at the hotel on Sunday morning. This is just a way of waking up the body and physically getting it loose and ready. Things like progressive stretching and perhaps a bit of light cardio. That can either be a gym-based exercise, such as a static bike or cross trainer, or maybe a jog. Nothing too dynamic, so no sprinting or playing any sports. Nico and I tend to do a relaxing sports massage on Sunday to start getting him physically ready. This also gives us a chance to chat about how he's slept or how he's feeling about the race.

We normally have breakfast in the Renault motorhome. Nico might then have a snack mid-morning and have lunch just before the drivers' parade. After the drivers' parade we don't have too long before he has to go to the garage to get strapped into the car. In his drivers' room, this is where Nico will just have a bit of quiet time and some contemplation. He'll close his eyes for a few minutes and









As the race approaches a bit of fun such as kicking a football - can be a good way of easing the pressure



We will follow the relaxation time with some more intense adrenaline builds and this is his last chance for a little break from that. We'll start an activity and whatever it is, we'll do it with a bit of fun and have a laugh. It's important to have this release. Whether it's a bit of football, a few reaction drills where we throw and catch balls - inevitably we'll start to

With the intensity of a grand prix looming, it is important to have these moments to relax and ease the pressure. Then

and some are different to others. You see some sitting down, under an umbrella, focused on the task ahead - listening to music. Others, like Nico, are more than happy to chat.

On the other side of the team you'll see Dan doing some dynamic stretching and mobility movements like rolling his







'DRIVERS ARE **ABOUT TO BE ALONE FOR TWO** HOURS IN THE CAR, SO IT'S **GOOD TO RECEIVE SOME POSITIVE VIBES FROM THE TEAM BEFORE** THE KAUE

wrists or shoulders. I assume he likes to do movements that feel good to him and allow him to stretch. Don't forget the guys are about to spend two hours cramped and uncomfortable in the cockpit.

All the drivers also fist bump mechanics and people they know on the way from the anthem to the car. It's a way to share support – a bit like tennis players. When they win a point they always look up to their coaches, or in doubles tennis players celebrate every point. Drivers are about to be alone for two hours in the car, so it's good to receive some positive vibes from the team before the race.

Nico is a tough, independently minded competitor and doesn't need someone to look after him, but every driver occasionally needs their engineer to come

When the drivers are in the car, the key thing from my perspective is hydration. Actually, it's not something you can rush – it needs to be a constant process that starts much earlier in the weekend because there is a rate at which your body can absorb fluids. If you're feeling thirsty and you start drinking too much too quickly, your body can only take on

on the radio in the race and give them a bit of encouragement.

so much and will just flush the rest out. As a result, I have a schedule of water and electrolytes for the weekend and for inside the car too. I know what generally works for Nico, but I also constantly tweak the plan based on how he's feeling and how hot it is out there.

Post-race, depending on the track, the drivers can be a bit beaten up afterwards so there's a big benefit to relieving the stress from the muscles that have been under tension for so long. We do this via a post-race deep-tissue massage. If a circuit is bumpy that can be a big factor, or if there are high-speed corners, which can fatigue the neck. The nutrition aim afterwards is to rehydrate and take on proteins, both important to kick-start a driver's recovery.

I remember at last year's Singapore Grand Prix, Nico came out of the car and I was prepared with my cold towels and cold drinks and he immediately said, 'I need something to eat.' So, I'm rummaging for a power bar and he said, 'I really need a sandwich to get my teeth into!' We found him one and before he did any media he was sitting on the ground tucking into a sandwich because he was so hungry and drained of energy.





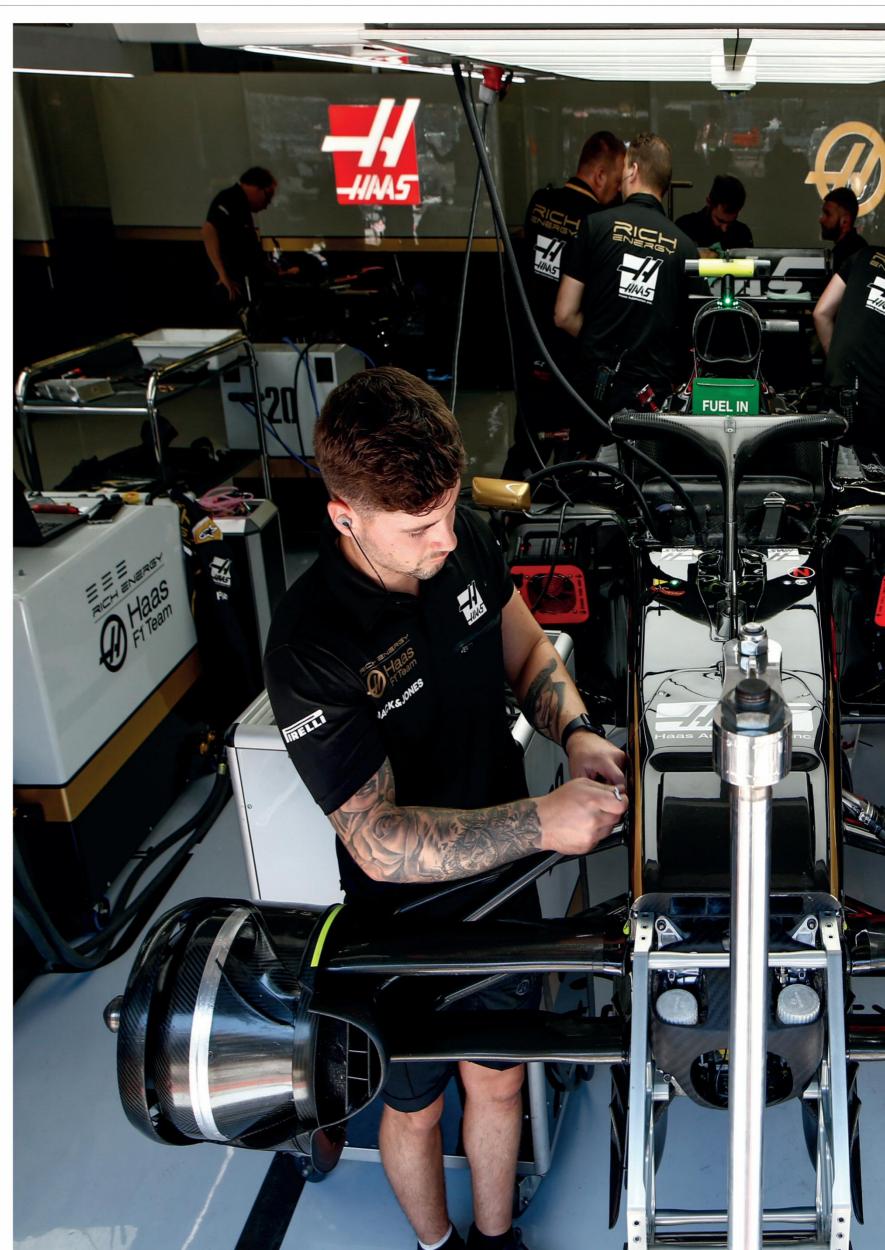
CAR SET-UP



Ayao Komatsu, the Haas team's chief race engineer, explains how he uses the three practice sessions of a grand prix weekend to perfect the car for race drivers Romain Grosjean and Kevin Magnussen

WORDS
JAMES ROBERTS
PICTURES
ANDY HONE







GETTING THE BALL ROLLING

In Formula 1 there are two main performance differentiators to focus on: aerodynamics and tyres. Across a grand prix weekend we have to ensure we are using the car's aerodynamics to the maximum potential for a given circuit layout. Secondly, we need to have tyres working in the correct operating window and determine our tyre strategy for qualifying and the race.

"FOR DOWNFORCE LEVELS, WE CAN LOOK AT SECTOR TIMES, GPS TRACES AND SPEED-TRAP DATA. WE CAN ALSO ANALYSE GPS FROM EVERY OTHER CAR. THIS GIVES US SOME IDEA OF HOW **OUR RIVALS ARE** CHANGING THEIR **ENGINE MODES** AND ENERGY

In FP1 on Friday the track conditions are usually poor, so the priority in this session is to check the car is functioning correctly from both an aero and suspension perspective, while also measuring tyre temperatures and pressures.

Following that, we do one long run to understand how the car behaves on a high fuel load. Because of the poor track conditions we are not doing any detailed set-up work at this stage. We would only make significant alternations if fundamental changes are needed such as downforce levels, rear rideheight or heave

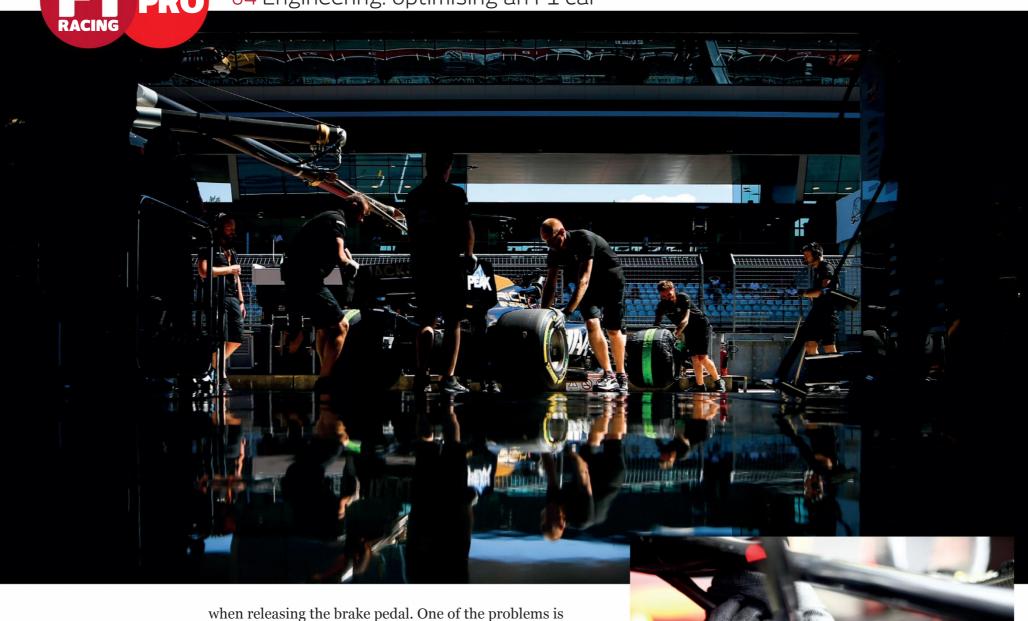
(damper) stiffness. Although track condition is relatively poor, driver feedback is very important. For example, if they feel the car is very easy to drive in high speed corners, it may suggest we could take the downforce off to take advantage of a straight-line speed gain. However, if a driver is struggling in those corners, we may simply wait for track to improve before taking any actions.

For downforce levels, we can look at sector times, GPS traces and speed trap data. We can also analyse GPS from every other car. This gives us some idea of how our rivals are changing their engine modes and energy deployment

We also look at fundamental system set-up such as brake-by-wire (BBW) mapping. This varies from driver to driver because of the slight differences in driving style. We need to dial in some shape to their braking phase to give the driver a certain level of consistency. For example, if the brake balance was completely flat, regardless of how much pressure they apply with their left foot, then most likely the front tyre will lock when the inside wheel is unloaded while turning into corners.

To avoid that we shift the brake balance rearwards, but if that transition is too steep it could induce oversteer





when releasing the brake pedal. One of the problems is that the driver does not consistently apply exactly the same brake pressure every lap, so we have to balance the brakes to allow a consistent, predictable car but also be as close to the optimum as possible.

RAMPING THINGS UP

Approaching the second free practice session on Friday afternoon we shouldn't be making any big changes. However, if we had misjudged anything and the car wasn't working correctly, that would be addressed at the end of FP1 so we start FP2 in good order.

In this session we finalise brake maps, engine and torque maps and collect data about the tyre compounds available to us. Because track conditions are more representative, the second session is more about balance adjustment and learning about tyres.

We do one run on the harder compound tyres and a second run on the softest tyre. This is a simulated qualifying run and the driver must make sure he gets the out-lap right to prepare the tyre for the qualifying lap.

We need to make sure the set-up offset between the tyre compounds is correct, because when we go from harder to softer tyres, normally the car balance changes. You naturally have a higher grip level, which means we can put more front load in the car and increase aero balance. The key is to have the car in an optimum balance despite the change in tyre.

However, one thing we need to consider is

Setting changes can be made mechanically (top) or electronically via the steering wheel (bottom)



the offset between the tyre compounds isn't equal. In order to gain good understanding on all compounds, we often split drivers. This means one driver goes from hard to soft tyre, whereas the other driver goes from medium to soft. For a driver who goes from hard to soft, it is not easy for him to extract everything out of the soft tyre as the grip delta can be very large.

"THE OFFSET BETWEEN THE TYRE COMPOUNDS ISN'T **EQUAL. IN ORDER** TO GAIN GOOD **UNDERSTANDING** ON ALL COMPOUNDS WE OFTEN SPLIT DRIVERS. THIS MEANS ONE DRIVER **GOES FROM HARD** TO SOFT TYRE, WHEREAS THE OTHER DRIVER **GOES FROM** MEDIUM TO SOFT"





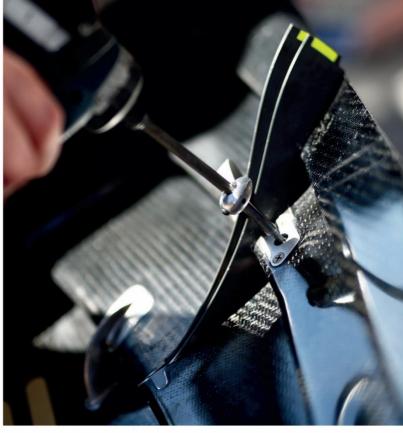
For one lap performance, we focus more on the soft tyre because it's very unlikely (especially for teams like us in the midfield) that we can qualify on the medium tyre.

Once FP2 has finished and we have had a debrief with both drivers, I then speak with the team back at base and point them in the direction of a few areas in which to do a detailed analysis. When Haas first started in F1 a few years ago we didn't have a support group, but now we have a small performance team back at the factory.

A few hours later we reconvene and have a meeting which

"AT THE START OF FP3 THE CAR SHOULD BE 90% SET UP FOR QUALIFYING AND THE RACE. THE DRIVERS MIGHT GO IN SLIGHTLY DIFFERENT DIRECTIONS ON CAR SET-UP YET CAN'T BE TOTALLY OPPOSITE BECAUSE THE CAR HAS GOT FUNDAMENTAL CHARACTERISTICS"





Refinements to set-up are made all weekend with downforce levels tweaked by adjusting wing angles (above)

also includes the aerodynamicists based in Italy. By Friday night we will have a clear idea about tyre strategy.

LAST CHANCE TO NAIL IT

We use FP3 to fine-tune the car for qualifying. This is where we prepare the car, not just from an engineering perspective, but for the driver. We'll normally have two sets of qualifying tyres in FP3 and for each of those runs we keep set-up changes to the absolute minimum – maybe only a small aero balance or map adjustment. We want to keep the car consistent and allow the driver to get the best out of it.

At the start of FP3 the car should be 90% set up for qualifying and the race. The drivers might go in slightly different directions on car set-up yet can't be totally opposite because the car has got fundamental characteristics. We can fine tune the car to each driver's style and this means it's

likely there are some differences in aero balance, mechanical balance and brake map shapes. Romain can deal with a more oversteery car on corner entry, as he likes to feel the car turning in. Kevin needs a stable and consistent car on certain parts of corner entry. This is critical because it's all about giving a driver confidence. If Kevin has rear instability, he will have to reduce entry speed and lose time. With Romain, if he turns and the car doesn't respond immediately he loses lots of time.

Fundamentally, despite aero, tyres, brakes and engine power, the driver remains a significant performance differentiator and it's important for engineers to understand what they need to enable them to be confident behind the wheel. We need to develop a relationship to understand how we can optimise a car with the right balance characteristics to enable them to get the maximum out of the car both over a single lap for qualifying and a race distance. After FP3, if everything is reliable, it's up to them to deliver on-track. ①

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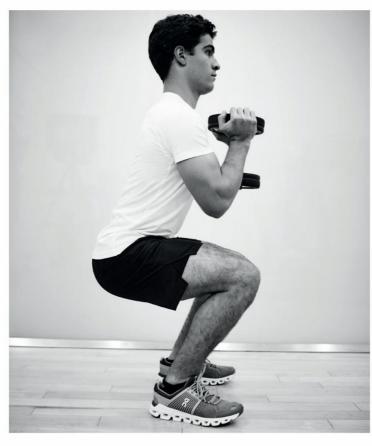
05 Performance: Lower body strengthening

F1 FITNESS

In the second in our series on Formula 1 driver fitness, this month the area of concentration for **Sérgio Sette Câmara** is the lower body and legs

PICTURES ADRIAN MYERS

An F1 driver's left leg must be strong enough to apply the brakes with up to 80kg of force. McLaren's driver performance manager, Simon Reynolds, details four lower body routines undertaken by test driver Sette Câmara.



GOBLET SQUAT

"The goblet squat is easy to master, promotes efficient muscle engagement and is extremely effective to develop strength and endurance; all the qualities a driver needs to control their car. The exercise targets the explosive muscles (gluteal and quadriceps) for braking

and also encourages mechanical efficiency, such as the range of motion of the ankle, which is important for brake and throttle application. Shortened and tight lower leg muscles will restrict how much a driver can move their ankle, which plays havoc with brake and throttle technique."

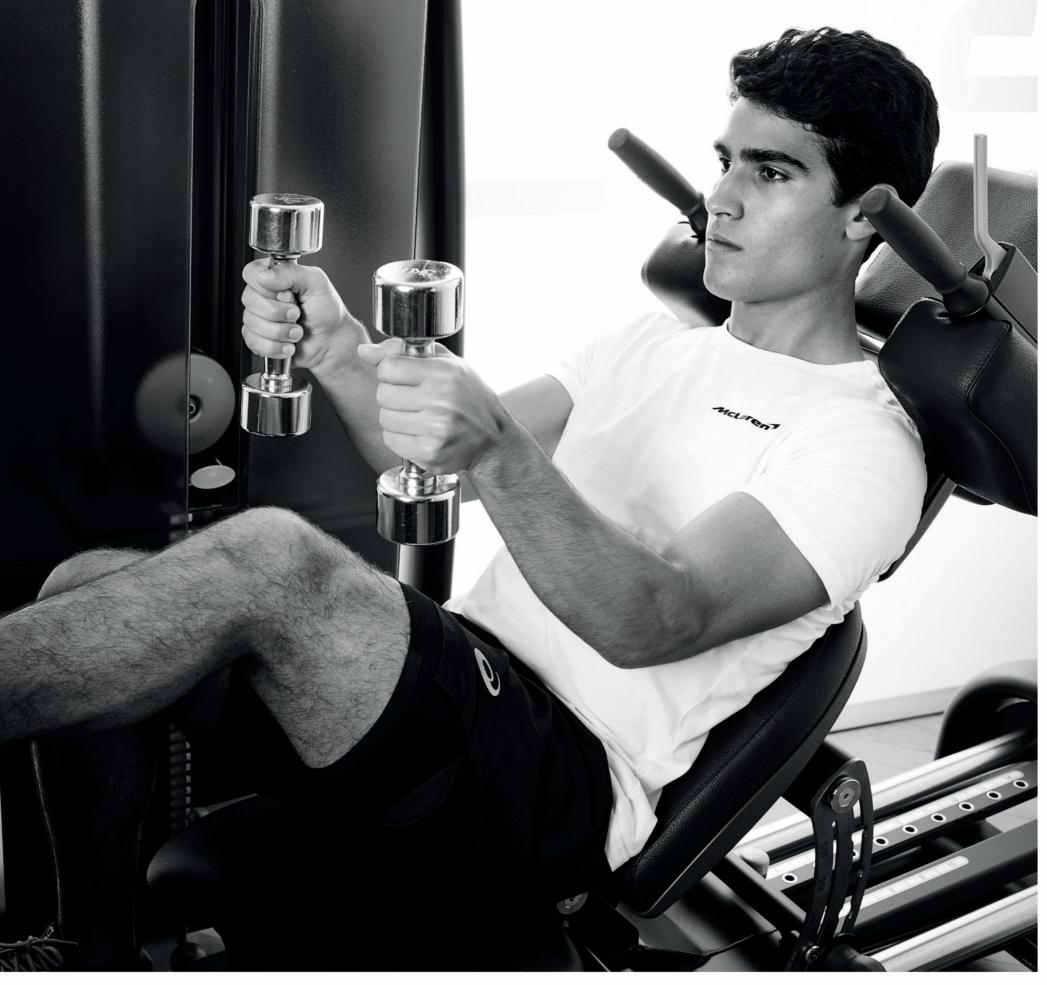


ARABESQUE EXERCISE

"This is an extremely challenging exercise, which requires an individual to stabilise on one leg, whilst maintaining a neutral spine and square hips. A driver performs this as part of warm-up mobility and activation protocol, to prepare for their training session. It helps develop the endurance capacity



of the intricate stabiliser muscles of the ankle, knee and hip. Due to the fact drivers only have to generate large forces on the left leg, this can cause an imbalance to the right leg and back muscles. This exercise will highlight such imbalances, as the driver will begin to rotate their pelvis and find it too difficult to align their hips."





LEG PRESS

"This adds to the repertoire of sports specific exercises, which helps develop drivers in a cockpit similar position. The leg press is fully adjustable and operates by sliding back and forth with the foot in a fixed position. Drivers perform single leg (unilateral) movements, similar to a single leg squat exercise but in a more controlled

and fixed position. This allows greater focus on knee alignment and gluteal (bottom muscles) activation, very important under braking to generate force efficiently. Poor knee alignment and weak gluteal muscles can place greater emphasis on the lower back and hip, which compensate, and possible injury can occur."



BAR BELL ROMANIAN DEAD LIFT

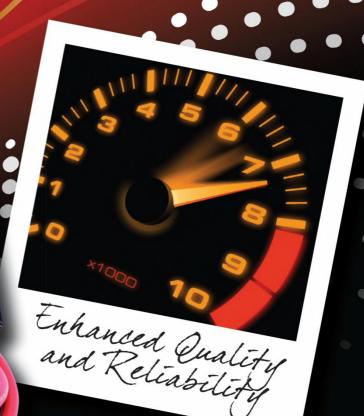
"Like many sports, athletes from high speed can perform movements in front of their body, which can develop anterior (in front of body) dominance and potential imbalance to posterior (behind body) musculature. A driver's training regime will combine movements that develop athleticism, while maintaining a balanced and car down effectively functional body. Braking

generate as much as 6G in Formula 1, which requires drivers to generate 80+kg of force against the brake pedal, repeatedly, for up to two hours. This requires a strong back and combined strength of the gluteal (bottom), front and back leg muscles to slow the when cornering."

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hen Sebastian Vettel is on song, he is a sight to behold. In harmony with his car, which for him needs a strong front end allied to a predicable rear that he can manipulate in the way he likes, he is close to unbeatable.

Think of the Red Bull years, Vettel perfectly attuned to the exhaust-blown aerodynamics of Adrian Newey's designs, a seemingly never-ending sequence of pole

positions, races surrendering to his will, an era defined in a blur of blue and purple perfection, and by Vettel's index finger raised in celebration, smiling blue eyes visible through the slit in his helmet.

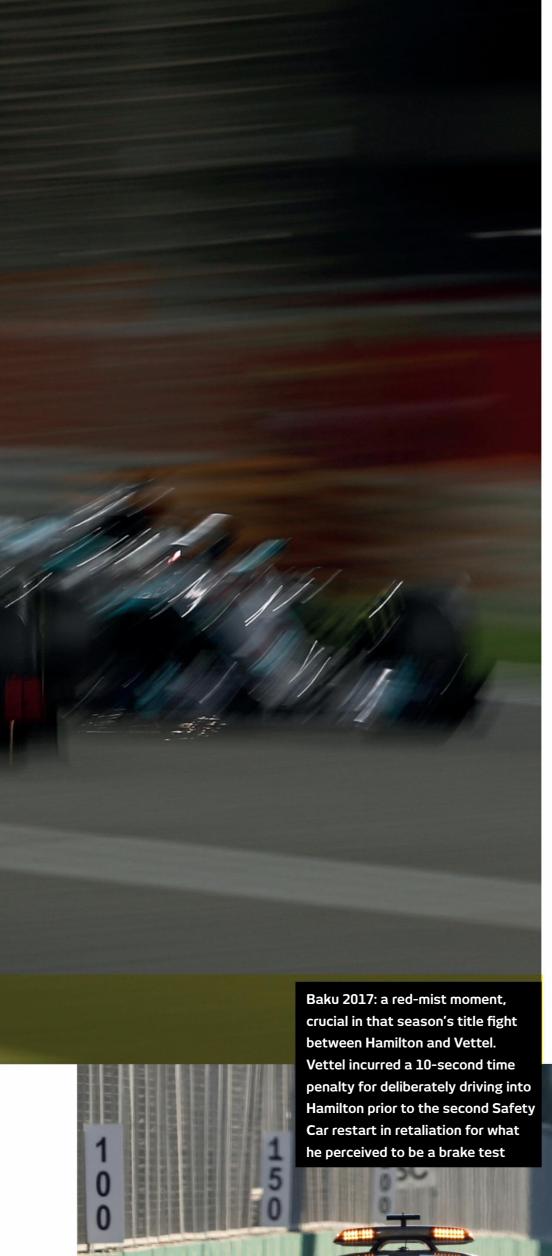
But that was a long time ago; a different time. And Vettel, it seems, was a different person. Then he was all light and sun, a joke never far away. Now, the lightness is still there, at least in person, but the jokes have dried up. There's a defensiveness about him, and a red-mist rage surfaces all too often.

Consider the 12 months between the last two British Grands Prix. In that period, Vettel made significant errors in seven races – crashing out of

the lead in Germany in 2018; hitting Lewis Hamilton and spinning while battling for position on the first lap in Italy; crashing into Max Verstappen while trying to pass at Spoon Curve in Japan; spinning while racing with Daniel Ricciardo in Austin; spinning after being passed by Hamilton in Bahrain this year; going across the grass while leading in Canada (an incident that led to the penalty that cost him the race win); clumsily crashing into the back of Verstappen at Silverstone.

That's a mistake that cost significant points in one in every three grands prix. At the same time, there have been several examples of Vettel apparently losing his rag while in the car — ranting at the mechanics in a wet qualifying session in Belgium, and what can only be described as a temper tantrum, albeit understandable, when informed of the penalty in Canada to name but two.

This is not a sequence of events that is expected of a four-time world champion, with the third-best winning record in the history of Formula 1. And the question up and down the paddock is what on earth has happened



to him; what is going on?

When these incidents happen, Vettel's modus operandi is to play them down, diminish their importance. It was a mistake, they happen, he says, before talking about the positives. But he admitted to this writer at Silverstone this year that Hockenheim 2018, for example, "did hurt – a lot".

Vettel says that what's important is "the how, as in what

"I KNOW WHAT HAPPENED INSIDE THE COCKPIT.
I KNOW WHAT I'VE DONE. I LOOKED AT IT. AND OF COURSE, I HOPE NOT TO DOTHAT AGAIN.
BUT THEN YOU HAVE TO MOVE ON"

happened. We had a couple of incidents last year – I had – where they didn't go our way, for sure. Maybe I didn't look very good in them. I don't know; if you take Hockenheim, if you take what happened in Monza. A lot of it is taking risk and racing. Unfortunately, not always it works. That's the way I look at it.

"I didn't stress too much about it.

I didn't feel like I needed to have my
head fixed or anything like that. I know
what happened inside the cockpit.

I know what I've done. I looked at it.
And of course, I hope not to do that
again. But then you have to move on.
Because what do you do? You hang
yourself? No, so get on with it, you know

what I mean? For me, that's racing. As beautiful as it can get, it can also be cruel sometimes."

As for the red-mist moments — to which we also have to add Baku 2017, when Vettel incorrectly believed he had been brake-tested by Hamilton behind the Safety Car and responded by driving alongside, gesticulating and banging wheels with the Mercedes — Vettel says he doesn't see the big deal.

"It's just emotions," he argues. "I'll give you an example. Something happens in racing. I shout, because I am annoyed in that moment, and it's like [I'm playing tennis and] I missed to give the ball enough spin. It goes out and I yell like [John] McEnroe.

"Everybody knows what I mean. And then nowadays you face [the media] two weeks after and people asking: 'Do you have an anger-management problem?' If you think about it, I find that so disrespectful, because you've had two weeks to think about something and that's what you come up with?



That is disrespectful. I'm not personally offended. But, are you serious? That's why sometimes I don't get it."

Which is all very well. You can see his point. But the incidents keep happening all the same. It's all such a contrast from his Red Bull days.

"With us," says Red Bull team principal Christian Horner, "Sebastian was like a metronome when he was in the lead of a grand prix. He was always so strong in that position."

The two situations are not the same, though. At Red Bull, more often than not, Vettel had the best car in the field, he had qualified on pole or the

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OR HAMILTON'S

front row, taken the lead at the start and controlled the race from there, managing the Pirellis just-so. In fact, it's striking when looking down a list of Vettel's victories just what a high proportion of them have happened in that fashion.

There have been some wins like that at Ferrari, too. And there have been times – particularly in 2017 and 2018 – when the car's been the class of the field and he has gone with it all the way, and in doing so looked like the driver of the Red Bull era.

In both those seasons, Vettel looked a strong bet for the championship only to fade in the second half of the year. In 2018, in particular, had Vettel driven a flawless season such as Fernando Alonso did at Ferrari in 2012, he could have won the championship despite Ferrari's fading form in the second half of the campaign.

Vettel is now five years into his Ferrari career, and still hasn't won the title – like

Alonso was in 2014, when he decided enough was enough. But Vettel isn't Alonso. They are both superlative racing drivers, but with very different qualities.

Give Vettel a car he likes, and he's arguably the fastest driver in the field. But he needs what he calls "the feeling" to perform at his best. Some believe his peaks might be higher than Alonso's or Hamilton's. But he is also far less adaptable, so his talent can shine in fewer situations.

Equally, while Vettel can be demanding, he is a much easier personality than Alonso. But if Alonso created pressure, his driving was impervious to it. Vettel's is not. And he is clearly not as able to handle a situation in which he is fighting a rear-guard battle, or struggling in a less-than-ultimately competitive car, than either of the other two men who have collectively defined the first decade of Vettel's career.





In his first year at

Ferrari, only his second in Formula 1, if Charles Leclerc has not quite been the sensation some were expecting, he has not been far off.

On paper, it perhaps does not look that great. Leclerc made too many mistakes in the first half of the season, particularly in qualifying. A torrid weekend in Canada led to a rethink of his approach to Saturday afternoons, and at the time of writing, looked to have been a turning point – he outpaced and out-raced Sebastian Vettel in the next three grands prix.

Mistakes are to be expected of a driver in his second season. And if results in the

first seven races felt a little disappointing, that's largely because expectations were so high. The underlying picture, though, is one of abundant promise.

Leclerc should have won in Bahrain – and would have but for an engine problem, after a dominant performance. He could have won in Baku, where he was the quickest guy in the field until he crashed in qualifying. And only Max Verstappen's late charge in Austria deprived Leclerc of a lights-to-flag win.

Austria raised questions about his racecraft – which he immediately answered with a defensive drive against Verstappen at Silverstone up with the



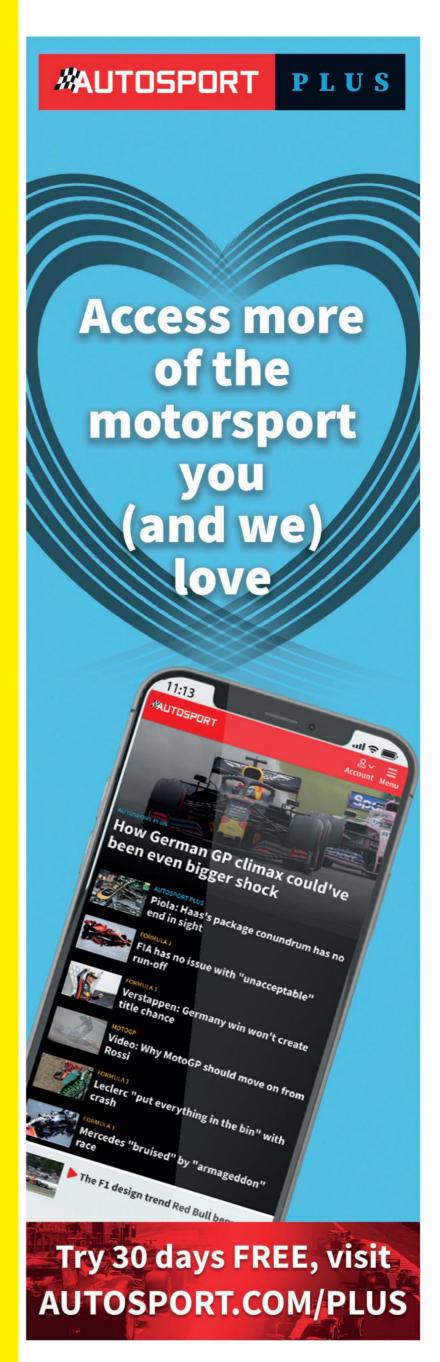
best F1 has ever seen.

The team orders imposed on the drivers early in the season as Ferrari sought to maximise its championship chances led to tension, but that has dissipated. Partly as it became clear that a title challenge would not happen, and partly due to the circumstances of the races after Spain.

But Leclerc's form leads to fresh questions – and potentially problems. If he can consolidate the position of lead driver he assumed from France to Silverstone, what does that mean for Vettel?

As for Leclerc, he says the disappointments of Bahrain, Baku and Austria have just made him more determined to secure that first victory.

The next big chances are likely to come at high-speed Spa and Monza. If he were to win there, it would be no surprise at all. And as for it confirming him as a star of the future? Well, he has pretty much taken care of that already.





The problem that faces Vettel right now is that, half a decade into his Ferrari career, the team has now taken a dip too – and the championship looks further away again, certainly than it did for the past two years.

"You can see a slight similar pattern to Alonso," says a former grand prix driver, speaking on condition of anonymity. "You go to Ferrari. It is like this crazy love, amazing, everything-cool relationship, and then over the years this pressure creeps in, and then there is the frustration that some things don't change. "It gets a bit tricky. The team gets frustrated

INTO A TEAM IN WHICH UNTIL THEN VETTEL HAD BEEN THE CLEAR DOMINANT FORCE, HAS COME A NEW **GUY BRIMMING WITH** ENTHUSIASM AND TALENT, DETERMINED TO MAKE HIS NAME WITH HIS FIRST BIG CHANCE IN A TOP TEAM. AT THE SAME TIME, THE PROUD CHAMPION IS FACED WITH A DROP IN COMPETITIVENESS FROM HIS CAR

with you; the engineers. So, you are in this position where everyone is a bit fed up but you still respect each other. It's a bit like a marriage which is not full of passion. But still a marriage. That's what they have.

"And then this young kid helicopters in, full of energy, which is only going to last a certain amount of time as well. It is like an affair. It's great, the energy, and then the dynamic shifts to the other side of the garage, and that's difficult. And that's where they are."

That's a reference to Charles
Leclerc, whose arrival this year has
changed the internal dynamic at
Ferrari significantly. Vettel lost
Kimi Räikkönen, a friend, whose
pace generally was not troublesome
to him, and who was uncomplaining
on the rare occasions he was in front
and was asked to move aside.

In Räikkönen's place has come a 21-year old of obvious talent, signed because Ferrari consider him the future, who is accepting of team

orders but clear he's determined to get into a position where they are not needed because he's ahead, and is showing that he's capable of delivering on his ambition. In this situation, there are clear parallels with the one Vettel faced at Red Bull in 2014 with Daniel Ricciardo. Into a team in which until then Vettel had been the clear dominant force, has come a new guy brimming with enthusiasm and talent, determined to make his name with his first big chance in a top team. At the same time, the proud champion is faced with a drop in competitiveness from his car.

Five years ago, this led to Vettel leaving – and starting his journey with Ferrari. Could the same happen again? There have been rumours for much of the year of Vettel leaving Ferrari, talk of a potential swap with Verstappen, or of replacing the Dutchman if he goes to Mercedes. At the time of writing, however, that looked to be pie in the sky.

Verstappen's first ambition is to make the Red Bull-Honda package work, so he might be well minded to give it more time, and it's far from clear there will be an opening at Mercedes anyway. Valtteri Bottas is out of contract at the end of this year, but would Toto Wolff want to put Hamilton and Verstappen together, however exciting that might be for F1's audiences?

Wolff does have the problem that Hamilton is 34 and can't go on forever – and he needs to think of a replacement. But that problem could be three to five years away at least given the way Hamilton has been talking recently.

If Mercedes is not an option, why would Verstappen leave Red Bull for Ferrari, given this year's competitive picture? And if he doesn't, the attractiveness for Vettel of swapping an internal battle at Ferrari with Leclerc for one at Red Bull with Verstappen would surely be minimal.

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FERRARI'S LATEST FALSE DAWN

It all looked so good after pre-season testing. The Ferrari SF90 was so fast in early March that Mercedes was genuinely worried. That all looks a bit ridiculous now.

On paper, the results in 2019 look bleak for Ferrari. And while it could have had four wins from the first nine races - Bahrain, Baku, Canada and Austria – had things gone differently, that should not distract from the fact that Ferrari has made a step backwards this year.

In 2017 and 2018, the car was at least as good as anything else pretty much everywhere for the first two-thirds of the year, only for the challenge to stall in the closing phase of those seasons.

This year, the car is quick only on certain circuits. It has the most powerful engine, and its straight-line speed advantage comes at the cost of a lack of overall downforce. But that means that while it is quick on tracks with long straights and short corners, it struggles elsewhere.

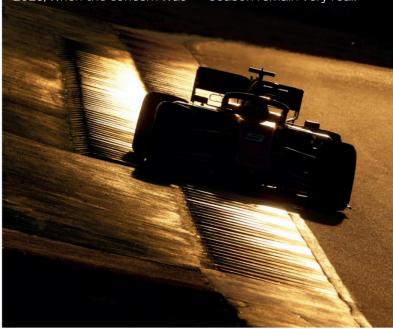
Ferrari is also having problems with the 2019 tyres, which are harder to get up to temperature than 2018, when the concern was to stop them overheating.

There have also been questions over Ferrari's aerodynamic concept - it uses a different flowsystem on its front wing than Mercedes, one that is less conducive to creating the biggest front aero loads - and understeer has been the car's biggest weakness.

It would be easy to conclude the mandated changes to front-wing design for 2019 are to blame, that Ferrari did not adapt to the new rules. The team believes there is a bigger issue.

Towards the end of 2018, Ferrari lost performance, introducing a new floor that it ultimately determined was a step backwards. The team believes it lost ground at that stage last year that it is yet to recover. In other words, it might well have been behind in 2019 anyway, even if the frontwing rules hadn't changed.

A development path has been settled upon, and there is hope of progress over the second half of this season. But until it proves otherwise, the concerns over Ferrari's ability to challenge Mercedes over a season remain very real.





So, what is the future for Vettel? He is not keen on some aspects of F1: he doesn't appreciate being a public figure, he thinks the cars are too heavy, he really doesn't like the sensitivity of Pirelli's tyres – although he is careful about how he puts this in public. But for all that, the goal with which he came to Ferrari in 2015 – to emulate Michael Schumacher and win back the title for the Scuderia – remains.

"In a way," he says, "it is crazy it has been four, now five, years. A lot of stuff happened, good and bad – a lot of good especially – that I look to, and I have reason to look forward, too. I love the racing bit of it, standing on the grid, seeing that so many people get excited about what we do collectively, racing these cars. That really does something. It gives me a lot of adrenalin, makes me nervous on Sunday morning when I wake up. I still feel different than waking up Thursday or Monday.

"And I want to succeed. I want to make this work. If I will succeed, I don't know, but that's what I want, and that's what determines the future. And what's happening now, but it also depends on where the sport is going, and so on."

Take that at face value and it sounds like he will stay at Ferrari at least until the end of his contract next year. If so, that's the immediate future sorted. Then, he can make a call, based on his opportunities, and what he sees of the 2021 rules.

As for the mistakes, they, wise observers believe, are coming from a desire to compensate for the car's shortcomings. If he is to achieve his goal, Vettel will have to hope Ferrari ups its game, and that he can go with the team while fending off Leclerc. It could be the biggest challenge of his career. 1

Andrew Benson is BBC Sport's chief F1 writer

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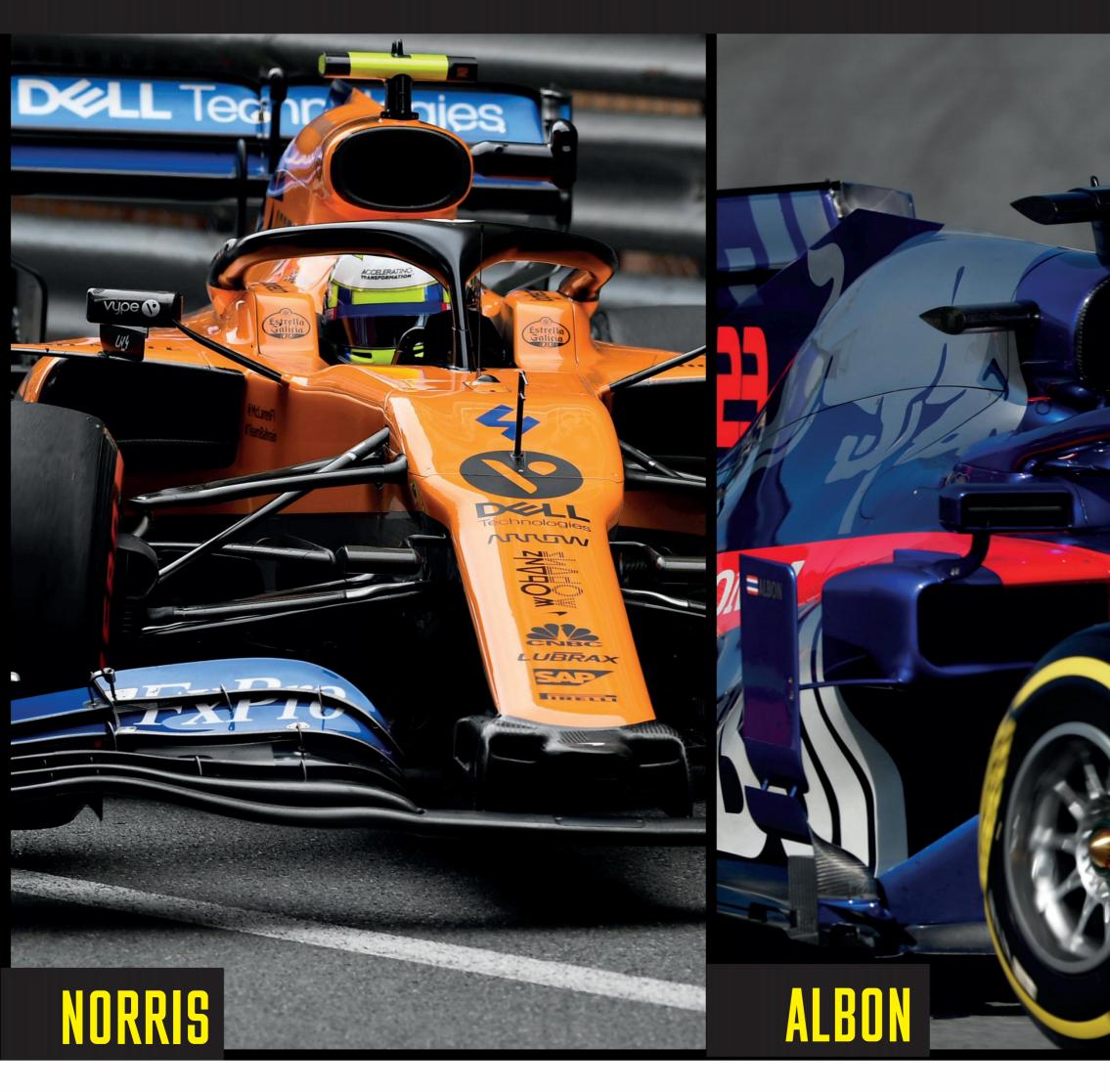


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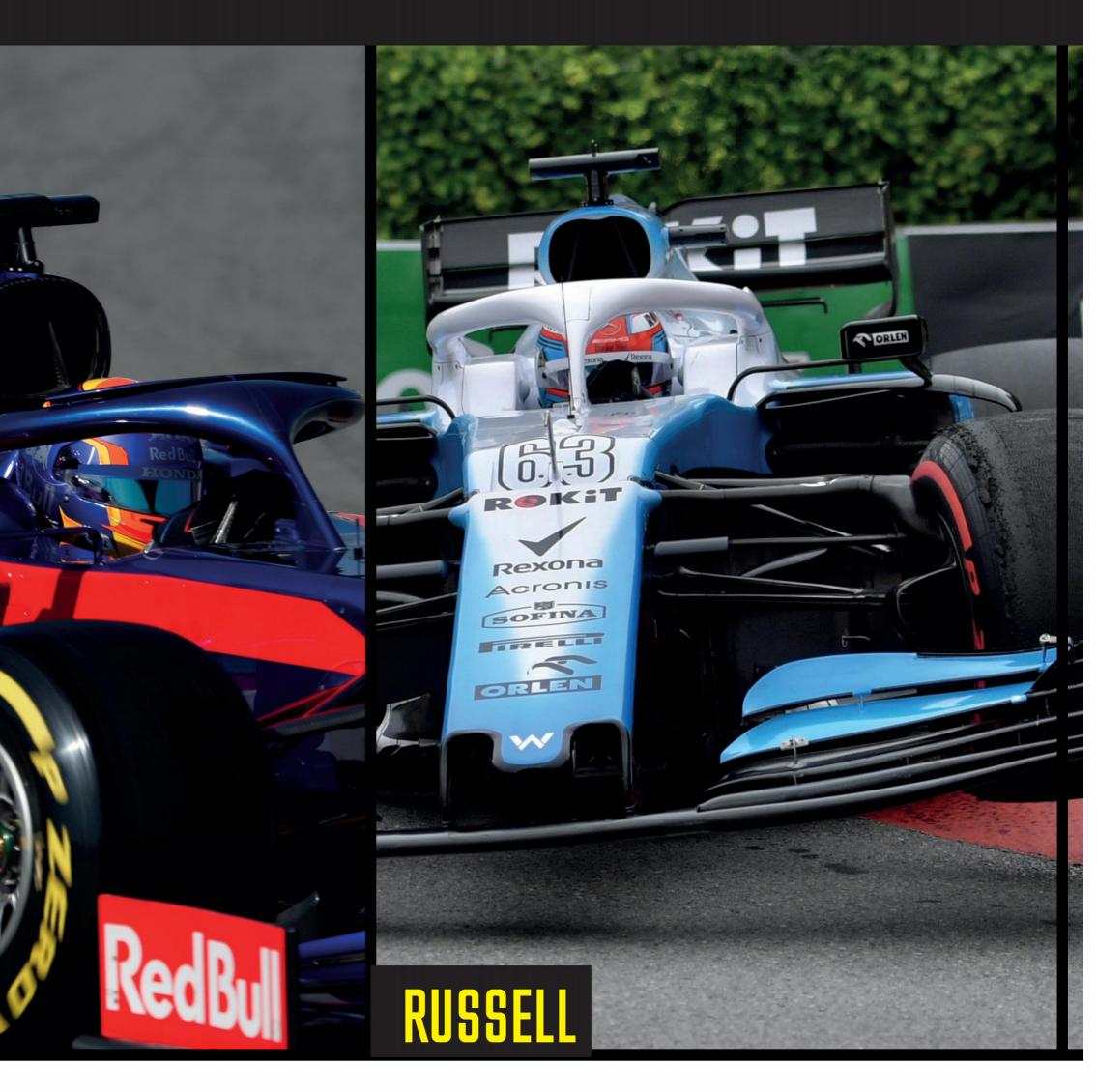
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'5 KKIGH FUIUKE

The three newest drivers on the grid – Lando Norris, Alex Albon and George Russell - have enjoyed excellent starts to their F1 careers. We explain why this trio look like the real deal, and determine who's done the best job... so far



It doesn't matter how strong or weak you are in the junior formulae — it's how you perform in Formula 1 that will define your career. The top three drivers from last year's Formula 2 championship all made their first grand prix start in 2019 with various levels of experience and expectation. Would they handle the pressure and,

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in the case of all three, a quick team-mate?

In terms of prior track time coming into Australia, Lando Norris had the most F1 experience (despite only being 19), but by driving for McLaren he's also ended up in one of the best cars in the midfield. The now Red Bull-bound Alexander Albon (23) was given a late call-up by Toro Rosso, so his first laps in an F1 car came in pre-season testing, meaning he would start at a significant disadvantage. Finally, Mercedes junior and F2 champion George Russell (21) would step from a race-winning car into one at

the back of the grid, so had to significantly adjust his mindset while also coping with experienced one-time grand prix winner Robert Kubica on the other side of the garage.

Due to the differing performances of each car on the grid, the only fair way to make an accurate appreciation of how the three youngsters have performed so far is to analyse their pace against their team-mates in qualifying, and study their wider performances in detail to determine how well they have started their careers and whether they deserve to be in F1 for the long haul.

Lando Norris #4 McLaren-Renault

PURE PACE 4/5

Norris immediately impressed in qualifying when he hauled his McLaren into Q3 in Australia, notable because team-mate Carlos Sainz failed to escape from Q1 after being slowed by Robert Kubica's Williams. But without that issue for Sainz, would he have been ahead in Q3?

In Austria, Norris was fifth, but Sainz was rooted to the back of the grid with engine-related penalties. A week earlier, at Paul Ricard, there was a better chance for comparison. The McLarens were fifth and sixth on the grid, but Norris was quicker, by 0.104 seconds.

When the most representative qualifying times are compared (a sample of nine) it's close – and Norris just edges Sainz (someone who ran Max Verstappen close in their Toro Rosso days). With qualifying times expressed in percentage terms (to neutralise the laptime discrepancy created by differing circuit layouts), Norris is on average just 0.001% ahead, almost a dead-heat!

RACECRAFT 4/5

Although Norris has made a habit of qualifying strongly, when the lights go out he's struggled a little. In the first 12 races Norris lost an average of 1.4 positions on the opening lap, with his biggest losses in Bahrain (five places) and Spain (six places). In Bahrain, Norris was unfazed by the error at the start and battled past some tough competitors – Kevin Magnussen, Kimi Räikkönen and Dan Ricciardo – to finish sixth.

After losing a place to Verstappen in Canada, Norris re-passed him on the opening lap, and wasn't put off duelling with Sebastian Vettel and Lewis Hamilton in the opening stages in Austria, where he finished a brilliant sixth.

Perhaps Norris's most impressive drive was at Paul Ricard (where he won the fan vote for driver of the day). He brought his hobbled McLaren home in the points despite a late hydraulic failure. He was also excellent in the British GP, before the Safety Car spoiled his race.

PENALTIES AND MISTAKES 5/5

Norris's driving has been impressively clean so far. He's suffered no major practice shunts or any driving misdemeanours that have warranted penalty points. He was unfortunate to be tripped up by Daniil Kvyat's Toro Rosso on the opening lap of the Chinese Grand Prix – and subsequently produced a hilarious Instagram story featuring his flying car.

Norris did briefly get into trouble with the stewards in final practice in Canada for re-joining the track incorrectly – but they took no further action. He also escaped sanction for his collision with Lance Stroll in Spain.

Norris was recovering from a bad start and came up to pass the Racing Point on the outside of Turn 1. They clashed at the apex of Turn 2 and were both forced to retire, but the stewards decided that "neither driver was wholly or predominantly to blame" so no penalty was imposed.



Alexander Albon #23 Toro Rosso-Honda

PURE PACE 3/5

Just like Norris, Albon's arrival in F1 began well when he out-qualified an experienced teammate in Australia. Albon came into the weekend with very little F1 mileage and made a mistake, crashing in the opening session. But the next day he recovered to beat Daniil Kvyat by 0.138s and line up 13th for his first GP.

Albon's first Q3 visit came at arguably the toughest challenge of the season so far:
Monaco, although he was down 0.382s to Kvyat.

The qualifying head-to-head is balanced 5-4 in Kvyat's favour (discounting Bahrain, China and Austria) and as a percentage, overall his deficit to Kvyat has been small – just 0.123%. In recent races, Albon's Saturday pace has been better and he was faster at Paul Ricard and Silverstone, the latter his biggest qualifying margin over Kvyat, where he was 0.239s quicker. A sign perhaps that he is gaining the upper hand as the car improves and he gains experience.

RACECRAFT 5/5

Red Bull

Albon has impressed in a couple of races this year where he's managed his brakes and tyres to the flag and held back a determined opponent in the closing stages. Under pressure from Sergio Pérez's Racing Point in Bahrain, he withstood the attack to hold onto ninth and did similar in the following race in China to keep Romain Grosjean's Haas at bay for tenth. This earned Albon the driver of the day award and another point, despite starting from the pits.

There were strong drives in Austria and Britain, although the latter was scuppered by a high voltage issue with his power unit that prevented him from making a second stop for tyres.

Arguably his best drive came at the German GP. Having never driven an F1 car in the wet, he hauled himself into a points position and spent much of the race in the top six, until a late Safety Car cost him track position when others pitted earlier.

PENALTIES AND MISTAKES 3/5

While Albon has avoided the attention of the stewards and has picked up no penalties for driving infringements, he has caused a few headaches for his Toro Rosso mechanics.

The loss of his front wing in FP1 in Australia was understandable and on the opening lap of the Canadian GP he was boxed in at the first sequence of corners, which ultimately caused him to retire from the race.

But Albon's biggest blunder so far came in the Saturday morning practice session in China, when he lost control of his Toro Rosso coming out of the final corner and made heavy contact with the barriers. This destroyed every corner on his car and required a change of gearbox. But he salvaged his weekend with that brilliant recovery drive on Sunday. There was another crash in Hungary practice, but Albon understands that mistakes will always happen – the important thing is how you deal with them.



George Russell #63 Williams-Mercedes

PURE PACE 5/5

Arguably, Russell is the toughest to assess of the newcomers. While team-mate Robert Kubica has impressed just by returning to the cockpit, there remain significant question marks about his outright pace. The starkest statistic from the first 12 races has been the qualifying head-to-head between the pair: 12-0 to Russell.

On average, Russell has been 0.529% faster with some large margins at certain races. The difference in Canada was 0.776s and on the short Red Bull Ring 0.302s. Most recently, a sensational performance in Hungary produced a deficit of 1.293s. This has led to suggestions of disparity in equipment between the two drivers, either from the chassis or power unit, which has been refuted by the team. So, has Russell been stellar in qualifying or has Kubica been underperforming? The truth is probably a bit of both – but there is no doubt Russell has been comfortably the faster of the two.

RACECRAFT 5/5

At the tail of the field, it's difficult to know how good Russell would be racing wheel-to-wheel with more experienced drivers but he has at least maintained a 100% finishing record.

Like Norris, but not to the same extent, he has lost out in the opening laps, but has done a fine job of recovering afterwards. The best example was Monaco, when he lost out to Kubica at the start, but finished the race three places ahead.

Compared with his team-mate he has been 0.25-0.45 seconds per lap quicker in the races, underscoring the sense Russell is quicker than Kubica. Only in France and Germany has Kubica actually finished ahead in their private battle.

Russell's most impressive overtake actually came against Kubica in France. He caught and tried to pass the other Williams into the daunting 180mph Signes curve. On the first attempt he ran wide and hit a bollard, but achieved the breath-taking move second time around.

PENALTIES AND MISTAKES 4/5

With a 100% finishing record, Russell's mistakes on race day are rare. The two slip-ups he has made have come on Saturday. For the avoidance of doubt, his biggest incident of the year came on the Friday in Baku, when a loose drain cover destroyed the floor of his car – but he was completely blameless for that. In fact, he impressed in Azerbaijan since he was getting over the effects of flu.

His two Saturday issues were, firstly, in FP3 at the Spanish Grand Prix, where Russell spun backwards into the barrier, necessitating a five-place grid penalty for a gearbox change.

In qualifying in Austria, Russell was deemed to have impeded Daniil Kvyat at the penultimate corner by running slowly on the track. Although the stewards noted that Russell wasn't given adequate warning by the team about Kvyat's approach, he was hit with a three-place grid sanction and a point on his licence.







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IN CONCLUSION...

Three undoubted stars of the future, with one already destined to move up the grid, but it's the man at the back who has probably just edged ahead after their first 12 F1 races



LANDO NORRIS 4.3/5

ALEX ALBON 3.7/5



GEORGE RUSSELL 4.7/5

Outside the cockpit Norris is laid-back, with a down-to-earth persona, and is very witty on social media. He has a great rapport with Sainz and both enjoy playing pranks together, such as hiding after a debrief to avoid PR duties. Norris gets on well with his peers and regularly races online with Verstappen or Albon. In fact, if he's not in an F1 car he's on his own simulator.

This approach shouldn't be seen as a lack of commitment. He's self-critical and was annoyed in Austria when he qualified fifth, 0.02s down on Kevin Magnussen. "The most important thing is raw speed," says McLaren boss Andreas Seidl when asked to sum up Norris, whose results don't fairly reflect how well he's performed. His reward is another year with McLaren in 2020.

Inevitably, Albon's lack of F1 experience has meant a slower start to his season than Norris and Russell. But he's improved as the races have ticked by – perhaps aided by the European part of the schedule, where he's more familiar with the tracks. And he's been rewarded with promotion to Red Bull from Spa onwards, a trial run for 2020.

Outside the cockpit, Albon is extremely personable and polite, with a happy-go-lucky, almost apologetic attitude. He is also intelligent enough to know there is a world outside of F1.

"He's good, he's methodical, he's not emotional, and he's learning quickly. I'm really impressed so far," says Toro Rosso technical director Jody Egginton.

Russell comes across a little more polished than the others, probably because of his background as a Mercedes junior. Politically, it gives him power and could be decisive in his future career. Russell is clear, direct and switched on to maximising his opportunities.

The external view is that Russell has enjoyed the upper hand over Kubica – which, although predicted by some, is still impressive. Russell is mature for his 21 years, has experienced tough seasons before and says he has taken on the mantle of leading Williams through difficult times. He's a definite long-term project for Mercedes. "Enthusiasm and drive, undoubted talent and raw pace are his main strengths," says engineering chief Dave Robson. @















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THE LONG INTERVIEW

For five years Cyril Abiteboul has been in charge of Renault's Formula 1 presence.

The hybrid era has been challenging for the company that introduced turbocharging to the sport, put Abiteboul at odds with his counterpart at Red Bull, and prompted Renault to return in force to prove itself again as a manufacturer. But as Cyril explains, his career has been eventful even before this latest chapter

MORDS STUART EDOLING PORTRAITS DOW ROWNEY ABITEBOUL BOULL ABITEBOUL BOUL



THE Long Interview



CYRIL ABITEBOUL



hile Cyril Abiteboul is a regular character in our news pages by dint of his position at the head of one of Formula 1's grandee teams – albeit one struggling to regain past glories – somehow six years have elapsed since F1 Racing sat down for a one-to-one interview with him. Then he was team principal of

Caterham; now he's in charge of superintending Renault's return to championship glory.

That means he's a busy man, but Cyril has found a one-hour window for us between meetings in Monaco, and we convene at his hotel, the Monte Carlo Bay, where the Blue Gin Bar is conveniently empty at this time of day – the sun not yet being past the yard arm...

F1 Racing: You were very much below the radar in F1 before you became the team principal at Caterham in 2012. What happened before then — what got you interested in motor racing, and how did you get your break?

Cyril Abiteboul: I was born and did most of my education in Paris. It was a good life, a good childhood. My parents were engineers in French industry. I was born and raised as, "You will be an engineer, my son. You will work in French industry."

My dad was very keen on cars. Myself I loved cars, speed, anything that's fast. From a push bike to whatever. As soon as I could stand on my own two feet I was trying to go as fast as possible. I loved sports. I loved competition.

I went into an engineering school in Grenoble, and basically in the last year of school you can graduate and share your time between the school and a company. By pure coincidence I was offered an opportunity in Renault's e-business activity. Renault the car company [rather than the F1 team] was starting to think the internet would become an important thing for changing the business – from procurement to engineering to sales to employment, and also engagement.

It happens the year was 2001, one of the many milestones of Renault's journey in Formula 1 [when it bought the Benetton team]. That's how I first got in contact with F1. I was asked to put together a report for the Grand Prix Manufacturers' Association [an alliance of car manufacturers plotting a breakaway series] to show how digital rights were at the time completely non-existent, under-exploited.

There was a feeling that maybe the manufacturer's part of GPMA could form an alliance and exploit a different type of rights that was here to be seized. I looked in particular at the benchmark of NBA, NHA and NFL, and the way they were already far in advance in terms of digital rights management, and tried to establish some parallel. The report went fairly high into the Renault F1 organisation, up to two, three key persons at the time: the head of sales and marketing, the head of finance, and Flavio Briatore.

I was offered a position at Renault [cars] but there was

still dialogue with F1. On a regular basis I was helping them on different activities. For instance, we were the first team to stream live timing data on the internet. That was me. We were the first team to have an online store — and that was me. Those two things are obvious today, but back in 2002 or '03 I can tell you it wasn't something that was obvious...

F1R: Around that time Renault was very proactive in terms of its PR and engagement, so was that an influence on you and something you took on as you rose through the organisation?

CA: I've been extremely lucky to be able to work with people with very progressive ideas. Patrizia Spinelli, at the time in charge of PR, was also the first one to connect the world of F1 and the world of fashion. But there were also other people who were really very impressive. The head of finance at the time trained me and set up GP2 with Bruno Michel. Bruno is also someone I learned from and worked with in the set-up of GP2, in the Renault Driver Development programme. So, yeah, very progressive people. I feel extremely lucky and privileged to have had that opportunity.

F1R: How did you get involved with all these different parts of the business and GP2?

CA: Flavio was very active in that area, because it was his style. But Flavio being Flavio he wasn't always on top of all the details and he needed someone who knew all the details and would be able to be across all the departments. I would be going with Flavio to all of the meetings, not just to carry the documents but also to try and carry the knowledge and common sense [laughs], which was always difficult.

Plus, at the time [2007] Renault was very lean, and actually some people I've mentioned had gone, so I was in charge of finance, of legal, of sponsorship acquisition, of driver contracts. I was responsible for all of that, because I was trusted by Flavio and by Renault corporate. Most of my life has been in trying to establish that confidence, that mutual understanding, and respect, between the racing world and the corporate world.

F1R: That phase of Renault's involvement in F1 came to an end quickly – you had the double whammy of the global financial slowdown and 'Crashgate' [the 2008 Singapore GP controversy when the team ordered Nelson Piquet to cause a Safety Car]. What was it like being part of the organisation at that time, when you went from being a winning team to one up for sale? CA: The thing you haven't mentioned, which also rushed the decision and the sale, is that results were not there. ▶

After graduating Abitboul's first role at Renault was in





CYRIL ABITEBOUL

We had excellence in 2005 and '06, but there was a clear watershed and turnaround when we switched from Michelin to Bridgestone [tyres]. Clearly most of the competitiveness we had in 2005 and '06 were Fernando [Alonso], Michelin and a strong aerodynamic understanding.

So, high costs, lack of results, the financial crisis, and indeed a reputational crisis with Crashgate – it was a hell of a rollercoaster, pure crisis management or mitigation. I was in charge of the internal investigation with the group of lawyers defending Renault in Crashgate. It wasn't something I desired to be exposed to. But being given the opportunity to live this type of situation gets you to grow up.

I think, on balance, Gerard Lopez and the group of investors around him were the best candidates, and I'm not ashamed of the decision taken at the time, which in hindsight allowed the company to continue to operate as a going concern. In my opinion we found a better way forward than BMW, Toyota, Honda, who decided to stop their operations.

F1R: And you stayed as part of Renault rather than the Lotus side from there on?

CA: No. Gerard offered me a position, which I accepted, because the first agreement with Gerard was that he take 75% of the business and Renault kept 25%. My position would allow me to do some business with Gerard on the rest of his activities, and still do some business for the F1 team.

The following summer the team, which was still called Renault at the time but majority-controlled and operated by Gerard and Genii Capital, was already struggling financially. The opportunity came up of doing a deal with Lotus. But it was clear that Renault would not be able to remain a minority shareholder in a team that was not called Renault any more.

Splitting my time between Gerard, the F1 team and a bit of Renault was untenable. So, I decided to take the opportunity to come back and look after the relationship with Red Bull – which was on the way up – because at the time we were doing a lot with Red Bull, a lot of sponsors, having a very integrated technical collaboration.





CRASHGATE - IT WAS A HELL OF A ROLLERCOASTER BUT BEING GIVEN THE OPPORTUNITY TO LIVE THIS TYPE OF SITUATION GETS YOU TO GROW UP



F1R: This would be the end of 2010, the beginning of 2011, when Red Bull was unbeatable?

CA: Exactly, it was really the period of honeymoon between Red Bull and Renault – lots of success on track, lots of technical exchanges going on. But it was not just that – let's not forget that we also brought to Red Bull lots of sponsors: Total, Pepe Jeans, Infiniti. So all of that is what I was responsible for. Bringing value to Red Bull, not just technology but also sponsorship and commercial equity to the team.

F1R: How were you persuaded to leave Renault and join Lotus/Caterham?

CA: Two things: I'd already been head-hunted by another Formula 1 team, and I wasn't clicking with the management at Renault at the time.

F1R: A particular person?

CA: If you really want to connect the dots you'll be able to look at the different presidents we had at the head of Renault F1. [The timeline suggests it is Jean-Michel Jalinier, who took over from Bernard Rey at the beginning of 2012] It was just not clicking at a personal level. So I decided to get on the move.

I had a team principal proposition from one team, which I will not name, and another one. Carlos Tavares [then chief operating officer of Renault] said 'no go' to that first option, and there was this second one with Tony Fernandes at Caterham. In addition to the F1 team, Caterham had formed a joint venture with Renault for Alpine, and Carlos Tavares felt it was positive for the joint venture to have a former Renault boy into Caterham. Not that I would spy or influence, but at least I would put a bit of goodwill into the relationship.

F1R: What went wrong there? Was it that the Caterham road car business was never going to have the volume to justify an F1 entry?

CA: I don't want to be negative on Tony or Caterham, it's not my style. Basically Tony tried to do something with Caterham F1 and the road car business which he did with Air Asia — which worked there because with an airline you don't build





CYRIL ABITEBOUL

planes, you operate them. You rent them [from a leasing company] at a viable cost for your income, and it's all about marketing and branding. Tony is fantastic at that.

The problem with the road car industry and motor racing is that it's cash-intensive – and you have to put the cash up front, invest in people, facilities, infrastructure, technology, skills. You need to be stable and committed, and maybe after a few years it yields dividends.

In F1, you have to keep racing because if you stop, you lose the prize money. Every Monday we had a meeting to look at the cashflow and pay the most critical suppliers just to go racing. That was a very difficult and challenging situation. At the end we were short of cash and short of time to find a buyer. Quite frankly there weren't many serious buyers and Bernie [Ecclestone] pushed for Colin Kolles – but even Colin, who is very good at managing lean operations, did just a few races after I left.

F1R: How long had you been talking to Renault before you returned there?

CA: Actually it was very quick. You remember I said I decided to move on from Renault because I didn't click with someone in the organisation? Actually I was not the only person to have this, a number of other people were in the same situation. Jérôme Stoll made the decision to change the top management of the F1 activity and he offered me the opportunity to come back and look at restructuring it. The engine was bad, the relationship with Red Bull was very bad. I accepted, but only if we managed to find a buyer for Caterham.

F1R: What delayed Renault's return as a manufacturer? Was it because [Renault CEO] Carlos Ghosn and Bernie Ecclestone kept telling each other to go away and sharpen their pencils? From the outside it looked like two stags having a face-off in the park near our Richmond office...

CA: There are still some secrets which need to be kept but your description is very good. What's fair to say is that when the decision was announced in December 2015, the decision had been taken 24 hours earlier.

We had a number of conditions. The first was very clear. We knew in summer 2015 that we had two options — completely walk away from F1 or return as a team. Our analysis was clear that staying as we were, with no control or influence over the choices of the team or our image, wasn't working. We made a proposal to Red Bull to restructure our collaboration and build a proper Red Bull-Renault team with a different way of putting our financial resources together. But that was clearly not what Red Bull wanted — they wanted to focus all their resources on the chassis to have dominance on that. If you look at Mercedes that's absolutely not how they've built their domination.

Mercedes made different choices, being fully integrated, and being capable of directing resources in accordance with necessity. At the time if you had the best engine you would be winning races. That's what we should have done – we should have been able to have a model with Red Bull that could have allowed us to put maximum financial resources, whether they



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came from Red Bull or Renault, into the engine, because it was a key performance differentiator. That proposition was rejected and it was very clear we could not remain as an engine supplier on that basis — or even as a partner.

There was an appetite to stay in F1 because of our legacy in the sport, and the social responsibility in France because of our engine factory. Carlos Ghosn set very clear conditions and I had to tick those boxes.

F1R: Where did it begin to go wrong between Renault and Red Bull? The beginning of 2014, or even before that?

CA: For once I need to distance myself a little bit, because as I mentioned before I had some reasons for leaving Renault [in 2012]. Among those were that I could see things weren't going in the right direction, we weren't investing at the right level, and we weren't quick enough to recruit the right people. We were so focused on the final stint of the V8, because it all got very complicated with the exhaust blowing, that we weren't working on the future. And that was a major mistake.

So, yes, at the beginning of 2014 there was problem after problem. I was a customer at the time so I can tell you from the receiving end that Renault was massively behind in terms of understanding the whole concept and executing the product. Red Bull had become used to the success and the prize money and it came to a stop. But criticism in the media doesn't solve the problem. The problem was massive under-investment in

Abiteboul had a torrid time managing Red Bull's expectations and criticisms





technology and people, all the way back to the frozen-engine period of 2007. Sorry to come back so far, but that's the reality. Flavio wanted to shut down Viry [Renault's F1 engine HQ] completely, and he sent me to speak to another team to see if we could buy an engine from them.

Mercedes at the time was diversifying, picking up additional work, researching technology that would one day become relevant in F1, and lobbying for regulation with what would be compatible with that work. Very smart, very clever. What we see today is the result of decisions Mercedes made in 2007.

To a degree I can understand the frustration of Red Bull. But it got to a point where it's not just criticism of the product but criticism of the brand, and that for us was a red line.

F1R: In terms of where Renault F1 is now and those conditions



Carlos Ghosn set — winning in a five-year timeframe, at a reasonable cost. Has it been more difficult than expected?

CA: We set out to spend 15% less than Mercedes, but that was 2015 Mercedes. If you look at what they're spending now we're more like 30-40% down. That is what's been underestimated. Time: we said five years starting in 2015, and it's an easy excuse, but we weren't assuming the decision would be made in December 2015. In summer we could have built a new car for 2016 and that didn't happen. We had to use an old car. So I think it's not stupid to say it's become a six-year plan, and that puts you into 2021 to be able to fight for championships. I continue to stand by that roadmap, but I have to accept the intermediate milestones were tougher than I was expecting.

^{*} Our thanks to the Monte Carlo Bay Hotel, Monaco.





NOW THAT WAS A CAR

WORDS JAKE BOXALL-LEGGE PICTURES JAMES MANN



FERRARI F1-2000

For the Scuderia this was the car that heralded the return of the glory days and the start of Michael Schumacher's five-year domination of Formula 1



or a team of Ferrari's glorious stature, the current 11-year title drought after such an extended period of dominance in the early 2000s is hideously obtrusive — but Ferrari has been through a far more extensive fallow period.

Following Jody Scheckter's title triumph in 1979, Ferrari fell off of a cliff spectacularly in 1980, and thus began a 20-year span without title success. It inched closer in the late 1990s, once the Michael Schumacher/Ross Brawn/Rory Byrne dream team clambered aboard the good ship Maranello, but disqualification for shoving Jacques Villeneuve off the circuit at the 1997 finale, an absurdly good McLaren as the rules changed for 1998, plus a broken leg for Schuey midway through 1999, contrived to spoil the party. Still, Ferrari bagged the 1999 constructors' title as Eddie Irvine got within two points of the drivers' crown. If he could do that, imagine what a fully fit Michael Schumacher could do in that car...

The new millennium answered that question. An evolution of the rapid F399, the F1-2000 looked outwardly similar to its predecessor — but was a sharper, leaner machine. Using the McLaren-inspired trick of placing two small fins along the edge of the chassis bulkhead, it could be shrink-wrapped a little more, and the nose lost a smidgen of puppy fat over the winter.

Ferrari also overhauled the sidepods: these now slanted slightly downwards for a smoother transition to the rear wing. They were tapered in a little more towards the rear, while the inlet was swept in towards the bottom to link up more cohesively with the larger bargeboard package.

Out of all the changes made over the off-season, the new 90-degree V10 engine was the biggest-ticket item. Opening out the V-angle yielded a lower centre of gravity, and compromises for the lack of immediate balance were found in an uneven piston firing order. In joining the team, Ross Brawn had insisted Ferrari's engine and chassis departments worked closer together, and their cumulative efforts came to bear fruit.

NOW THAT WAS A CAR



FERRARI F1-2000 The driving staff also changed. Irvine went off to lead the Jaguar team, with Rubens Barrichello going the other way after Jackie Stewart sold his outfit. Renowned for being excellent with set-up work, Barrichello was expected to challenge Schumacher more often than Irvine had.

In the days of unlimited testing, Ferrari spent the winter pounding around Fiorano and Mugello, logging almost 900 laps before the season opener in Melbourne. Despite the odometer's best efforts to resemble a phone number, Ferrari still began the season with a slight disadvantage to McLaren, which had also developed an evolution of its 1999 car.

At Melbourne, Schumacher and Barrichello qualified third and fourth behind the McLarens of Mika Häkkinen and David Coulthard. Snap judgements suggested Häkkinen was in line for a third consecutive title, but the race threw up a result reflective of the McLaren and Ferrari dichotomy of 2000.

Häkkinen and Coulthard held their positions at the start, but hadn't even approached half-distance by the time both of their Mercedes engines gave up the ghost. The Mercedes valve seals proved to be problematic, a repeat of the Stuttgart manufacturer's woes from exactly a year before.

Ferrari took control and never looked back. The team switched Rubens Barrichello from a one-stop strategy to get ahead of the Jordan of Heinz-Harald Frentzen, who had trickled past into fourth at the start. From there, Ferrari waltzed to a 1-2 to set up a perfect start to the campaign.

Schumacher won the next two after that, but the streak came to a close at an uncharacteristically early British Grand Prix. Coulthard led home a McLaren 1-2 to put on a show for the home fans, who had spent most of the weekend trudging through mud and flooded car parks amid the April showers.

Victories went back and forth between Ferrari and McLaren during the middle the season; Häkkinen won in Spain and Coulthard sandwiched a Schumacher win in Canada with successes in Monaco and France – the latter after a great duel with Schumacher, as he famously flipped off the German when



"BRAWN INSISTED FERRARI'S ENGINE AND CHASSIS **DEPARTMENTS** WORKED **CLOSER** TOGETHER, AND THEIR **EFFORTS CAME** TO BEAR FRUIT"

faced with a robust defence.

Häkkinen got into his stride and notched up a second win in Austria and took an early lead next time out at Hockenheim, as Ferrari's German Grand Prix got off to a tumultuous start. Schumacher collided with Fisichella on lap one, while Barrichello qualified a lowly 18th after reliability issues and had to make his way through the field. Barrichello's eventual maiden win was miraculous, but Ferrari joy was put on hold for the next two races as Häkkinen collected a brace of victories to move to the top of the championship by six points.

Ferrari refused to capitulate, and Schumacher took a welltimed victory at Monza and prevailed two weeks later at F1's first visit to Indianapolis. Crucially, Häkkinen's engine

failure in the US swung the pendulum firmly in Schumacher's favour and gave him an eight-point championship lead.

The title showdown came at the penultimate round at Suzuka where, despite Häkkinen's best efforts and early lead, Schumacher reeled in the reigning champion. He jumped ahead of Häkkinen at the second round of pitstops to streak across the line with just 1.8s in hand to claim his third title – and Ferrari's first drivers' title in 21 years. Curly red wigs appeared in the wake of victory celebrations at the Malaysia finale, and Schumacher, Brawn and Byrne partied well into the night. But in truth, Ferrari's work had only just begun. 🗊











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Engine Capacity 2997cc **Power** 805bhp @ 17,300 rpm Other podiums 11

Gearbox seven-speed manual gearbox

Tyres Bridgestone Weight: 600kg

Notable drivers Michael Schumacher, Rubens Barrichello

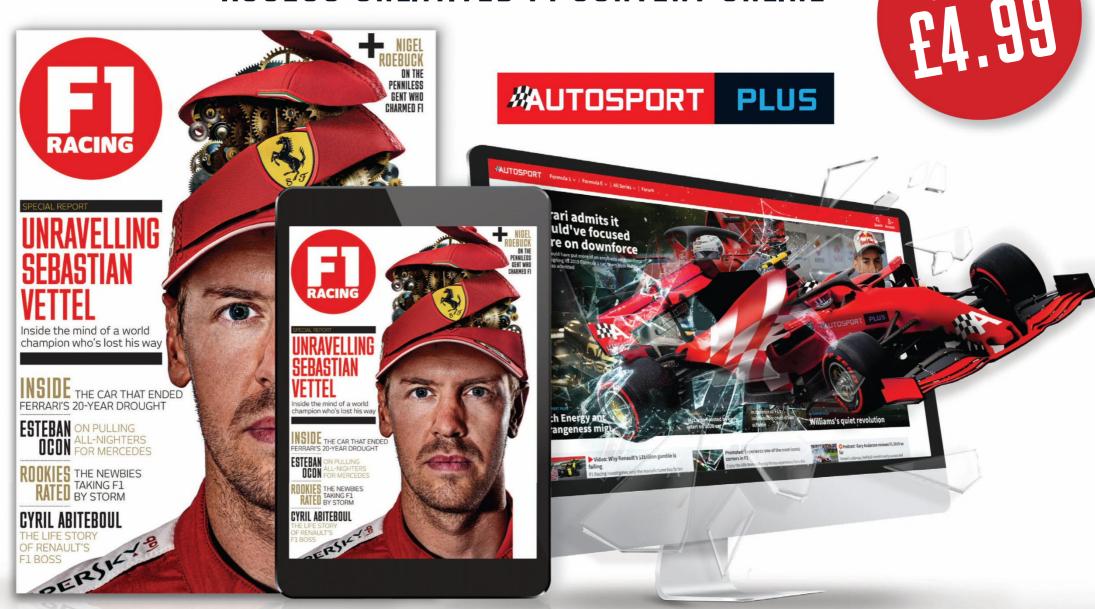




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ON THE NIGHT SHIFT

After losing his seat at Racing Point, Esteban Ocon landed back at Mercedes as the team's reserve driver. But not for him the chance to simply kick back in team clobber. He's pulling all-nighters in the sim to help his team move forward while remaining resolutely focused on returning to the grid – either in Valtteri Bottas' seat or another...

Anyone who sets their alarm for 3.50am deserves sympathy. Doubly so if they only managed to get to sleep at 3.20am. But this is a typical Friday night for Mercedes' main man on the sidelines: Esteban Ocon. For the European races the Mercedes reserve driver spends his Friday

evenings at the team's Brackley simulator, regularly clocking up more than 1000km. Once finished, he's whisked to the airport to board the first flight to wherever on the continent that weekend's grand prix is taking place.

On this occasion, *F1 Racing* catches up with Ocon at the Austrian Grand Prix. The previous evening he'd completed 221 laps of the Red Bull Ring – *virtually* – finishing at just gone 2am. Three hours later he was walking through the terminal at Heathrow airport for the first flight of the day to Vienna. He managed to get some kip on the hour and

Ocon, with 221 laps of the Red Bull Ring under his belt, looks remarkably fresh...

a half journey from Brackley to the airport, dozed on the flight, and had more shut-eye during the two-hour trip from Vienna to the Red Bull Ring.

Ocon was in the pits in time for final practice, prepared, just on the off-chance something unexpected befell Lewis Hamilton or Valtteri Bottas.

Those two need to be on the lookout for banana skins on the top of staircases...

"I have to be here, perhaps not in the best condition, but yes, definitely – I jump in," says Ocon, ready if Hamilton or Bottas have a problem. Thankfully the gruelling routine doesn't apply to flyaway races, where Ocon is present at the circuit all weekend.

"When this opportunity came around I insisted that I am always at the track. It's very important for me not to leave this world. I really want to be here and not forgotten."



REWIND 12 MONTHS and the circumstances of Ocon's move to Mercedes' reserve ranks were set in motion. Team boss Toto Wolff was guiding his career. Having been impressed by the young Frenchman in Formula 3 (where Ocon eclipsed Max Verstappen en route to the title), Wolff subsequently supported Ocon in GP3, knowing that from his humble background Esteban didn't have the finances to compete without patronage.

When he was placed against Sergio Pérez at Force India in 2017 Ocon shone, fearlessly failing to kowtow to his more established team-mate and regularly displaying electric flashes of speed. But the following year, when Pérez set into motion the winding-up petition to rescue financially-crippled Force India from closure, it gave the Canadian businessman

Lawrence Stroll an opportunity to buy the team. Although he had done nothing wrong, the end was nigh for Ocon. He ultimately lost his seat to Lance Stroll and fans were

both in uproar and saddened by the injustice. To Ocon's great credit, he took the loss of his race seat magnanimously.

"The good thing about my situation is that it wasn't because the bosses were not happy with my performance," he says. "It was for a totally different reason – more political than sporting. I'm very lucky that Mercedes still shows me support and it looks after me. Sometimes in racing it can be cruel and you can be left out, but Mercedes cares and want its drivers to progress."

Plans to place Ocon at Renault fell apart when Daniel Ricciardo jumped ship from Red Bull, so Wolff made the decision to bring Ocon closer to the fold, appointing him the team's official reserve driver. With that, the 22-year old has been studying the nuances of a championship-winning outfit and utilising his own talent to help the team. The experience has given Ocon a new insight into the world of F1 outside the cockpit.

"It's a very different approach," he says. "Of course, I would like to be racing, but it's good to have the experience and see how the team works. I spend more time speaking with engineers than when I was a driver. That's because I'm in the factory more, listening to every debrief, understanding how they make decisions about tyres and strategy. It's good, because when I come back to F1 I will be more complete as a driver."

In addition to his reserve driver duties, Ocon has also been working with French TV broadcaster Canal+ at races, taking on the role of pundit. It's another side of the industry that has surprised him.

"I realise that it's not just the teams that work hard in the paddock. For the TV crews and the media it's long hours too. At one race I did a live TV grid walk from the back to the front. Being on the other side, it's really difficult to get people to talk to you and get the right answer. Now, as a driver, I'll make a bit more effort to make it easier for the guys asking the questions.'

Ocon believed he would have more spare time on his hands this season, but finds his diary is busier than when he was racing 21 times a year. His other duties have involved Mercedes sponsor appearances and time in the Racing Point simulator, while maintaining the levels of fitness and stamina required to jump in a car at a moment's notice. In an interview

in Paris last year, Ocon revealed to F1 Racing that he only had 2.8% body fat – and reiterates that's all he still has before adding, "what was I saying...? I forgot. Too little sleep!"

The previous day, in Brackley, Ocon was with the engineers in the team's race report room watching FP1 and listening to the radio traffic from pitwall

<u>"I'M VERY LUCKY THAT</u> MERCEDES STILL SHOWS ME SUPPORT AND IT LOOKS ER ME. SOMETIMES IN WANTS IT DRIVERS TO PROGRESS"



to both drivers. He then listened in to the debriefs at the end of each session.

"After FP2, that's when I start the correlation work on the simulator," says Ocon. "The intention there is to get the car the same in the sim as we have on track. By the time we have done that, we then receive all the test items. At about 5.30pm we run all the aspects of the car the team at the **Operation Sports**

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track wants the answers for ahead of FP3 and qualifying.

"Last night I did 954km and 221 laps, then travelled overnight and flew from London to be at the track for Saturday. I can help either driver or their engineers with questions about optimising setup for the car. I've tested everything, so from my report everyone is interested in my comments."

Despite his lack of sleep, Ocon is typically upbeat and remains a popular figure, given the amount of times our conversation is interrupted by well-wishers hoping he returns to the starting grid soon.

As *F1 Racing* went to press in late August, there were a number of options that could open up for Ocon and take him off the sidelines. Mercedes deciding not to exercise its one-year option on Valtteri Bottas could potentially provide a race berth for 2020, and returning to Racing Point –

this time as Lance Stroll's team-mate – is an alternative destination. There has also been a rumour the second Renault seat could open up for Esteban if Nico Hülkenberg moves on, something Mercedes wouldn't necessarily block.

"If another team finds an agreement with Mercedes it's possible for me to be released for some time," Ocon confirms. "Toto [Wolff] has said if he finds a good solution for me, he's open to releasing me."

The most important aspect for Ocon is that he made clear to Wolff he wanted to maintain a presence at races. That way he ensures he's on people's radars and not at home feeling sorry for himself – even if he finds the lack of sleep particularly gruelling.

"Look, I've nothing else to do," he adds. "If my career is on standby, then my life is on standby. I have nothing else."

①



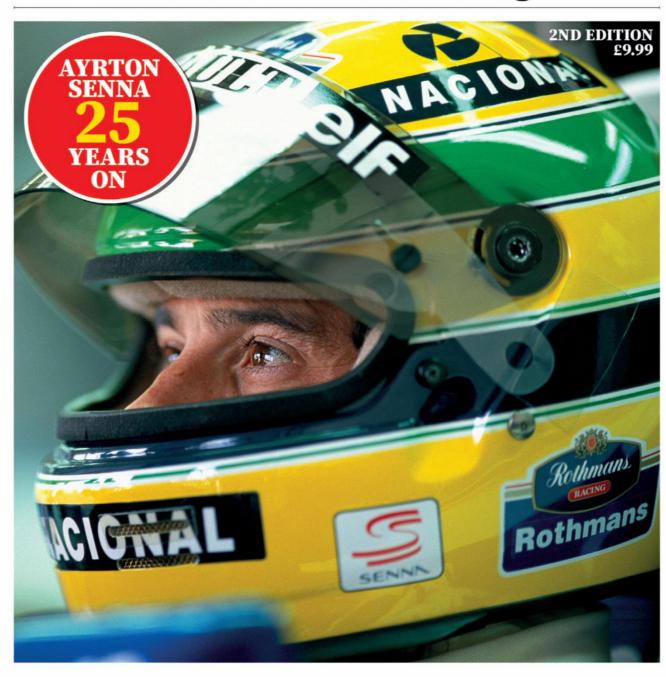


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"WHEN I <u>talk</u> about PIERS.

says Frank Williams, "I have to be careful not to make it sound like a eulogy. He viewed almost everything with an amused eye - he was the life and soul of dinner parties, because he could sit with complete strangers, and talk to them about anything. In those days I took to travelling with books of poetry, to be ready for him – but even so, he could always out quote me, which maddened me!

"He had become an extremely good driver, getting better all the time, but as well as that was a totally loveable character: funny, charming, loyal. People like Piers don't exist any more because life, as they say, has moved on. In today's racing world, there's no one like him – at all."

I never knew Piers Courage, and the more I have come to know of him - from conversations with such as Frank - the more I regret it. The eldest son of the chairman of the Courage Breweries, he indeed came from a privileged background, knowing nothing beyond great wealth until deciding to pursue a career in motor racing, this after reading a book, *The Vanishing Litres*.

"Piers had a lovely dry sense of humour," says Williams, "and delighted in telling stories against himself. I'd come from a poor background, and didn't have anything like his self-confidence. I was mesmerised by him. He was desperate to succeed as a driver, and in fact his background rather worked against him. People assumed he couldn't be tough enough, and also that he had access to family money, which wasn't the case, because his parents didn't want him to race. He was like the rest of us - broke."

Courage began racing in 1963 with a Lotus 7, in which he proved quick, but somewhat erratic: "At Aintree the motor racing circuit runs parallel, in places, with the horse racing circuit: quite inadvertently, I sampled them both..."

The following year he moved up to Formula 3, joining the celebrated 'continental circus'. Williams remembers it as a hand-tomouth existence: "It was a matter of setting off to East Germany or Sicily or wherever, towing the car behind his old Ford Zephyr. Piers crashed fairly regularly in '64, and you'd probably doubt me if I told you we used to straighten out the chassis by pushing it against a wall with another car! But that's what we did.

"Even when he was penniless, though, Piers was always very



much the English gent. We'd share the driving and he'd sleep on the back seat – but always in pyjamas! We'd stop on an autobahn at first light, and Piers would head off to the gents with his toothbrush, still in his pyjamas – the locals used to think that very strange."

It would be easy to get the impression of a dilettante, but Williams insists that Courage was always resolutely dedicated to his career. Over the winter of 1967/68 he put together a team for the Tasman Series, running an F2 McLaren. If he were usually hard pressed to stay with Jim Clark's Lotus and Chris Amon's Ferrari, in torrential rain he beat everyone at Longford, an open road circuit lethal even in perfect conditions. "Piers," Amon remembered, "was always abnormally brave."

After graduating to Formula 1, Courage drove BRMs for the Parnell team in 1968, then joined Frank's fledgling team.

"It was a lovely year, that," says Williams. "Brabham chassis, Cosworth engines, Dunlop tyres. Given the relative paucity of opposition that season, you usually got points if you finished. We were second at Monaco and Watkins Glen, and so on. In '69 it was essentially just Piers and me, with three mechanics, and that year he really found himself as a racing driver."

For 1970 Williams reached agreement with de Tomaso to run a new Dallara-designed car: "These days drivers are very... commercially minded, but Piers didn't view racing quite like that. He had a firm offer from Ferrari for 1970, but he'd already agreed to stay with me, and never thought of going back on his word. For the drivers of today it would have been no contest."

Initially the de Tomaso was well off the pace, but Dallara's second car was a great improvement. In the BRDC International Trophy



at Silverstone Courage finished third, behind Amon and Jackie Stewart, and by midseason was becoming competitive.

"Racing was a lot of fun in those days," Williams remembers, "Everything was coming along well. Ford had bought out de Tomaso, so we had hopes of more financial backing and technical support – and here was this society golden boy driving for the team. Great-looking bloke, devastatingly charming, beautiful wife, all that stuff. Sally was just like Piers – nutty as a fruitcake! I have a particular memory of one afternoon with them, at Monaco in 1970. We were sitting in a little old cafe, with everyone stopping by to say hello, and I couldn't help thinking that their life was almost too good to be true, that it just couldn't go on..."

The following month, shortly after the death of Bruce McLaren at Goodwood, Courage's de Tomaso went off the road during the Dutch Grand Prix and was engulfed in fire. I was spectating at Zandvoort that day, and remember the relief we felt when the commentator declared that all was well, for it certainly hadn't looked that way, in the distance a huge waft of black smoke billowing into the gloomy



PEOPLE LIKE PIERS DON'T EXIST ANY MORE BECAUSE LIFE, AS THEY SAY, HAS MOVED ON

FRANK WILLIAMS



sky. Half an hour later came an announcement that there had been 'a mistake': "We have to tell you that Piers Courage died in his car."

"In every respect," says Williams, "life got very tough the next day. I can't say I considered getting out of the business, but after Piers died it was matter of going racing for different reasons. I was devastated. Every one of his contemporaries came to his funeral, which says a lot. All these years on I think of him, for example whenever I hear Beethoven's Sixth Symphony – the Pastoral – his favourite piece of music, I remember him very fondly.

"In the sixties and seventies," Frank murmurs, "we buried a lot of drivers, didn't we?"





YOU ASK THE QUESTIONS

GUENTHER STEINER

The Haas team boss has earned Netflix notoriety for his no-nonsense approach, even spawning a spoof Twitter account (he's a fan of it by the way), but would he be so typically forthright when answering readers' questions – on managing difficult drivers, his favourite swear words and his closest friend in the F1 paddock?

WORDS JAMES ROBERTS





Earlier this year, Haas team boss Guenther Steiner achieved notoriety with his frank, no-nonsense approach to running a Formula 1 team. The behind-the-scenes insight was brought to light in the Netflix documentary, *Drive to Survive*.

While he has enjoyed a long career in motorsport, firstly in the World Rally Championship before joining Jaguar's F1 team in the early 2000s, Steiner has most recently been at the helm of Haas, America's newest Formula 1 team.

The entertaining aspect of his appearance on the Netflix documentary was his X-rated comments, particularly when the hapless Romain Grosjean was in the firing line. Those with a sensitive disposition had better look away now, as once again Guenther's highly humorous turn-of-phrase is vocalised in some of the responses to *your* questions. As we ascend the Haas motorhome and into his air-conditioned office, Steiner takes one look at the question cards and exclaims: "All of them?!"

Over the course of the next half hour, almost all are answered with a flourish – and much laughter. And what better place to start than the source of much, er, consternation, his two drivers... How difficult is to deal with your drivers Romain Grosjean and Kevin Magnussen?

Lorenzo Lombardi, Italy I wouldn't say it's difficult, but it's always challenging to manage drivers because they all have... I wouldn't say egos, but they are particular and always want it their own way. I would say they are not different to anybody else.

Drivers are always tough to manage. Whoever it is, it's always a big job.

You come from a rally background within motorsport, would you ever consider going back to your roots and being a team manager of a rally team?

Daniel Jones, UK

I still like it and watch it but it has lost a lot of the appeal and some of its adventure. In the past you would travel from one place to the next in an event, whereas today the service park is fixed. I'm still interested but I'm getting too old to change jobs now.

YOU ASK THE Questions

What's your biggest motivation to consistently survive in F1?

Mega Wati, Indonesia

Success on the race track. At the moment, getting good results for a team like Haas is coming fourth in the championship. We need to be realistic, but that is what motivates us.

Steiner's answer is unfortunately

curtailed because the batteries in our Dictaphone have suddenly died. Thankfully, the Haas press secretary is making a recording of our chat.

GS: I don't have to start again then? Good. I had to recently. Tom Clarkson wasn't recording the Beyond The Grid F1 Podcast I did, so we had to start all over again!

Why is your chassis okay for a few laps in qualifying and then worse in the race?

Larry Schultz, USA

If I knew that, I would fix it! You can blame the tyres, but we have to blame ourselves. We overheat the surface and have no grip anymore. When you start to overheat, you never recover.

If they had a bigger [operating] window, the drop-off would be less. They just switch off and then you are not two tenths slower but two seconds slower - everyone just drives by and waves at you.

This is your second spell in Formula 1. Do you think that overall F1 has improved or gone backwards?

John Slater, New Zealand It's actually my third spell in F1. Jaguar, Red Bull, Haas. I actually had a year out and came back to Red Bull after Jaguar. So, John Slater from New Zealand.... I won't say anything bad about him in case he motherf***s me on the internet!

I don't think F1 has gone

backwards, it evolves all the time and it's moving so fast. If you look at an F1 car from ten years ago it appears old, even a car from five years ago. It's part of F1, always moving ahead. It's amazing, but the fans don't get to know a lot about the technology. We should make it more visible to the fans.

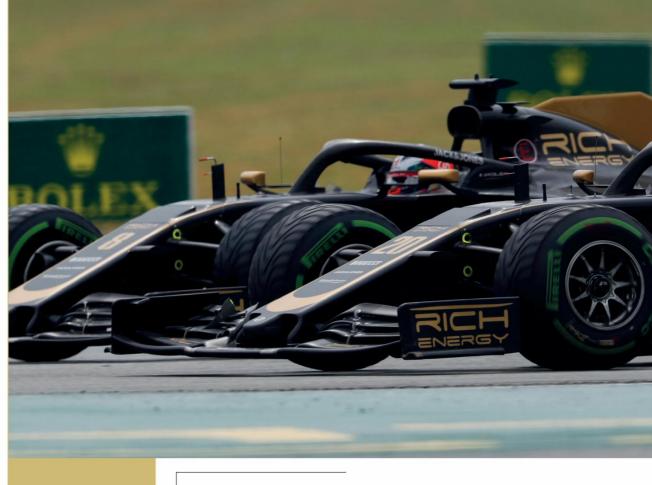
What was it like working alongside Niki Lauda at Jaguar?

Rhys Cooper, UK





When I was a kid, he was a hero a the second Austrian (after Jochen Rindt) to win the championship. Then being able to work with him and establish a very good friendship was fantastic. You don't realise something until it's gone. He was very straightforward, there was never any hidden agenda. I enjoyed his company a lot and I feel honoured to have worked with him.



in a movie? DOCUMENTARY with incidents?

Hi Guenther, which Hollywood actor could play your role

Stevo Eisele, Slovenia

[laughs] We need to ask a Hollywood producer because I have no idea. I don't know any actors, so I don't want to answer.

A clown could play me! **F1R:** Patrick Dempsey?

GS: I don't know him and I don't want to say Patrick Dempsey as I don't want people to believe I think I'm as good-looking as him. I'm an ugly f**k! [laughs] I don't want to be arrogant, I don't need to be played...

How difficult is it managing Romain given his past record

Garin Davies, UK

It's a new challenge every race weekend with him. He can put a lap down where you think, 'where's that come from?!' to leaving the pitlane and going straight into the Armco. You've

got everything there, so in my fourth year I don't get excited any more. Life is normal, my heart rate doesn't go up. Did that just happen? OK, well, let's put the new nose on and hope the damage isn't too bad...

Will you be replacing any of your drivers for next season?

Alexis Ferraris, Czech Republic I don't know yet, between myself and [team owner] Gene Haas we will start to talk about that in due course. That's what we do each year, otherwise you waste a lot of time on theoretical stuff.

I'll go around and see who is available and look at who is or isn't an option. It doesn't take us more than two weeks to decide.

Larry Kessler, USA

there any prospects There are, but it's difficult at the for an American driver? moment for American drivers to succeed in F1. There were a few who were not interested in F1

because it was better for them to stay and do NASCAR. There is a lot of talent in NASCAR who could have been F1 drivers. It takes a lot of effort and discipline to

come over to Europe. On the 4th July, ex-F1 driver Scott Speed came to my house and we spoke about it. He said that being American, he just didn't want it hard enough. You need to be so driven and he admitted he didn't try hard enough.



know is, which driver has made you the most angry, and why? Danny Teasdale, UK

Drivers will take this personally if I say this. I better not answer this. I know exactly who this is, but then I'll get a call from a lawyer!

What is the craziest thing a driver has ever said to you?

Scott Walschlager, **USA**

I worked with Colin McRae so a lot of stuff was said to me... And Eddie Irvine. Between the two of them, they said crazy stuff. **F1R**: Probably not printable either?

GS: Some are printable. I remember Colin once saying to me, "I don't need luck, I've got talent."

F1R: Well, reversing it, what is the craziest thing you have said to a driver?

GS: You cannot print that one!

What is your hardest job in managing Haas?

Breffni McCarthy, Ireland

I don't know really, it's all hard. The biggest challenge is to get everyone working together, especially as we are split up

over three countries. If there are some technical disagreements, which happens because engineers have big egos and they don't talk to each other anymore, you have to re-establish relationships.

Of the current schedule, which grand prix track is your personal favourite?

Mark Manweiler, USA

I personally always like Australia. I think it's because it is the first race of the season and I like the country as a place. Everyone is relaxed and your expectations are high. You think, competitively,

you are great and then afterwards you realise how bad you are and how hard the season will be...

How do you feel as a new Netflix star?

Alicja Starzyk, Poland

I don't feel like a Netflix star, everyone tells me I am, but I haven't seen the documentary Drive to Survive and I don't want

to see it for a few years. People tell me they enjoy it. I think it was good.

F1R: Has your wife seen it?

GS: Yes, she has – not my daughter.

What is the most annoying thing a driver can do, other than crash the car?

F1R: In French? **GS**: [laughs]

Rene Moller, USA

What's your favourite swear word and why?

Piotr Atwik, Poland

You have to watch Netflix's *Drive* to Survive.

Complaining all the time...

F1R: We nearly put 'Guenther F**king Steiner' on the question

cards, like the guy on Twitter who parodies you. Have you seen it?

GS: Yes, I have seen it. The guy is pretty good!

What do you do in your spare time?

Steve Hockey, UK

Not a lot, I spend time with my family which is the most important thing for me to do as I'm away so much, especially with

living in the States. I try to spend my time with them, but I don't have any real hobbies.

F1R: You don't go sky-diving for example?

GS: I'm far too old for that...

F1R: Golf?

GS: No, come on. Golf is too boring. I haven't got that attention span to walk and hit a ball forever. I'm lucky that my hobby is my job. I like what I do. I need to rest when I'm at home and spend time with my family.

Team principals Steiner and Binotto go back a long way

Steiner has had

his hands full with

the Haas drivers

this season



Which team principal are you closest to in the paddock?

Becky Robson, UK

I would say Mattia Binotto. We have been friends for 15 years now. He's a nice guy. Like me... 3

Want to get involved? For your chance to ask drivers questions, sign up at: flracing.com/global-fan-community

PICTURES: ZAK MAUGER; ANDY HONE



RAIN MASTERS

When rain and Formula 1 meet head-on there are only a few drivers that rise to the top

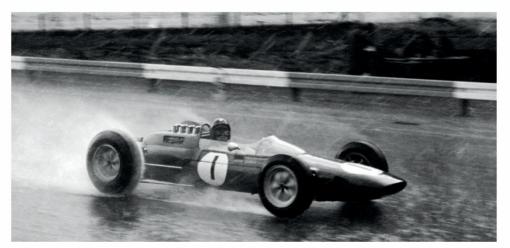








✓ Look at the camera: Jim Clark on his way to victory in the 1963 Belgian GP. In a supreme performance Clark had lapped the entire field after 17 laps, apart from Bruce McLaren, who finished within five minutes of the Scot



It's not only the drivers that have an uphill battle when the heavens open. Ferrari mechanics try, in vain, to keep their garage dry during a downpour on the Friday ahead of the 2008
Italian Grand Prix at Monza





→ Jack Brabham serenely pilots the BT33 that bears his name during a damp practice session for the 1970 Monaco GP. On a dry race day Brabham was all set for victory until he was pressurised into a mistake on the last lap



McLaren mechanics try to keep Ayrton Senna and his MP4-6 dry before the start of the 1991 Australian GP in Adelaide. In torrential rain Senna went on to win a race stopped after 16 laps, the shortest in F1 history



Vittorio Brambilla takes his first - and only - win at the 1975 Austrian GP. After a superb performance at the Österreichring, in a race shortened from 54 to 29 laps, the Italian celebrated as he took the flag and promptly crashed...





- Lewis Hamilton, already a winner in the wet several times by this stage in his career, leaves the McLaren garage during practice for the 2010 Japanese GP. Conditions were so bad that qualifying was postponed until Sunday.
- Mika Häkkinen ploughs through the puddles during the 1998 British GP at Silverstone. After a Safety Car period the Finn lost the lead to Michael Schumacher, who went on to win the race despite an enforced visit to the pits on the last lap
- ✓ In the days before special visor coatings and tear-offs drivers had to be inventive in order to be able to get a clear view. This was Graham Hill's solution to the problem during practice for the 1965 French GP at Clermont-Ferrand

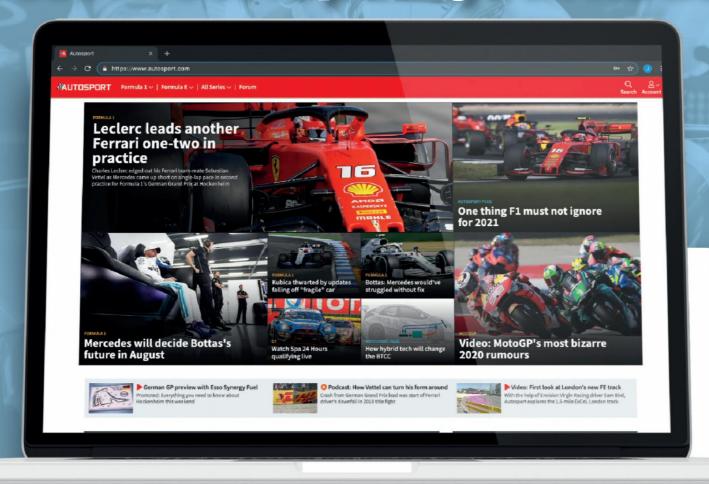


Michael Schumacher is another of those drivers who always excelled in the rain. Who can forget his first F1 victory at Spa in 1992 in very tricky conditions, or this sublime winning performance in the 1996 Spanish Grand Prix?





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Stop whinging

Mercedes too powerful? This cycle has always existed but the issue is that people think a sport like Formula 1 should be like Game of Thrones. There's a difference between F1 and a TV show. F1 is a competition and the rule of the game is eat or be eaten.

I do not like the domination of F1 by Mercedes, but asking a governing body to step in to *help* the competition because 'we are so bored' is weak. You cannot take away the engineering showdown, brilliant driving or fantastic brains behind the scenes because it is getting boring. Some are always better than others. That's a fact. And don't forget that the midfield fight is amazing and that has never been this fun before. People think the changes coming in 2021 will make F1 exciting but the fact is that the smarter and better teams will always win.

Also, if people are bored then go and watch something else. People keep watching every race, with the same results, so it seems to me that people still love the sport! F1 has been always about an engineering showdown and is not an entertainment show... and that's a great thing!

Mehran Irdmousa By email

Bye, bye F1

I've been a serious fan of Formula 1 since I first saw Alain Prost and Niki Lauda on television at the

1984 Monaco Grand Prix. I've attended every Canadian Grand Prix since I was 18 – I'm 48 now – and have even ventured to Spa. So I hope this shows my dedication and I also have every issue of F1 Racing since it was made available in Canada in 1996.

But I think this will be my last year of following and watching F1. The cars look terrible and sound awful and I can remember my first F1 race, when I could hear them screaming out of the pits half the track away. Now you only hear the car when it is almost at your seating area. My ears are still ringing from the year Jenson Button put the power down in his BAR Honda coming out of Montréal's Turn 7.



This year's French GP was the straw that broke the camel's back for me as it was the first race I have ever turned off after only five laps. It was a poor decision to return to France at that venue. There's no penalty for any driving error at any point.

Now, with a first look at the new regulations and new car design, I think I'll take a pass on the sport until F1 brings back the racing from the years from 1978 to 2008 because, as far as I'm concerned, they were easily the best.

Joel Osborne Ottawa, Canada

Fans are crucial

Chase Carey believes pay TV is where the world is going and Liberty Media will continue to push F1 off free-to-air TV, in spite of declining audience numbers.

When will those who run Formula 1 understand the vital part played by its fan base?

Liberty needs to stop treating fans as an exploitable commodity and realise that without them F1 cannot exist.

Stephen Jaques By email



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KUBICA Analyses his comeback

> Now That Was a Car: McLaren's MP4-27

> The long interview: Frédéric Vasseur

> Nigel Roebuck remembers Michele Alboreto

> Reports from the Belgian and Italian Grands Prix



RACE DEBRIEF THE GERMAN GP

F1 WORLD CHAMPIONSHIP ROUND 11

IN 3 KEY MOMENTS



Disaster for Mercedes at home

motorsport

It should have been a fairytale weekend for Mercedes at its home race. As title sponsor of the German Grand Prix, the manufacturer was celebrating 125 years, its 200th GP. Both cars featured a special livery, and team personnel wore period costume. And for the first 26 laps of the race everything was going to plan.

Lewis Hamilton led team-mate Valtteri Bottas and a 1-2 finish looked assured. But the race dramatically unravelled. At the flag, Hamilton finished 11th (but was promoted to ninth after both Alfa Romeos were given post-race penalties for a clutch start infringement), while Bottas had walked away from his crumpled car in the Turn 1 barriers.

In the end, in one of the most wild and chaotic races for years, Max Verstappen took the seventh victory of his career, from Sebastian Vettel's Ferrari and the Toro Rosso of Daniil Kvyat.

So how did it go so badly wrong for Mercedes? With persistent rain, the race started with a series of formation laps behind the Safety Car, but it was deemed safe enough to have a standing start with a reduced lap distance.

Then, as the weather abated, drivers started gambling with switching to slick tyres, but Mecedes made the wrong call at the wrong time.

Afterwards a subdued Hamilton, who nearly didn't take part in qualifying due to illness and was struggling to shake-off the effects of a virus, described the race as "snakes and ladders" adding "and we kept hitting the snakes".

His race was undone on lap 28 when he was put on slicks while the track was still wet. He slithered off at Turn 16 and broke his front wing on the barriers. As he scrambled into the pitlane, his team wasn't ready and he was stationary for 50 seconds. In his desperation to get into the pits, Hamilton had also missed the bollard denoting the pit entry and was handed a five-second time penalty.

"This has been one of the most difficult races we've had as a team for a long time," said Hamilton. I thought I had the race under control, but we took a risk going out on slicks and the race fell apart. I made a mistake and paid the price."

In a chaotic race littered with Safety Cars, numerous drivers lost control on the treacherous track, including Bottas who spun at Turn 1 and smashed into the tyre wall. Hamilton went off in similar fashion but escaped hitting the barrier, although it dropped him down to 13th.

"It's a shame because today was a good opportunity for me to make up points to Lewis and I ended up not getting any at all," said Bottas.

Sebastian Vettel's recovery drive

From last on the grid, Sebastian Vettel came through the field to take second, seven seconds down on eventual race winner Verstappen.

The joy in the result was a fitting contrast to the despair he'd felt the previous afternoon. After being fastest in all three practice sessions, it seemed Ferrari was the team to beat until it came undone in qualifying. Reliability problems for both cars gave





Mercedes an open goal on Saturday.

Vettel felt a drop in power on his Q1 outlap, traced to an intercooler problem, failed to set a time and started his home race last on the grid. There was further woe for team-mate Charles Leclerc, who didn't leave his garage in Q3 due to a fuel pump problem. His race ended early when he crashed on slicks at the treacherous Turn 16 run-off area.

After an ace start, where Vettel passed eight cars in the first two laps, he struggled in the first part of the race on his intermediate tyres. He didn't look in contention until his Ferrari came alive on the

soft compound slicks in the closing stages.

"After the disappointment of yesterday I was excited about this race when I saw the weather because I knew anything could happen," said Vettel. "But the race was crazier than I thought it would be. I was around 10th with two Safety Cars still to go."

When the last Safety Car peeled into the pits with five laps remaining Vettel was fifth. Ahead of him were those drivers who switched to slicks first in the closing stages. With every move the crowd cheered with delight as Vettel picked off Carlos Sainz, Lance Stroll and Daniil Kvyat.

Toro Rosso's first podium for 11 years

Daniil Kvyat's third-placed finish for Toro Rosso was the team's first visit to the rostrum since Sebastian Vettel won the 2008 Italian GP. It was a fitting result for Kvyat, who has endured a rough time at the hands of Red Bull. He lost his Red Bull seat four races into 2016 and was then dropped from Toro Rosso late on in 2017.

The podium also capped off an emotional weekend for the Russian, as his girlfriend Kelly Piquet (daughter of world champion Nelson) gave birth to their first child on Saturday evening.

Kvyat's strong finish was the result of pitting on lap 45 for dry tyres, a decision no one except Lance

Stroll pre-empted. Initially Kvyat was behind Stroll (who stopped on lap 44) but when Stroll made a mistake, Kvyat ran second behind Max Verstappen. Until Vettel passed Kvyat on the penultimate lap, a Honda-powered 1-2 was on the cards.

"The first time I chose to go on slicks was the wrong choice, but the second time was the perfect moment," said Kvyat. "And when I saw that the others didn't pit for slicks then I knew this was our chance."

His team-mate Alex Albon also impressed with sixth place, despite late-race contact with Red Bull's Pierre Gasly.



RESULTS ROUND 11

HOCKENHEIM / 28.07.19 / 64 LAPS



<u>lst</u>	Max Verstappen Red Bull	<u>Lh 44m 31.275</u> s		
2nd	Sebastian Vettel Ferrari	+7.333s		
3rd	Daniil Kvyat Toro Rosso	+8.305s		
4th	Lance Stroll Racing Point	+8.966s		
5th	Carlos Sainz McLaren	+9.583s		
6th	Alexander Albon Toro Rosso	+10.052s		
7th	Romain Grosjean Haas	+16.838s		
8th	Kevin Magnussen Haas	+18.765s		
9th	Lewis Hamilton Mercedes	+19.667s		
10th	Robert Kubica Williams	+24.987s		
11th	George Russell Williams	+26.404s		
<u>12th</u>	Kimi Räikkönen Alfa Romeo	+42.214s*		
13th	Antonio Giovinazzi Alfa Rome	eo +43.849s*		
14th	Pierre Gasly Red Bull	+3laps/collision		
Retirements				

Valtteri Bottas Mercedes56 laps - crashNico Hülkenberg Renault39 laps - crashCharles Leclerc Ferrari27 laps - crashLando Norris McLaren25 laps - power unitDaniel Ricciardo Renault13 laps - exhaustSergio Pérez Racing Point1 lap - spin/crash

Fastest lap

Max Verstappen: 1min 16.645s on lap 61

TYRE COMPOUNDS USED





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







CLIMATE A

AIR TEMP

TRACK TEMP





DRIVERS' STANDINGS

1 Hamilton	225pts	11 Ricciardo	22pts
2 Bottas	184pts	12 Stroll	18pts
3 Verstappen	162pts	13 Magnussen	18pts
4 Vettel	141pts	14 Hülkenberg	17pts
5 Leclerc	120pts	15 Albon	15pts
6 Gasly	55pts	16 Pérez	13pts
7 Sainz	48pts	17 Grosjean	8pts
8 Kvyat	27pts	18 Giovinazzi	lpt
9 Räikkönen	25pts	19 Kubica	lpt
10 Norris	22pts	20 Russell	0pts





F1 WORLD CHAMPIONSHIP ROUND 12

RACE DEBRIEF THE HUNGARIAN GP IN 3 KEY MOMENTS









Hamilton and Verstappen toe-to toe in "awesome" fight

It took a typically bravura performance from Lewis Hamilton to wrest victory from Red Bull's Max Verstappen. This was undoubtedly the first time the pair have raced each other flat-out, throwing the business of tyre management to the wind.

But it was the absence of their respective team-mates - and the Ferraris of Charles Leclerc and Sebastian Vettel - from the battle at the front that enabled Hamilton's crew to take the strategic gamble that broke the race open.

As one of the least power-sensitive circuits, the Hungaroring has been a happy hunting ground for Red Bull recently. So it was little surprise to see Verstappen securing his maiden F1 pole position, albeit by just 0.018s, from the Mercedes of Valtteri Bottas, with Hamilton two-tenths further in arrears.

Verstappen got away cleanly from the grid to assume the lead as Hamilton dispatched Bottas with a feisty move at Turn 3. Leclerc then took advantage of Bottas's compromised exit to snatch third on the run to Turn 4, but clipped the Mercedes' front wing, consigning Bottas to a long slog from the back after pitting for a new one.

Hamilton then shadowed Verstappen as they both broke well clear. By lap 24, when Max pitted to exchange his medium-compound Pirellis for hards, they had just over 20s in hand over Leclerc enough to emerge ahead and begin the process of leaving the scarlet cars for dust once more.

But although Verstappen was briefly held up by the George Russell/Lance Stroll/Antonio Giovinazzi battle for 17th after his stop, once in clear air he found enough pace to ensure he regained the lead when Hamilton pitted for hards six laps later. When Hamilton tried and failed to pass - including a brave move around the outside at Turn 4 - it looked like game over. Hamilton had used the best of his tyres and Verstappen was well set for the run to the flag.

Instead, with third-placed Leclerc now 40s behind, Mercedes brought Hamilton in again on lap 48 of 70 for new mediums. Red Bull daren't follow suit for fear of yielding track position, so Verstappen had to turn his engine up and push on as Hamilton attacked Max's 20-second lead. Four laps from the flag Verstappen's tyres gave up and Hamilton dived past into Turn 1.

"It felt like the steepest kind of wall to climb when I'd come out that far behind," said Hamilton. "Hopefully we'll see more of these battles in the second half of the season. This was awesome."

Verstappen felt the denouement of this race merely revealed the true extent of Mercedes' car advantage. "I think you can see how much margin they still have when they really need to push," said Max. "Lewis was on fire as well, but you see, once he really has to go for it, you can see that car is still the dominant car."

Pressure mounts on Bottas and Gasly

Had the 'other' Mercedes and Red Bull drivers been in the mix, it's unlikely Hamilton could have executed the two-stop strategy that won him the race. But Bottas and Gasly were elsewhere at the critical moment following costly mistakes on the first lap.

Not always the most forceful driver in combat, Bottas was certainly trying hard, but it fell to his



With their futures under increased scrutiny both Bottas and Gasly had races to forget

detriment as he locked up twice in the first two corners, gave his own team-mate a tap, then lost his front wing. Pitting early for a new nose left him chasing from the back on hard tyres, but Mercedes still felt sixth place might be possible.

Although he reached ninth before making a second pitstop (for mediums), Bottas lost three positions at the stop and had to spend the final laps clawing his way back to eighth. Not the best way to enter the summer break for a driver out-ofcontract at the end of this season.

Gasly also made heavy weather of the opening



lap, dropping from fifth to ninth. He gained a place by dint of Bottas's early stop, then the Red Bull pit crew did the rest, enabling Gasly to leapfrog Kimi Räikkönen and Lando Norris. But he was unable to crack Norris's McLaren team-mate Carlos Sainz and came home sixth, a lap down.

"It is vital for us, if we are to stand any chance of catching Ferrari, that we have him finishing further ahead," said team principal Christian Horner. "Today both Mercedes and Red Bull had one-legged races with their team-mates out of contention."

Pierre, you have been warned...

5 Podium bonus for 'not quick enough' Ferrari

Ferrari salvaged a podium on a day when it was very much cast adrift from the battle for the lead. Ahead of the weekend, team principal Mattia Binotto conceded in media interviews that the low-drag concept of the SF19 is flawed.

Leclerc and Vettel qualified fourth and fifth but, aside from Leclerc's opportunistic pass on Bottas on lap one (from which he was lucky to escape a puncture), neither was in contention for victory. Indeed, it was telling when Vettel was informed that his strategy, which was to extend his first stint on

mediums to 39 laps before swapping to softs, was "Plan C". The Ferraris were only racing each other, and "Plan C" came to fruition when Vettel mugged Leclerc for third at Turn 1 three laps from the flag. They came home a minute down on the winner.

"It [the strategy] was really for the sake of trying something different," said Vettel. "The big picture for today is that we were not quick enough."

Hopefully the long straights of Spa and Monza will offer greater hope for the Scuderia when F1's summer break concludes.



Vettel may have managed a second consecutive podium but Ferrari was never in with a chance of victory in Hungary



RESULTS ROUND 12

HUNGARORING / 04.08.19 / 70 LAPS



1st	Lewis Hamilton Mercedes]	.h 35m 03.796s
2nd	Max Verstappen Red Bull	+17.796s
2110	wax verstappen Red Bull	
<u>3rd</u>	Sebastian Vettel Ferrari	<u>+61.433</u> s
4th	Charles Leclerc Ferrari	+65.250s
5th	Carlos Sainz McLaren	+1 lap
6th	Pierre Gasly Red Bull	+1 lap
7th	Kimi Räikkönen Alfa Romeo	+1 lap
8th	Valtteri Bottas Mercedes	+1 lap
9th	Lando Norris McLaren	+1 lap
10th	Alexander Albon Toro Rosso	+1 lap
11th	Sergio Pérez Racing Point	+1 lap
12th	Nico Hülkenberg Renault	+1 lap
13th	Kevin Magnussen Haas	+1 lap
14th	Daniel Ricciardo Renault	+1 lap
15th	Daniil Kvyat Toro Rosso	+2 laps
16th	George Russell Williams	+2 laps
17th	Lance Stroll Racing Point	+2 laps
18th	Antonio Giovinazzi Alfa Rome	eo +2 laps
19th	Robert Kubica Williams	+3 laps

Retirements

Romain Grosjean Haas 49 laps - water pressure

Fastest lap

Max Verstappen: 1min 17.103s on lap 69

TYRE COMPOUNDS USED











CLIMATE

AIR TEMP

TRACK TEMP

Sunny





DRIVERS' STANDINGS

1 Hamilton	250pts	11 Ricciardo	22pts
2 Bottas	188pts	12 Stroll	18pts
3 Verstappen	181pts	13 Magnussen	18pts
4 Vettel	156pts	14 Hülkenberg	17pts
5 Leclerc	132pts	15 Albon	16pts
6 Gasly	63pts	16 Pérez	13pts
7 Sainz	58pts	17 Grosjean	8pts
8 Räikkönen	31pts	18 Giovinazzi	lpt
9 Kvyat	27pts	19 Kubica	lpt
10 Norris	24pts	20 Russell	0pts





RACE PREVIEW BELGIAN GP

F1 WORLD CHAMPIONSHIP ROUND 13

30 August-1 September Spa-Francorchamps







The Belgian Grand Prix is the first in the traditional double-header that marks the end of the European season. Spa, like the Italian GP at Monza a week later, is regarded as a classic F1 race, having featured on the calendar in the first year of the world championship in 1950. Both are renowned power tracks, and the steep long sweeps around Spa's Ardennes forest layout place a premium on a car's top speed.

Traction is also vital for a good exit from the tight La Source hairpin with the long climb through Eau Rouge, Raidillon and up the Kemmel Straight to follow.

Finally, no trip to the Hautes Fagnes (High Fens) region of Belgium is complete without buying chips with mayonnaise and remembering to take a raincoat. The threat of rain is usually never far away.

2018 RACE RECAP

Sebastian Vettel secured a decisive victory in last year's race, which kick-started Ferrari's fightback in the title chase. Vettel led all 44 laps of Spa, for his 52nd F1 win. It was Ferrari's first victory there since 2009.

Mercedes appeared to suffer a power deficit to Ferrari and Lewis Hamilton could only watch Vettel drive into the distance, despite starting from pole. The race's biggest drama came at the start when Nico Hülkenberg missed his braking point and launched Fernando Alonso's McLaren over Charles Leclerc's Sauber, scuffing the car's halo.

KEY CORNER: TURN 10 (POUHON) The approach to the double apex left-hander is downhill and fast at 186mph and the track falls away after turn in . Drivers must demonstrate total commitment to be quick through here.



RACE DATA

Venue Circuit de Spa-Francorchamps

First GP 1950

Number of laps 44

Circuit length 4.352 miles

Longest straight 0.78 miles

Elevation change 335.31 feet

Race distance 191.414 miles

Lap record 1m 46.286 secs

Valtteri Bottas (2018)

F1 races held 51

Winners from pole 24

Pirelli compounds C1, C2, C3

CAR PERFORMANCE

Downforce level Medium Cooling requirement Low Fuel consumption 2.3kg/lap Full throttle 60%

Top speed 214mph

Average speed 137mph

TIMETABLE (UK TIME)

Friday 30 August

Practice 1 10:00-11:30

Practice 2 14:00-15:30

Saturday 31 August

Practice 3 11:00-12:00

Qualifying 14:00-15:00 **Sunday** 1 September

Race 14:10

Live coverage Sky Sports F1

Highlights Channel 4

THE WINNERS HERE











2018	2017	2016	2015	2014
Sebastian	Lewis	Nico	Lewis	Daniel
Vettel	Hamilton	Rosberg	Hamilton	Ricciardo
Ferrari	Mercedes	Mercedes	Mercedes	Red Bull



RACE PREVIEW ITALIAN GP

F1 WORLD CHAMPIONSHIP ROUND 14

6-8 September Monza







Monza, the setting for the Italian Grand Prix, is steeped in history. The circuit, built in the 1920s, is situated in a royal park some distance from the centre of the fashion capital of Milan. Originally created with huge banked corners, these old structures ceased to be used in the 1960s, but have been preserved as a testimony to the high speeds undertaken at the old Autodromo.

The long straights of Monza have always put a premium on engine power. In a bid to further reduce drag, teams always trim their aerodynamics so top speeds at the end of the straights can reach 220mph.

With three chicanes splitting the straights, teams also focus their engineering resources on braking, choosing efficient yet durable pads and discs that can withstand race-long wear.

2018 RACE RECAP

With a power advantage Sebastian Vettel was expected to add Monza to his dominant victory at Spa. But after a rigorous debrief Mercedes came to Ferrari's home race up for a fight. Lewis Hamilton delivered a masterclass to silence the faithful tifosi.

The most significant act was his overtake of Vettel on the opening lap. While Kimi Räikkönen led from pole, Lewis placed his Mercedes around the outside of Vettel's Ferrari at the second chicane, Vettel lost control and spun. A week after Belgium, Mercedes was back in contention.

KEY CORNER: TURN 11 (PARABOLICA) The cars

approach at over 200mph, take an early apex and get on the power as quickly as possible because the longest straight on the lap follows.



RACE DATA

Venue Autodromo Nazionale di Monza

First GP 1950

Number of laps 53

Circuit length 3.599 miles

Longest straight 0.696 miles

Elevation change 41.99 feet

Race distance 190.591 miles Lap record 1m 21.046 secs

Rubens Barrichello (2004)

F1 races held 68

Winners from pole 24

Pirelli compounds C2, C3, C4

CAR PERFORMANCE

Downforce level Low **Cooling requirement** Medium Fuel consumption 1.89kg/lap

Full throttle 75%

Top speed 220mph

Average speed 157mph

TIMETABLE (UK TIME)

Friday 6 September

Practice 1 10:00-11:30

Practice 2 14:00-15:30

Saturday 7 September

Practice 3 11:00-12:00

Qualifying 14:00-15:00

Sunday 8 September

Race 14:10

Live coverage Sky Sports F1

Highlights Channel 4

THE WINNERS HERE..











2018	2017	2016	2015	2014
Lewis	Lewis	Nico	Lewis	Lewis
Hamilton	Hamilton	Rosberg	Hamilton	Hamilton
Mercedes	Mercedes	Mercedes	Mercedes	Mercedes



F1 WORLD CHAMPIONSHIP ROUND 15

RACE PREVIEW SINGAPORE GP

20-22 September Marina Bay





RACE DATA

Venue Marina Bay Street Circuit **First GP** 2008 Number of laps 61 **Circuit length** 3.146 miles **Longest straight** 0.517 miles **Elevation change** 17.38 feet Race distance 191.821 miles Lap record 1m 41.905 secs Kevin Magnussen (2018) F1 races held 11 Winners from pole 8

CAR PERFORMANCE

Pirelli compounds C3, C4, C5

Downforce level High Cooling requirement High Fuel consumption 1.65kg/lap Full throttle 45% Top speed 190mph Average speed 104mph

TIMETABLE (UK TIME)

Friday 20 September **Practice 1** 09:30-11:00 **Practice 2** 13:30-15:00 **Saturday** 21 September **Practice 3** 11:00-12:00 **Qualifying** 14:00-15:00 Sunday 22 September **Race** 13:10

Live coverage Sky Sports F1 **Highlights** Channel 4



DRS end



KEY CORNER: TURN 5 A 90-degree right-hander, the exit

to this corner is bumpy so it's vital to get the power down

cleanly because the second DRS zone follows







THE WINNERS HERE.



2018

Lewis

Hamilton

Mercedes



2017

Lewis

Hamilton

Mercedes



2016

Nico

Rosberg

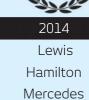
Mercedes



Sebastian

Vettel

Ferrari



THE MAIN EVENT

Despite being a relatively recent addition to the F1 schedule (the first GP around Marina Bay was in 2008) the Singapore race has quickly established itself as a modern classic. An impressive pits facility, a challenging - and in places - high-speed circuit with the Asian city as a backdrop has made this race a popular event for teams, drivers and spectators. The addition of floodlights to make this a night race adds to the thrilling spectacle.

The only downside is the tropical temperatures and humidity, which make working in the Singapore environment a challenge, even when the sun has set. It's the most physical race of the year for the drivers, who train in heat chambers in preparation for the gruelling twohour slog around Singapore's city streets.

2018 RACE RECAP

Lewis Hamilton has always excelled on street circuits. The precision and speed required to carry momentum while avoiding the barriers seem almost effortless to the fivetime champion. Search out on-board footage of Hamilton's 96-second pole lap last year as it is a masterclass in street circuit driving - nearly seven tenths quicker than his Mercedes team-mate Valtteri Bottas.

On race day, Hamilton dominated the 61-lap event finishing over eight seconds clear of Red Bull's Max Verstappen and more significantly, nearly 40 seconds ahead of his Ferrari title rival Sebastian Vettel.

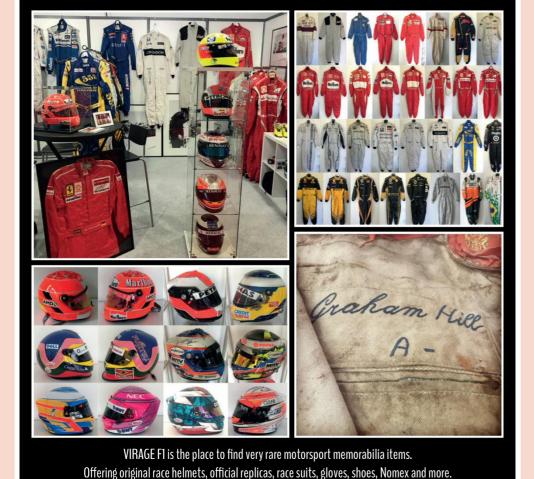
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VISIT THE ABU DHABI GRAND PRIX

ABU DHABI, 29 NOVEMBER- 1 DECEMBER 2019



YOUR GUIDE TO THE UAE

Situated around 90 minutes apart, most fans decide to share their time between both Abu Dhabi and neighbouring Dubai when heading to the United Arab Emirates for the Abu Dhabi GP. Since its inception in 2009, Formula 1's first day-night race has become the staple end-of-season party to conclude the championship with a flourish. The 2019 race will be the eighth time in 11 years that the plush Yas Marina Circuit has held that particular honour.

Starting your trip in Dubai before heading off to Abu Dhabi means you can fit in some sightseeing before the grand prix. Dubai's skyline is dominated by the Burj Khalifa skyscraper. Standing 829.8 meters tall and boasting 57 elevators, heading up the tower gives you a bird's eye view of downtown Dubai, and the world's tallest structure is also home to great bars, restaurants and shops.

Dubai Mall is the world's largest mall and is open for business in the city's downtown. Accessible by metro or car, the mall receives over 100 million visitors a year and includes a zoo, an aquarium, the SEGA theme park, a 22-screen cinema, a second theme park just for kids and

over a thousand shops.

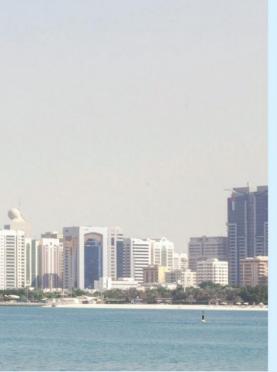
Then you could take time to recoup in Dubai's Miracle Garden, home to over 100 million planted flowers. The garden gives visitors a chance to get away from the busy downtown area for a day and surround themselves with some of the world's most beautiful flora. Easily accessible via public transport, the garden is the perfect place to relax during an otherwise high-octane trip.

After the short hop along the coast to Abu Dhabi, the go-to sight is the Sheikh Zayed Grand Mosque, the country's key site of Muslim worship and an incredible feat of architecture.













FAST FACTS

Flight time: 7hrs from Manchester & London Currency: UAE Dirham Time zone: GMT+3

Average temperature: 28 C

Completed in 2007, the \$500 million building is adorned with 82 domes and receives 40,000 visitors during Eid alone.

No self-respecting Formula 1 fanatic would pass up the chance to immerse themselves in the world's first Ferrari-branded theme park. Ferrari World is a must-see when exploring Abu Dhabi. Spend the day riding the world's fastest rollercoaster, trying your hand on the flight simulators, or getting behind the wheel of Ferraris and a whole heap more.

Part of what makes these two modern-day cities so incredible is their stark surroundings.

They stand alone in the middle of the desert, as if they rose out of the dunes themselves. Desert tours are available from both Abu Dhabi and Dubai, with various options on offer for visitors to experience the sheer scale and beauty of the Arabian desert. Whether you want to ride dune buggies, be shown the sights in a 4x4 or maybe take it slow on a camel.

The tours usually run in the mild early evening temperatures and for the visitor they offer a welcome change of pace from the bustling city and the hectic days of action at the Yas Marina Circuit.



ASK THE EXPERT THE THOMAS COOK SPORT REP'S VIEW

What's your favourite part of the track?

The fast-flowing section through Turns 2, 3 and 4 is incredible. The drivers fly through this sequence at nearly 190mph and it makes for an amazing spectacle.

What's the best thing to do away from the track itself?

There is an abundance of activities. In Dubai, head to the Burj Khalifa, a sight to behold on its own but the view from the top is out of this world. The Atlantis waterpark, the Dubai Marina, Ferrari World or Yas Water World in Abu Dhabi – there's lot to do and see.

Is there any local food and drink that you would recommend?

Firstly, be prepared because alcoholic drinks can be quite expensive and can only be consumed in the hotels so you have to plan ahead on this front. When it comes to food, I would recommend stuffed camel. It's a famous Arab delicacy and you'll be blown away. It's hard to find this dish outside this region.

What's your top tip for this particular race and destination?

The UAE can be expensive so be ready with lots of spending money but it is completely and totally worth it. This is my favourite GP on the calendar.

THOMAS COOK SPORT Break Details

Flight, 4-night break London to Dubai, £1,149pp

YOUR BOOKING INCLUDES:

- ★ Return from London to Dubai
- ★ 4-nights accommodation in Dubai with daily breakfast
- ★ 2-day general admission ticket
- ★ Return race day circuit transfers
- ★ Access to post-race concert featuring The Killers

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Enhance the F1 experience with the latest must-have products

FORMULA 1 TECHNICAL ANALYSIS

2016-18

Giorgio Piola

Price £49

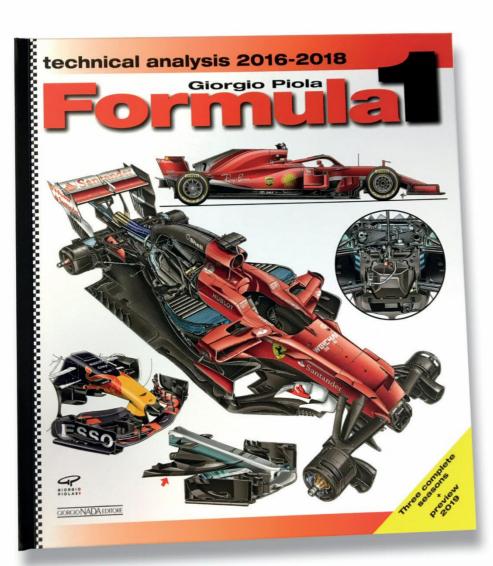
giorgionadaeditore.it

The works of technical illustrator Giorgio Piola will be well known to long-time readers of both our sister title *Autosport* and the Italian publication *Gazzetta dello Sport*. At the 1000th world championship grand prix in Shanghai earlier this year, Piola was given a special award to commemorate 800 grand prix appearances, more than anyone else in the sport – his first race was back in Monaco 1969.

His technical drawings, which

are made up of detailed aspects of suspension, aerodynamics and 'under the skin' renderings, are exquisite. This latest book of technical analysis charts the advances of all the Formula 1 teams over the past few years with captions and arrows to explain the developments in detail.

Printed on glossy paper and over 200 pages long, this book is a must for those with a keen interest in the technical side of the sport.



ROKIT IO PRO 3D PHONE

Price £249.99

rokitphones.com

This season Williams unveiled a coup at the launch of its 2019 challenger when Rokit was announced as a title sponsor. The telecommunications company is expanding sponsorship through sports to help promote both its handheld devices and services. The latest Rokit product is an affordable smartphone, which has one very cool gimmick – a special screen that doesn't require the user to wear glasses to enjoy 3D viewing.

The bright 5.9inch FHD+ display (meaning a full high definition display of 2220 x 1080 pixels) is a technological triumph and the IO Pro 3D also comes fitted with a 3D camera to take your own photos and videos in three dimensions.

The Android-based phone also boasts a decent battery life: 200 hours in standby or seven hours talk time, and has ample memory with 64GB ROM and 4G RAM, expandable to 256GB.





Other features include dual sim and fingerprint sensor, and for the price the Rokit IO Pro 3D is an impressive bit of kit.

BLOOD SPORT: FORMULA 1 DRIVERS OF THE DEADLY YEARS

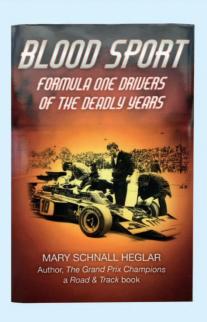
Mary Schnall Heglar

Price \$34.95

outskirtspress.com/bloodsport

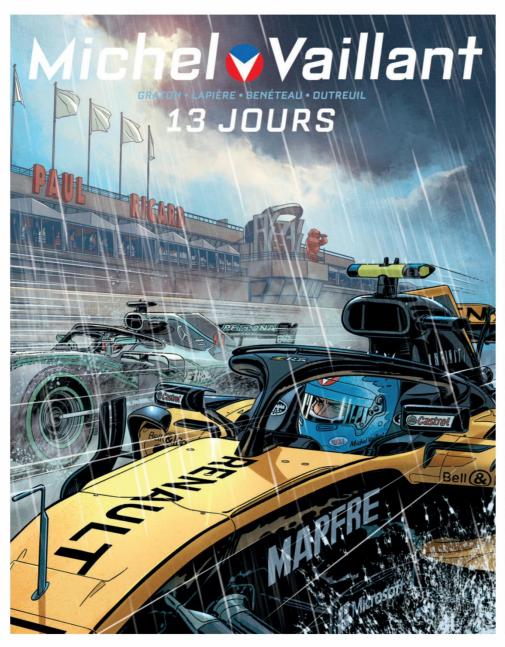
Despite the gruesome title, this book is a fond reflection on the 1970s era of Formula 1. The format is simple: a list of 50 drivers captured contemporaneously on black & white photographic film by the author, accompanied by a synopsis of their career and interspersed with a few personal thoughts. They range from legends such as Stirling Moss and Emerson Fittipaldi to lesser-known competitors such as Pete Lovely and Sam Posey.

Author Heglar was armed with a camera, tape recorder and press credentials at a number of US F1 races at the time, gathering



material for the book *The Grand Prix Champions* featuring the winners of the first 25 years of Formula 1. It was published by the book arm of the magazine *Road & Track*.

This latest title is a chance for the author to produce her candid pictures of the stars and reminisce about that era of motor racing.







MICHEL VAILLANT 13 DAYS

Philippe Graton

Price €25

michelvaillant.com

This 50-page, hardback comic book is the latest instalment in the long line of stories of the fictional racing driver Michel Vaillant.

Created in 1957 by French author Jean Graton, the graphic novel adventures of Michel Vaillant have since been adapted to a television series, several animated pictures and, in 2003, a feature film written and produced by Luc Besson.

Over the past 60 years, Vaillant's fictional stories have taken place in a world of motor racing featuring real-life teams and characters.

Racing legend Dan Gurney once said that "inclusion in one of Graton's novels was considered one of the highest recognitions for a

professional racing driver".

13 Days is the latest of the Michel Vaillant re-boot by Philippe Graton, taking over the work of his father. Beautifully illustrated by Benjamin Benéteau, this is the story of how Vaillant gets a call-up to race for Renault at the 2019 French Grand Prix, after Nico Hülkenberg sprains his ankle.

Guided by team boss Cyril Abiteboul, Vaillant uses the team's simulator in Enstone, goes shark diving off the coast of Cassis and then takes part in the race itself.

Worth a look if you haven't seen any of the work before. Its originally written in French, but an English version is available,

ROKIT BUDS

Price £44.99 (on Amazon) rokitphones.com

To accompany the Rokit phone, the company has also developed wireless earbuds that can either be used in conjunction with the handset or, alternatively, can have quick connectivity with all Bluetooth music players.

Designed to sit comfortably around the bottom of your neck with buds that fit in your ears, they have been designed with a workout in mind and are sweat proof.

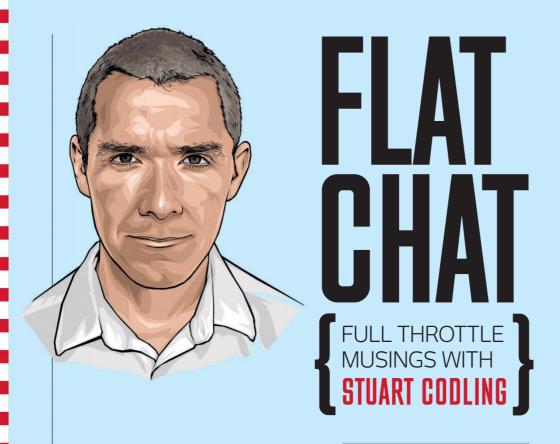
Like the Rokit IO Pro 3D phone, the buds can go a decent amount of time without charge, with an impressive 11 hours of battery life. And they also have a user-friendly design with three buttons that allow

k with have in

you to navigate media, playback, or answer or reject calls with ease – and an in-line mic to enjoy handsfree phonecalls.









will be the minimum in 2020. If, as expected, the Spanish Grand Prix also gains a reprieve, it will be 22 - and since the teams have already signalled (at a meeting with F1 CEO Chase Carey in Hungary) the unanimous approval required for this to happen, you can take it as read that it will.

THAT CALENDAR BLOAT IS SET TO CONTINUE NOW THAT THE COMMERCIAL RIGHTS RESIDE WITH A **MEGACORPORATION WITH NERVOUS SHAREHOLDERS**

This is problematic, even before we get on to the subject of Liberty's plan to grow the calendar to 24 races come 2021. Although the teams have given their assent to 22 races ("We've got to let Liberty do their business, and their business is to grow F1," said Mercedes team boss Toto Wolff), there are differences of opinion about how to manage the power unit situation. Red Bull wants teams to be permitted to use four rather than three per driver during the season, while Ferrari and Mercedes are aligned in their desire to stay at three. "Increasing the

> number of units available would be simply wrong," says Ferrari team principal Mattia Binotto, "because it means we have more

> > engines but then more costs, which makes no sense."

Given the likelihood of a cost cap being part of the 2021 rules package, this is more in keeping with the prevailing spirit of doing more with less. It will appeal to customers of Ferrari and Mercedes who, Racing Point aside, don't have the benefit of enthusiastic investment from new owners.

There will also be a human cost. The present calendar – particularly

the succession of flyaways in the second half of the season – has a punishing effect on F1's working class, the mechanics and catering staff who are first on site to set up and last to leave having packed away again. Expansion will mean more back-to-back events, or aberrations such as last year's triple-header. That, says Williams deputy team principal Claire Williams, "broke a lot of people".

The solution is to hire additional personnel and rotate them through the year. But how does that fit in with less-is-more F1? The answer is that it doesn't.

F1 Racing now has a podcast! Search for 'Flat Chat with Codders' in your podcasting platform of choice.

IS CALENDAR EXPANSION **SUSTAINABLE?**

At what point will there be too many grands prix in a season?

The answer depends upon which promontory you're occupying. If you're the kind of die-hard fan who trawls news sites and forums hourly for updates, desperate to feel part of a constantly evolving scene, you probably feel pain on those weekends *not* occupied by a three-day grand prix jamboree. In fact, you're probably wondering what all the moaning is about from the denizens of the other side - those who feel that we've already got quite enough races, thank you very much.

If we were to express this in terms of a Venn diagram – let's do it rigorously or not at all – then the latter set is a pretty significant one because it contains the majority of people in Formula 1. Certainly those who skin their knuckles week in, week out in the service of the show, as opposed to those who swan around in private jets, 'do meetings', and count the pennies as they roll in.

From the early 1970s until the late 1990s the



It's not the logistics of more races that is the problem but the cost, both human and financial

annual F1 schedule remained relatively stable at around the 16-race mark. After Bernie Ecclestone sold the commercial rights to venture-capitalist vultures, that figure ticked upwards to the present total of 21 as Bernie chased lucrative sanctioning fees to feed the new owners' relentless hunger for cash. And that calendar bloat is set to continue now the commercial rights reside with a megacorporation with nervous shareholders who require regular appeasement.

Following the confirmation of the Vietnam Grand Prix for next year, along with Mexico receiving a stay of execution, a 21-race calendar

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