



THE PICTURES OF THE YEAR

12 PAGES OF 2016'S BEST IMAGES

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How Ron Dennis changed his team – and F1 – forever



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English heart

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Ward**



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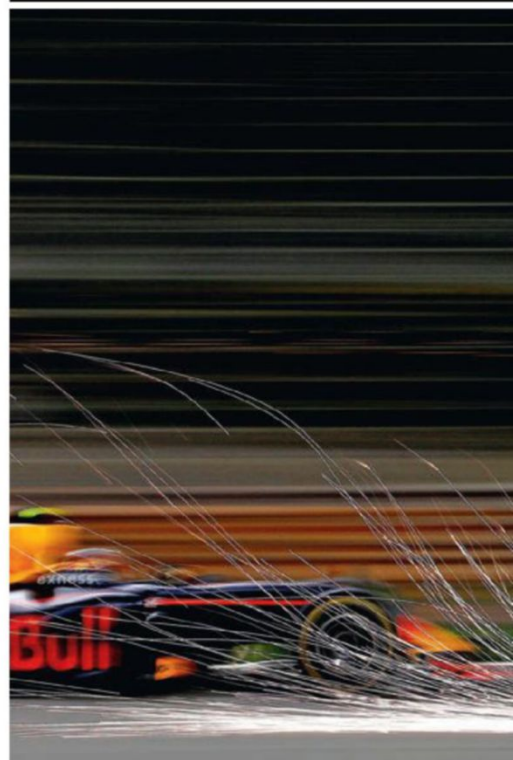
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F1 2017

Drivers face the ultimate test – the new, 2017 machinery. We analyse what's changed and why



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All the action on track and off was captured by LAT's snappers. Here are their favourite shots



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RON DENNIS

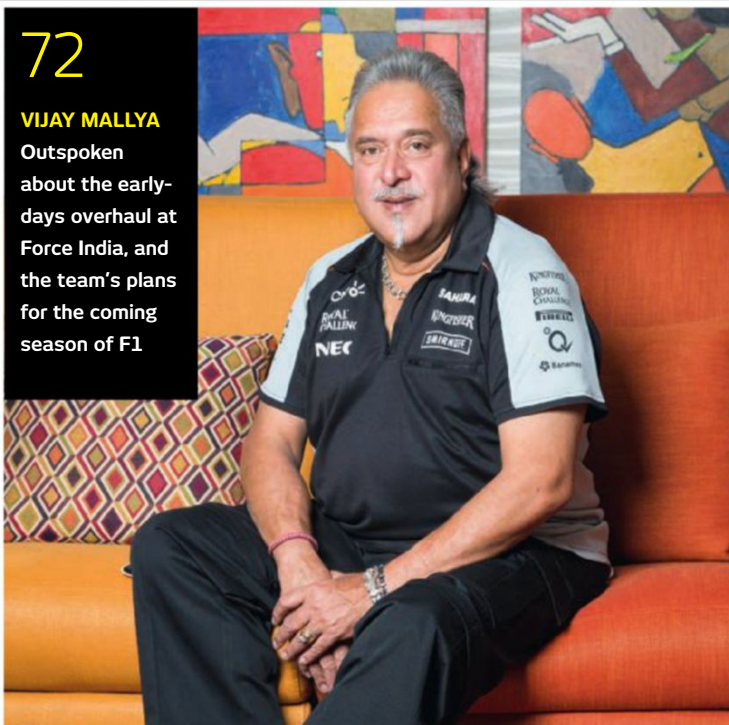
From part-time mechanic at Cooper, to overlord of the McLaren empire – we look back over his F1 career



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VIJAY MALLYA

Outspoken about the early-days overhaul at Force India, and the team's plans for the coming season of F1



F1 2017: be careful what you wish for



Follow Anthony on Twitter: @Rowlinson_F1

Not a wheel has been turned, barely a 2017-spec power unit fired up in anger. A thousand known unknowns to ponder and still (at the time of writing) six weeks to wait till the first F1 test in Barcelona on 27 February.

God, the F1 winter break is boring – at least for those of us charged with reporting on it, while teams hunker down behind closed doors in frenzied

pursuit of *this* killer mod or *that* marginal gain.

But glimmers are emerging of a new and different F1 that will demand a step-change in our perceptions of the sport. As we explore in our 13-page analysis of the 2017 regulations (p26-38), this is the first time since the 1966 ‘return to power’ that regulations have been devised to make cars faster – and dramatically so.

Then as now, drivers will be presented with machines several seconds per lap quicker, that will require modified driving techniques and which will alter the nature of circuits: corners that were previously ‘quick’ may now become ‘flat’ while the formerly humdrum may now become challenging.

Unlike the ‘66 reset, however, the gains will be made through changes to aero, tyres and chassis, rather than by the effective expedient of doubling maximum engine capacity (as was the case from ‘65-66). So fatter tyres are in, built to a low-degradation brief, as are a wider track, bigger wings and higher downforce levels.

As an indication of what we might expect, Pirelli simulation data has shown that the demanding Turn 3 at Barcelona’s Circuit de Catalunya – currently a tyre-eating fourth/fifth-gear uphill right-hander, taken at around 145mph – will become a ‘nailed down’, 5G, 160mph screamer.

The Becketts-Maggotts-Chapel sequence at Silverstone, meanwhile, will change from a left-right-left-right set of sweeps, each generating 4G of lateral load, to a repeated 5G sequence. That’s a 25 per cent increase in cornering load – a staggering margin in a sport grown used to incremental increases.

Drivers will feel the strain, making F1 2017 quite literally a pain in the neck as shoulder and upper-back muscles get used to a whole lotta load. Twitter watchers will note that drivers’ off-season ‘Tweets from the gym’ have shown them pushing weights as well as carving out miles on high-end road bikes. Pure cardio fitness is less in demand; more urgent is the need for drivers to hold on tight and ‘muscle’ machines through the high-speed stuff. Think back to Nigel Mansell in the 1992 Williams FW14B: one reason he was so devastating in that actively suspended car was that he was burly enough to manage its high cornering loads.

Bigger, beefier drivers, then, for bigger, beefier cars? Yes, but also compressed braking distances, fewer line choices through corners, perhaps less requirement for finesse and decreased likelihood of devastating deeds from outrageously talented youngsters.

Still, there are reasons for optimism as we prepare for ‘lights out’. Here’s hoping we get what we want.



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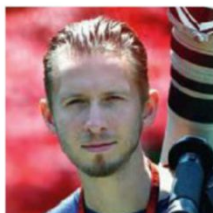
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As a freelancer who shoots exclusively for LAT Images, Andy Hone frequently helps *F1 Racing* out with photographic tasks. His latest assignment was for a story on Pirelli (page 34)



Andrew van de Burgt
Former *Autosport* ed, now Formula E social media guru

‘VdB’ was *Autosport*’s GP2 correspondent when Lewis Hamilton won the title back in 2006. He went on to pen a book about Lewis, so there’s no one better to write about the man’s 53 race wins (p63)



LAT Images
Motorsport Network’s dedicated photo agency

The lensmen of LAT Images, Tee, Dunbar, Hone, Bloxham & Mauger, proudly display their best photographs from this past year of grand prix racing. Check out their stunning shots on page 92



Thanks to Andrew Benson, Matt Bishop, Roberto Boccafolli, Annie Bradshaw, Fabrizio Campelli, Richard Cregan, Peter Crowther, Ava May Cullen, Finn Rhys Cullen, Russell Day, Will Hings, Clarisse Hoffmann, Amanda Hunt, Lucy Genon, Mario Isola, Akiko Itoga, Darren Jones, Laurence Letresor, Bradley Lord, Daljit Mahal, Sophie Ogg, Kelly Parker, Anthony Peacock, Bernie Shrobreer, Andy Stobart, Lynden Swainston, Fabiana Valenti, Bob Wayman, Nicola West





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FRENCH GP RETURN 14



MANOR COLLAPSE 16

F1 INSIDER

NEWS ■ OPINION ■ ANALYSIS

NEWS

Bottas to replace Rosberg at Mercedes

Williams drive a hard bargain following protracted negotiations with Mercedes

Valtteri Bottas will take Nico Rosberg's recently vacated Mercedes seat alongside Lewis Hamilton, following Rosberg's decision to retire after winning last year's world title. Bottas, 27, was Mercedes F1 boss Toto Wolff's only serious candidate, and the deal was due to be finalised just after this issue of *F1 Racing* went to press.

So keen was Wolff to secure Bottas that Williams were able to push for a much better deal before releasing him from his contract. They will keep on Felipe Massa, who was due to retire from the sport, in place of Bottas.

During the extended contractual negotiations over the winter break, Williams deputy team principal Claire Williams said: "I'm delighted to see that a team like Mercedes list Valtteri as a potential replacement for Nico. We have always known Valtteri is one of the sport's key talents and are proud that the championship leaders recognise this.

"However, Williams has its own ambitions and we must always ensure we give our team the best opportunity to move forward. Any changes would only be made if Williams remain in a strong position to compete and develop in 2017.

"If we did allow Valtteri to leave, we would do this only if an experienced, credible alternative

was available, such as someone like Felipe Massa, for example. Whatever we decide, it must be in the best interests of this team."

Williams have chosen to keep on Massa as a replacement for Bottas because they need a driver over the age of 25 to satisfy the promotional requirements of title sponsor Martini, who cannot use two drivers under that age to promote their product.

Williams have already signed 18-year-old Canadian rookie Lance Stroll as one of their drivers in 2017, and this means Williams cannot use Pascal Wehrlein, who Wolff had made clear was available should they want him, although he was not part of the original deal offered.

Massa had announced his retirement from F1 last season, even though he had always made it clear he wanted to race full-time in 2017. His problem was that he had no other competitive F1 team to go to, and Williams wanted to retain Bottas alongside Stroll – who is bringing a reputed £20m in sponsorship to the team.

Williams and Massa agreed before Christmas the terms of a deal in which he would rejoin the team, assuming a deal between Bottas and Mercedes is also agreed.

Williams rejected Wolff's initial offer, which was a reduction of €10m (£11.4m) in the team's Mercedes engine bill, but Wolff came back to them with an improved proposition.

A final deal was due to have been struck between this issue of *F1 Racing* going to press





Mercedes have been reluctant to promote their young and unproven reserve driver, Pascal Wehrlein

and its appearance on the newsstand. It is very likely to involve Mercedes writing off almost all of Williams' €17m engine payment in order to obtain Bottas. Williams don't want to be obstructive to their engine partner, but they know that as they are losing their lead driver, they still hold all the cards in negotiations.

Wolff considers Bottas to be a very close like-for-like replacement for Rosberg: fast, solid, dependable and easy to manage inside the team. Bottas certainly ticks the latter three boxes. It is only in terms of his ultimate speed that there remain any lingering doubts. But he has done enough to prove that he will at least provide a consistently high level of performance. And his

calm and easy-going nature will be an extremely important factor in a season in which Hamilton, following the events of last season, may well feel his status has been diminished.

Often a mercurial character anyway, Hamilton still harbours frustrations over the way poor reliability effectively decided the 2016 world championship in Rosberg's favour.

Hamilton also admitted after the season had come to an end that he had felt "disrespected" by Mercedes management's interventions during the decisive Abu Dhabi Grand Prix season finale, where they ordered him to speed up when he was backing Rosberg into the approaching Ferrari and Red Bull drivers in an attempt to get



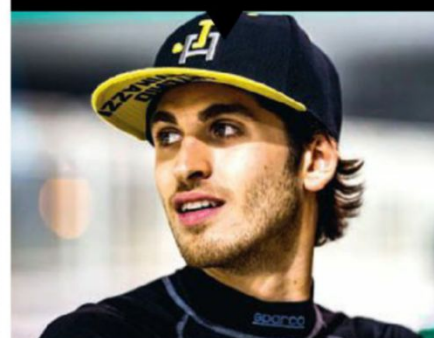
Dependable Williams racer Valtteri Bottas has long been Toto Wolff's preferred option as a replacement for Rosberg

NEWS DIGEST

The month's big stories at a glance

- 01.12.16** Red Bull announce new deal with outgoing McLaren partner ExxonMobil
- 14.12.16** Liberty Media raise \$1.55bn to finance completion of F1 commercial rights deal
- 15.12.16** Rob White named as new Renault operations director

19.12.16 GP2 runner-up Antonio Giovinazzi named as Ferrari's third driver for 2017 season



- 20.12.16** Williams confirm departure of tech chief Pat Symonds
- 20.12.16** Force India announce Johnnie Walker sponsorship deal
- 23.12.16** Emerson Fittipaldi's son Enzo joins Ferrari Driver Academy
- 31.12.16** Susie Wolff made MBE in New Year Honours list
- 02.01.17** Pascal Wehrlein joins Sauber
- 03.01.17** Ferrari query Merc and Red Bull suspension with FIA

Rosberg to finish lower than third – this being the only way Hamilton could win the title.

Wolff and Hamilton had clear-the-air talks shortly after a series of post-season interviews in which Hamilton talked about his unhappiness over the situation.

Mercedes have been reluctant to promote reserve driver Pascal Wehrlein, 22, for a number of reasons. First, they do not feel he has sufficient experience to be the regular high points scorer they need to be able to win the constructors' title. Second, they are not yet convinced that he is top-drawer material. There are still question marks over his attitude, with some insiders accusing him of arrogance.

On all counts, they feel it is simply too early to put Wehrlein into a works Mercedes alongside Lewis Hamilton. Wehrlein has instead agreed to drive for Sauber this season.

Allison set for Mercedes, so what next for Lowe?

Paddy Lowe's departure hints at discord behind the scenes, but Mercedes have a plan to replace him within the coming months

Paddy Lowe, the technical author of Mercedes' three consecutive title doubles, became the most sought-after property on the Formula 1 job market, as *F1 Racing* closed for press.

Lowe's shock exit from Mercedes placed him at the centre of a tech merry-go-round, following the departure of Pat Symonds as Williams' chief

technical officer and the widely expected return to F1 of ex-Ferrari technical boss James Allison.

Lowe, 54, had been strongly tipped to join Williams as a replacement for Symonds, but

Lowe has been Mercedes' technical chief through their three consecutive title doubles

F1 Racing understands no agreement has yet been reached. Williams have courted Lowe for months to take up a role more senior than Symonds'. At Mercedes, Lowe was *de facto* joint team boss alongside Toto Wolff – a situation that may have been instrumental in his departure.

Symonds, meanwhile, had been seeking a new three-year deal after his contract finished at the end of 2016. He had been offered a single-season contract, which he initially refused but then went on to accept, only to find himself undermined by the decision to sell Bottas to Mercedes and target Lowe. Symonds only became aware of Williams' move for Lowe when news of a putative deal broke in the media. He left the team on the Tuesday before Christmas.

Williams' interest in Lowe is not linked with the deal that will take Valtteri Bottas to Mercedes in 2017, but the reasons behind Lowe's departure are unclear. It is understood his contract was moving from a four-year lock-in to a standard staff contract with a notice period, but it seems the size of his earnings – he took home in the region of £3m in 2015 and 2016 once bonuses were included – was becoming a problem. Insiders have also hinted that behind the scenes he had started to act beyond his remit.

Mercedes have lined up former Ferrari technical director James Allison as Lowe's replacement. Allison, 48, will join the team in the late spring/early summer, as soon as his gardening leave from the Scuderia is over.

His precise job title is not known, but he is likely to have less contractual seniority than Lowe's position of executive director (technical).



QUIZ



F1 Mastermind

Your chosen specialised subject: the world's greatest sport





- Q1** Who was the first world champion not to race in Formula 1 the following year?
- Q2** Which driver managed to finish in 11th place five times during the 2016 season?
- Q3** Who won the two GPs held in Las Vegas in 1981 and 1982?
- Q4** Who had more points-scoring finishes in 2016: Sebastian Vettel or Kimi Räikkönen?
- Q5** Four teams have won only one constructors' championship. Can you name them?

- Q6** In how many seasons has the number '1' not been used on a car since year-long numbers were introduced in 1974: 2, 3 or 4?
- Q7** Alfonso Celis, Jordan King, Charles Leclerc, Sergey Sirotkin and Esteban Ocon all did what in 2016?
- Q8** True or false: on two occasions, the Formula 1 season has started on 1 January?

- Q9** Which 2016 grand prix had the most Safety Car periods?
- Q10** Which famous Formula 1 engine made its debut 50 years ago this June?
- Q11** How many Formula 1 races have been won on Pirelli tyres: 151, 161 or 171?
- Q12** In which 2016 races were there no retirements?

- Q13** What happened in the constructors' championship in 2016 for the first time since 2009?
- Q14** Three F1 grands prix now finish at night under floodlights. Which ones are they?
- Q15** Felipe Massa, Sebastian Vettel and Daniel Ricciardo have all had one thing in common over the past three seasons. What is it?

1 Juan Manuel Fangio **2** Esteban Gutiérrez **3** Alan Jones & Michele Alboreto **4** They drew on **5** Vanwall, BRM, Tyrrell & Brawn **6** **7** Took part in a practice session when not a race driver **8** True **9** Monaco **10** Ford Cosworth DFV **11** 11 **12** China & Japan **13** All teams scored at least one point **14** Bahrain, Singapore & Abu Dhabi **15** The only non-Mercedes drivers to start on pole



New chairman, Chase Carey, has been quietly working to gain an understanding of Formula 1's bigger picture

NEWS

F1 sale to be completed before start of season

The sport's new owners could collect the keys earlier than planned after competition authorities approve the sale

Liberty Media will complete their purchase of a controlling interest in F1 in the first quarter of 2017. The company, which bought 18.7 per cent of F1 for \$746m in cash in September 2016, will take their shareholding to 35.3 per cent in a deal that values the business at \$8bn. Liberty say they have "all required approvals from all appropriate anti-trust authorities in connection with the pending acquisition of Formula 1".

The next step is approval by all Liberty shareholders, just after *F1 Racing* goes to press, on 17 January, and by the FIA, which is a formality. Insiders say the deal should be completed before April and there are not expected to be any immediate changes once Liberty take over from former majority owners CVC Capital Partners, who will retain a 24.7 per cent holding once the deal is complete.

Liberty seek to lay new foundations for F1 in 2017. They want to grow the business through more active use of digital media, with a focus on the core European races, which they see as being F1's heartland and an asset to be valued and nurtured. They also want to invest more in the US, and are targeting new races there.

Chairman Chase Carey has been playing a low-key role since the deal was announced, but has been meeting with major stakeholders and other interested parties as he attempts to form a picture of where F1 is at. Many have told him the sport is "dysfunctional" under the current regime and needs a revamp, particularly in governance.

Bernie Ecclestone's future, once the deal is complete, is unclear. If he stays on, it will only be on the condition that he operates under strict guidelines, a situation with which he has never been comfortable.

PHOTOS: GLENN DUNBAR/LAT; STEVEN TEE/LAT; STEVE ETHERINGTON/LAT; SUTTON IMAGES

Capito leaves McLaren in management shake-up

Newly recruited F1 chief executive officer clears desk after less than four months in the role, following a boardroom reshuffle

Jost Capito has left McLaren Racing less than four months after being recruited as CEO. The former head of Volkswagen motorsport started work at McLaren in September after being signed by chairman Ron Dennis in January 2016. It had taken Capito nine months to secure his departure from his previous role.

Capito, 58, was seen as a Dennis hire, and fell prey to the boardroom battles that resulted in Dennis himself being forced out. Capito's exit became apparent before Christmas, but there has been no formal confirmation from the team.

Dennis's contract as chairman and CEO of the McLaren Group will not be renewed when it expires in mid-January. He is a non-executive chairman and a 25% shareholder but will no longer have an active role in running McLaren.

Capito's departure follows the recruitment of F1 marketing expert Zak Brown as McLaren Group's new executive director. Brown and COO Jonathan Neale have been empowered to run McLaren on a day-to-day basis by the new executive board, which carries final authority. This is composed of 50 per cent shareholders Mumtalakat, the investment arm of the Kingdom of Bahrain, and TAG's Mansour Ojeh – a long-time associate of Dennis, with whom he has now fallen out – who owns 25 per cent.

Another effect of the management reshuffle is that long-time McLaren marketing chief Ekrem Sami will no longer have a place on the executive

It had taken Jost Capito (centre) nine months to exit his role at Volkswagen to join McLaren

board, although he will retain his position within the management team.

Capito's departure means racing director Eric Boullier now answers directly to Brown and Neale. This is unlikely to affect driver arrangements, since Brown, Capito and Boullier are all in agreement that the team needs to keep hold of Fernando Alonso at the end of his contract this year. If Alonso decides he wants to stay on in F1 after trying this year's cars, he is likely to be offered a new two-year deal.

McLaren see the new rules as an opportunity to close the gap to the front-running teams, and their management revamp will give the restructuring of the team, undertaken by Boullier over the past three years, the first real chance to prove its worth. However, their competitiveness will depend to some extent on the new engine Honda are developing for the 2017 season.

F1 Racing has learned that the revised Honda, which is expected to follow the Mercedes design of using the compressor and turbine outside the vee at opposite ends of the engine, is even more compact than the previous one. Honda's target is to match Mercedes for outright performance in 2017, but insiders caution that this is unlikely to happen at the start of the season.



PHOTO: ANDY HONE/LAT

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French Grand Prix to return after lost decade

Following years of fruitless rumours and dead ends, the historic event will make a comeback on the F1 calendar in summer 2018



The 2008 race took place at Magny-Cours and was the last time France hosted a GP

The French Grand Prix will make a return to the Formula 1 calendar in 2018 at the Le Castellet track, also known as Circuit Paul Ricard, after an absence of ten years. The country, which hosted the first ever grand prix in 1906, last held the race at Magny-Cours in central France in 2008.

Le Castellet hosted the French Grand Prix 14 times between 1971 and 1990, during which time it often alternated with Dijon-Prenois. The track, in the south of France, close to Marseille and Toulon, was famous for its long Mistral

Paul Ricard last played host to F1 action at a two-day wet-weather tyre test in 2016



straight and the ultra-fast Signes corner that followed it. But the straight will be bisected by a chicane for the revival of the race, and the notorious Verriere sweeps after the start-finish straight have also been slowed down.

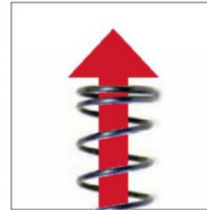
The resurrection of the race is the brainchild of Christian Estrosi, a former racing driver and now the president of the Provence-Alpes-Côte d'Azur region, in which the track is situated.

Organisers said at a news conference at which the GP's return was announced that the race will be funded by a consortium of different regional bodies, who will provide \$15m a year, and ticket sales and partnerships that will bring in another \$17m. The regional government has calculated that the race will have an economic impact on the region of \$69m a year.

The length of the contract has not yet been announced, but the deal is believed to be for five years and F1 boss Bernie Ecclestone said he expected the race to be held at the end of July. It remains to be seen how it will fit in alongside Germany, where Hockenheim is in the last year of its contract in 2018, and Hungary.

PASSNOTES

Your essential F1 briefing #35 Heave



Name Heave

Age Entered Old English as *hebban* around 1,600 years ago

Appearance Springy

Funnily enough, I observed that someone had done just that outside the office door after the England-Australia rugby match at Twickenham. Did it contain remnants of prawn sandwich?

It is not in my nature to subject the contents of pavement pizzas to forensic examination. So, what of this 'heave' business? Are the Brand New Heavies coming back?

Thankfully not. After the grim reaper tore through the classic rock and pop scene in 2016, it would be spiteful if 2017 brought an acid jazz revival.

I'd move to Antarctica if that happened.

As would I. Anyhow, heave: pretty much all F1 cars use a third suspension element called a 'heave spring' to control vertical movement.

If only that fellow waiting for the 281 bus on match day had one of those in his stomach!

Quite. So, in 2014 the FIA banned FRIC

suspension, in which the front and rear dampers are connected, and which, if optimised correctly, can boost car performance. Mercedes and Red Bull got around the ban with a passive hydraulic system that uses energy recovered from suspension movement to change the position of the heave spring, giving similar advantages.

Let me guess. Someone hasn't been able to get it right themselves and so wrote to the FIA to complain about it. Ferrari?

Not quite. Their chief designer, Simone Resta, sought 'clarification'. In a letter, he wrote: "We would question the legality of these systems under Art. 3.15 and its interpretation in TD/002-11, discriminating between whether certain details are 'wholly incidental to the main purpose of the suspension system' or 'have been contrived to directly affect the aerodynamic performance of the car.'"

I prefer the letters of PG Wodehouse. He had a much more engaging verbal dexterity. I take it Charles Whiting Esq responded in kind?

The upshot is they'll give it the heave-ho.

Do say Get Ur FRIC On.

Don't say Le FRIC - c'est chic!



WILLIAMS RACE DAY HOSPITALITY & MUSEUM TOURS



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MUSEUM TOURS

Housed in the award-winning Williams Conference Centre is Sir Frank Williams' private Grand Prix Collection, the largest of its kind in the world, spanning the history of the team since 1978

Manor lost out on prize money after dropping to last place in the constructors' standings in 2016

NEWS

Manor in peril as sale talks collapse

Owner Stephen Fitzpatrick puts the Manor F1 team's operating company into administration as sale discussions founder



Fitzpatrick (top) was believed to have been in talks to sell to Ecclestone associate Tavo Hellmund (above left)

The future of the Manor F1 team is in doubt after their owner, Stephen Fitzpatrick, called in the administrators in the first week of January. Manor finished last in the 2016 constructors' championship after Sauber leapfrogged them at the penultimate round, and have been seeking new investment – without which the team cannot continue in Formula 1.

At the 2016 season-ending Abu Dhabi Grand Prix, Fitzpatrick said that he had “agreed terms with an investor”, and that the loss of revenue that resulted from dropping to last in the championship was “not a deal-breaker”, but there has been no further information since.

The deal Fitzpatrick referred to was believed to have been with American Tavo Hellmund, the man behind the US Grand Prix in Austin, Texas, and a close associate of Bernie Ecclestone. This inevitably led to speculation that Ecclestone himself was involved.

That deal is now said to have collapsed, while other unknown entities are believed to be interested. *F1 Racing* understands that while at least one of them entered a due diligence process, none have demonstrated proof that they have the money to buy and run the team.

Fitzpatrick, the founder of the energy company Ovo, has owned Manor since 2015, when he rescued them at the 11th hour on the eve of the new season. The team had gone into administration after the 2014 Russian GP.

Now the same administrators, FRP Advisory, are presiding over the business again. They said there was “a very limited window of opportunity” in which to save Manor before the season-opener in Australia on 26 March.

“Senior management have worked tirelessly to bring new investment, but regrettably have been unable to do so within the time available,” said FRP administrator Geoff Rowley.

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1:18 SCALE - JUNE 2017

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NEWS

Renault ring the changes at their Enstone HQ

Team principal Frédéric Vasseur steps down, while long-time engine boss Rob White takes charge of operations in the UK

Renault have reorganised their management team as they seek to improve on their difficult first season back in the sport as a works entry. Rob White, who has run the engine operation at Viry-Châtillon in Paris for the past few years, has moved to the Enstone chassis base in the UK, where he will be operations director.

White will be responsible for ensuring the smooth running of an expanded workforce, which has grown by about 100 since Renault's

takeover of Lotus to around 560. Another 100 staff are expected to join by the end of 2017.

As *F1 Racing* went to press, Renault announced that team principal Frédéric Vasseur was leaving, after just one year in the role, "by mutual consent". Day-to-day running of the team will continue under chief technical officer Bob Bell, technical director Nick Chester, and trackside operations director Alan Permane, assisted by chief race engineer Ciaran Pilbeam who has rejoined the team from McLaren.

Renault are keeping a lid on their expectations for next season. Just before Christmas, Vasseur

had said 2017 was: "A fantastic opportunity for us to take a significant step forward," but he added the team were "realistic... as we know that we won't leapfrog the midfield in a single season. However we are all pushing for a big improvement."

Engine chief Rémi Taffin, meanwhile, said he doubted Renault would be in a position to compete with Mercedes on engine performance in 2017.

Rob White will oversee an expanded staff at Enstone, having moved over from Viry-Châtillon



MIRTH

SEPARATED AT BIRTH...

Proboscis monkey



Proboscis monkey (*Nasalis larvatus*), a native of the Borneo rainforest

McLaren MP4-29



McLaren MP4-29 – a clumsy-looking entrant in the 2014 season of Formula 1

NEWS IN BRIEF



NEWKEY PROPOSES WINDTUNNEL BAN

Red Bull's chief technical officer Adrian Newey believes restricting resources such as windtunnels will boost creativity. Speaking to Sky Sports F1, he said: "It would be possible to come up with a set of regulations that would reward creativity more than simply the number of people. You could restrict research resources more heavily, scrap windtunnels and be more restricted on the CFD runs. If you restrict the resources there wouldn't be [any] point having so many engineers."

MERC & FERRARI NAME LAUNCH DATES

Ferrari and Mercedes are the first teams to announce the launch of their new cars ahead of the first test at Barcelona on 27 February. Most teams opt for low-key unveilings during testing, but, given 2017's radical rule changes, Mercedes and Ferrari will use FIA-permitted 'filming days' to shake down their cars at Silverstone and Fiorano on 23 and 24 February respectively. They hope this will let them maximise track time at the official tests.

HARYANTO TARGETS F1 RETURN

Rio Haryanto is seeking sponsors to help him return to F1 after his long-term backer, Pertamina, announced in January that they would withdraw their support. "We are still working on a plan to keep Rio in F1," manager Piers Hunnisett told Reuters. "People felt he did a good job and deserves to be there." Haryanto has been Manor's reserve since losing his race seat to Esteban Ocon.

WOLFF IS MADE AN MBE

Former Williams test driver Susie Wolff has been made an MBE in the New Year's Honours list. Since hanging up her helmet, Wolff has spearheaded the Dare To Be Different campaign, which inspires and supports women seeking to work in motorsport. "I am humbled to receive an MBE in recognition of my service to women in sport," said Wolff. "Like any female competitor, I simply aspired to compete on a level playing field."

PHOTOS: ANDREW FERRARO/LAT; STEVEN TEE/LAT; SUTTON IMAGES; REX/SHUTTERSTOCK

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Pat Symonds explains THE SCIENCE BEHIND... Steering wheels

F1 TECH

The steering wheel has undergone an extraordinary evolution over the years.

Can you chart its history for us?

You'd need to go back to the 1980s to find a steering wheel that had no other function than to allow the driver to steer the car – although even then wheels sometimes had an ignition kill switch on them to allow the driver to shut the engine down if the throttle jammed open.

It was during the '80s that radios were introduced, which led to the first button to be added to the steering wheel, for 'push-to-talk' enabled transmission. Around the same time, quick-release mechanisms were incorporated to let the driver exit the cockpit more easily. But it was the advent of electronic control systems, firstly for the gearbox and latterly for active suspension, that really turned the steering wheel into a control centre for the driver.

Instrumentation has also changed the face of the steering wheel. Prior to usable electronic systems, even the rev counter and temperature gauges were mechanical. There was little driver information and I remember as late as 1992 having to add some bizarre equipment.

When I was working with Michael Schumacher at Benetton, he wanted to assess changes to both the car and his driving by looking at split times around the lap in real time. My solution was to glue a simple digital watch, with a stopwatch function, to the steering wheel. I remember the puzzlement of the shopkeeper who sold them to me as I was interested only in how big the buttons were and whether they could be used with a gloved hand. He was even more surprised when I asked if I could buy ten of them!

Did the introduction of paddle-shifts pave the way for more electronics on the steering wheel?

The introduction of electro-hydraulic gearshift systems meant there was no longer just an electronic control unit for the engine, but also one for the chassis. In addition it was possible to display much more information to the driver.

Now, microprocessors in the steering wheel control both visual and audio information and warnings to the driver. The simple £10 Casio watch on Michael Schumacher's steering wheel has given way to the £3,500 PCU8 display that is used on all F1 cars today.

So what does a steering wheel cost?

They're certainly not cheap. The basic carbon structure of the steering wheel, including the internal metalwork, would cost around £12,500. There are around £800-worth of switches, knobs and wiring in total. The display and electronic interface boards amount to a further £4,000, and even the quick-release mechanism would cost around £1,000. The paddles and bracketry for the clutch and gearshift cost a further £6,000, so you're close to £25,000 before amortising any design costs.

So what are all the functions now?

These vary from team to team, but a quick inspection of photos will show around 16 buttons and nine rotary switches, plus paddles for the clutch and gearshift. The buttons control simple singular functions such as the radio, pitlane speed limiter and DRS action.

The rotary switches are more complex and cover functions such as the power unit mode (qualifying or race modes for example), the differential locking and the brake-balance maps. There are also two multi-function rotary switches that are used to select what may be thought of as sub-menus. Once selected, two push buttons, usually labelled with a 'plus' and a 'minus', are then operated to index to the desired setting. You can understand why it gets complicated at times.

Because of the work needed to optimise the settings on a modern F1 car we strive to combine sets of settings into single-switch positions using a global override. This means that the driver can, for example, set the power unit up for a qualifying lap by just selecting the qualifying position. This will then set the correct boost,

ignition and fuel settings automatically, rather than having to pick each one individually.

Have we reached a limit in terms of the workload a driver can handle?

It's not just how many tasks the driver needs to perform that matters, but also how difficult those tasks are to perform: it's always the thought process behind an action that counts. The global override is an example of reducing the driver's workload. It's easy for a driver to understand that before starting a qualifying lap he should select the qualifying power unit mode, but harder for him to know what to do if he gets a warning that a sensor has failed or that his battery store is depleting too rapidly.

This came to a head last year when a new rule was brought in to limit communication between teams and drivers. This, in turn, forced the teams to automate more actions. Even then, Felipe Massa picked up a puncture during a race last year because he was concentrating on making a switch change and failed to notice some debris on the track.

What else do you have to consider when designing a steering wheel?

The steering wheel and column have to undergo their own impact test and, even though the HANS device has largely made the need superfluous, the steering column must collapse on impact when subjected to the FIA test. I also have a personal foible about keeping steering wheel inertia low and column torsional stiffness high since the steering feel is a primary feedback path for the driver to know what the car is doing. Finally, each driver has some unique requirements, whether it's the shape of the grip or simply the layout of the switches. But they're always encouraged to keep things the same to reduce the need to carry multiple spares of this very expensive component. 📌

NEXT MONTH ENGINE MAPPING

Steering wheels got their first button, for push-to-talk radio communication, in the 1980s. Now, a steering wheel has around 16 buttons and nine rotary switches





PETER WINDSOR

RACER'S EDGE

Authority, wit and intelligence
from the voice of *F1 Racing*

Sound bites don't appeal to me, particularly when they're eked out of a driver as he's about to insert a drink hose in his mouth on the grid and tell his engineer that the track's suddenly gone to understeer.

There's a time and a place for everything, and the grid, for me, is a time to *watch* the drivers, not to annoy them. You'll never garner anything profound from them, so better to observe than to fuss. Michael Schumacher sussed this out early in his Ferrari career; Mark Webber, by contrast, was to my mind, always too nice to the boys and girls with the mics – often to the detriment of his starts.

There are exceptions, of course. I always have fun with Fernando Alonso on the grid, chatting about which cars he's going to pass around the outside of the first corner, and Valtteri Bottas is always good for a quick weather update or three. Everyone else milling around out there tends to be fair game, and it's been interesting to see how they react when you do offer them the mic.

I digress. Fuji 2007. It's pouring and there's the usual confusion on the grid as engineers shout commands and tyre guys try to remember which set of intermediates is for stop one and which set of full wets will be the backup. Umbrellas fight for space.

Strange things can happen in the rain

Camera- and sound-men do their best to keep the water seals tight on their expensive equipment. Team managers look skywards, preparing for a Safety Car start.

I am sheltering just by Race Control, watching the action. Our sound mic has already gone down. The techs are working flat-out, but, as they graft, there's nothing to do but pause... and listen. In my left ear I can hear Charlie Whiting talking calmly to Williams team manager, Tim Newton.

"Safety Car start but the conditions are so bad that we're going to make it mandatory to start on extreme wets. I've just emailed the directive."

"Okay. Thanks. Start's in ten minutes?"

"Precisely."

I walk back to the grid to watch the chaos. Wheel guns clatter, tyre trollies roll. I find myself beside Kimi's Ferrari where all seems to be calm. Rupert, our sound tech, runs up to say that all is now in order. I pull the mic out from under my rain coat. Andy, our cameraman, has the big Sony shooter up on his shoulder. I look for a Ferrari management guy. It'll be interesting to get his take on the all-wet tyre start.

Suddenly, a Ferrari jacket is pushing me to one side. I nearly trip over Rupert. Andy shuffles sideways, just catching the Sony.

"Just want to have a quick word with Stefano or a race engineer to talk about the tyre situation," I say, regaining my balance.

"No interviews! Out of the way!"

We oblige. I spy Ron Dennis over Rupert's shoulder. We have our alternative victim.

A few minutes later we clear the grid. The tyre covers come off and we gasp as Felipe Massa and Kimi Räikkönen's Ferraris are revealed to be on wets – not extreme wets. What's going on? What do they know that we don't? Or don't they know?

The race starts, gingerly and with little fanfare, behind the Safety Car. Kimi goes



backwards, but the rain, after a few laps, does seem to be easing a little. Maybe, we think, it could work for him. Then the message flashes up: obligatory pitstops for Kimi Räikkönen and Felipe Massa. Starting on incorrect tyres.

Had I done my interview, someone up there at Ferrari would have twigged that they were on the wrong tyres and quickly made amends; there would have been time to change. Sure, they won the battle of the interviews; no, it wasn't worth winning.

Blame it on the rain. It does strange things to F1 people. At the Nürburgring in 1962, Jim Clark was so focused on keeping his goggles mist-free that he forgot to switch on the fuel pump of his Lotus 25. Fast-forward

"The message flashes up: obligatory pitstops for Kimi Räikkönen and Felipe Massa"



At the rain-soaked 2007 Japanese GP, Race Control made a late decision that everyone should start on extreme wets. Somehow, Ferrari didn't get the message in time and were forced to make a race-ruining pitstop just a few laps in



to Brazil, 2016, where Romain Grosjean was so confident about his car control and reflexes after qualifying seventh that he forgot how to drive a simple out-lap onto the grid. Call it *overconfidence*.

In Brazil last year, you also had that race team of race teams – Red Bull – forgetting to remind their drivers to change visors and/or helmets at the red-flag stops. Every other driver in the race, from Sauber upwards, had new visors or helmets ready and waiting. Not so Daniel and Max. It was a bit like forgetting to tie your shoelaces, as both Red Bull drivers discovered on the restart when their visors very quickly began to mist over. Both had been Rain-Xed (silicone-sprayed), but only

Max thereafter remembered the golden rule about wiping the inside of your visor at your peril. Daniel scratched the itch and for the rest of the race found himself peering through Smearsville, São Paulo.

We all remember Ayrton Senna's ultra-wet drives in Portugal 1985, and at Donington Park in 1993, but what about Nigel Mansell's drive to fifth place in that Estoril race after starting from the pitlane? In a Williams-Honda with a throttle response so violent that it flicked even Keke Rosberg into the pitwall, Nigel passed car after car under braking as he burst through the pack. I asked him afterwards how he did it.

"I couldn't see anything in the mist so I just followed the car in front as closely as I could,

waited to hear the guy's engine note change, flicked out alongside him and braked..."

Speaking of Keke Rosberg, I was there in 1978 when he won the Silverstone International Trophy Formula 1 race for Theodore, if you please – on the day when 'standing water' officially became the new F1 vernacular for 'puddle'. Out of everyone, only Keke, it seemed, could find any sort of grip and consistency amid the treacherous standing water out on track – and it wasn't all due to his penchant for orchestral opposite lock. "I just followed the tyre trails left by the cars in front," he said afterwards, adding that there were "plenty of trails because there were plenty of cars to lap..." 📌

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DIETER RENCKEN

POWER PLAY

The stories F1's bigwigs would rather you didn't know...

For a company whose principal activity is mass communication, Liberty Media Corporation, shortly to be confirmed as Formula 1's commercial masters, have been exceptionally slow in coming forward about their plans for F1's future.

True, Chase Carey, chairman-designate of Liberty's emerging F1 division, has attended a handful of grands prix since the deal was announced early last September – seldom in the company of Bernie Ecclestone – but he has yet to grant an on-the-record interview to independent F1 media. And while a number of F1-related media releases have appeared on Liberty's website, these have in the main been statutory messages aimed at potential investors, not F1's global fan base.

Thus it was illuminating to learn via City broadsheets that 74-year-old John Malone, billionaire boss of the trio of Liberty entities (Media, Global, Interactive), plans to introduce budget caps for teams, quoting a source familiar with the situation as stating: "It makes no sense to have teams spending the better part of \$400m. That money is not doing anything good for fans. It is just wasted on competing on technology. That has not been driven by logic, and has created a two-

Budget caps are not the solution

class society in terms of what is spent by teams. You should have an opportunity for underdogs to win."

These are noble sentiments; hugely philanthropic, even. But dig deeper, and the message is clear: Liberty intend driving down the costs of competing, in turn reducing the financial pressures on teams and thus their need to demand increased slices of F1's (soon to be) \$2bn annual income.

By implication, therefore, Liberty clearly intend to maximise their take on behalf of shareholders. This is, of course, the primary duty of any publicly traded entity, and it leaves zero doubt as to where Liberty's control will take the sport.

Indeed, Carey made that point himself, shortly after the deal was announced: "Of course, profits are important, but realistically the primary goal of the business that I have been in has always been to build long-term value. So the goal is not what can be achieved in the next 12 months, but where you are going to be in three to five years."

While fans can draw solace from Liberty's focus on the long-haul, unlike outgoing majority rights holders CVC Capital Partners, who sought a quick in-out, listed companies face quarterly audits by the markets. Hence the company will be sure to scan the bottom line on a regular basis, taking corrective action when it is necessary.

Räikkönen wins for Lotus in Australia 2013 – the last time a non-bonus team won a grand prix



The first question that arises, however, is whether a commercial rights holder should have any say over the sport's technology, or sway over how teams wish to blow their budgets. That surely is down to the technical and sporting commissions of governing body the FIA, both of which are currently framing cost-saving initiatives. They, surely, are better placed to make these judgments than new rights holders whose fuller understanding of the sport was gleaned after the purchase.

If, though, Liberty are sufficiently concerned about F1's 'two-class society' – and, as a US-based entity, they surely understand better than most that inequality exists in all walks – then they would do well to study the root cause of F1's current fiscal imbalance, and thus the reasons why 'underdogs' cannot currently win.

At the heart of the matter lies a revenue-distribution structure devised by removed outgoing majority rights holders CVC at a time when the venture vultures needed to snare big-name teams ahead of a planned-but-aborted listing on Singapore's exchange. CVC managed to entice them by offering, for example, non-performance-linked annual bonuses that enrich Ferrari annually by twice the amount that Force India spend per season in total.

These bonuses were introduced as effective for 2013, and disbursed during 2014, with the main beneficiaries being Red Bull, Ferrari and Mercedes. It can be no coincidence that the last grand prix won by a team other than a member of this trio, was 2013's season opener, which Kimi Räikkönen won for Lotus. That very team subsequently folded under the stress of competing on unequal terms against five 'bonus' teams (McLaren and Williams receive more modest sums).

The fact of the matter is that underdogs have won races and championships against better-funded operations since the inception of the F1 world championship in 1950 through to 2013 – but not since. That is where F1's true inequality lies, not in any lack of notional budget caps – a concept that has been rejected time and again due to its inherent impracticality.

The moral is simple: sort the revenue structure by paying like money for like results, and the rest will largely sort itself. 🚗

"Liberty would do well to study the root cause of F1's current fiscal imbalance"

Why 2017 is F1's most important year – ever!

This season's new machinery will be better to look at and faster and more physical to drive, testing drivers' skills as never before. But have all the implications of the changes been fully anticipated? Was the sport really so broken that it required such a massive 'fix'? And what changes are F1's new owners planning to make – assuming they get to buy it at all?

WORDS ANDREW BENSON

IMAGES PETER CROWTHER & BEN SUMMERELL-YOUDE





As a new year dawns, so does a new era of Formula 1. And this time it's grand prix racing on steroids. This is a major shift in the sport's focus, born of a desire to boost its 'wow factor', and an abrupt reversal of 50 years of history: not since the 1960s have rule-makers actively sought to make the cars *quicker*.

The new rules are intended to make cars run up to five seconds a lap faster and look more dramatic. They will be wider, with big, fat tyres, arrow-shaped delta wings at the front, and low, aggressive-looking wings at the back. They will test drivers physically in a way they have not been tested for at least six years, and increase cornering forces by up to 1G in fast corners.

So why is all this happening? Put simply, it's to return the 'hero factor' to F1. The sport's bosses felt it needed spicing up following concerns about a decline in television audiences.

Not everyone is happy about it, though. In November 2015, Mercedes made a last-ditch attempt to stop F1 adopting the new rules that will change the face of the sport this season. In a meeting of technical chiefs before that year's Brazilian Grand Prix, the world champions

questioned the desire to reduce lap times by five seconds when cars were already approaching historic highs in terms of downforce, and raised concerns about the ability of Pirelli tyres to cope with the increased speeds.

But the other teams rejected Mercedes' complaints, believing them to be rooted in a desire to keep a competitive advantage, and seeing in the change an opportunity to peg them back after three years of domination.

So F1 starts 2017 knowing it is facing its biggest potential upheaval for eight years. There is a lot riding on it. And for many in the sport, this will be a pivotal year.

NEW RULES, FASTER CARS

New rules generally lead to a change in the competitive order. The introduction of hybrid engines in 2014 ended the Red Bull era and ushered in Mercedes dominance. Having committed more resource much earlier than all their competitors, Mercedes started with an advantage that continued until the end of 2016.

The changes being brought in for 2017 are slightly different. The engine rules are remaining

stable – with the exception of extra freedom on development – but the chassis rules have been overhauled.

The last two times this happened, one team's hegemony ended, and another's started. McLaren took over from Williams with the introduction of narrow-track and grooved tyres in 1998, and Red Bull leapt to the fore in 2009, once the anomaly of Brawn's blown-diffuser-led initial dominance waned.

So, in theory, new chassis rules mean that even if Mercedes continue with a power and efficiency advantage – which has to be considered likely, although it is far from being a given – another team could reduce the gap by having a better car.

There is an important link between those last two sets of major rules changes. In both cases, it was Adrian Newey who led the technical team that stole a march on their rivals at the start of a new era.

Newey, F1's pre-eminent aerodynamics design leader, is now 58, and, according to Red Bull, spends only around 50 per cent of his time on F1; the rest of it he spends on special projects – particularly the Aston Martin-Red Bull road car.

THAT WAS THEN...



Newey's enthusiasm for F1 was starting to wane in 2014, but insiders speak of him being re-energised by the new rules. And well he might be. The rule-makers' intention was to speed up the cars through a combination of aerodynamic and mechanical grip. Along with wider tyres, the cars' track has been widened from 1,800mm to 2,000mm, and the bodywork from 1,400mm to 1,600mm. This boosts downforce by creating a much greater area under the floor and, in addition, the size of the diffuser has been significantly increased.

How much more downforce will be created? The numbers are staggering. A document issued by the FIA around the time of the US Grand Prix collated the gains seen by all the teams in their research and development, and stated a mean gain of 15 per cent, with the maximum of 31 per cent. Team names were redacted, so it isn't possible to identify who reported what.

But insiders suggest these numbers have been underplayed, and that gains approaching 40 per cent could be seen once the cars get on track. This is one of the unknowns that makes the new season such an important point in F1's history.

What does this mean in reality? First of all, a huge increase in cornering speeds. Many fast corners, engineers say, will bring an increase of 1G in the forces exerted upon the driver. Insiders are giving the example of Turn 3 at Barcelona, which they say will go from being a tricky corner through which drivers have to modulate the

Braking distances would therefore be shorter even if cornering speeds were not changing, but since those speeds are increasing, the braking distances will be shorter still. And that could make overtaking even more difficult.

Finally, there is not a lot of point in making cars five seconds a lap faster if the drivers cannot

“CARS WILL BE FOUR OR FIVE SECONDS QUICKER. BUT IF IT'S FOUR OR FIVE SECONDS QUICKER ON THE FIRST LAP AND TWO SECONDS ON THE SECOND, IT IS NOT FUN ANY MORE” FERNANDO ALONSO

throttle at about 135mph, to one that will be flat-out at about 160mph. This will present a much greater challenge for the drivers, which was part of the idea behind the rules, and has been welcomed by those in the cockpit. But insiders cannot agree on whether this will make the racing better for spectators.

Wider cars, with bigger tyres and more downforce, mean slower speeds on the straights.

drive them to the limit because the tyres lose grip if they push hard for more than a couple of laps at a time. This has been the case for the past six seasons.

As Fernando Alonso put it last autumn: “We know cars will be four or five seconds quicker. But if it is four or five seconds quicker on the first lap and then two seconds quicker the second lap, it is not fun any more.” →

THIS IS NOW

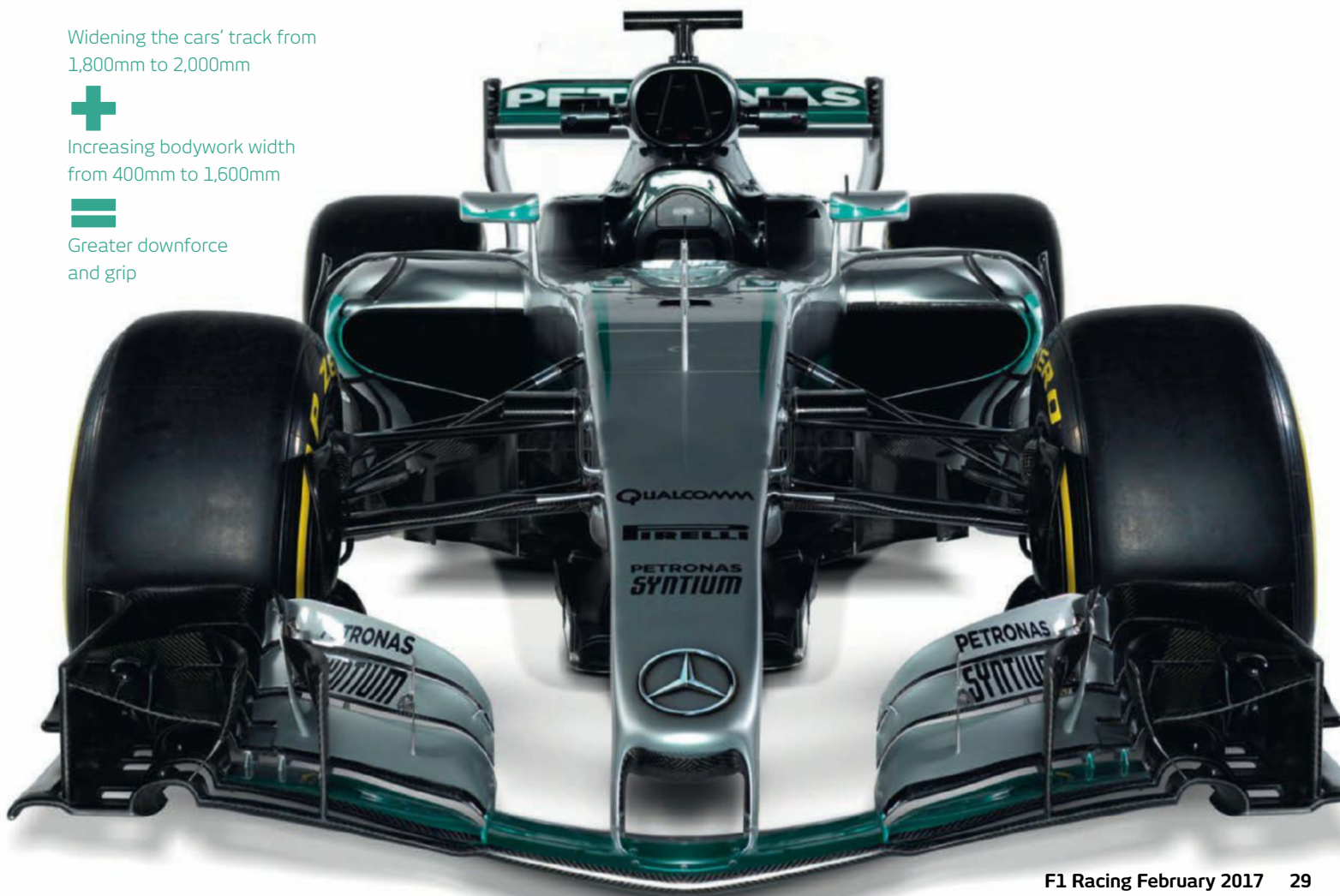
Widening the cars' track from 1,800mm to 2,000mm



Increasing bodywork width from 400mm to 1,600mm



Greater downforce and grip



THAT WAS THEN...



Pirelli have been given a set of requirements this season to address the problem, and have been told to produce tyres on which drivers can race hard throughout a grand prix. One of the big questions hanging over the season is: will Pirelli succeed and what will F1 do about it if not?

WILL IT WORK?

The arguments among the teams as to whether the new rules run along the right lines have continued in public, even after the rules were set in stone. "We weren't big supporters of a regulation change," Mercedes team boss Toto Wolff says. "Not because we wanted to freeze the current situation; it's clear that when regulations

stay stable, eventually performance is going to converge. It was because we weren't sure that it was the right way for F1."

Red Bull have been putting forward the opposing view, that F1 needs the rule change to spice things up and make the cars more spectacular. They claim that everything had got to the point where it seemed just a bit too safe.

Even Wolff admits: "The cars, certainly in the windtunnel, look very spectacular, very wide with the big tyres, and I am personally very excited to see them on track for the first time.

"For the drivers it will be much harder; the cars will be pulling more G through the corners. The simulations that we have seen are very

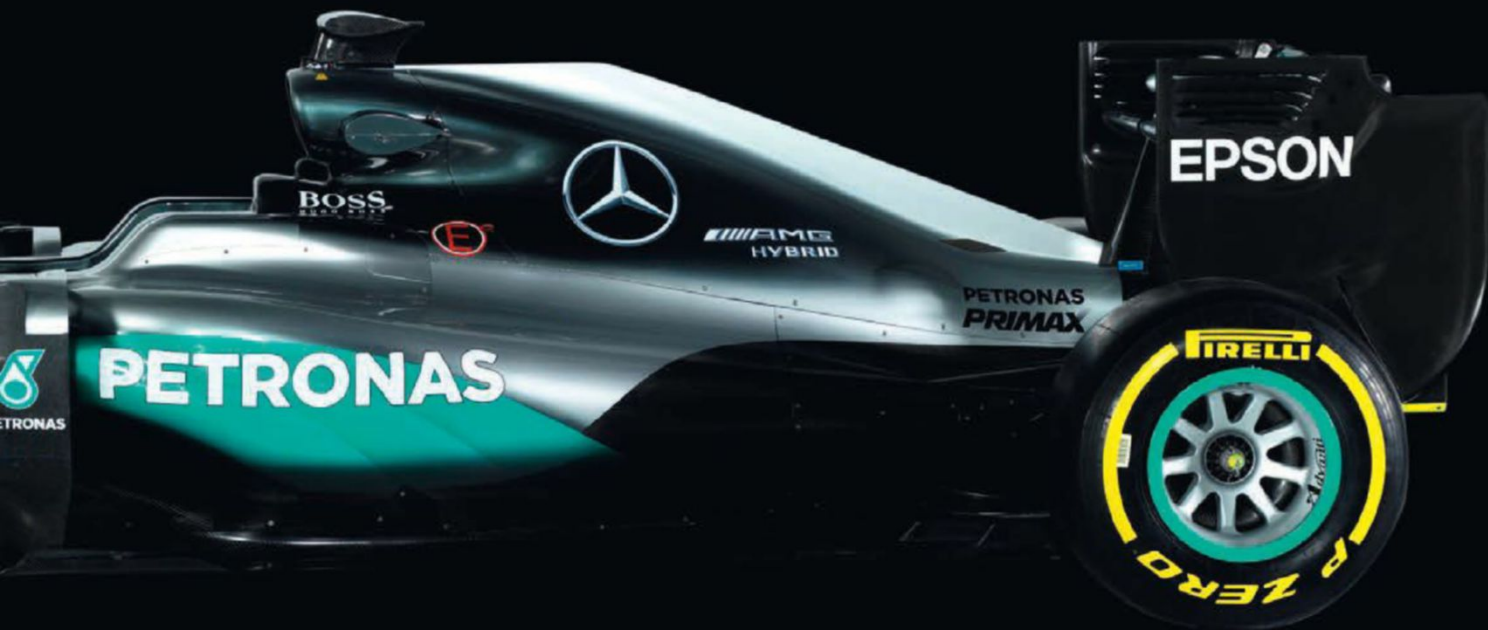
exciting. Corners will be flat that are far from flat today, and we will be breaking records in terms of lap time. So, I guess, an exciting season will be ahead of us.

"I hope that the overtaking is not going to be too difficult because of the width of the car and the dirty air behind it, but let's see. In hindsight, now that we are where we are, we have to make the best of it."

Not everyone agrees that the look of the cars has been as carefully considered as it might have been, however. The wider-tyre, wider-track look was based on the cars of 1991-92. But those cars had bodywork that was 1,400mm wide mated with a two-metre track.

"CORNERS WILL BE FLAT THAT ARE FAR FROM FLAT TODAY, AND WE WILL BE BREAKING RECORDS IN TERMS OF LAP TIME. SO, I GUESS, AN EXCITING SEASON WILL BE AHEAD OF US" TOTO WOLFF





Now the bodywork has been increased by the same amount as the track, the dimensional ratio is the same, and the cars are simply bigger and heavier. This has led one technical director to describe the overall effect as “like standing closer to the TV set”.

PRESSURE ON TEAMS

In the end, many teams backed the new rules just because they saw them as an opportunity to close up the gap to Mercedes. Stability would simply have meant further iterations of the same car concepts.

Chief among those pushing for the new rules were Red Bull. They already had a chassis that

was at least as good as Mercedes’, and few would be surprised if they ended up producing definitively the best chassis this year.

But that will all be for nothing if Renault are unable to improve their engine sufficiently to close on Mercedes. A major redesign is now under way at Renault Sport HQ in Viry-Châtillon near Paris, in an attempt to reduce a power gap that was in the region of 50bhp last year.

Whether or not that happens is also going to have a direct effect on the works Renault team. Pressure was already building internally last year, despite the team starting the season knowing full well that they were going to have a difficult first season back.

Renault have focused hard on the 2017 rules and if major progress is not made on both car and engine, questions will be asked at very senior levels within the company about whether they were right to re-enter Formula 1 as a constructor.

Pressure is always a given at Ferrari, and 2017 will be a critical year after the team slipped from second to third last season and won no races for the second time in three years.

President Sergio Marchionne admitted in December that the team had a “big hole” to fill in terms of aerodynamic development. In which case, the decision to split with former technical director James Allison becomes no less mystifying than it seemed at the time. →



THIS IS NOW

Times to drop by as much as five seconds per lap



Increased G-force by a factor of one through some corners



Up to 25 per cent increase on maximum G-force through corners

Why get rid of one of the most respected aero design leaders in the sport, just as development of a car designed to new regulations in this area was coming to a head? Ferrari spoke a lot at the end of last year about internal restructuring putting them in a better place for the future. Can they prove that this is more than just hot air?

At McLaren, too, there is expectation and potential risk. The team sank to a low in terms of chassis performance in 2014, when the car was more than two seconds a lap slower than the Mercedes with the same engine.

Since then, McLaren have made conspicuous progress, and ended 2016 with a chassis that was vying with the Ferrari for third best on the grid, although its performance was masked by the deficiencies of the Honda engine.

Meanwhile, racing director Eric Boullier has been reshaping the design department behind the scenes. The rule change is a chance for his new three-pronged leadership team of aero expert Peter Prodromou, chassis leader Matt Morris and technology chief Tim Goss to prove they can produce a class-leading chassis.

But what if they don't?

For Honda, too, pressure is mounting. They have been cut plenty of slack in the past two years, many accepting they came in too early. But there is a big redesign of the engine coming for 2017, and a major step forward is expected.

And there is a shadow hanging over all those with hopes of increased competition. Mercedes have produced the best car of the past three years, and increasing downforce and drag means engine power will be more important than ever. Mercedes already had the best engine, and freeing up development, with the proviso that engine numbers for a season remain restricted and new parts can be introduced only with a new engine, gives them the opportunity to improve just as much as it does their rivals.

Give the best team and engine manufacturer a set of new rules and there is every risk they will simply extend the advantage they already had.

WHERE THE DRIVERS COME IN

Nico Rosberg's decision to retire inevitably means a shake-up at Mercedes. At the time of writing, Mercedes were negotiating to try to prise Valtteri Bottas away from Williams.

Bottas is seen as a like-for-like replacement for Rosberg. For Hamilton, though, it is likely to change little. Whoever emerges as his team-mate, his prime focus will be to reinstate what he sees as the natural order and reclaim the title he lost to Rosberg last year.

And, elsewhere, this is a crucial year for the drivers at both Red Bull and Ferrari. If Red Bull live up to their own expectations and become title contenders, it's hard to imagine the fundamentally relaxed ambience between Daniel Ricciardo and Max Verstappen continuing.

Most expect an explosion there at some point. If there is a genuine title fight between the two, beside the pressure that would put on a team who have not had to handle such acrimony since Vettel and Webber in 2010, and did so conspicuously badly, one of them could end up leaving before their contracts expire. Ricciardo's is up in 2018 and Verstappen's in 2019.

Over at Ferrari, the potential for tension between team-mates Sebastian Vettel and Kimi Räikkönen is not as great as the potential for tension between Vettel and team. If Ferrari continue the downward spiral they entered last

**THAT
WAS
THEN...**



“GIVE THE BEST TEAM AND ENGINE MANUFACTURER A SET OF NEW RULES AND THERE IS EVERY RISK THEY WILL SIMPLY EXTEND THE ADVANTAGE THEY ALREADY HAD”

year, Vettel's willingness to sign a new contract will be tested. And if his form slips as badly as it did in the second half of 2017, the team will have their own doubts.

The question both Vettel and Ferrari will be asking themselves, however, is what better option do they have?

And over at McLaren, Alonso's contract will be coming to an end. He has said he will continue if the cars and tyres are exciting to drive, and McLaren want him to sign a new contract, so fans worldwide will be hoping that Pirelli can come up with the goods.

WILL LIBERTY SET F1 FREE?

Potentially the biggest change to F1 in 2017, though, could happen off the track. Liberty Media will complete their buy-out of enough


shares to take a controlling interest in F1 before the end of the first quarter. At that point, a new philosophy will be instilled in the company that owns the sport's commercial rights.

For 40 years, under Bernie Ecclestone, F1 has been run in a state of deliberate constant crisis. Ecclestone's aim has been to keep participants unsettled so as to enhance his control, while keeping an eye on the deal, with little regard for the consequences of his strategy.

Liberty, under new chairman Chase Carey, have a very different agenda. They want to make a profit, of course, but they want to do it by growing the sport. This means not only reaching out through the possibilities of digital media to a hopefully expanding audience, but also by securing the future of Formula 1 in its core market – Europe.

Liberty's vision is to have races in Britain, Germany, France, Italy, Spain and Belgium as the centrepiece of a revitalised F1. They also plan to invest – a word that has not been heard for a very long time in the context of the sport's future – in building it in key markets such as the USA.

The perceived drop in audience is almost certainly more a function of the switch to pay TV than a lack of interest in Formula 1. But to ensure that is the case, the focus will need to be on ensuring F1 stays true to its roots as the arena where the best drivers in the world race the fastest, most advanced cars, flat-out, at tracks that test them to the limit.

Ecclestone, it has been made clear, will have to fit into a new structure based on proper governance in the 21st century, or he will not fit in at all. It will take time for these changes to be put in place, and 2017 will most likely mainly be about laying the foundations. But it speaks of an exciting future if it all comes to fruition. 

Andrew Benson is BBC Sport's chief F1 writer



THIS IS NOW

Restrictions on in-season engine development loosened

+

Cars are faster, more aggressive-looking and harder to drive

=

One hell of a ride. Strap yourselves in!

BIGGER IS BETTER

The official line is that fatter tyres equal faster racing. But it just so happens that they look pretty impressive as well. *F1 Racing* investigates the thinking behind 2017's coolest rule change

WORDS MATT YOUSON **PICTURES** ANDY HONE/LAT



PIRELLI

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2017

is a season of many technical and sporting changes; some subtle, others potentially game-changing. But amid the complexity of Formula 1's revamp, what's captured the imagination more than anything else is the introduction of big, fat tyres. F1 changes its rules for any number of reasons; this is the first time it's done so to make the cars *look cool*.

First, the numbers. The rule-of-thumb increase is 25 per cent: the rear tyres grow by 80mm, from 325mm to 405mm; and the fronts expand by 60mm, going from 245mm to 305mm, with track width and wing dimensions increasing correspondingly. There has been plenty of talk about rim sizes, with Pirelli unveiling prototype F1 tyres on 18-inch wheels at the 2015 Monaco GP, but for 2017 the rims will remain at 13 inches. The intention with the wider tyres is to increase the size of the contact patch and therefore the amount of grip available. Cars will be quicker through the corners, generate higher G-forces and, it is hoped by the stakeholders, cut lap times. And, we stress again, *look cool*.

Aesthetics genuinely were a factor for the revamp; stung by criticisms in recent years, F1 is making a concerted effort

to reconnect with a fan base that was increasingly vocal about the cars' visual appeal. Pirelli could have made a grippier tyre within the existing form factor – as a control supplier, they haven't been focused on outright performance and so have plenty of margin in hand – but this wasn't what F1 asked for.

"We could have developed the current tyre, certainly that was feasible, but there was also this desire to change the look of the cars as well," says Paul Hembery, Pirelli's motorsport director. "The wider tyres make the cars look more aggressive; it *looks* like the size of tyre that should be on a Formula 1 car. When you see them on the mule cars, it looks right. When you see them side-by-side, the old tyre, frankly, looks a bit small."

The mule cars, one each provided by Red Bull, Ferrari and Mercedes, were used to track-test the new tyres, through 24 days of running in the second half of 2016. These were 2015 cars, fitted with aero packs (mostly side-skirts) to simulate the expected downforce levels of next year's wider cars. During approximately 7,500 miles of testing, they ran well over a hundred test tyre samples.

The use of mules highlights the perpetual difficulties Pirelli face with tyre development in the modern era, but also the complicated 2017 environment in which the new tyres will make their debut. Hembery concedes the mules "are still maybe 20 per cent of the aerodynamic loadings we're expecting to see in February".

This, he stresses, is not a criticism of the mule cars as such: "Within the constraints it was as good as we were going to get.

WHAT'S CHANGED UP FRONT...

2016 front tyre

Diameter: 660mm

Width: 245mm

2017 front tyre

Diameter: 670mm

Width: 305mm



Of course, if you ask if I would have liked something better, I'd say yes, but we also have to be realistic and accept the teams have spent a lot of money to allow us to do this. If they hadn't, we wouldn't have the change for next season. We'd like more, of course. Was it as good as we were going to get? Absolutely."

The lack of a truly representative model is the big unknown for 2017. While Pirelli are satisfied that their new structures and materials will cope with the increased loads (this being something primarily rig-tested indoors), and are confident that their new compounds will function properly, quite how they will function is dependent on what the teams produce. "That's going to have a huge impact," says Hembery. "The compounding really does rely on the energy coming into the tyre to make them work in the way we want." The intent of the changes was to make the cars four to five seconds quicker per lap than a 2015 benchmark. Natural evolution has already provided a two-second improvement in 2016. The new tyres, new aerodynamic configuration and still-increasing horsepower are likely to overshoot that goal.

In 2011, when Pirelli came into the sport, it took teams a while to get on terms with the new rubber, which led to the occasional 80-plus-pitstop dry race and cars falling off the infamous 'Pirelli cliff'. But Hembery argues that the change for 2017 is of far greater magnitude.

"I think the big difference is there's a massive car change. Last time there wasn't a car change, just a tyre-supply change. Clearly some teams will have found something in the



A 2015 Ferrari 'mule car', fitted with an aero pack to simulate 2017 downforce levels, tests the new Pirelli tyres

regulations they can use better than others and they'll make a jump. We envisage a high rate of development, and we also believe there may be one or two surprises with certain teams who'll maybe dominate the new change better than others."

Because no one is entirely sure where downforce levels will be next year, Pirelli can't predict the performance spread between the five slick tyre types. If the numbers produced in simulation are accurate, then something similar to 2016 should result. This doesn't, however, mean that the tyres are going to perform in the same way as their predecessors. The new models are designed to be less thermally sensitive, letting drivers push harder through a stint without suffering the degradation that characterised the previous generation. This should make drivers happy: not being able to push has been a consistent grumble of the high-degradation era.

From a fan's perspective, is giving drivers what they want a good thing? That very much depends on your opinion of →

INSET: XPB/C

...AND AT THE REAR

2016 rear tyre

Diameter: 660mm

Width: 325mm

2017 rear tyre

Diameter: 670mm

Width: 405mm



A HISTORY OF F1 TYRE INNOVATIONS

1950: The early years

Pirelli, Dunlop and Englebert were F1's first tyre suppliers, producing thin, treaded cross-ply tyres. Over time tyres became smaller but fatter. Front and rears started out the same size and width, but the rears became taller and wider, to cope with increasing bhp.

1971: Slicks come in

Firestone and Goodyear were fighting a tyre war in 1971, and Goodyear struck the first blow by turning up to the South African GP with a tyre that had minimal tread. Six weeks on in Barcelona, Firestone hit back by launching the first ever slick tyres.

1977: Radials are introduced

Already used on road cars, radials were brought into F1 by Michelin in 1977. They offered a better contact patch and their smaller slip-angle gave more precise steering but didn't offer the driver much warning when approaching the limit of adhesion.

1986: Blankets become a must-have

In 1974, at a chilly Canadian GP, McLaren created a heated shed in their garage to store tyres, borrowing blankets and duvets from their hotel to wrap the tyres on their way to the grid. Blankets were officially introduced by Williams at the 1986 Spanish Grand Prix.

1998: Grooved tyres slow things down

In 1997, Bridgestone joined Goodyear in F1 and a tyre war ensued. Concerned that speeds were too high, the FIA introduced grooved tyres, which limited both contact patch and grip level. The tyres drew the ire of drivers but remained in F1 for a decade.

2007: Multiple compounds are mandated

To mix up processional races, a 2007 rule stated that both a hard and a soft tyre had to be used in a race. In the Bridgestone era, this rarely seemed significant, so durable were the tyres, but when Pirelli returned to F1 in 2011, strategy became crucial.

2008: Tyre wars effectively abolished

While Formula 1 has had a single tyre supplier at several points during its history, 2008 was the first time this became part of the rules. Bridgestone won the contract for 2008-2010, and were then replaced by Pirelli as sole supplier for 2011-2013, and 2014-2016.



PHOTOS: ALASTAIR STALEY/LAT ARCHIVE

Wider tyres mean a bigger contact patch, hence higher grip. Higher grip means faster cornering speeds – and so, ultimately, a faster F1

the tyre era that has just ended. If you're the sort of purist who thinks a grand prix should be flat-out from lights to flag, this is good news. If you prefer the incident-packed overtaking-heavy races that have characterised the Pirelli era to date, maybe it won't be. Hembery chooses his words carefully when addressing the latter type of fan.

"What we asked for was a clear guideline from the sport to avoid a situation where one group wants one thing while another wants something different. Unfortunately, the fans don't have a say in that definition. The people who run the sport did come together and I'd think that they took into account the fans' views.

"One of the other objectives, via the aerodynamic changes, is to reduce the disturbance of airflow when following another car. That should allow drivers to push harder to create overtaking opportunities. Combined with tyres that are less thermally sensitive – and therefore allow drivers to push in ways they've suggested they are unable to do now – then it *should* create the better racing that people are asking for."

Drivers are also viewing the situation with cautious optimism, with many happily imagining new corners that can now be taken flat-out. "I think the cars are going to look pretty bad-ass," says Daniel Ricciardo, who drove the Red Bull mule at the Yas Marina test. "I think everyone will be putting on a few kilos to cope with the forces. To put numbers on it, if next year is 100 per cent of our physical strength, then this year we've been at 75 per cent."

F1 is entering a new age and even ignoring the aesthetics, these are exciting times. Not since the 1960s have rules been introduced to deliberately make Formula 1 faster. The cars will be good to look at. The timesheets, too. 🏁



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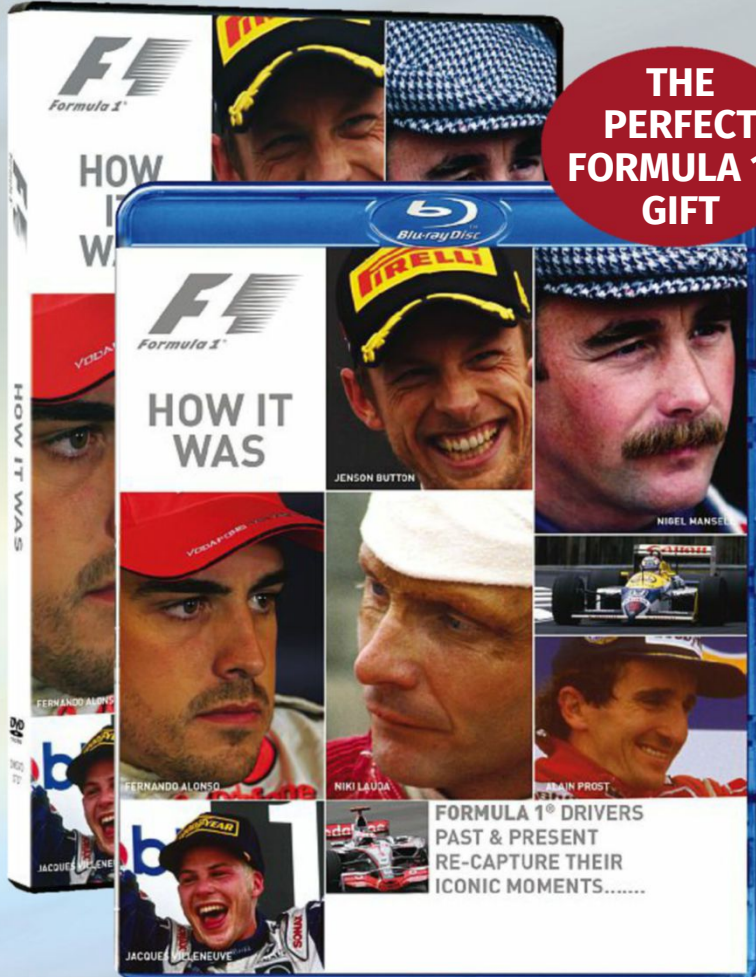




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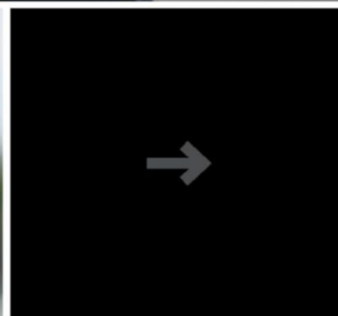
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“That’s motor racing”

Over the course of 50 years on the front line of F1, Ron Dennis evolved a simple three-word catchphrase that encapsulates, with exquisite clarity, our favourite sport’s rich tapestry of soaring competitive success and dispiritingly dismal quirks of fate: “That’s motor racing.” Now, as Ron departs McLaren’s top job, we celebrate five decades of highs and lows for Formula 1’s most successful team leader



WORDS
STUART CODLING

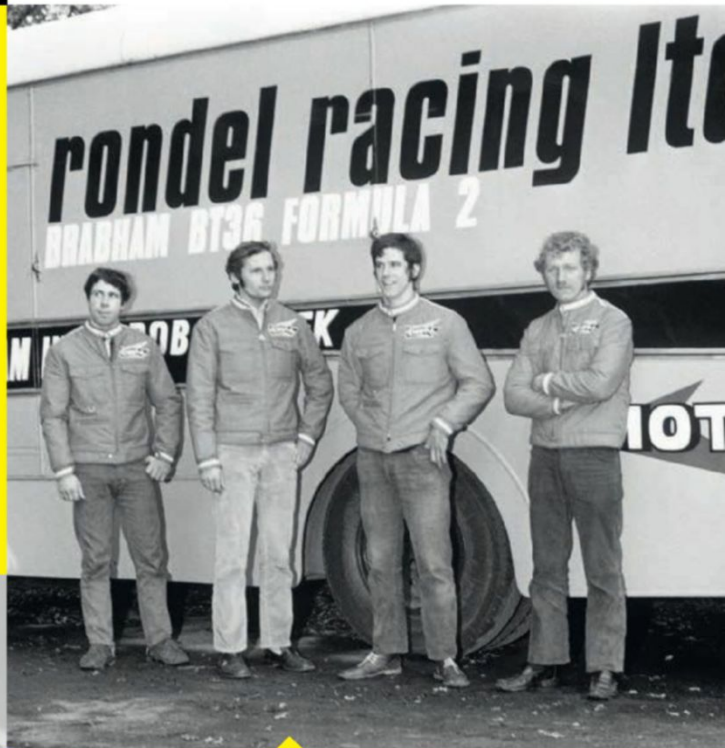


PHOTOS: LAT IMAGES; SUTTON IMAGES; NILS JORGENSEN/REX/SHUTTERSTOCK



FROM BOLTER TO RUNNING THE SHOP

Ron Dennis was a teenager, working as a mechanic for Cooper while studying for a qualification in motor vehicle technology, when he was picked to work on the team's third car at the 1966 Mexican Grand Prix. Eyes opened to the magic of motorsport, he earned key allies through his meticulous approach: when Jochen Rindt moved from Cooper to Brabham, he took Ron with him. Dennis's next move was to try his hand at running a team of his own. It was a bumpy ride in the 1970s, but he built up credibility and, in 1980, his sponsor, Marlboro, engineered a merger between his Project 4 team and the ailing McLaren organisation.

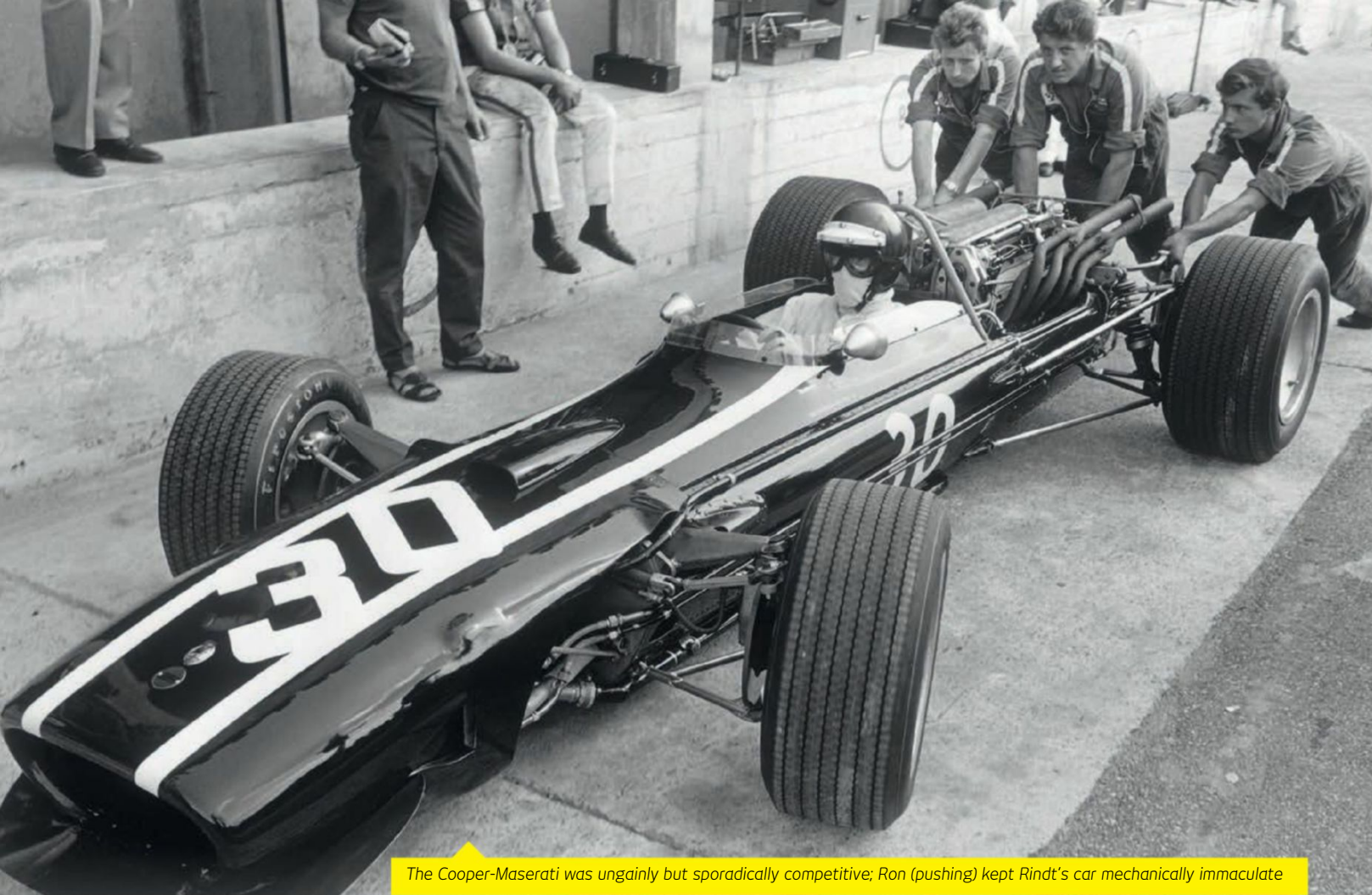


In 1971 Dennis formed Rondel Racing with Neil Trundle (third from left)

Ron was Jochen Rindt's mechanic at Cooper before they moved to Brabham

When Rindt switched to Lotus, Dennis worked for Sir Jack himself

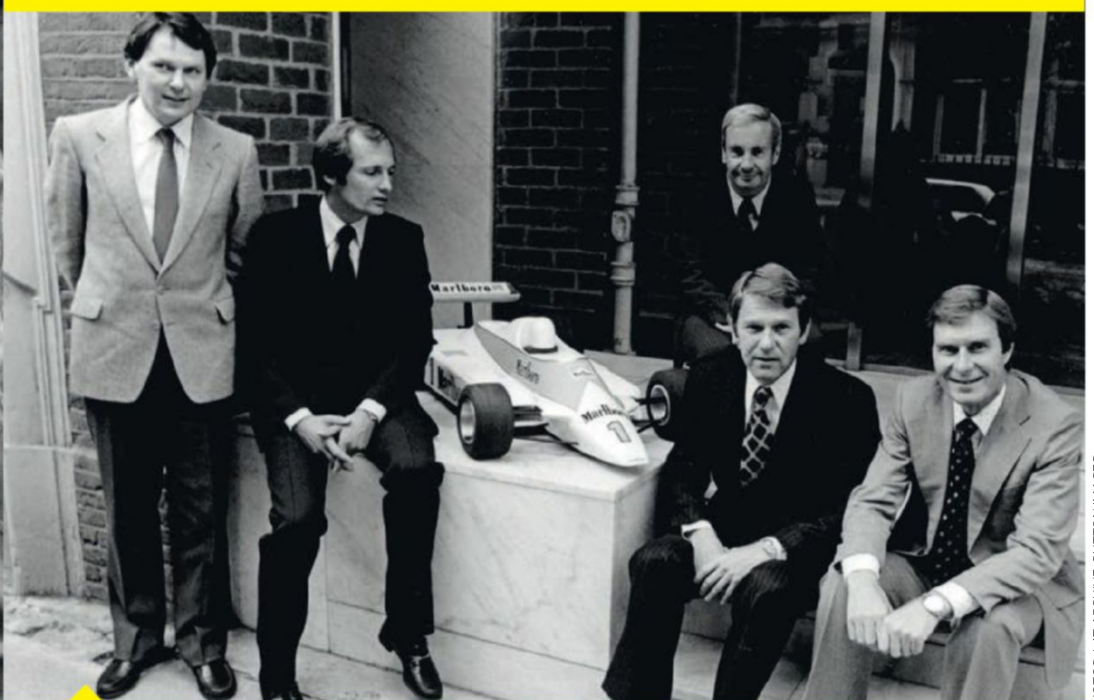




The Cooper-Maserati was ungainly but sporadically competitive; Ron (pushing) kept Rindt's car mechanically immaculate



By the late '70s, Ron had the resource to consider F1, with John Barnard (right) designing a carbon-fibre car for 1981



The merger of Project 4 with McLaren was uneasy at first; within a year Teddy Mayer (rear of picture) had left →

PHOTOS: LAT ARCHIVE; SUTTON IMAGES



A REVOLUTION IN RED AND WHITE

Armed with Marlboro cash and a mandate to implement his high-tech vision, Ron hired designer John Barnard and pushed through the first F1 car to be built around a carbon-fibre tub. Its success made the technology ubiquitous, but Ron stayed ahead of the game by signing key partners – TAG funded development of a new turbo engine – and the best drivers. He persuaded Niki Lauda out of retirement and put together the combustible Alain Prost-Ayrton Senna superteam. TAG made way for Honda, and then (after fallow years with Ford and Peugeot) Mercedes. McLaren had become the best of the best.



By 1982, Ron was in complete control of McLaren, having bought out Mayer



McLaren clinched their sixth constructors' title under Ron in Australia 1991

The reception at the Albert Drive factory soon ran out of space for trophies



Alain Prost, alienated by McLaren's previous management, returned to the fold in '84

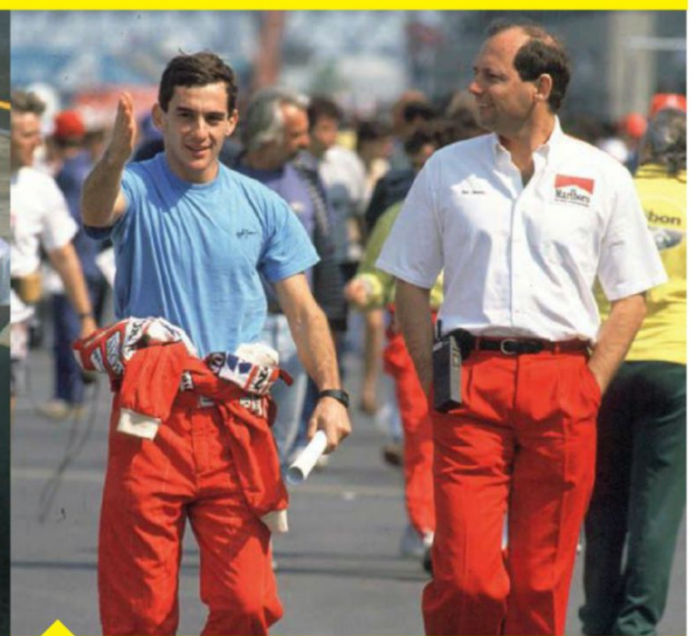




Senna didn't always 'get' jokes, so Ron poured a bin filled with water over his head...



Luring Niki Lauda out of retirement, and motivating him, was a great coup



Famously, Dennis and Senna settled a contract on the toss of a coin



Ron showed a keen eye for talent, signing Mika Häkkinen in '93



Frank Williams was a rival on track, but very often a political ally →

PHOTOS: LAT ARCHIVE; SUTTON IMAGES



FAST FINNS AND FANCY ARCHITECTURE

Ron ensured McLaren rode out a mid-1990s lull – which coincided with Marlboro leaving to focus on Ferrari – by hiring technical wizard Adrian Newey. Now clad in silver, McLaren-Mercedes won the 1998 constructors' championship, plus drivers' titles in 1998 and 1999 with Mika Häkkinen, and might have added more with Kimi Räikkönen but for the rise of Ferrari in the early 2000s. Away from the track, Ron oversaw the construction of a temple to his detail-obsessed vision: the McLaren Technology Centre, where the many parts of the McLaren business (including a marketing and an electronics company) could sit together under one roof.



The award-winning McLaren Technology Centre still looks stunning today



Häkkinen found repeated title battles stressful

Celebrating 500 GPs for McLaren, with the team's founding father, the late Tyler Alexander, in 2000





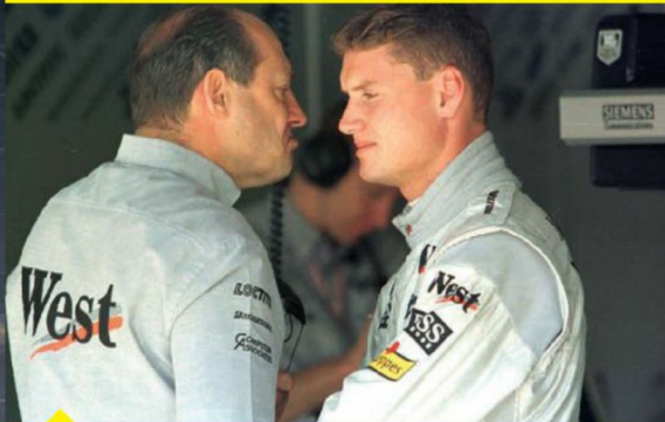
Her Majesty The Queen officially opened the McLaren Technology Centre in 2004



Dennis plucked Kimi Räikkönen from Sauber after his rookie season



Signing designer Adrian Newey was a boost after the mid-'90s drought



San Marino '98; DC has just gone half a second quicker than Mika...



Ferrari put McLaren on the back foot in the early 2000s – but McLaren still won races



Dennis and Williams often united in opposition to Ecclestone's deals →



THE BEGINNING OF THE END

Unleashing Lewis Hamilton on the world should have been Ron's greatest triumph. Instead, his 2007 superteam (featuring Vodafone sponsorship and with champion Fernando Alonso in the other car) imploded as Hamilton and Alonso fell out and a McLaren designer was caught with Ferrari intellectual property. The scandal enabled Ron's nemesis, FIA president Max Mosley, to humiliate him in public, ending in a vicious \$100m fine and the deletion of constructor points. Hamilton won the title in '08, but it would take more than that to repair the damage.



Dennis had signed Alonso at the end of 2005, before he won his second title



A stage-managed handshake between Max Mosley and Dennis at Monza resolved nothing

A year after the 'Spygate' scandal, Lewis Hamilton won the championship



Relations with Ferrari thawed, helped by common enmity with Max Mosley



After contemplation, Ron chose to step aside for his long-time deputy in '09 →

PHOTOS: LAT ARCHIVE



NEVER GO BACK

After stepping aside to let long-time understudy Martin Whitmarsh take over as F1 team principal, Ron demonstrated his entrepreneurial credentials by relaunching McLaren Automotive as a multimillion-pound engineering powerhouse to rival Ferrari. But this drove a wedge between McLaren and Mercedes, and when Dennis ousted Whitmarsh in a 2014 boardroom coup to extend his control over the whole McLaren empire again, his fellow shareholders took umbrage. Ron had to find new investors as well as putting the F1 team back on course...



The whole team marked the passing of Jenson Button's father, John, in early 2014



Ron was back on the scene for 2014, but new hire Eric Boullier was in charge of the team



PHOTOS: LAT IMAGES

A big bet on the future in 2015: an older, wiser Alonso returned, along with Honda 🇪🇸



At a low ebb in 2014, McLaren clearly lacked sponsors and the car was poor

Alain Prost

What a life; what a career; what an F1 story Alain Prost has to tell. How better, then, to revisit the back catalogue of this four-time world champion than by presenting him with the questions of friends, rivals, peers and acolytes

WORDS ANTHONY ROWLINSON **PORTRAITS** STEVEN TEE/LAT

Quietly at first, but with growing conviction, Alain Prost leafs through the stack of questions supplied to us by the great and the good of Formula 1. This method means we're not starting at the beginning and working to an end; we're diving in, focusing on highlights and stepping off into questions of character.

And, on this hot-baked Abu Dhabi afternoon, Prost seems to have all the time in the world to answer questions and share a personal account of some of the most memorable moments in F1 history. Ayrton Senna and Ron Dennis, of course. But also cycling and parenthood. Then the business of competition, of *winning*, and articulating what it takes to become a champion.

Every now and again a living legend just wants to open up and start talking. And when they do, *F1 Racing* is here to listen...

You and Senna at the chicane at Suzuka in 1989? Whose fault was that? [Brundle is referring to the infamous coming-together between these two titans – team-mates and bitter rivals – at the 1989 Japanese GP. The clash settled the title in Prost's favour.]

Martin Brundle

Sky Sports F1 commentator and ex-F1 racer

There is no fault. I know a lot of people... maybe they don't understand. It depends whether they are fans of Ayrton or fans of mine. But during this race, I was under control. I was really, really under control. Before the race I said to Ron [Dennis, McLaren team boss] and I said to Ayrton that if I'm in a situation where I have to, I'm going to open the door, because I had done so many times already in 1988 and '89.

If you remember I worked really hard on the race setup, but Ayrton was much quicker in qualifying, which was not a problem. I was much, much quicker in the warm-up and I really had the race under control. And when he went through the chicane... [Prost puts both his hands in front of him and shoots right in front of left, to indicate Senna's manoeuvre] he really came very fast. At that point, if I had opened the door [to let Senna pass] I would not have made the chicane myself. And that was not a possibility for me if I wanted to be world champion. So there's no 'fault' – he tried and I did not put the car in front of him enough. In fact, I was surprised by the speed he was coming, so obviously we touched. It was not a big impact but I think it's very important to say this: people still say that Senna wasn't world champion because of that →



moment, but if you look at the results, he also had to win the Australian GP to be champion. So even with this win it wouldn't have made any difference in the championship.

What advice do you have on how to manage two championship-contending drivers within the same team?

Paddy Lowe

Executive director (technical), Mercedes

You have to be very careful in Formula 1 about giving advice, because every situation is very different. In my time with Ayrton I didn't think it was fair sometimes. It's all relative to psychology. And when you start to show that you have a preference – even if it's not very concrete – then you make it difficult to keep a balanced system, and it doesn't work.

Having said that, it's very difficult. I remember in 1989 that some of the people close to us, and often some media, could make an unbalanced feeling. And that was then. Imagine what it's like now with social media all around us. You have to adapt yourself all the time and what Mercedes have done is not bad at all.

F1 Racing: Do you see parallels between Lewis versus Nico, and you and Ayrton?

AP: Yes, because of the domination. If Mercedes weren't dominating the world championship, and they were fighting really closely with another team, the situation would be a little bit different. And I would not give any advice except: 'be careful not to show one of the drivers a preference'. Because when you do, you destroy the whole team.

Is there anything you regret about your years with Senna at McLaren?

Jo Ramirez

Former McLaren team coordinator

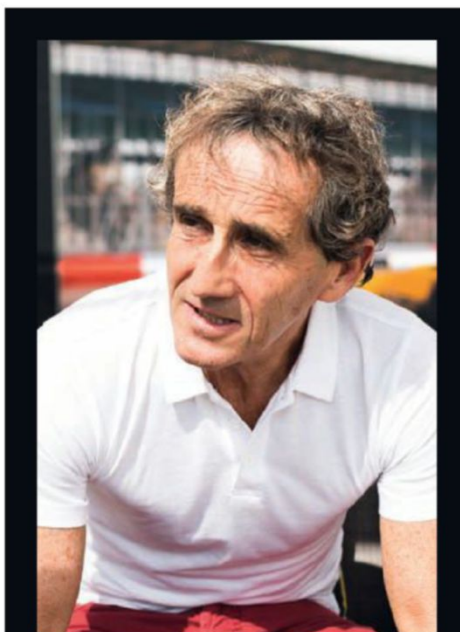
I think that if I regret something, it is that I had a bad relationship with Ron [Dennis] at the end of 1989, considering that he's a person I really had – and still have today – great respect for. Ron was even an example for me when I ran my own Formula 1 team [Prost GP]. That's what I regret most about my time at McLaren, to be honest. Five or six years later I came back to McLaren to work with him. But I regret that I finished with bad relations in 1989.

Did the turbo era suit your style, or did you make the car suit you?

Allan McNish

Le Mans winner and ex-Toyota F1 racer

I think I made the car suit me. The most important thing was to have the maximum of elements you could change on the car – chassis, engine, and so on – for me, that was the best.



"I had to work hard to become a racing driver. I had no money and nobody helped me so I had to do everything myself... that gave me respect for the technical aspects"

Today, I don't know that I would suit this situation where drivers can't change things.

Would you have enjoyed driving this generation of Formula 1 cars?

Anthony Davidson

Sky Sports F1 pundit and former BAR F1 racer

In Austria last year, I drove my car from 1985. And I've driven a few times a Red Bull and the Lotus-Renault at Paul Ricard. For sure, when I get back in the car, I really enjoy it more in my car. Is it because I remember and I knew what it was? To answer this question honestly, I would have to adapt myself to the new systems. But if you ask me which car I prefer to drive, then it's the one from my generation.

F1R: A few weeks ago we were at Silverstone with Damon Hill, to watch him test his title-winning FW18 and he got out of the car with the

biggest smile on his face saying it felt exactly the same as when he was racing.

AP: That's because you feel everything. It's very different now.

As a driver you always seemed to be in the right place at the right time. How did you manage that?

Ivan Capelli

Ex-Ferrari, Tyrrell and Jordan F1 racer

Ha! Well maybe I was in the right place a good percentage of the time – but not all the time. It's also a question of your basic philosophy. First of all, it very often depends on your education. It's crazy to say that, maybe, but I had to work hard to become a racing driver. I had no money and nobody helped me so I had to do everything myself and had to learn how to prepare the kart, the chassis – everything. That gave me a perfect respect for the technical aspects of everything.

Then my brother became very ill when I was racing [Prost's younger brother, Daniel, died from cancer in September 1986] and I had to consider these kinds of things for my family. The 1982 accident with Didier [Pironi drove into the back of Prost's Renault at the 1982 German Grand Prix and sustained career-ending leg injuries] did make me think 'how can I do this?' because I didn't like crashing – not because you lost the race, but because you had to fix the car!

Even damaging the front wing was a bad feeling for me, so I used to say to myself: 'I need to do the best work possible, to be able to drive only at my preferred per cent – not 101 per cent'.

That led me to prepare better. If I was racing now, maybe my philosophy would be different. But we used to change everything – brakes, fuel, engine, setup – between qualifying and race, so I really worked much more on the race setup.

Was I the most scary team-mate you ever had [Prost and Alesi were partnered at Ferrari in 1991]?

Jean Alesi

Winner of the 1995 Canadian Grand Prix

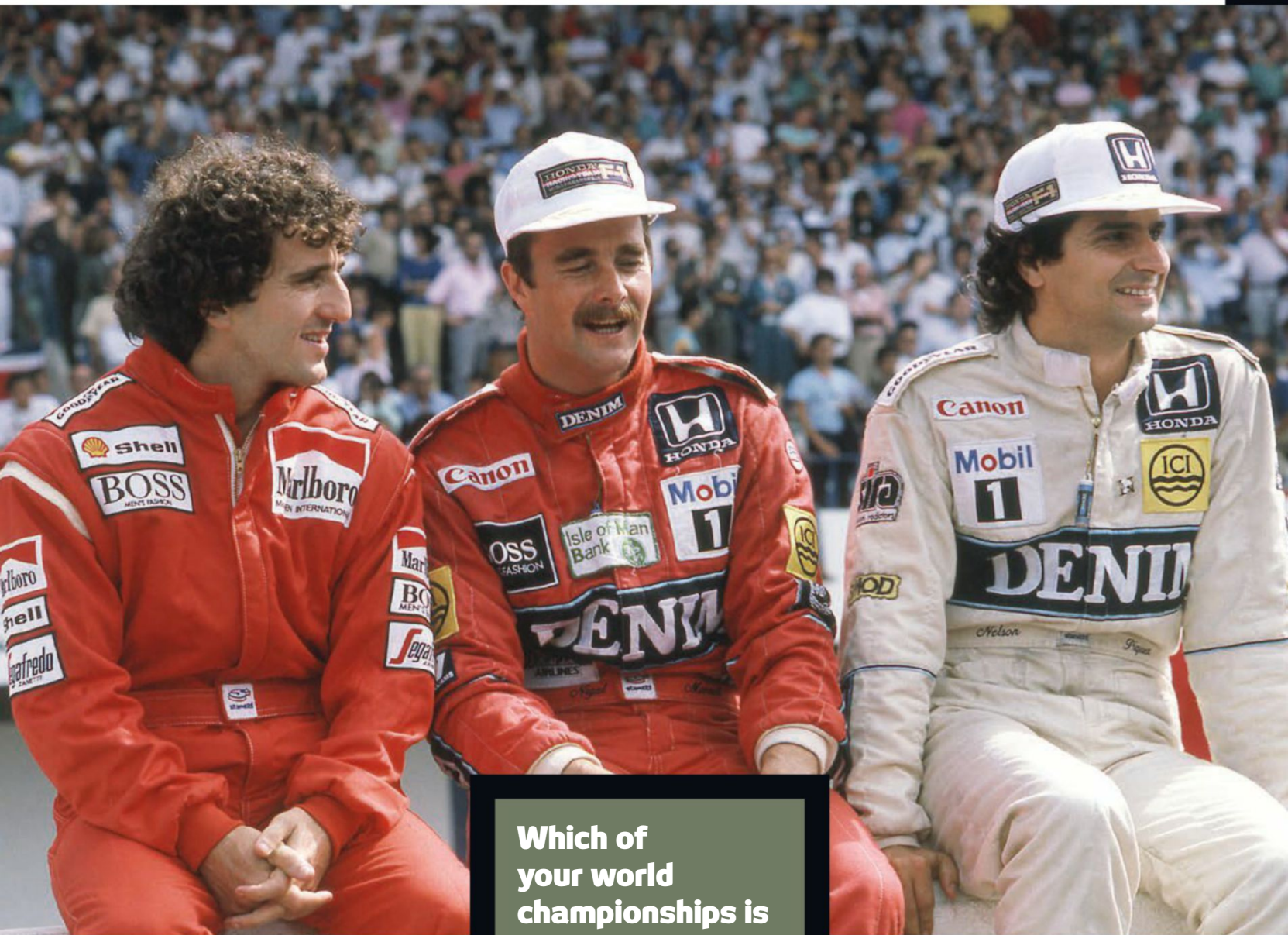
Scary? Well I was scared by Ayrton sometimes, because of the way he behaved around God. It gave the perception, especially at the start of a race, that we weren't exactly the same and sometimes I was feeling sick. But scared with Jean? No.

How much did you weigh when you were racing, and did that give you an advantage?

Valtteri Bottas

Williams F1 racer

When I was racing I was heavier than now. I was around 60-61 kilos. Now I am 57.



Which of your world championships is your favourite?

Carlos Sainz
Toro Rosso racer

It's 1986, for one reason: my car was not as good as the Williams-Honda. I had a good team-mate, Keke Rosberg, and this championship was a really good example of how you can optimise almost everything with the team and drivers and we finished by winning the title.

F1R: It's all that cycling.

AP: People who work in Formula 1 know that weight has always been an advantage. I remember testing with McLaren and Ferrari and there were some places where even a ten or 15 kilo increase didn't make any difference. Today, if you do that, you're an idiot, because the whole car is so optimised. Extra weight makes a much bigger difference.

The advantage I had from being small wasn't always so great. I remember one year at McLaren, with the gears *here* [Prost makes a fist from his right hand and raises it in front of him] I had to put myself more at the front of the cockpit. And very often I was like this [he hunches and contorts his body forward, right shoulder down] and I still have – look at that [he indicates a nodule of knotted gristle, the size of a marble, on his right shoulder blade]

– twenty-five years later. Just because I had to change gear in a different way.

And because I was sitting further forward, I really had my feet in the middle of the suspension, so I had much less space. But I can understand that some people like Nigel [Mansell], who was 75 kilos, sometimes had a disadvantage. But that is our sport [laughs].

Is it true that when you were at Williams in 1993, the team had an option on Senna and you refused to let them take it up, so they couldn't have Prost and Senna at Williams at the same time?

Emerson Fittipaldi

F1 world champion in 1972 and 1974

No, not true. The truth is that when I signed the contract with Frank [Williams], it was a three-year contract and I said to him: "I don't want →



to be number one, I don't care, I've never been number one in a team. The only thing – which I'm sure you understand – is that I want to fight against Ayrton, because he is The Man. But I will never accept Ayrton in my team any more.” And he said: “Yeah, no problem, we understand that.” So I signed the contract saying that I'm not number one, but that Senna cannot be with me. But during the season we were pushed by [engine supplier] Renault, who wanted Ayrton. Frank came to me, I remember very well – I was in the south of France, he came specially with a private plane – to say: “Alain, I'm sorry, but I have a lot of pressure. I have pressure to have Ayrton in the team.” And I said: “No, you cannot have my agreement to this, because that's the key of everything.”

Then, eventually, during August, I picked up the phone to Frank and said: “Okay, if you want to have Ayrton, you take Ayrton, and I'll retire. If I retire I want to have my contract paid for next year [1994]. If Ayrton wants to come, and it's going to be free for him, I want the money as if I was world champion.” And that's how it was.

I let him go; I'd had enough of this situation.

Frank Dernie [ex-F1 technical director] says that you were unbelievably quick when you tested the Ligier at the start of 1994. Was there any chance of you racing for them that year, and how competitive would you have been?

Karun Chandhok

Ex-HRT F1 racer and Channel 4 technical expert I think that was 1992, actually. I do remember the car was really good and the engine was good. I was talking at the time to buy the team and be a driver and we did not manage to find the right package, for different reasons – not just financial but more political. And at that time I didn't want to be only a driver.

Why is it that no French driver has ever won a world title with a French team? [Prost, the only French Formula 1 world champion, won three titles with McLaren – in 1985, '86 and '89 – and one with Williams in 1993.]

David Coulthard

GP winner and Channel 4 F1 commentator Formula 1 is an environment that's really English. The relationship between the English and French is sometimes difficult, but when they're working well, they work very well together. But it's not that easy.

Speaking for myself, I don't feel French, I've never felt French and I think that's why I was successful. But I really love working with the English, Japanese people, Germans, Italians,

Americans, Indians... I sometimes found the Japanese mentality difficult, but it's not a question of preference, and a lot of French drivers did not manage to do the right thing to become a top Formula 1 driver in this kind of environment. Having said that, for sure Didier Pironi deserved to be world champion at Ferrari.

It's a question of mentality, of managing the people inside. It's almost a closed world that you have to get in. You have to be accepted. For me, okay, I was a Frog [laughter] but they knew that I didn't have the 'Frog' mentality.

What were the most surprising things you learned when you changed career from racing driver to team owner?

Pat Symonds

Former Williams chief technical officer

That's a good question, because a lot of people think I was surprised – I was not surprised. The only thing I was surprised about was the difficulty of the politics in France. When you have a company in France, first of all you are competing against a lot of teams that are English, and you are not fighting with the same rules. In five years with my own team, 95 per cent of my time was spent trying to fix all of these problems with the structure, taxes and everything and finally trying to find sponsors. And I was not surprised at all by the work itself. Because I knew it would take a long time. It's a shame, because after the fifth year I think my team was starting to be at the right level with the organisation.

But I knew it would be difficult: I said to my close people, three months after starting: “I am dead.” We had a change of politics in France and all the people who had wanted to help the project did not help any more.

If you could have signed any driver for your Formula 1 team, who would it have been, and why?

Guenther Steiner

Haas F1 team principal

I don't remember who was available at the time, but, in fact, I wanted to sign Alonso very early, when he was still in F3000. We were close to making a deal in three parts, between Fernando, Ferrari and myself, because Prost GP had a Ferrari engine. I don't remember the other drivers at the time. In my position, then, you had to consider the best drivers are not so cheap.

Have you found it difficult to adapt to life after racing? Are you over your career?

Damon Hill

F1 world champion in 1996

I had two or three months when it was very difficult, I must say. When you retire you have →

Why did you come back in 1993 and did you feel sure that you would win the world championship?

*Romain Grosjean
Haas F1 racer*



You know, I did not want to leave Ferrari in 1991. I had a proposition, I was talking at the time about being a driver and a sporting director at the same time and, for sure, there were a lot of politics. Nobody knows exactly what happened at Ferrari because it was absolutely unbelievable. I was fired only because of that and they only found the excuse of 'the truck' because they had to find something. Did you see the interview yourself?

F1R: You're talking about when you called the 1991 Ferrari “a truck”, giving them an excuse to fire you...?

AP: Yes, but have you ever seen the interview? Try to find someone who did. Because when we wanted to go to court [over Prost's dismissal] we asked for it, but the team could never find it. That's interesting, don't you think?

This cryptic revelation – suggesting a Maranello-authored stitch-up – casts new light on his departure from the Scuderia. He continues...

So, in fact, to answer your question, I did not want to stop. I almost signed for Williams immediately – very, very quickly – but it couldn't happen and maybe it was the right decision for me to go on a sabbatical year and then come back. I wasn't sure – you're never sure that you are going to be world champion – but the break was a good thing for me and I also saw Formula 1 with a little perspective.

Prost on his way to P2 for Ferrari at the 1991 US GP. He didn't win any races that year, and was sacked just before the Australian GP



one week that's a dream. You wake up at ten o'clock in the morning, you rest, you do different things and then after one week you say: "Shit, I'm not going to wake up at ten o'clock every day." My son was going to school at seven-thirty in the morning and I was still sleeping. So you are in a different situation. I never knew this kind of situation. I started working when I was 14, around school.

So there was a time when it was difficult for me to manage everything, because I had no objective any more, no goal. And you need to have a goal in life, or a passion – you always need to have something.

But I think that the most important thing to understand is that when you have been

in Formula 1 as a winning driver, winning championships, you can never have anything as good as that. So you have to forget that and just look at being a little bit different.

And that's where I am now. I still do something with passion [Prost remains actively involved in motorsport, through Renault F1 and Formula E], I still have my hobbies and my family – I work maybe a little bit more than I should because I am a lot happier when I am involved in something.

But the most difficult thing is to compromise and balance the time you want to spend on your life, your family and for you. It's the most difficult thing, but if you are passionate and professional, it always goes like this.

What made you more nervous: racing, or watching your son [Nicolas] race?

Nico Rosberg

Formula 1 world champion

[A long, rueful grimace passes across that so-expressive, famous face] Watching my son race – especially at the beginning. I remember one huge crash he had at Le Mans, but he's getting better and better. To be honest, there was a time in Formula 1 where we were really stressed, because there were a lot of accidents, but the feeling was never the same. Some races with my son were very difficult.

FIR: So that's the parent in you?

AP: When you are a racing driver, you want to be in complete control. In 1982, when Didier



If you could turn back time, is there any one thing you would have done differently?

Toto Wolff

Head of Mercedes-Benz motorsport

I suppose the easy thing to say is: "Okay, I would not accept Ayrton at McLaren." But, at the time, I remember being in Japan with Ron, and I was the one saying: "Okay, you want to take Nelson [Piquet]... why Nelson? I like Nelson, we're quite good friends, he's the same generation as me. But why don't you take Ayrton? He's the future."

And I pushed McLaren because at the time they were my family and I was doing everything possible for sponsors and for the team. So yes, to answer the question, maybe I would have changed that. But when you are in your racing career, decisions you make are like decisions when you're driving. You think it's for the best. I have never thought only for myself. I focus on the team, on the interests of people around me, and when you have this kind of philosophy, you never regret anything. Although to answer the question, I would say: "Yes, maybe this one thing."



Pironi had the accident with me [Prost is again referring to Ferrari title favourite Pironi's career-ending collision with Prost's Renault during qualifying for the 1982 German GP], I was Alain Prost, racing driver, and under control. When my son is driving, I have no control.

What would you most want to change about Formula 1 now?

Sergio Pérez

Force India F1 racer

That's the question that everybody asks. There have been so many changes over the past few years that it's very difficult to change something radically. I read an interview with Ross Brawn saying we need to have a strategy for the next

three or five years. I agree with that. Because as soon as we change one thing you can introduce a negative aspect, so you need to have a strategy.

And you also have to be very humble. I remember when we were introducing the new Formula 1 engine three years ago, I was part of supporting this engine, and I was really, really disappointed by the fact that the perception of the public and fans was not very positive. If you saw a manufacturer's new road car and it had the same power – or even better – with thirty per cent fuel consumption, that would be interesting, wouldn't it? You would want to understand how it works. But all the communication we did around the hybrid engines was not good – that's just one example.

The one thing I would *really* change if I could is the overall philosophy – the fact that we need to show people that the job of a Formula 1 driver is much more difficult than it's perceived to be by the people outside.

That's why I have never been in favour of live radio communication, because I don't think it gives a very good perception of the situation.

Do you think you could you beat every current F1 driver on your bike: (a) on the flat; and (b) in the mountains? [Prost remains an avid cyclist, competing regularly in masters events and using the fearsome Mont Ventoux as part of his training routine.]

Alex Wurz

F1 consultant and chairman of the GPDA

On the flat maybe not, because my power and my size would not help me. But in the mountains, yes – especially if they are longer.

Which drivers most inspired you when you were young?

Marc Gené

Ex-Minardi racer, Ferrari tester and TV pundit

When I was younger, there were quite a lot of them. Maybe Jackie Stewart was the biggest inspiration of all to me, because I didn't know Jim Clark's generation. But I was also a big fan of James Hunt when he started out in Formula 1 and obviously Niki Lauda when he was at Ferrari.

When I started out in Formula 1, we had Clay Regazzoni, Jody Scheckter, Emerson Fittipaldi, Carlos Reutemann, Alan Jones – all the French guys, and a huge amount of strong characters. And this builds you. I remember at my first race [the 1980 Argentine GP] being accepted by these guys. We were talking and they were almost giving advice – they were very open and very helpful. For sure, people like Jackie, like Niki, all these guys, Emerson and Carlos – I was looking up to them.

Being team-mates with Niki [in 1984] almost ten years after his first title was, for me, unbelievable, because ten years before that, I was still a child.

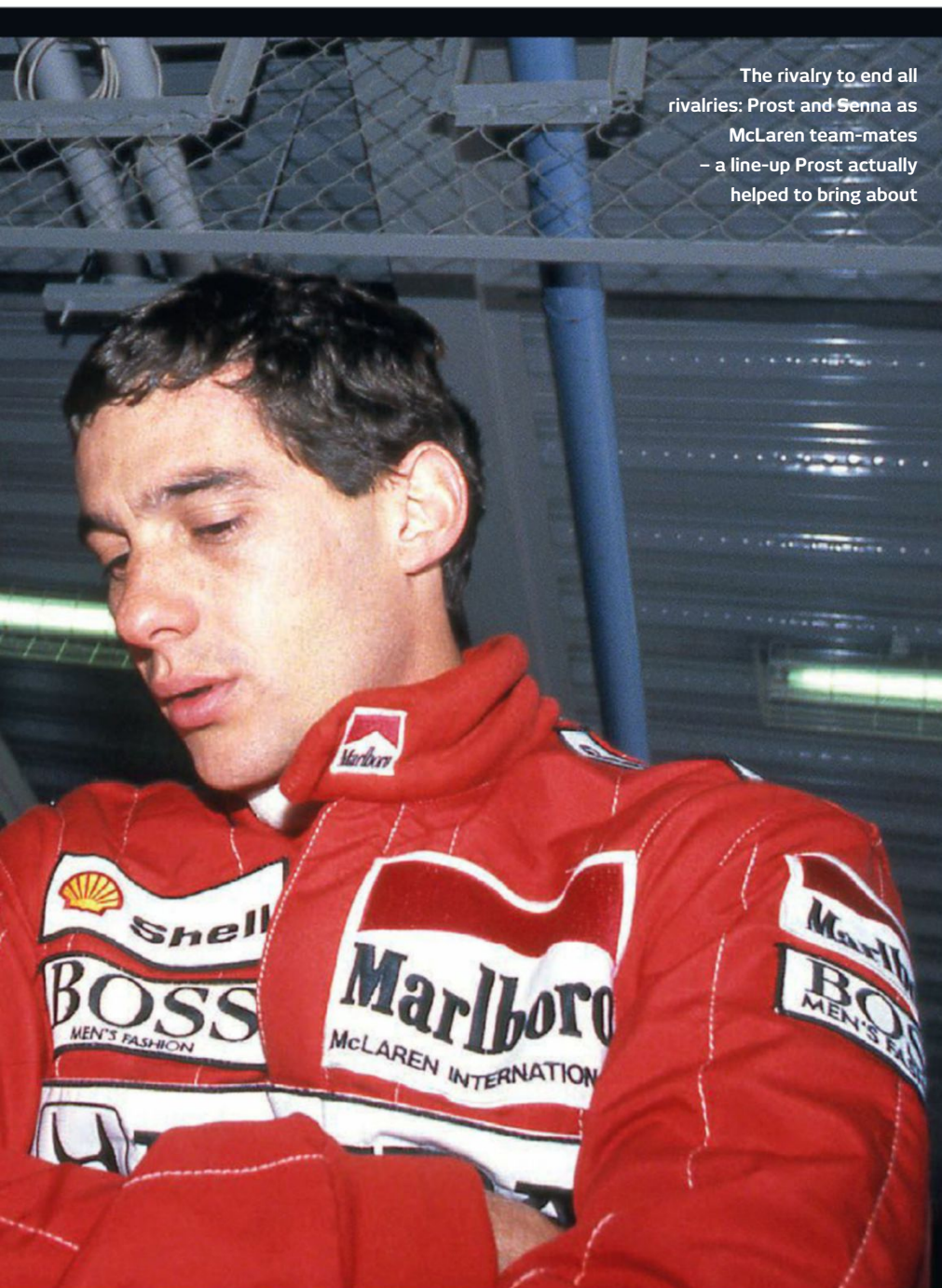
How many girlfriends have you had?

Niki Lauda

Three-time champion and Mercedes chairman [This bold probe pulls Prost up short and brings forth a peal of laughter – though he manages not to blush] One!

F1R: We're very sorry, but that is actually Niki's real question...

AP: No, no, no! Niki was my hero! How can I answer...? Never enough! 🍷



The rivalry to end all rivalries: Prost and Senna as McLaren team-mates – a line-up Prost actually helped to bring about





The Honda Civic Type R purrs with each dab of Stoffel Vandoorne's right foot. He adjusts the seat incrementally to position himself the perfect distance from the steering wheel, arms relaxed, hands at quarter-to-three. The exhaust crackles in the crisp autumnal air and we begin our journey south towards Ise Bay, with the glistening vista of the Pacific Ocean beyond.

Vandoorne has spent the morning visiting the Honda engineers and mechanics at a road-car facility in Suzuka, just a ten-minute drive from the iconic grand prix track. As we leave the plant,

drivers who have competed in the Far East en route to F1, including Eddie Irvine and Jacques Villeneuve. But he's inevitably found that, on occasion, his words have been lost in translation.

"For me to come here and to work in a completely different culture took some time to get used to in the beginning," he says, bringing the Civic to a halt at a red light. "Working in a Japanese team with only two people I can talk to wasn't easy, but it was a good experience to understand how they operate at a race weekend.

"There have been a couple of phrases that I've been learning over the past year," he continues, "but it's hard to have a proper conversation. I can manage when I jump into a taxi or order some food. And I've learned some funny words because the Japanese love it when you say even just a few words to them. It makes them laugh."

As we approach the junction of the Suzuka track, Vandoorne makes a right turn to head to the circuit hotel. He cheekily cuts in front of a queue of cars to the clear disgust of one motorist. "Sorry!" laughs Stoffel. "*Arigatou gozaimasu!*" he adds, showing off some of the Japanese he has picked up over the past year.

As well as learning the language, Vandoorne has been getting to grips with a very different sort of car in Super Formula, one that he says is nothing like anything else he's raced before. It explains why he's been competitive, but hasn't romped away with the title.

"The Super Formula car is unlike anything I've driven in Europe," he announces. "They have turbocharged engines and the way they handle feels different. If you compare Super Formula with Formula 1 it would be interesting to do an overlay and see the difference in the high-speed corners. It's probably quite similar, but the lap time is not as low because there is much less power in Super Formula."

As we approach the gates to the Suzuka circuit hotel, Stoffel lowers his window and exchanges a few words of Japanese with a smartly dressed man, who nods and raises the barrier. "I told him I'm staying here," says Vandoorne.

With his experience in Japan now at an end, Stoffel faces a hectic few months. He'll spend more time on McLaren's simulator in Woking, and focus on building up his strength in the gym for the big step up that will be required to drive the new generation of F1 cars.

"With the new regulation changes we don't know where we'll be," he says as he parks up at the hotel. "Hopefully we can move forward and make our way to the top."

And, with that, he takes the keys out of the ignition and collects his bag from the boot of the Civic. The final year of Vandoorne's apprenticeship in Japan is over, but the partnership with Honda is just beginning. 📍

A RIDE WITH STOFFEL

McLaren's new ace says goodbye to Japan after a year of keeping his race technique on the boil in Super Formula

WORDS JAMES ROBERTS PORTRAIT STEVEN TEE/LAT

all the workers – dressed in identical white boilersuits and green Honda caps – come outside to say goodbye to Stoffel.

The young Belgian is bidding farewell to these shores after a season racing in Japan, the final stage on the junior formula nursery slopes before F1 – and an important opportunity to cultivate a relationship with McLaren's engine partner Honda. Just before he exits the factory gates, he mashes his foot on the throttle and wheelspins away, to cheers of delight from the Honda staff.

"After winning in GP2 in 2015 there weren't many options, so I decided with McLaren and Honda to come and race here in Japan in Super Formula, [think GP2-level machinery] which was probably the best thing for me to do.

"These are competitive cars and we race on challenging circuits. What was important for me was to build a strong relationship with Honda, which is massively important for the future. This year wasn't a lost one for me. It's been a year of new experiences, even though it wasn't in F1."

Vandoorne was racing for Docomo Team Dandelion Racing, scoring a podium at Suzuka on his debut (just three weeks after he stood in for Fernando Alonso and took points on his F1 debut in Bahrain) and he collected his first Super Formula win at Aida in September.

By immersing himself in the culture of Japan, he's followed in the footsteps of other European

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53

AND COUNTING



WORDS
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Okay, so Nico edged Lewis out of the 2016 title race, but Hamilton still won ten races last year, to bring his career tally to 53 and underline his position as F1's driving benchmark. As the sport takes a between-seasons breather, we take a fond look back at all of Lewis's victories – so far...



1 Montréal, Canada

10.06.07

Car McLaren MP4-22

Grid 1st

Podium Nick Heidfeld, Alex Wurz

It's difficult to imagine now, but when McLaren announced that they were going to pair untested rookie Lewis Hamilton with their new signing, double world champion Fernando Alonso, it caused a real stir in the paddock. Some prominent figures questioned whether it was too much too soon for 22-year-old Hamilton.

He silenced his critics by finishing third on his debut. And then, in what was only his sixth F1 start, in Canada,

he made his maiden visit to the top step of the podium.

The groundwork for this first win was laid down in qualifying, when Hamilton outpaced Alonso by almost 0.5s to take his first F1 pole. Lewis led from the start, unable to relax in a race interrupted by Safety Cars – including one for Robert Kubica's terrifying 140mph collision with a wall. But he hung on to take an emotional win.

"I'm on another planet after this," he said. "It seemed every time I opened up a bit of a gap, the Safety Car came out and I had to start again. It was only a few laps from the end I realised victory was within my grasp and when I crossed the line it was amazing."

2 Indianapolis, USA

17.06.07

Car McLaren MP4-22

Grid 1st

Podium Fernando Alonso, Felipe Massa

From pole, Hamilton led Alonso into the first corner. After the pitstops Alonso was on his tail, but Hamilton defended his position assertively to claim his second consecutive win.

3 Budapest, Hungary

05.08.07

Car McLaren MP4-22

Grid 1st

Podium Kimi Räikkönen, Heidfeld

Following a controversial qualifying, when Alonso blocked Hamilton in the pits, Alonso was hit with a five-place grid penalty. That left Hamilton clear to lead every lap of the race.

4 Suzuka, Japan

30.09.07

Car McLaren MP4-22

Grid 1st

Podium Heikki Kovalainen, Räikkönen

The race started behind the Safety Car in torrential rain, with Hamilton leading Alonso. When Alonso aquaplaned off the track, Hamilton was left unchallenged up front.

5 Melbourne, Australia

16.03.08

Car McLaren MP4-23

Grid 1st

Podium Heidfeld, Nico Rosberg

Hamilton kicked off the 2008 season in style, with victory from pole in Australia. He had to contend with three separate Safety-Car restarts, but was still a comfortable winner.

6 Monte Carlo, Monaco

25.05.08

Car McLaren MP4-23

Grid 3rd

Podium Robert Kubica, Massa

Hamilton was incredibly successful around Monaco during his junior career, and on just his second visit to the Principality in Formula 1, he produced yet another brilliant drive.

Ferrari locked out the front row, but when the race started in the wet with all drivers on intermediate tyres, Hamilton wasted no time in dispatching Räikkönen on the run into Ste Dévote. As he gave chase to Massa, Hamilton clipped the barrier at Tabac, puncturing his right rear. He made it back to the pits where he was topped up with fuel and a fresh set of intermediates were fitted.

Such was the pace set by Hamilton and Massa, that the stop dropped him only to fifth. A pile-up at Massenet involving David Coulthard and Sébastien Bourdais then brought out the Safety Car and put Hamilton back into contention for victory.

That extra fuel allowed Hamilton to run deeper into the race than his rivals, and he set a scintillating pace, lapping by as much as two seconds a lap faster than Massa as the track dried. When Hamilton eventually switched to slicks he was so far ahead he managed to hold on to his lead to the finish.



PHOTOS: CHARLES COATES/LAT, ANDREW FERRARO/LAT, STEVE ETHERINGTON/LAT



7 Silverstone, Great Britain

06.07.08

Car McLaren MP4-23

Grid 4th

Podium Heidfeld, Rubens Barrichello

The all-time greats of F1 each have a reputation-defining wet-weather drive to their name. Whether it's Jackie Stewart at the Nürburgring in 1968, Ayrton Senna at Estoril 1985 or Michael Schumacher in Spain 1996, these are performances ingrained in the memory. For Hamilton, this moment came at Silverstone in 2008. In typically British sodden summer weather, Hamilton lined up fourth but made an amazing start to challenge team-mate Heikki Kovalainen for the lead into the first corner.

It took five laps, but a great move into Stowe earned Hamilton the lead, and, once free, he put in a peerless drive and set an incredible pace that no one else in the field could match. By the finish, he was over a minute ahead of second-placed Nick Heidfeld.

"It is definitely and by far the best victory I've ever had," he said. "It was one of the toughest races I have ever done. I was thinking out there: 'If I win it, it will be the best race I have ever done, not just because of the home crowd.' On the last laps I could see the crowd starting to stand up, and I was praying, praying: 'just finish'. You can imagine the emotions going on inside."

8 Hockenheim, Germany

20.07.08

Car McLaren MP4-23

Grid 1st

Podium Nelson Piquet Jr, Massa

Timo Glock's crash forced race leader Hamilton to make his second stop under the Safety Car, which dropped him down to fifth. He fought back with an inspired charge to victory.

9 Shanghai, China

19.10.08

Car McLaren MP4-23

Grid 1st

Podium Massa, Räikkönen

Hamilton made an exceptional start from his seventh career pole. From there, he established and maintained a comfortable gap at the head of the field to seal a straightforward win.

10 Budapest, Hungary

26.07.09

Car McLaren MP4-24

Grid 4th

Podium Räikkönen, Mark Webber

In a race marred by Felipe Massa's terrible accident, Hamilton took advantage of Alonso's botched pitstop to become the first driver to win an F1 race in a car equipped with KERS.

11 Marina Bay, Singapore

27.09.09

Car McLaren MP4-24

Grid 1st

Podium Timo Glock, Alonso

The F1 rules had been changed for 2009, with KERS hybrid technology introduced, and a cap placed on the extreme aerodynamics used previously. McLaren's MP4-24 was initially not one of the team's finest creations, but it was improved over the season to the point where Hamilton was able to put it on pole at the Singapore GP. In contrast, Kovalainen was almost 0.2s slower and way back in tenth in the second McLaren.

Lewis made a great start to take the initial lead, but this was neutralised when the Safety Car was deployed after Adrian Sutil collided with Nick Heidfeld. With Nico Rosberg out of contention due to picking up a penalty for running over the white line on the pit exit, Hamilton traded fastest laps with Sebastian Vettel until the latter was punished for speeding in the pits. This left Hamilton to cruise home for a hard-fought win.

"It was a great victory – not only for Lewis, but also for the team," said Martin Whitmarsh, McLaren's then team principal. "What Lewis did this weekend was a fantastic job. Although Rosberg and Vettel were piling on the pressure, we were always confident." →



12 Istanbul, Turkey

30.05.10

Car McLaren MP4-25

Grid 2nd

Podium Jenson Button, Webber

A great fight between the Red Bull and McLaren drivers was settled in Hamilton's favour when Vettel and Webber collided, leaving Hamilton to lead home team-mate Button.

13 Montréal, Canada

13.06.10

Car McLaren MP4-25

Grid 1st

Podium Button, Alonso

Another rules shake-up came in for 2010 – refuelling was banned – which once again mixed up the competitive order. This time, McLaren were on the pace from the off, although only once did Hamilton manage to put the MP4-25 on pole. That came about at the Canadian GP, where he shot off the start line to lead Vettel's Red Bull into the first corner.

In the early stages, Lewis withstood enormous pressure from Vettel, but he

14 Spa, Belgium

29.08.10

Car McLaren MP4-25

Grid 2nd

Podium Webber, Kubica

Hamilton took advantage of Webber's slow getaway to snatch the lead, which he held to the end despite an off-track moment and a brush with the wall at Rivage following a late rain shower.

15 Shanghai, China

17.04.11

Car McLaren MP4-26

Grid 3rd

Podium Sebastian Vettel, Webber

A fuel issue meant his McLaren almost didn't make it to the grid, but using an aggressive three-stop strategy Hamilton pulled off a great late move on Vettel to seal victory.

then lost a place to Alonso in the pits as the two almost banged wheels while leaving the pitlane.

In a race dominated by tyre strategy, Hamilton retook the lead as Alonso was distracted by a battle with the Toro Rosso of Sébastien Buemi. Once out in front, Hamilton had to gauge his pace to ensure he kept his tyres alive, while staying far enough ahead of the pack, headed by his McLaren team-mate Jenson Button.

"It was an incredibly challenging afternoon," Hamilton admitted, "especially in the last 20 laps, when I was trying to look after my tyres while keeping Jenson and Fernando behind me. It wasn't easy, I can tell you that!"



16 Nürburgring, Germany

24.07.11

Car McLaren MP4-26

Grid 2nd

Podium Alonso, Webber

Red Bull had dominated the 2011 season, winning six of the opening nine races. McLaren and Ferrari managed to steal the odd win, but Red Bull were the favourites at every grand prix.

It was no surprise, then, when Mark Webber took pole in Germany, but he bogged down at the start, which allowed Hamilton to move into the lead. Red Bull used the undercut to get Webber back into P1 after the first round of pitstops, but after the second round, Hamilton leapfrogged Webber in the pits.

Ferrari, however, managed to get Alonso out ahead of the pair of them and into the lead. Undeterred, Hamilton took full advantage of his tyres already being up to temperature and drove around the outside of Alonso through Turns 2 and 3 to pull off a sensational pass for the lead.

With a series of superb fastest laps, Hamilton moved away from the duel between Alonso and Webber for second place. With a comfortable lead, McLaren were able to call the shots with pitstop strategy over the final stops, successfully ensuring that Hamilton retained his lead – and he duly collected the win.

17 Yas Marina, Abu Dhabi

13.11.11

Car McLaren MP4-26

Grid 2nd

Podium Alonso, Button

When a puncture sent Vettel spinning out of the race on the opening lap, Hamilton was there to pick up the pieces and secure a relatively easy win – his first in Abu Dhabi.



18 Montréal, Canada

10.06.12

Car McLaren MP4-27

Grid 2nd

Podium Romain Grosjean, Sergio Pérez

The team's decision to pit Lewis for a late set of tyres was fully rewarded as Hamilton made easy prey of Vettel and Alonso, to claim a long-overdue first win of the season.

19 Budapest, Hungary

29.07.12

Car McLaren MP4-27

Grid 1st

Podium Räikkönen, Grosjean

Despite a slow pitstop, Hamilton managed to fend off the challenge of the fleet Lotus team-mates Räikkönen and Grosjean to claim a narrow win from pole position.

20 Monza, Italy

09.09.12

Car McLaren MP4-27

Grid 1st

Podium Pérez, Alonso

Hamilton faced a surprise challenger in the shape of Sauber's Sergio Pérez, who was flying at the end of the race after managing his tyres brilliantly. But Lewis clung on to take the win.

21 Austin, USA

18.11.12

Car McLaren MP4-27

Grid 2nd

Podium Vettel, Alonso

Taking full advantage of the DRS zones at this new American track, Hamilton passed the Red Bulls of Webber and then Vettel late on to secure victory in the first F1 race to be held in Austin.

22 Budapest, Hungary

28.07.13

Car Mercedes F1 W04

Grid 1st

Podium Räikkönen, Vettel

For 2013, Hamilton left McLaren for Mercedes. At the time it was a shock decision and on *Top Gear* that winter, the show's host, Jeremy Clarkson, asked: "You've moved from McLaren to Mercedes, is that not a bit like moving from Manchester United to West Ham?"

Hamilton replied: "It's a great opportunity to go somewhere where they are struggling and hopefully build something great."

At the beginning of 2013, it looked as if Clarkson was right. Hamilton picked up only a trio of podiums in the first half of the season, as Vettel and Red Bull dominated again.

Things started to change in Hungary where Lewis produced a stunning qualifying lap to beat Vettel by just 0.048s. He converted pole into the lead at Turn 1, but dropped back down to eighth after the first of three pitstops.

A great move on Button right after his first stop was the key to Hamilton's race, since any time lost then would have been crucial. In the closing stages of the race, Kimi Räikkönen was flying in his Lotus but was just too far back to deny Lewis the win. →



23 Sepang, Malaysia

30.03.14

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Rosberg, Vettel

Hamilton dominated the race, leading from lights to flag. By race end he was 17s up the road from team-mate Rosberg following a crushing display of early-season superiority.

26 Barcelona, Spain

11.05.14

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Rosberg, Daniel Ricciardo

In a nail-biting finish, Hamilton just managed to keep Rosberg at bay to claim the win. He'd led from pole, but had to work hard to take his fourth win of the 2014 season.

28 Monza, Italy

07.09.14

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Rosberg, Massa

A poor start dropped Hamilton to fourth, but he fought his way past Magnussen and Massa. When leader Rosberg missed the first chicane, Hamilton nipped by to take the win.

29 Marina Bay, Singapore

21.09.14

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Vettel, Ricciardo

With technical issues forcing Rosberg to start from the pitlane, Hamilton was left with the relatively simple task of fending off the Red Bulls, which he did with great aplomb.

30 Suzuka, Japan

05.10.14

Car Mercedes F1 W05 Hybrid

Grid 2nd

Podium Rosberg, Vettel

In a race overshadowed by Jules Bianchi's terrible accident, Hamilton had passed Rosberg to lead following the Safety Car start and took a low-key win when the GP was red-flagged.

24 Sakhir, Bahrain

06.04.14

Car Mercedes F1 W05 Hybrid

Grid 2nd

Podium Rosberg, Pérez

From the moment the 2014 cars hit the track, it was clear that Hamilton's move to Mercedes was indeed a smart one, since the silver cars were comfortably faster than their rivals.

However, an unexpected mechanical problem had forced Hamilton out in Australia. A Mercedes one-two at the next race in Malaysia had helped close the points gap, but when Rosberg qualified on pole in Bahrain, Hamilton needed to make a statement.

Hamilton made the better start and led into the first corner, leaving Rosberg to drop back and bide his time. Rosberg attacked on lap 18 and used DRS into Turn 1, but went too deep and Hamilton nipped back inside. Hamilton switched to the faster softs for his second stint, but Rosberg chose to save them for the final stint.

A Safety Car destroyed Hamilton's ten-second lead and the two Mercedes went side-by-side through Turns 2 and 3, before Hamilton forced Rosberg wide at Turn 4. With five laps to go, Hamilton let Rosberg sail through Turn 1 before cutting back inside. This took the best out of Rosberg's tyres and Hamilton held on for victory.

25 Shanghai, China

20.04.14

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Rosberg, Alonso

Hamilton surpassed Jim Clark's record of poles in qualifying, becoming the most decorated Brit in the process. He converted pole into a lead he would never lose in the race.

27 Silverstone, Great Britain

06.07.14

Car Mercedes F1 W05 Hybrid

Grid 6th

Podium Valtteri Bottas, Ricciardo

When Rosberg's car ground to a halt with gearbox problems, Hamilton was perfectly placed to take over at the front and secure a comfortable home win ahead of Bottas and Ricciardo.

31 Sochi, Russia

12.10.14

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Rosberg, Bottas

When Rosberg locked up and ran wide while trying to wrestle the lead from Hamilton at the start of the inaugural Russian GP, the tone was set for a race in which Hamilton dominated.

32 Austin, USA

02.11.14

Car Mercedes F1 W05 Hybrid

Grid 2nd

Podium Rosberg, Ricciardo

In 1992 Nigel Mansell surpassed Sir Jackie Stewart's tally of 27 wins to become the most successful British F1 driver. By the end of that season, he had raised the bar to 31. Stewart's record had stood since 1973, and it took a further 22 years for Mansell's new mark to be bested.

Hamilton wrapped up win number 32 in Austin following yet another fraught battle with Rosberg. It was Nico who took pole and made an

excellent start to take the early lead. He retained P1 following the first round of pitstops, but Hamilton kept up the pressure and on lap 24 dived down the inside of his team-mate at Turn 12 to take the lead with a signature late-braking move. From there, he held on to the finish.

Mercedes technical boss, Paddy Lowe, said: "Tiny margins make the difference between first and second, and it's fantastic to see Lewis and Nico battling neck and neck in such a sporting way. I worked with Nigel Mansell during his most successful years in the 1990s and he was another great lion-hearted driver, so to see Lewis set a new record is very special."



33 Yas Marina, Abu Dhabi

23.11.14

Car Mercedes F1 W05 Hybrid

Grid 2nd

Podium Massa, Bottas

Hamilton secured his second title with victory in Abu Dhabi. He made a sensational start to almost immediately get out of DRS range, but an ERS fault for Rosberg sealed the deal.

34 Melbourne, Australia

15.03.15

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Rosberg, Vettel

Hamilton's defence of his second world title kicked off with a totally routine win from pole in Australia. Aside from a brief period during the pitstops, he led all the way to the end.

35 Shanghai, China

12.04.15

Car Mercedes F1 W05 Hybrid

Grid 1st

Podium Rosberg, Vettel

A resurgent Ferrari put Mercedes under pressure and forced Hamilton to work hard for victory, managing his tyres as well as the gap to team-mate Rosberg and Ferrari's Seb Vettel. →

36 Sakhir, Bahrain

19.04.15

Car Mercedes F1 W06 Hybrid

Grid 1st

Podium Räikkönen, Rosberg

Ferrari once again took the fight to Mercedes, but Hamilton was able to control the race from the front as Rosberg overheated his brakes doing battle with Vettel and Räikkönen.

37 Montréal, Canada

07.06.15

Car Mercedes F1 W06 Hybrid

Grid 1st

Podium Rosberg, Bottas

Hamilton made up for the disappointment of missing out on the win at the preceding race in Monaco with this dominant victory in Canada, leading all bar one lap.

39 Spa, Belgium

23.08.15

Car Mercedes F1 W06 Hybrid

Grid 1st

Podium Rosberg, Grosjean

When Rosberg botched his start, Hamilton was left with a fairly straightforward run to victory, during which his only real challenge was managing the wear of his tyres.

40 Monza, Italy

06.09.15

Car Mercedes F1 W06 Hybrid

Grid 1st

Podium Vettel, Massa

Hamilton sealed the grand slam – winning from pole, setting fastest lap and leading every lap – as he strolled to victory at Monza, while a late engine failure dashed Rosberg's hopes.

38 Silverstone, Great Britain

05.07.15

Car Mercedes F1 W06 Hybrid

Grid 1st

Podium Rosberg, Vettel

The 2015 season had been a repeat of 2014, with Mercedes a clear step ahead of the rest. However, at Silverstone, the team came up against an unexpected challenge from Williams.

Hamilton and Rosberg had locked out the front row, but both were jumped at the start by Felipe Massa and Valtteri Bottas. The Williams pair held on in front, their Mercedes engines ensuring they were the equal of the factory team on Silverstone's long

straights. But despite Bottas appearing to be quicker than Massa, there was no instruction to let Bottas through. This could have caused a headache for Mercedes, but Hamilton stayed within striking distance, and they simply used the undercut to grab the lead.

It took longer for Rosberg to make his way into P2, but once he did, it started to rain. Initially the drizzle was too light to be an issue, but just as it started to intensify, Hamilton switched to intermediates.

The gamble paid off as the rain became even heavier, giving Hamilton a huge grip advantage, which he used to secure a comfortable win – to the delight of the home crowd.

41 Suzuka, Japan

27.09.15

Car Mercedes F1 W06 Hybrid

Grid 2nd

Podium Rosberg, Vettel

Hamilton and Rosberg went wheel-to-wheel into the first corner at Suzuka, and it was Lewis who came out on top, edging his team-mate onto the grass and going on to take victory.

42 Sochi, Russia

11.10.15

Car Mercedes F1 W06 Hybrid

Grid 2nd

Podium Vettel, Pérez

From pole, Rosberg led away from the start and had established a comfortable gap when his throttle stuck open and he was forced to retire, leaving Hamilton unchallenged up front.

43 Austin, USA

25.10.15

Car Mercedes F1 W06 Hybrid

Grid 2nd

Podium Rosberg, Vettel

Hamilton again went toe-to-toe with Rosberg into the first corner and again came out on top. In an entertaining race in mixed conditions, Lewis fought off Ricciardo and Rosberg to win.

44 Monte Carlo, Monaco

29.05.16

Car Mercedes F1 W07 Hybrid

Grid 3rd

Podium Ricciardo, Pérez

Hamilton got his third title defence into full swing with a hard-fought win earned by staying out on wets on a drying track and leapfrogging Ricciardo for the lead.



45 Montréal, Canada

12.06.16

Car Mercedes F1 W07 Hybrid

Grid 1st

Podium Vettel, Bottas

Vettel's Ferrari sped off into the lead as once again Hamilton tangled with Rosberg at the first corner. Mercedes played the tyre strategy to perfection to get Hamilton into a winning position.

46 Spielberg, Austria

03.07.16

Car Mercedes F1 W07 Hybrid

Grid 1st

Podium Max Verstappen, Räikkönen

In a controversial finish, Hamilton and Rosberg collided as they disputed the lead heading onto the final lap. This caused damage to Rosberg's front wing and dropped him back to fourth.

47 Silverstone, Great Britain

10.07.16

Car Mercedes F1 W07 Hybrid

Grid 1st

Podium Verstappen, Rosberg

On a soaked but drying track, the race started behind the Safety Car. This let Hamilton convert pole into an easy lead that he held to the finish.

48 Budapest, Hungary

24.07.16

Car Mercedes F1 W07 Hybrid

Grid 2nd

Podium Rosberg, Ricciardo

A flying start let Hamilton overtake Rosberg on the run to Turn 1 and control the race. Ricciardo's Red Bull, meanwhile, kept Merc on their toes.

49 Hockenheim, Germany

31.07.16

Car Mercedes F1 W07 Hybrid

Grid 2nd

Podium Ricciardo, Verstappen

In an almost carbon-copy of Hungary, Hamilton beat Rosberg into the first corner and dominated the race from there on. The Red Bull of Ricciardo was again there to keep him honest.

50 Austin, USA

23.10.16

Car Mercedes F1 W07 Hybrid

Grid 1st

Podium Rosberg, Ricciardo

The wait for the 50th win took longer than imagined but after engine-failure in Malaysia and start-line disaster at Suzuka, a fault-free race in Austin saw Hamilton rack up the half-century.

51 Mexico City, Mexico

30.10.16

Car Mercedes F1 W07 Hybrid

Grid 1st

Podium Rosberg, Ricciardo

A week after Austin, Hamilton blitzed his team-mate to become the fastest Mercedes driver all weekend. The only blip was a trip across the grass at the first corner on the opening lap.

52 Interlagos, Brazil

13.11.16

Car Mercedes F1 W07 Hybrid

Grid 1st

Podium Rosberg, Verstappen

In treacherous conditions, Lewis was never headed during the 71-lap Brazilian GP. Despite numerous Safety Cars and red-flags, he drove supremely and didn't put a wheel wrong.



53 Yas Marina, Abu Dhabi

27.11.16

Car Mercedes F1 W07 Hybrid

Grid 1st

Podium Rosberg, Vettel

Lewis Hamilton's 53rd grand prix victory was arguably the *slowest* win of his career. In this world championship showdown race, under the Abu Dhabi floodlights, he knew that if he won and his team-mate Nico Rosberg managed to follow him across the line in second place, Rosberg would still take the title. To have any chance of winning the drivers' championship for a fourth time, Hamilton needed Rosberg to finish lower than third place.

Mercedes had envisaged that Lewis would roar off into the distance in a display of dominant superiority. Instead, he slowed his team-mate down and reversed him into the Red Bulls and Sebastian Vettel's Ferrari.

Hamilton was over a second ahead at the DRS detection point but then slowed. Rosberg, on his tail, couldn't get past. When Hamilton was ordered to speed up, he replied: "Right now I'm losing the world championship, so I'm really not bothered if I'm going to win or lose this race."

Rosberg did what he could over 55 nervous laps to stay second. Hamilton had won the battle – first again – but Rosberg had won the war. 🏆



CYO
ROYAL CHALLENGE
NEC

SAHIRA
KINGFISHER
SMIRNOFF

KINGFISHER
ROYAL CHALLENGE
PIRELLI
Q
Banamex



VIJAY MALLYA

THE LONG INTERVIEW

Force India's team principal has been absent from the Formula 1 paddock for much of the 2016 season. But in spite of the woes elsewhere in his business empire, he's still very much on top of the team's day-to-day affairs, as he reveals in this exclusive interview at his country home

WORDS STUART CODLING

PORTRAITS THOMAS BUTLER

As befits Formula 1's 'King of Bling', the Christmas lights adorning the gate of Vijay Mallya's country abode in rural Hertfordshire are bright and cheery, a pulsating riposte to the wintry chill.

The house within, though, is more modestly appointed than you might expect when viewed from without – well, okay, so there's a separate guest house, a two-storey office annexe (home to a scale replica of a Force India F1 car) and a substantial garage, but even though we're in millionaire territory, Chez Mallya is substantial rather than architecturally ornate. Previously owned by Anthony Hamilton, this home's beauty lies in its surroundings: the last rays of the setting sun beam in to the sitting room, large windows framing a view of unspoilt countryside.

In very short order, we're introduced to some of the other residents of the Mallya milieu: his long-serving PA, Daljit, his butler, his chef, a pair of friendly bichon frise, and two golden labradors so excited by *F1 Racing's* arrival that they charge full pelt into the glass door of the kitchen with a substantial thump, leaving two wet nose prints.

"They always do that," says Vijay's butler, rolling his eyes. →

The man himself is running late, enveloped in a conference call in the annexe. These days, Dr Mallya superintends his many business interests largely from his Hertfordshire home, owing to a spat with the Indian government over the collapse of his airline. His passport is currently in their hands while the wheels of bureaucracy grind their way to a conclusion.

Still, that has worked in *F1 Racing's* favour. For several years we've been trying to arrange a sit-down interview with the man behind Force India, and, until now, the travel schedule demanded by his business interests hasn't permitted it. His present circumstances, though, have aligned neatly with his team's most impressive showing yet in the constructors' championship, which gives us plenty to talk about. After a very pleasant cup of tea – the china milk jug is neatly embossed with the initials 'VJM' – we're ready for the off, and our interviewee arrives, evidently in a mood to talk...

F1R: We've missed you this year at grands prix – the paddock has been short of a certain level of colour, eccentricity and bling, and it's all the poorer for it.

Vijay Mallya: [Chuckling] And I've missed being there. I don't know whether to take it as a compliment or not – I've certainly not heard the eccentricity thing before – but Hannah [Hannelore Gude Hohensinner, *formula1.com* producer and former Jordan PR chief] came to me and said: "You know, the most colourful characters in Formula 1 were Flavio Briatore and you, and neither of you are there any more." I said: "Don't worry – I'll be back!"

F1R: You're still there in spirit. I popped in to your motorhome to watch the GP2 race at the European Grand Prix this year. Hannah took the table next to me, and, within seconds, one of your hospitality crew arrived bearing glasses of champagne and a bowl of fruit. It was the most extraordinary thing.

VJM: When I was over at the factory this week, somebody suggested that since the 2017 car is going to be the VJM10, we should put a special logo on the car to mark the tenth anniversary of the team. I said: "Look, Williams just celebrated their 40th anniversary – what's to celebrate about being ten years old?" But then it was pointed out to me that not all independent F1 teams survive ten years in this game, so it's something to be enjoyed. All through that time I've kept our motorhome very open, friendly, warm and



F1 Racing sits down for a cup of tea and a chat with the colourful Vijay Mallya, in his equally colourful home

welcoming – it has always been very important to me that it should be like this.

As you know, I started in F1 as a sponsor in 1998, and I remember how getting into some motorhomes was like trying to get into a high-security area, with everybody watching to see what you were up to. I don't think that stands for *hospitality*. So we're

very happy to entertain all sorts of people in our motorhome – that's my philosophy. And, yes, we will be marking our tenth anniversary in some way.

F1R: To go back to the beginning, when you bought in to the team, it had passed through two different names and different owners, very quickly. There had been some investment but not much. The team were using the same monocoque from one year to the next. It was as if the aim of at least one of the previous owners had been to spend as little as possible and then sell on at a profit. What was it that made you want to

become a team owner – particularly of one in that state?

VJM: I had no intention of buying an F1 team. I was happy being a sponsor, enjoying being involved in all the trappings and all the excitement of F1 – and, by the way, I still think the sport is a fantastic advertorial opportunity if you want to build a global brand. So I had absolutely no intention of becoming a team owner. Then, I think it was in Istanbul, Mr Mol [Michiel Mol, the Dutch entrepreneur who led the investment consortium that bought Spyker Cars and what was then known as the Midland F1 team] said: "Would you be interested?" I said: "No." He said: "Would you consider coming on board as a shareholder?" I said: "No."

Then he said to me: "Why not? You've driven F1 cars before [Mallya

raced ex-F1 Ensign chassis in Formula Libre events in the early 1980s], you're a car enthusiast, you already sponsor Formula 1, so why wouldn't you be interested?" So then I said: "Okay, let me think about it."

I went back to India and commissioned my market research guys. We have an incredible youth demographic – over 500 million Indians are under 18. F1 has all the aspirational ingredients – it's young, it's glamorous, it's high fashion, it's fast, it's exciting. I wondered what opportunities there would be if I bought the team and made the Indian connection. And the results of the survey we carried out showed that there would be a lot of enthusiasm.

Another interesting thing came out. People were thinking, 'Formula 1? Wow! But we can't afford to do that, surely?'



"I sat [the Force India management] down and said: 'Look here, I don't care what you think of yourselves, you need to start thinking about what I think of you, because otherwise you aren't going to be here much longer'"

India is a rich country in many ways, but also a poor country in some senses. The politicians view Formula 1 as a rich man's sport, so F1 be damned. That's why we get no support from the Indian government for motorsport in that country. Everything has to be privately funded.

But, still, that survey showed the enthusiasm peeping through. So I said to Mol: "Okay, let's talk. The first thing is, if the name is staying as Spyker, I'm not interested. I'm walking out of the door. If you stay on as a shareholder, are you comfortable with a name change?" He said he was okay with that. I said I'd take 50 per cent, subject to contract – and the condition was that I would be in charge. Period. No interference. Board meetings, governance issues – all that is fine. But I'm in charge. I don't want anyone coming in and telling me how to run this team.

So we negotiated from there and it all came together. But, yes, as you say, in doing the due diligence we found out that there was a lot of work to do.

F1R: There are a lot of people – such as team manager Andy Stevenson – who are still there from the Jordan days, but it seemed as if there was a layer of management with whom you didn't get along.

VJM: The first year, 2008, was a nightmare. I understand cars; I understand racing. I wasn't some novice who was more interested in drinking champagne than running the team. So I very quickly brought in Robert Fernley, who has been my friend for over 35 years, and who used to run my Ensign F1 cars for me before working elsewhere in F1 and IndyCars. I said to him: "I think I've bitten off more than I can chew – I need you to come on board and help me run this."

We called a management meeting, introduced ourselves around, and... it was pathetic. Truly pathetic. I kept asking why our drivers seemed only to be racing each other. It was as if the whole objective of the team was to finish the race at the back. Reaching Q2 wasn't even an ambition!

F1R: Really?

VJM: Oh yes. There was no remorse for it at all. And this agitated the hell out of me. It was just no good. So I sat them all down one day and said to them: "Look here, I don't care what you think of yourselves; you need to start thinking about what I think of you, because otherwise you aren't going to be here much longer." So they said: "Oh, but then the team will collapse." I said, "That's none of your bloody business. That's my business."

There was this air of arrogance. When I told them that we needed to perform and that I'd hold them accountable, back came the reply that I would have no team left – as if they were indispensable.

So I said: "This can't go on." And I started setting benchmarks. I said that if they needed tools and investment, I'd do that. But every investment had to be benchmarked with performance. Windtunnel? Four-post-rig? Driver-in-the-loop simulator? That's all fine, but not all at once, because you can't just throw resources at a problem. So we agreed a plan whereby I gave them certain critical pieces of equipment, and they would then correlate and deliver track performance. After this meeting, which happened after the 2008 Monaco Grand Prix, I said that the objective for the remaining races was just to get into Q2. Baby steps.

Well, it didn't happen. So before Brazil I called them all in and said: "You can't deliver, so we need to part ways." And I sent them home. I could do a lot of things with finance and management, but I couldn't design the car, so I called in the

PHOTO: ANDY HONE/LAT



Sergio Pérez in the VJM09 during practice for the Brazilian GP. He finished P4 in the race, helping Force India consolidate their highest ever position in the constructors' standings: fourth

technical director's deputy – James Key – and I said to him: "You're in charge now."

F1R: He certainly made the most of the opportunity – not just with you, but later with Sauber and Toro Rosso. And maybe somewhere else soon...

VJM: He was over the moon. He just couldn't believe it. He hadn't expected to get an opportunity like that. But I could see the passion and competitiveness in him that he wanted to show. Sure enough, next year we were getting into Q2 [Giancarlo Fisichella started the Belgian Grand Prix on pole, in fact]. And the number-two people in the other departments, they all welcomed the opportunity and stepped up. →



One of the things the previous technical director Mike Gascoyne and I had disagreed about was the gearbox. He wanted us to build our own. I thought we should source one from elsewhere, because we had other things to do as well. We'd been using the Ferrari engine, but for 2009 I did a deal with McLaren which gave us access to the Mercedes engine and the McLaren gearbox and hydraulics. Most significantly, Simon Roberts [who had been operations director at McLaren Racing] came in as chief operating officer as part of the deal. The complexion of the team suddenly changed and people began to take us seriously.

People wanted to know what our plans were for the future, and I was pretty clear about that: baby steps again. I didn't want to overpromise and underdeliver, so the target had to be realistic: scoring more points every year and moving up gradually. And one of the things I'm most satisfied about is that the team have met or exceeded all the targets, year after year, and here we are now, fourth in the championship. Mercedes, Red Bull, Ferrari, Force India – all our guys at Silverstone [where the Force India factory is based] can be proud of that.

It's flattering when journalists say Force India 'punch above their weight' – there was even a story about that in your magazine a few months ago! We don't have the money the big boys have, but we do a good job with what we've got.

F1R: This is a subject worth exploring because there are concerns about the share the independents get. Your deputy, Bob Fernley, has been very vocal about it. And for the past couple of years, even though you've been getting a bigger share of the prize pot, you've still had to ask for an advance from Formula One Management.

VJM: There's nothing wrong with that – we've done it for three years running. FOM pays for ten months of the year, so you don't get anything in December and January, which is when you're trying to get your new car finished. So it's not like I'm taking a loan – I'm getting an advance, which is then deducted from what we get for the following ten months. People read it as being in financial distress – rubbish! They don't understand what cash flow is all about.

He's being a touch defensive here, so we're not quite getting to where we want to be, which is to discuss the rewards the teams get from competition. Let's try a different tack – the recent signing of Esteban Ocon. As ever with such moves, there are suggestions that a sweetener might have been provided by Mercedes in the form of a power unit discount for taking on their junior driver.

F1R: You've had drivers who brought a budget in the past, but most recently you've been able to prioritise performance. Where does Esteban Ocon fit in with that?



Left: Sergio Pérez scores a point at his home race in Mexico. The Mexican sponsor market is largely untapped, which is just one reason why Mallya was so keen to secure Pérez's services

VJM: Did you see what Toto Wolff said when we signed Ocon? He said he was glad that talent had prevailed over money. I turned down three, massive, double-figure offers from pay drivers and took Ocon instead for zero money. And if I was in a desperate situation, why would I take on a driver who doesn't bring in any money?

F1R: Well, he is a Mercedes junior...

VJM: [Laughing] Maybe I should have asked them to write me a double-digit cheque then!

F1R: Was Pascal Wehrlein on the table as well, and, if so, why choose Ocon over him?

VJM: Of course he was. I reviewed the performance of the three or four drivers we were looking at very carefully. →

"It's flattering when journalists say Force India 'punch above their weight'. We don't have the money the big boys have, but we do a good job with what we've got"



with bringing money to the team, but back when he was driving for Sauber, and I saw him scoring podiums for that team, I thought: 'Here's a driver I want.' Then before I could say Jack Robinson, he'd gone to McLaren! Too bad for him and McLaren that things didn't work out, but good for us – the minute he became available I grabbed him.

Mexico is an untapped market with a passion for motorsport and a history of sponsoring motorsport. That's why we made such a big drive into that market – even launching a car there. And Checo is part of that big push, but he's by no means a pay driver. Quite the contrary in fact.

Vijay remains loquacious, but still a touch defensive on the issue of finances, so let's steer away from that topic as we draw the interview to a close.

F1R: He's really upped his game since coming to your team. It was very interesting to speak to [chief race engineer] Tom McCullough about that for a feature a few months ago.

VJM: Tom is absolutely brilliant at developing drivers. He was there when Ocon tested in the simulator and he recommended him, too. Tom has developed Nico Hülkenberg a lot as well – massively, in fact. It boils down to the little things, such as tyre management. Nico *was* hard on the rubber, and he had struggled a bit on the most recent generation of tyres. Well,

Esteban beat Max Verstappen in his first year in Formula 3. And I went to Silverstone myself to watch him in the simulator and compare his times with Nico Hülkenberg's. I was bloody impressed. But I knew it was going to be a serious decision. Here – look at this. You'll see why.

He produces his mobile phone, searches through its archive and locates the video he's looking for: in-car footage of Ocon driving around Austin's Circuit of The Americas in the simulator. Ocon is not leaving much on the table.

F1R: This is impressive, on both counts. How long have you had this simulator?

VJM: A while... well, actually, it's brand new. Probably one of the best simulators in F1. But let me tell you about Ocon. One of the most impressive things about him is that he's so humble. His parents didn't have the money to support his racing beyond a certain point. He told me that if Mercedes hadn't picked him up after he was dropped by Lotus [who appointed Jolyon Palmer as F1 reserve in 2015 ahead of Ocon], that would have been it for him. He's very willing to learn. He's a good kid. He'll do well for us – it may take a few races to settle in, but he'll give Sergio Pérez a run for his money.

F1R: Speaking of Sergio, what did you make of him firing his sponsor, Hawkers, on Twitter after they made a slightly crass remark about Mexicans?

VJM: He's a very passionate, patriotic man. I understand completely. And he's a very good driver. People still link him



Vijay shows F1 Racing footage of Esteban Ocon's impressive simulator lap of CoTA (top). Ocon (above) will partner Sergio Pérez at Force India in 2017

"An impressive thing about Ocon is that he's so humble. He told me that if Mercedes hadn't picked him up, that would have been it for him"

you look at the last few races of 2016, where we put Nico on strategies where his tyres had to last, and he made it work.

We've invested in the right people. Tom is one of them, and we also have two of the best tyre engineers on the grid. They're both Japanese – we took them from Bridgestone.

F1R: How hands-on are you? Presumably Bob has more responsibility at race weekends, due to your passport situation?

VJM: I'm very hands-on, even now when I'm stuck here. I've got a functioning pitwall here at home, computers and all, with communication to the circuit pitwall. It's as if I'm there!

F1R: That does bring to mind the image of Mr Burns in *The Simpsons*...

VJM [Laughing]: That's alright. But I do miss the *atmosphere* of being there. Let me tell you this: I'll be back! 🇲🇪



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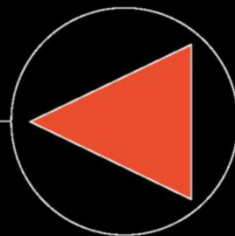
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Now that was a car



No. 58: The Brabham BT52

The fiery beast that took Nelson Piquet to his second title



WORDS STEWART WILLIAMS PICTURES JAMES MANN

Necessity is said to be the mother of invention and when F1's governing body banned ground-effect aerodynamics in November 1982, following a season of terrible accidents, teams faced a problem. Most altered their existing designs to deal with rules that mandated 'flat-bottom' chassis. But not Brabham's tech chief Gordon Murray.

The BT51 was intended to be the team's 1983 challenger. It had already been built and tested, with Brabham planning to make pitstops a major part of their strategy by fuelling the cars light at the race start. Yet with just three months to go until the first race, Murray went back to the drawing board to redesign the car from scratch.

The BT52 was a totally different machine. Gone were the BT51's bulky sidepods, which had housed the radiators and provided the surface for the now-banned under-body aero. Murray shifted the weight distribution towards the rear wheels to aid traction, knowing he could rely on BMW's amazing four-cylinder turbo engine. The 1.5-litre M12/13 could produce well over 850bhp in qualifying trim.

Radiators were mounted either side of the engine and bolted to the subframe, which made it easier to change the complete rear end. The whole car was simple to rebuild since Murray had also created a front module, mounted on the tub. This meant the front suspension could be set up off the car and replaced as a unit. Chassis construction was conservative for the time and the suspension conventional. Big front and rear wings were deployed to make up some of the lost downforce.

Little had been retained from the BT51, aside from the powertrain, pedal cluster and wheels, but the work needed to take advantage of Murray's plan to change fuel at pitstops – such as air jacks and new wheel nuts – had already been done. Murray admits this was not a complicated car. In an interview in *Motor Sport* magazine in 2005 he said: "It was the world's simplest GP car. But, like all of the best tools, no more complicated than needed to do the job."

Brabham's other advantage was their driver – 1981 world champion Nelson Piquet, now in his fifth season with the Ecclestone-owned team. Piquet would be the team's dominant force over the course of 1983, with his team-mate, Riccardo Patrese, managing just two finishes. In fact Piquet won on the car's first outing, at his home race in Brazil. "Nelson was of paramount importance," admitted Murray. "He was a world champion and when things didn't look good he was always committed. He was always up for testing and just wanted to be in the car. He was also the only one who could really handle Bernie."

Piquet relished 1983. "That was a fantastic period," he recalled later. "Wing cars with lots of downforce, turbo engines, qualifying tyres good for maybe two laps. I loved it!" Not that the engine power made for subtle driving. Piquet's method was simple: "I don't drive. I get the car to the middle of the circuit and press the accelerator."

The BT52 was a very compact car, due in part to the small fuel tank, and this was where Murray's refuelling ruse came to the fore. Time →



BRABHAM BT52/52B TECH SPEC



Chassis	Aluminium and carbon fibre monocoque, rear subframe
Suspension	Front and rear: double wishbones with pushrod operated coil springs over dampers
Engine	BMW M12/13 Straight 4 twin-turbo
Engine capacity	1,499cc
Power output	640bhp (850bhp+ in qualifying)
Gearbox	Brabham/Hewland 5 and 6-speed manual
Tyres	Michelin
Weight	540kg
Wheelbase	2,845mm
Notable drivers	Nelson Piquet, Riccardo Patrese

**BRABHAM BT52/52B
RACE RECORD**



Starts	30
Retirements	16
Wins	4
Poles	2
Fastest laps	5
Other podiums	6
Points	72



lost in the pits was regained in running a lighter car for most of the race. Tyres were also changed at stops, with the rubber pre-heated in ovens. Other teams opted not to go down this route, in the belief that refuelling would be banned, which gave Brabham an edge.

Even so, Piquet still needed to do the business on track against fellow turbo teams Ferrari and pre-season favourites Renault led by Alain Prost. As the season progressed Piquet managed to keep pace with Prost and just ahead of Ferrari's Patrick Tambay, and the car was given an update after Canada, meriting a 'B' designation.

Round 10 in Germany was probably the low point. Piquet led the race and was running second when his engine expired. A podium in Austria, where he was P3 behind Prost and Ferrari's René Arnoux, didn't help since Prost's lead had extended to 14 points with just four races left. Things got worse in Holland where, although both he and Prost retired, Arnoux won, moving to second in the championship.

And then the fightback began. At Monza, Patrese claimed pole and Piquet jumped the two Ferraris at the start to slot in behind his teammate. When Patrese's engine expired on lap 3 Piquet was imperious and took a dominant victory. The European GP at Brands Hatch followed the same script, with Patrese in the lead, this time until the first pitstops. Piquet then took advantage of an engine failure on leader Elio de Angelis's Lotus to become the first driver to win consecutive races that season. Prost was now only two points clear and

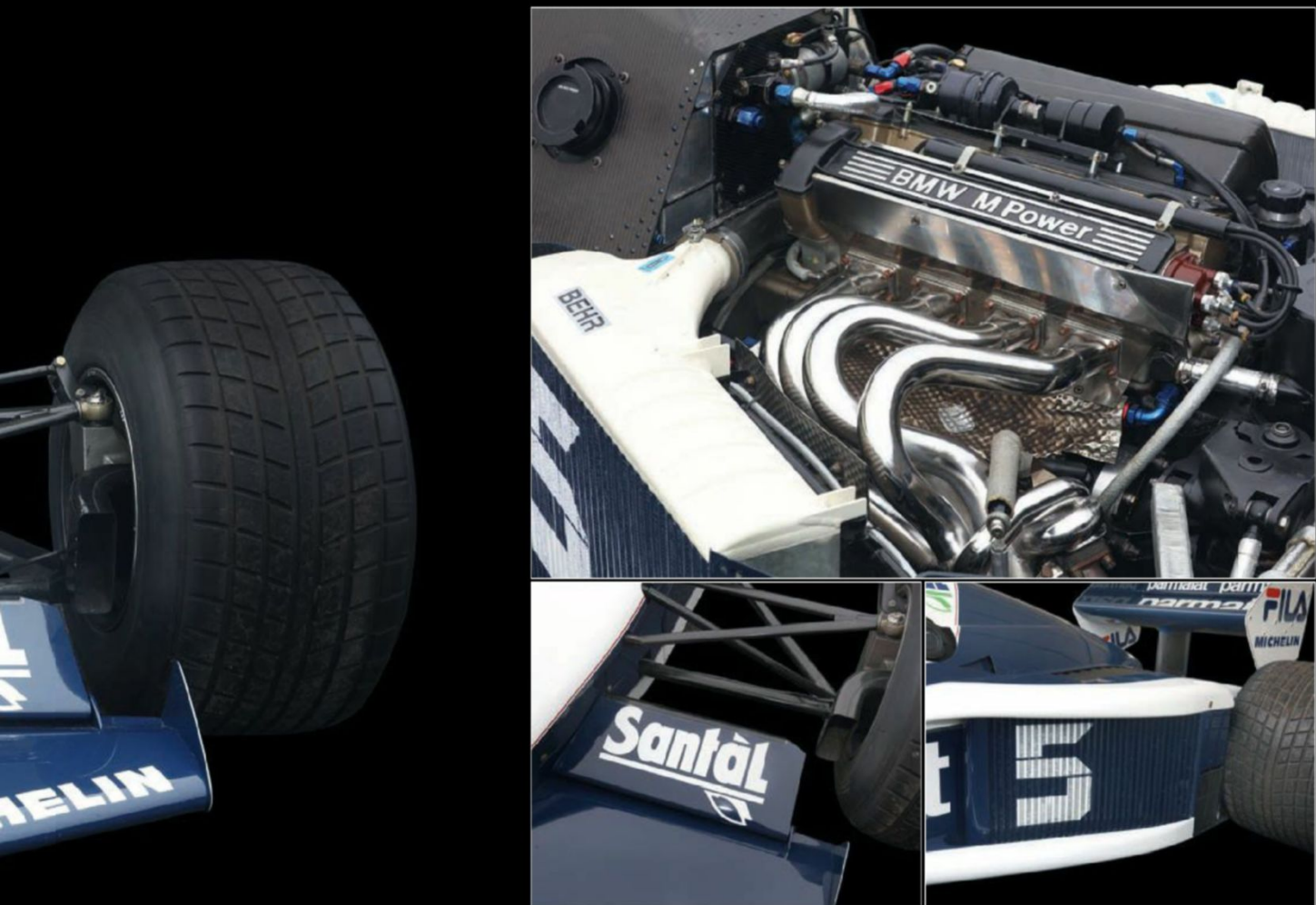
Arnoux had become a title outsider going into the final race at Kyalami in South Africa.

Although Tambay was on pole, Piquet and Patrese blasted into first and second and Piquet managed to pit without losing the lead. Arnoux retired early with a blown engine, and when Prost's turbo failed on lap 35, his only hope was that Piquet would follow him into retirement.

Piquet nursed his car, allowing Patrese to pass him on lap 60 and take the win. But P3 behind Andrea de Cesaris's Alfa, was enough for Piquet to snatch his second title from Prost by just two points. Patrese's poor results, meanwhile, meant Brabham managed only third in the constructors' championship behind Ferrari and Renault.

There was to be a sour footnote to the season as rumours began to circulate that BMW had used fuel with power-boosting illegal additives in the last four races. A sample taken from Piquet's car in Kyalami was analysed and eventually found to be above board, but BMW were annoyed to discover that a part of that sample had somehow found its way to Elf, supplier of fuel to Renault.

Despite the acrimonious end to the season, it was ultimately a triumph for Brabham, BMW and Piquet. The fire-breathing beast had been tamed and this was the first title win for a turbo car, which everyone had expected to go to Renault. It also proved to be Brabham's swansong. Piquet won grands prix in 1984 and 1985, but the BT52 was the last truly exceptional and awe-inspiring Brabham. ■



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NO MORE MR NICE GUY

He hit rock bottom in 2016, but after his demotion by Red Bull **Daniil Kvyat** has got his career back on track – and he’s learned some harsh life lessons along the way

WORDS JUSTIN HYNES PICTURES TORO ROSSO

Dig around the internet using the words ‘Kvyat’, ‘Hockenheim’ and ‘qualifying’, and close to the top of the search list you’ll find a video of the Russian driver being interviewed earlier this year after he limped to 19th place in Q1 at the German track. It makes for painful viewing.

Despite his sunglasses, it’s easy to see Kvyat’s eyes, hollow, darting left and right, never making contact, never once looking at the camera. But more than his physical demeanour, it’s the words he used that day that gave a clearer understanding of just how much anguish he was suffering.

Asked if he understands what has just happened, he sounds like a broken man.

“I don’t know, I should be better than this, it’s not my real self who is driving,” he says blankly. “It’s very painful to feel and to see. When you have no knowledge of what’s going to happen, it’s hard to show good pace.”

Asked about the impending relief of the sport’s summer break, he gives a mirthless chuckle. “I don’t know what’s going on at the moment. I need more than a summer break.”

For Kvyat, this was the low point of his F1 *annus horribilis*, a year that had, on the surface, begun with such high hopes. In China, he delivered in style, punching through the pack at the start to set up an aggressive drive to his second career →



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podium finish, and verbally punching his way past criticism from four-time world champion Sebastian Vettel, who claimed the Russian had come at him “like a torpedo” at Turn 1. “He’s on the podium, I’m on the podium; it’s fine,” Kvyat said dismissively.

Behind the scenes, though, it was far from fine, and the first part of Kvyat’s swift journey into darkness was already unfolding.

“At the end of 2015 there was a discussion about what would happen,” he says. “To be honest, I only got to know very late about my renewal with Red Bull. It wasn’t a nice period.

“When you beat your team-mate, the very famous Daniel Ricciardo [in 2015], and there are still talks that you might not be with the team in 2016, then of course it’s a question in your head. Do I have to beat him 15-0 in quali or something? I tried to concentrate on doing my job well, but every drop in performance felt like a step closer to something.”

With hindsight, Kvyat’s lunge for glory in China, and the career-altering one that followed on home soil in Russia, carried the stamp of desperation, the mark of a man resorting to the reckless in a bid to secure the approbation of his wavering masters.

That approbation never came. Four days after Kvyat had twice collided with Vettel at Sochi – once resulting in the Ferrari driver being punted into the side of Ricciardo, and the other leading to Vettel’s exit from the race – Kvyat was out. Max Verstappen was ushered in as a replacement, and Red Bull team principal Christian Horner was saying: “Dany will be able to continue his development in a team he is familiar with.” Kvyat, crushed, was on his way back to Faenza and Toro Rosso.

“After China, I thought I might have some breathing space, but I was wrong,” says Kvyat. “It was hard even to get out of bed for a month or two months after that. I wasn’t even keen to go racing any more.”

What made the onward journey easier, according to Toro Rosso boss Franz Tost, was the familiarity of the environment, the familial nature of the junior Red Bull squad.

“You must see it from two perspectives,” says Tost. “The first is that he was of course depressed because he wanted to show his potential at Red Bull, but the second thing is that he came back to a team he knows. That made it easier for him. Also, I said to Daniil

that on one hand it’s a shock, but on the other hand he had to be thankful to Red Bull that they have a second team with which he could continue. He understood this.”

In the short term it seemed that Kvyat did understand. In Barcelona he qualified 13th, compared with team-mate Carlos Sainz’s P8, and while Sainz raced to sixth, Kvyat was not disgraced on his first outing in an unfamiliar car, finishing tenth to take a point and setting the fastest lap of the race. He even managed to temporarily blind himself to the pain of watching Verstappen win the race, telling himself that it was a turn of events he could not possibly influence.

In Monaco he qualified eighth; in Baku he lined up sixth. But as the summer wore on, the stoic composure that had enabled him to face the F1 media in Barcelona alongside Verstappen and say “you always have an opportunity” began to desert him.

“In June, July, every time I thought about it, it was touching me extremely badly,” he admits. “I was just hoping that something would happen, that I would get on the podium with Toro Rosso or that I might win a race. But I wasn’t driving with heart. I was driving with anger, and not a positive anger.”

The nadir came in that Hockenheim qualifying session. On Sunday, Kvyat drove to 15th place, and as he left the circuit for the summer break there lurked the very real possibility that this might be his last F1 drive.

“I was ready to say goodbye to everything,” he says flatly. “But, in a way, that’s what actually saved me. I said: ‘Okay, you are in as bad a situation as you can be, so try to work with the people who knew you for being optimistic and a hard worker.’”

The Kvyat who returned from the summer break was, if not reborn, then at least reset. “I went through many things during the summer break. I had a lot of time to reflect. But I also completely forgot about Formula 1 and I reset everything. Basically, you have to remember why you started [racing].”

And the major reboot came in letting go of the desire for on-track revenge.

“You have to realise that you can’t focus on that one golden opportunity,” he insists. “I was always hoping something might happen that would bring me a P3 again, something mega. But then I calmed down. I forgot the negatives and just focused on being



“After China, I thought I might have some breathing space, but I was wrong. It was hard even to get out of bed for a month or two months after that. I wasn’t even keen to go racing any more”



Demoted from Red Bull back to Toro Rosso, Kvyat's nadir came at Hockenheim when he scraped P19 in Q1, before finishing 15th in the race. "I should be better than this" he said afterwards



grateful for what I have, on working with my engineers, on trying to improve."

The ultimate expression of the new mindset came in Singapore. Increasingly hamstrung by the flagging performance of Ferrari's year-old power unit – "we were 70-80bhp down", says Tost – Kvyat knew Singapore's winding streets and 23 corners represented the team's best chance to take points in the second half of the season.

"In Singapore, I just went with a clear mind. I just kept pushing no matter what," says Kvyat of his seventh place on the grid and his battling drive to ninth in the race. "For a while I hadn't felt that, and I think that the spark came back and it relit the passion."

In the end there would be no more points finishes for Kvyat in 2016, but Singapore had been enough and, a month later, at the US GP, the Russian was announced as a Toro Rosso driver for 2017. Had he spoken much to Dr Helmut Marko during the period leading up to the announcement? →



Kvyat battles doggedly to P9 for Toro Rosso at the 2016 Singapore GP, despite the handicap of a 2015-spec Ferrari engine. "I think that the spark came back and it relit the passion" he says



"You need to watch your back. The sport is very tough. There is no place for good boys here. You can be a good driver, but if you are a good boy it doesn't help"

"I was trying not to be too pushy. I was doing my job because I knew that until Singapore I was not good enough. As soon as I felt my work started to get good enough, I started to ask questions. You can count on Dr Marko that if you do your job when he asks you to do it, that you will get what you deserve, and I am grateful for that. I felt like I deserved this chance."

Kvyat admits, though, that he had pursued other career opportunities during this period of uncertainty.

"I started to look, but in a calm way, not like it was before Hockenheim, when I was feeling very upset," he explains. "I usually do my own talking, although my father sometimes helps me as well. Red Bull were a priority no matter what else happened. They had done so much for my career, and no matter what else has happened I will always be grateful to them. Who else was I talking to? What were the other options? It doesn't matter any more."

The hardness in Kvyat's voice reveals how much it *does* matter, though. The lessons of 2016 have been painful ones for a 22-year-old: that success is fleeting, security nebulous, and, far from being a paradise after the wilderness of junior categories, Formula 1 is racing's most hostile environment.

"This year taught me a lot," he says. "You need to watch your back. The sport is very tough. There is no place for good boys here. You can be a good driver, but if you are a good boy it doesn't help."

There's a degree of weary resignation in his voice, but while the scales have been removed from Kvyat's eyes, he's still choosing to peer upwards to the stars.

"At some point, in one way or another, everyone goes through a similar kind of thing," he says. "Mine was a bit rough, but still, you know, I managed to get out of it – I think with head held high. It's life, and you have to keep believing. If I work hard enough, I will get my chance again." 🍎

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PICTURES OF THE YEAR 2016

LAT Images' talented photographers attended all 21 races of the 2016 season, either trackside, in the pitlane, or in the paddock. Here they offer up a selection of their own favourite shots from another exhilarating year of F1

WORDS JAMES ROBERTS

STRIKE A LIGHT *by Steven Tee*

Sebastian Vettel hits a bump and throws up a shower of sparks at the start of his qualifying lap. As he enters the high-speed Turn 1 at the Shanghai International Circuit, he creates a 'standing wave' where the G-force resonates across his left-rear tyre

Shanghai, China,
3.35pm, Saturday
16 April 2016

Details Canon EOS-1DX MKII, 600mm lens, 1/500th at F10







STEVEN TEE

At the 2013 Singapore GP, Steven Tee became a member of Bernie Ecclestone's exclusive '500 GP' club. As managing director of LAT Images, Tee hasn't missed an F1 race since the 1984 San Marino GP. And in his role as F1 Racing's principal photographer, this year he has also accompanied our journalists on trips to Fernando Alonso's museum in Oviedo and on a sight-seeing visit to Baku, where we got our first look at the track in March 2016.

1. GUARD OF HONOUR

Jenson Button is serenaded by team and well-wishers in Abu Dhabi as he heads from the McLaren hospitality unit to the garage for probably the last time. Tee, photographer for both McLaren and Honda, has been snapping Jenson throughout his F1 career

Yas Marina, Abu Dhabi, 4.13pm, Sunday 27 November 2016
Details Canon EOS-1DX MkII, 35mm lens, 1/500th at F8

2. CHAMPAGNE SUPERNOVA

After all of the drama and tension of a 21-race world championship season, Nico Rosberg and his wife Vivian can finally enjoy his title success. Little did we know then that he'd already made up his mind never to race a Formula 1 car again

Yas Marina, Abu Dhabi, 8.32pm, Sunday 27 November 2016
Details Canon EOS-1DX MkII, 200mm lens, 1/640th at F2.8

3. CLOSE ENCOUNTERS

There are very few corners where you can get as close to an F1 car as you can here. This is La Source, the first corner at Spa, and Tee has captured Max Verstappen's Red Bull running over the kerbs on the inside of the Ferraris, using a wide fisheye lens

Spa, Belgium, 2.03pm, Sunday 28 August 2016
Details Canon EOS-1DX, 15mm fisheye lens, 1/2000th at F6.3

4. SHATTERED DREAMS

At the start of the Singapore GP, Nico Hülkenberg made a great start, but Carlos Sainz was also quick off the line. As they tried to circumnavigate Max Verstappen, they ran out of room and contact was inevitable: the Force India clouted the pitwall

Marina Bay, Singapore, 8.04pm, Sunday 18 September 2016
Details Canon EOS-1DX MkII, 600mm lens, 1/250th at F14

5. BIRD'S-EYE VIEW

Early on Thursday morning, Tee was able to gain access to one of the best vantage points in the sport. This is ten floors up in McLaren's VIP hospitality suite on the approach to Monaco's first corner at Ste Dévôte, where he captured Lewis locking up

Monaco, Monte Carlo, 10.50pm, Thursday 26 May 2016
Details Canon EOS-1DX MkII, 200mm lens, 1/500th at F7.1 →





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GLENN DUNBAR

During the 1970s and '80s, the photographic agency LAT (which originally stood for 'London Art Tech') was run by Glenn's father, John Dunbar. Glenn has been working at races for more than ten years, where he doubles up as Williams' team photographer. He was the perfect choice to accompany us when Felipe Massa welcomed F1 Racing to his São Paulo home ahead of what we all thought would be his final Brazilian Grand Prix...

1. DREAM DEBUT

When Max Verstappen made the early season switch from Toro Rosso to Red Bull, no one expected him to win first time out with his new team. But when the two Mercedes drivers crashed into each other in Spain, the youngster seized his chance

Barcelona, Spain,
3.55pm, Sunday
15 May 2016

Details Canon EOS-1DX, 400mm lens, 1/500th at F4

2. LIGHT SHOWERS

The titanium skid blocks on an F1 car, in combination with the floodlights of the Bahrain International Circuit, make for an illuminating combination. Dunbar has captured the two Red Bulls, with Ricciardo showering Kvyat with sparks.

Sakhir, Bahrain,
6.28pm, Sunday
3 April 2016

Details Canon EOS-1DX, 200mm lens, 1/15th at F10

3. WHAT AN IMPACT

Throughout 2016, Nico Rosberg reiterated his mantra of "one race at a time." In Austria, he was momentarily on the back foot when his left-rear suspension failed in FP3. As he exited the Turn 2 hairpin, it broke, and he was pitched into the Armco barriers

Spielberg, Austria,
10.38am, Saturday
2 July 2016

Details Canon EOS-1DX MkII, 600mm lens, 1/1000th at F8

4. TONGUES ARE WAGGIN'

Dunbar has worked closely with Williams as their team photographer for many years. This is one of the first days back at school after the winter break, and team boss Claire Williams spots him pointing a lens at her during FP2 at the Australian GP

Albert Park, Australia,
5.44pm, Friday
18 March 2016

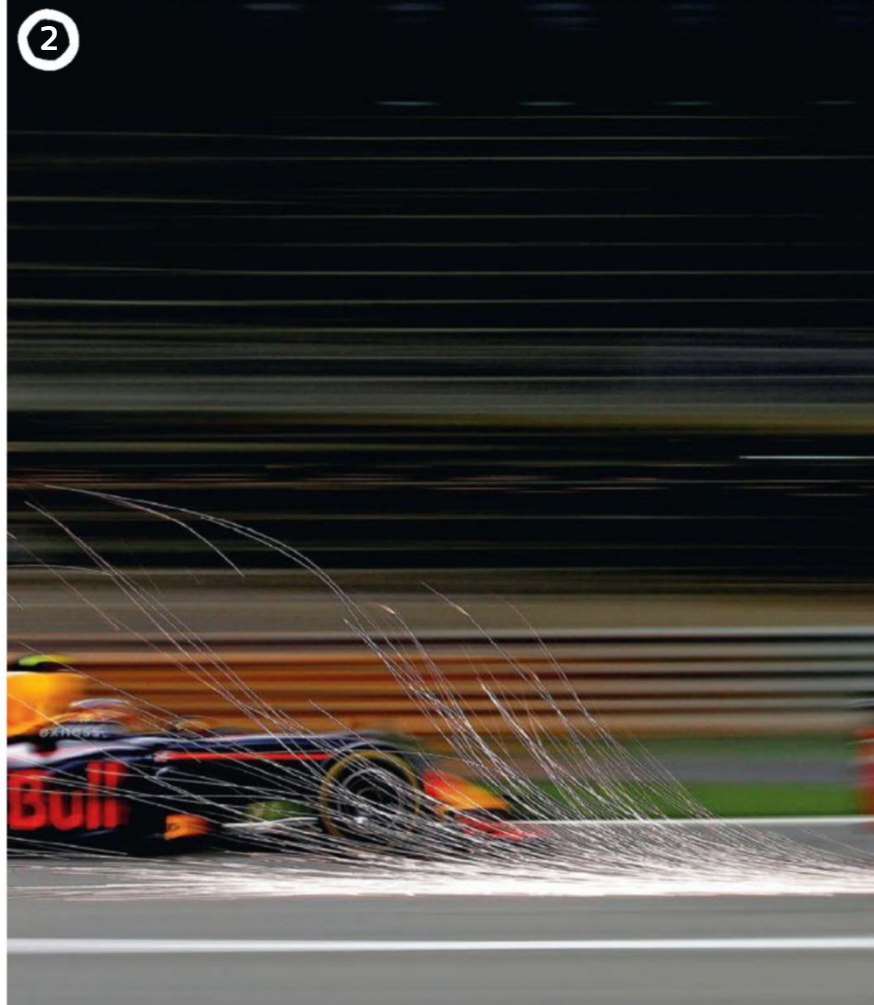
Details Canon EOS-1DX, 400mm lens, 1/500th at F4

5. FLYING THE FLAG

The 47th grand prix win of Lewis Hamilton's career was also the fourth time he's won his home race at Silverstone. From pole he was unchallenged in the wet and dominated to the delight of his British fans, with whom he celebrated after the race

Silverstone, Britain,
4.01pm, Sunday
10 July 2016

Details Canon EOS-1DX MkII, 300mm lens, 1/1000th at F2.8 →







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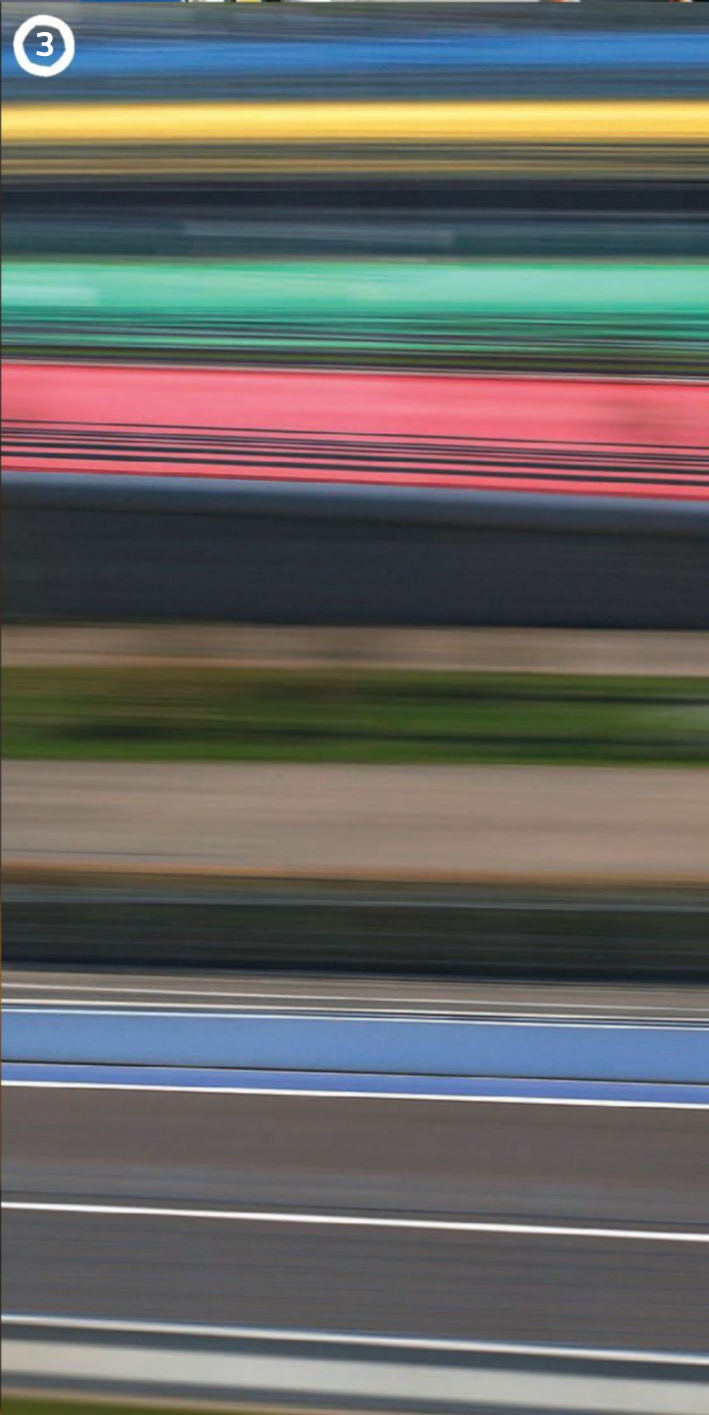


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SAM BLOXHAM

LAT's Sam Bloxham has been principal photographer for both GP2 and GP3 for the past three years, but from 2017 onwards he will concentrate full-time on Formula 1 as well as covering the all-electric Formula E series. It was in his role as one of Haas's team photographers that he captured Fernando Alonso hitting the back of Esteban Gutiérrez at the season-opening Australian GP.

1. MOMENT OF IMPACT

The 2016 season started with a bang when Fernando Alonso struck the rear of Esteban Gutiérrez's Haas during the season-opening Australian GP. Remarkably, Alonso was able to climb out of his wrecked McLaren unaided following the enormous airborne shunt

Albert Park, Melbourne,
4.33pm, Sunday
20 March 2016
Details Canon EOS-1DX, 600mm lens, 1/640th at F4.5

2. ILLUMINATING THOUGHT

Early on in the new season, the reigning world champion was under pressure. His team-mate Nico Rosberg was victorious in Australia, and Hamilton came to Bahrain to try to regain the initiative. But Hamilton wouldn't win until round six in Monaco

Sakhir, Bahrain,
5.29pm, Saturday
2 April 2016
Details Canon EOS-1DX, 600mm lens, 1/160th at F4

3. BULL-DOZING

The Russian GP was an inauspicious home race for Daniil Kvyat. He hit Sebastian Vettel at the start of the race (twice), which caused his Red Bull team-mate Ricciardo (ahead) to sustain a puncture and other damage. From the next race, Kvyat was back at Toro Rosso

Sochi, Russia,
4.01pm, Sunday
1 May 2016
Details Canon EOS-1DX, 200mm lens, 1/15th at F25

4. ROSTRUM REJOICING

The nature of the Hungaroring track is one that suits Lewis Hamilton's style. With its long-radius corners and extended braking zones, Hamilton's record here is outstanding. Victory in July's Hungarian GP was his fifth win from ten starts at this sinewy circuit

Budapest, Hungary,
3.54pm, Sunday
24 July 2016
Details Canon EOS-1DX, 35mm lens, 1/1000th at F8

5. VROOM WITH A VIEW

At Monaco there is always a stark contrast for drivers to process, between the dark, featureless tunnel and emerging into the sunlight to see the yachts bobbing on the Côte d'Azur harbour. And yet the real focus is on trying to pass someone on track

Monte Carlo, Monaco,
3.24pm, Sunday
29 May 2016
Details Canon EOS-1DX, 200mm lens, 1/1300th at F6.3 →





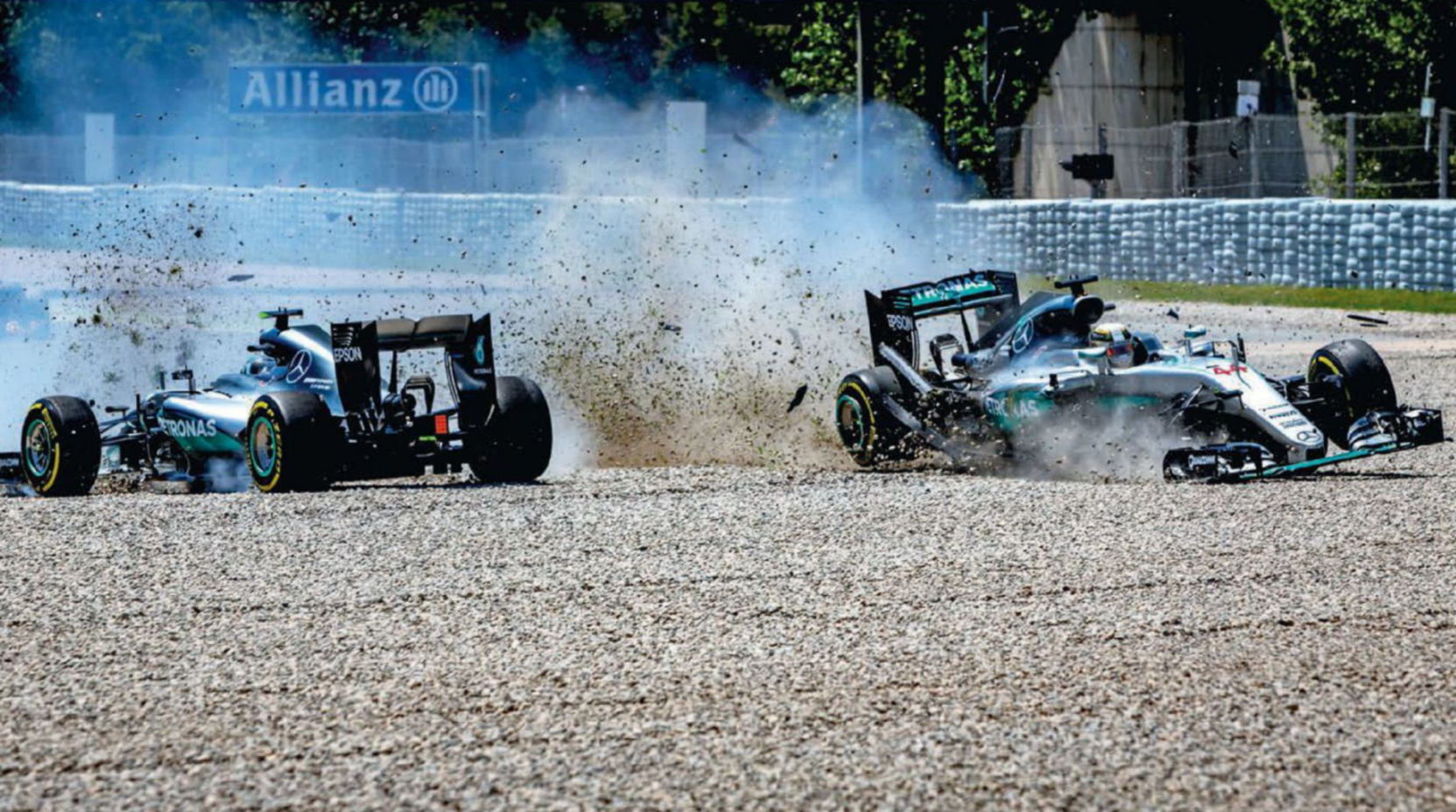
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ZAK MAUGER

After starting life at LAT Images as a digital technician, Zak has followed the same route as many before him, graduating to a full-time photographic role. In 2016, he travelled to a number of grands prix and tests, and this season will be the principal photographer of the GP2 and GP3 series, while also working with the Haas team in Formula 1. A little-known fact is that Zak originally hails from Guernsey...



1. STAR GAZING

The early pre-season tests in the winter months are an opportunity to capture the setting sun while the cars are still circulating. The days are short and often quite chilly, but shots like this can reward patience, particularly if the sky is devoid of cloud

Barcelona, Spain,
4.59pm, Wednesday
2 March 2016
Details Canon EOS-1DX, 200mm lens, 1/2500th at F7.1

2. TESTING TIMES

Fernando Alonso heads out of the pitlane once more to continue testing the new-for-2016 McLaren-Honda. The early signs are that it's still not on a par with the top teams, but thankfully there is no repeat of last year's mysterious testing crash

Barcelona, Spain,
3.35pm, Thursday
3 March 2016
Details Canon EOS-1DX, 14mm lens, 1/1600th at F9

3. CATCH ME IF YOU CAN

With team-mate Hamilton starting on the back row and the Ferraris making contact with each other and Max Verstappen at T1, the Mercedes of Nico Rosberg has a clear lead at Spa as the field streams through Eau Rouge on the opening lap of the race

Spa, Belgium,
2.03pm, Sunday
28 August 2016
Details Canon EOS-1DX, 200mm lens, 1/1600th at F7.1

4. SLINGS AND ARROWS...

Zak was at Turn 4 of the Spanish Grand Prix thanks to a commercial deal with track signage sponsor Allianz. He was on his own and, as a result, is the only photographer to have captured the full sequence of the crash between the two Mercedes drivers

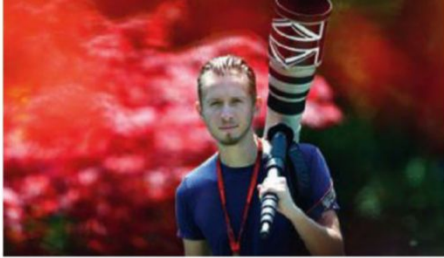
Barcelona, Spain,
2.03pm, Sunday
15 May 2016
Details Canon EOS-1DX, 200mm lens, 1/2000th at F8

5. MAX ATTACK

As a result of the crash between Hamilton and Rosberg on the opening lap of the Spanish GP, Max Verstappen was given the opportunity to win on his Red Bull debut. After the race he could scarcely believe his incredible achievement

Barcelona, Spain,
5.06pm, Sunday
15 May 2016
Details Canon EOS-1DX, 200mm lens, 1/320th at F3.5 →





ANDY HONE

This year, Andy returned to LAT Images for his second stint with the motorsport picture agency. As a freelancer shooting exclusively for LAT, he's divided his time working for various clients, including Haas and, of course, F1 Racing. Over the course of the year, Hone (who commutes to races from Newcastle) helped with our 'You Ask The Questions' portrait shoots, featuring the likes of Dan Ricciardo, Sergio Pérez and Carlos Sainz.

1. GLO-FASTER STRIPES

In Singapore, when you turn left over the Anderson Bridge, the cars are flat-out along the back straight. Under braking for the next right hander – Turn 14 – if you stand in the correct position, you can capture the brakes on the F1 machines glowing red hot

Marina Bay, Singapore,
8.32pm, Sunday
18 September 2016
Details Canon EOS-1DX, 35mm lens, 1/800th at F4

2. WINDOW SHOPPING

As Sebastian Vettel powers up the hill to Massenet during FP3 on a Saturday morning, he hasn't time to glance left to look into the luxury shops that grace the perimeter of the Monaco circuit. Note the jack outside the front door to help recover any broken cars

Monaco, Monte Carlo,
11.08am, Saturday
28 May 2016
Details Canon EOS-1DX, 35mm lens, 1/2000th at F8

3. IT'S ALL OVER

After getting out of his winning car at Abu Dhabi, Lewis Hamilton looks down, dejected that he's lost his championship crown. After a season of poor reliability – and a couple of off-the-pace races – he's had to concede title defeat to his team-mate Nico Rosberg

Yas Marina, Abu Dhabi,
6.45pm, Sunday
27 November 2016
Details Canon EOS-1DX, 200mm lens, 1/500th at F3.2

4. AN EMOTIONAL END

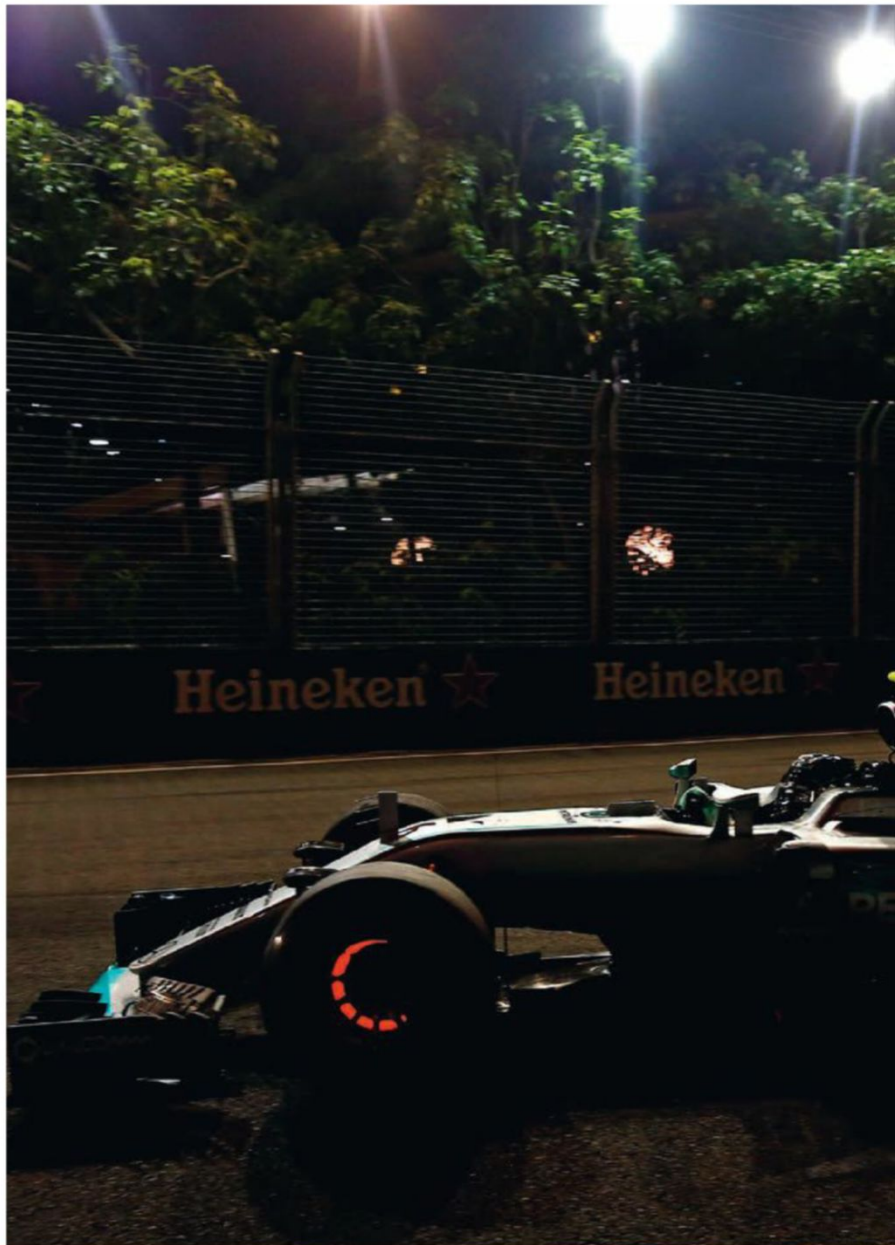
When Felipe Massa crashed out of his home race in Brazil, he waved to the crowd and began the long trudge back to the pitlane. Rival mechanics applauded him, as did his family. We thought it was all over, but is a comeback already in the offing?

Interlagos, Brazil,
4.18pm, Sunday
13 November 2016
Details Canon EOS-1DX, 200mm lens, 1/500th at F2.8

5. TIME FOR A NIGHTCAP

It's been easy to forget what an ace Dan Ricciardo is, given that so much of the media attention – good and bad – was on his Red Bull team-mate Max Verstappen this year. But there were great drives for the Aussie, including this Singapore GP podium 🏆

Marina Bay, Singapore,
10.08pm, Sunday
18 September 2016
Details Canon EOS-1DX, 600mm lens, 1/500th at F4





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Nico Rosberg gave it his all to beat Lewis Hamilton to the title

Full marks for effort

Congratulations to our new champion. Lewis Hamilton had the longest season in history, with the best car, and he failed to beat his team-mate. The driver with the most points at the end of the season is rightly declared champion, so I don't see why people question whether Nico Rosberg deserves it.

In his autobiography, *Watching the Wheels*, published before the title decider, Damon Hill summed it up perfectly: "Surely the man or woman who gives everything they have to beat those for whom things are a little easier deserves more credit, rather than disdain for not having as much natural ability?"

I couldn't agree more.

Niral Charadva
Leicester, UK

The inside line

I read your Nico Rosberg interview in January's *F1 Racing*. You asked if he had driven an F1 car like his dad's. He replied: "I did, yeah. I drove at Goodwood in my dad's '82 car, and around Silverstone. Williams let me do that. It was slow – like a kart. But it was cool."

I was at Silverstone on the day he drove his dad's car. It was a corporate event, and his brief description doesn't quite sum up what happened. One of the mechanics told me that Nico had kept asking if he could drive his dad's car. He was told that Kazuki Nakajima would be driving it instead, since they didn't want Nico to get too emotional.

At the end of the day they were preparing his dad's car and Nico was told to get ready to drive it. His face lit up and he rushed to get ready. You could see the pleasure on his face as he sat in the car.

Kevin Miles
West Yorkshire, UK

Stuck? Then overtake

Regarding the Abu Dhabi Grand Prix, I think everyone is missing the point: namely, that a racing driver's job is to race.

Reprehensible though Lewis's slow-down tactics were, the solution was in Nico's hands. He merely had to overtake Lewis. Had he taken them both out in trying to do so, he would be world champion (witness Schumacher and Hill).

Nico had nothing to lose, while Lewis had everything to lose and he would have had to respond to Nico.

Nico should have taken control, not sat behind, whining about how slowly Lewis was driving.

Trevor Hunt
Somerset, UK

In with the old

I recall one F1 commentator lamenting the loss of the 'old' Hockenheim, with its flat-out bursts through the forest, recognising that many of today's tracks are too similar to each other. There is in fact a quick and easy fix to bring a high-speed track back to F1.

The Autodromo Juan y Oscar Gálvez is infamous for the loop section used from 1995-98 for the Argentine GP, but in the early '80s, turbo cars roared along the lakeside extension – a road that still exists.

If Liberty Media got Argentina to invest in the old high-speed loop and bring it up to F1 spec, we'd have F1 cars running flat-out, and expand F1 into a growing market. Make it happen please, Mr Carey!

Daniel Stafford
By email

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AutoExpress, Dec 2016



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Dear Toto,
Well, we're not in Kansas any more, are we? Bet you weren't expecting your newly crowned world champ to click his heels thrice and give it the old "there's no place like home".

I hear, too, that the Paddy-wallah you'd left behind the curtain, operating the smoke machine, has been groping for the exit as well. Last seen thumbing a lift towards Grove and mumbling something about running a Formula 1 team being a wizard wheeze. I'd have told him to get on his bike, but I understand that mode of transport is *verboden* in Merc circles after your brains trust had that little pile-up by the Danube the other year.

Mind you, I couldn't blame the cove if he'd jacked in his company car already. I took a test drive in a GLE Coupé the other day, and am sorry to report that while it occupies as much real estate as the Bismarck, on the inside it's tighter than one of your Captain von Trapp's submarines. As a tall fellow, you should steer clear. It would be a most unedifying sight watching you fold yourself into such a cheerless conveyance.

Speaking of cars, Toto, quite besides that small issue of the temporary vacancy in one of your garages, and the other one in the skinned-knuckle department, you've got a new formula to look forward to this year. On this matter I must sympathise with you. Everybody has been

"So, Toto, quite a lot on your plate this past month or two, while less important folk have been out wassailing and such..."

trying to upset the Mercedes appletart, haven't they? All that work Uncle Ross put in, persuading your board to open the corporate purse and shake out a few more million in spare change, hiring a technical director for every day of the week and one for Sunday best – you'd think, once all that had come to fruition and left you sitting atop the competitive pile for a couple of seasons, that Mr E would let you enjoy the success for a while, wouldn't you?

But, no. He Who Must Be Obeyed started fretting that the Great Unwashed, faced with the riveting spectacle of two silver cars lapping in formation on any given Sunday afternoon, were switching over to repeats of *Colombo* instead. Thus the supine denizens of the venerable Strategy Group were given a poke, handed a set of pens and pencils and a few sheets of foolscap, and told that they wouldn't get any dinner until they'd come back with something that looked and sounded much racier.

Sigh. Some people, eh?

So, quite a lot on your plate this past month or two, while less important folk have been out wassailing and such. Still, I fancy you're in quite a good place. After all, if one executive-director-technical (or whatever you call them these days – German nouns being the linguistic equivalent of a multi-car shunt on the M25 in a pea-souper) comes to you cap in hand, wanting a bump up the greasy pole or a few more shekels in his monthly stipend, you've got the ideal bargaining chip in the form of another technically inclined chap who's been tending his bougainvilleas these past few months. Allison Wonderland I think his name is.

As to your other pedaller, Toto, I understand that filling this position has been a bit of a slog. Strange that, since drivers are rather like the number eight bus, in that there's always one along in a minute – or, alternatively, that after a long and disagreeably wet kerbside interregnum, you finally see half a dozen of them hove into view at once.

Surely it didn't have to be this tricky? It was always my understanding that the Mercedes young driver pool was well stocked. Trouble is, The Bernard doesn't think your cubs are much cop for F1's box office. Wehrlein schmerlein, quoth he.

As to this Bottas fellow, I hear Team Willy's title sponsors – some grog vendors who were big in the 1970s – were loath to part with someone who was actually old enough to be seen quaffing their tipple. Finns ain't what they used to be, eh? Perhaps ordering a job lot of Italian vermouth might do the trick. I should coco, Toto.

Yours, thumbing through the cocktail menu,

the SCRUTINEER



PHOTO: STEVE ETHERINGTON/LAT

"It was always my understanding that the Mercedes young driver pool was well stocked. Trouble is, The Bernard doesn't think your cubs are much cop for F1's box office"

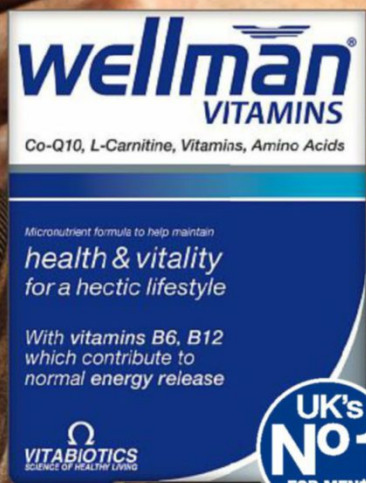
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