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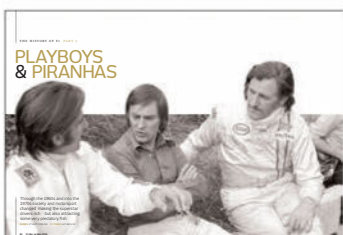
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WHY F1 TAKES SOME BEATING
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**McLAREN
VS FERRARI**

The Scuderia got the head start, but after decades of rivalry, it's very close between the two teams



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McLAREN M7C
This late-'60s high-winged stunner enjoyed both success and controversy



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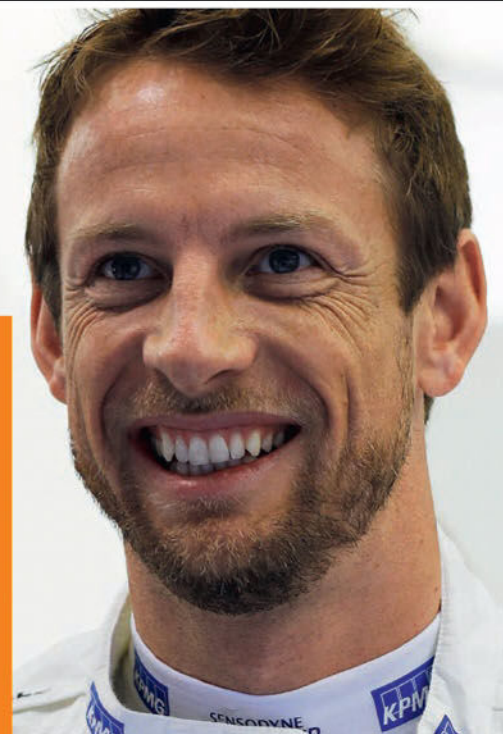
McLAREN MP4-31
We take a look at the numbers behind McLaren's latest offering, the Honda-powered MP4-31



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**JENSON
BUTTON A-Z**

Everything you need to know about the McLaren veteran and 2009 world champion



We celebrate McLaren's 50 years in F1



Follow Anthony on Twitter: @Rowlinson_F1

What might Bruce McLaren think today were he to take a tour of the steel-and-glass architectural extravaganza that is the McLaren Technology Centre? He'd probably be stunned that Formula 1 has come so far, so fast, since he first led his team to a grand prix start at Monaco, in 1966 (though he would also be delighted that the Austin 7 in which he began racing still takes pride of place in the MTC's 'Boulevard' entrance walkway).

McLaren's first grand prix wasn't the most auspicious: Bruce qualified his M2B tenth, almost three seconds off the pole time of Jim Clark's Lotus 33, and his race lasted only nine laps before he had to retire because of an oil leak. But it was the start of something very big indeed. Within two seasons McLaren were race winners – Bruce becoming only the second man to win a grand prix in a car bearing his own name, in Belgium. By the end of that year, 1968, they'd won two more and finished second in the constructors' championship.

Since that debut, 50 years ago, McLaren have won 182 GPs, second only to Ferrari, who, with an extra 16 seasons of competition, have 224. For the record, McLaren have also won eight constructors' titles and produced seven world champions, who have taken 12 titles between them. But McLaren are about much more than stats; they represent so much of the essence of F1, that it's impossible to imagine the sport without them.

As we note in our 'great rivals' feature on page 78, they're as vital to the soul of F1 as are their great Italian peers in Maranello. Twin buttresses of the sport, McLaren and Ferrari have been central to its narrative for almost five decades. They gave us Hunt vs Lauda; Senna vs Prost (round 2); Häkkinen vs Schumacher and Hamilton vs Massa – each of them battles for the ages.

While McLaren haven't been front-runners since 2012 and it's impossible to overlook the trials of 2015 (their least competitive season since 1980), McLaren are an organisation "with winning in their DNA" as CEO Ron Dennis might put it (for more from Ron turn to our exclusive 'Long Interview' on page 48). And they've endured far worse than a mere loss of speed. Bruce's death in a sportscar testing accident at Goodwood in 1970 would have finished a lesser team. Instead, those who survived him, including Teddy Mayer, Alastair Caldwell and Tyler Alexander, dusted themselves down and carried on: 'Because Bruce would have wanted it.'

So it's with caps doffed that we dedicate most of this issue to celebrating McLaren's 50 years in F1, confident in the knowledge that while form is temporary, class is permanent – and that McLaren will return to winning ways, because they have *always* been a class act.

As an F1 team, they sometimes seem impenetrable, untrusting of outsiders, wary of those who might seek to damage the inner circle. Get to know them a little, though, and McLaren are revealed as a team of warm-hearted racers, utterly dedicated to competition. Safe to say, then, that while Bruce might be bowled over at what McLaren have become, he'd soon feel right at home.

Contributors



Matt Youson
Encyclopaedic knowledge of all things McLaren

What better way to celebrate 50 years of McLaren in F1, than to remember their 50 defining moments? Find out what they are on p64



James Mann
The photographer star behind 'Now That Was a Car'

Parts of the luridly orange McLaren M7C were banned at the 1969 Monaco Grand Prix. Discover what all the fuss was about on p46



Steven Tee
LAT's ace lensman who's been in F1 for over 30 years

Having worked at more than 500 GPs, Steven has been awarded an honorary F1 pass for his lifetime's achievement. See his pics of Ron Dennis on p48



Andrew Benson
The BBC's F1 man never misses a breaking story

As a close observer of Fernando Alonso's every move, Benson ponders what the two-time champ will do next... See page 58 for his conclusion



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Parade

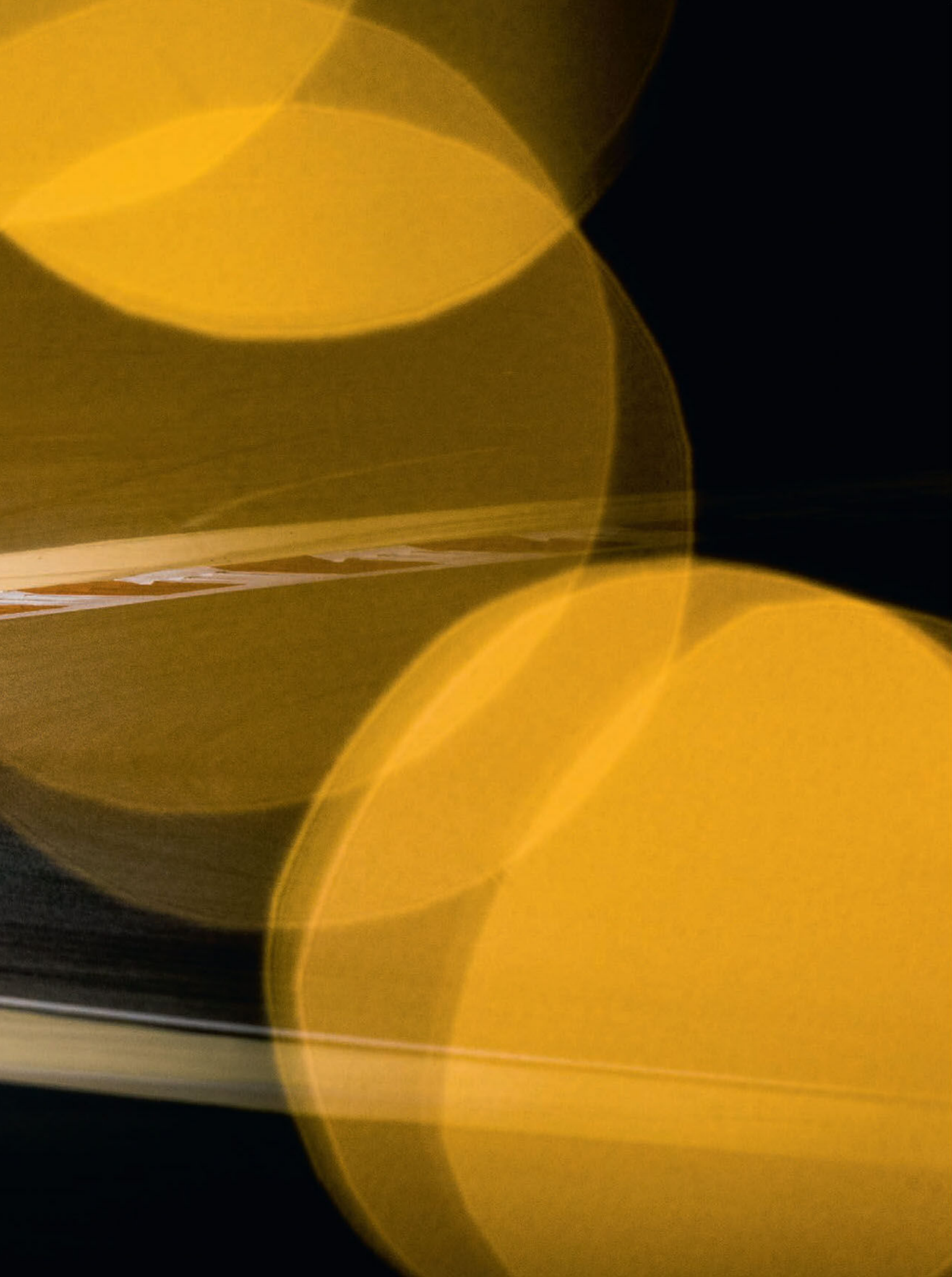
Guiding lights After being struck by an over-zealous Valtteri Bottas at Turn 1 on the first lap in Bahrain, an undaunted Lewis Hamilton fights his way back up through the field in his battle-scarred Mercedes. From seventh at the end of lap 1, Hamilton puts in a spirited comeback drive to finish third at the flag

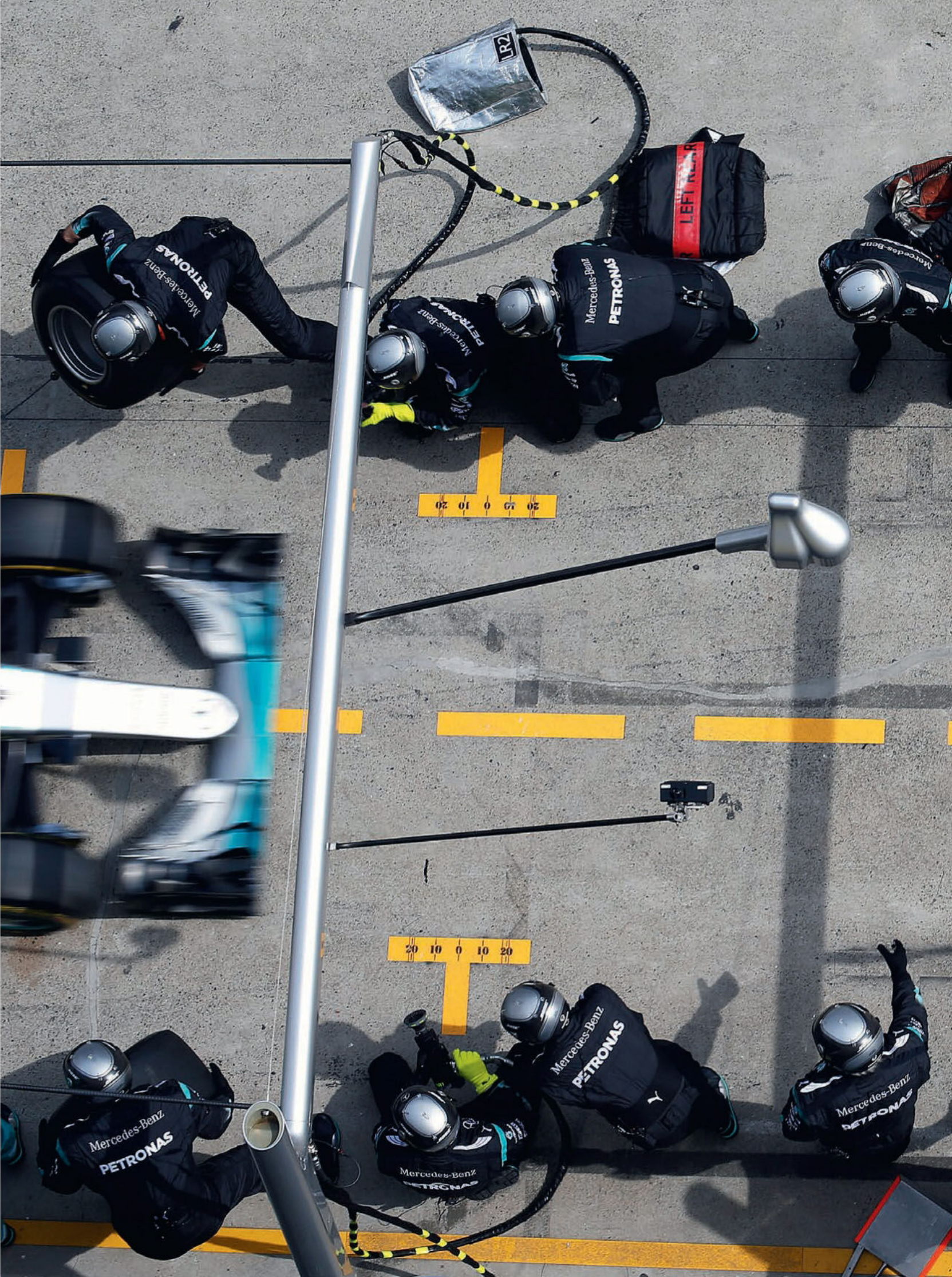
Where Sakhir, Bahrain **When** 5.49pm, Sunday 3 April 2016

Photographer Vladimir Rys

Details Canon EOS-1DX, 400mm lens, 1/500th at F3.5







LR2

LEFT REAR

PETRONAS
Mercedes-Benz

PETRONAS
Mercedes-Benz

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Mercedes-Benz

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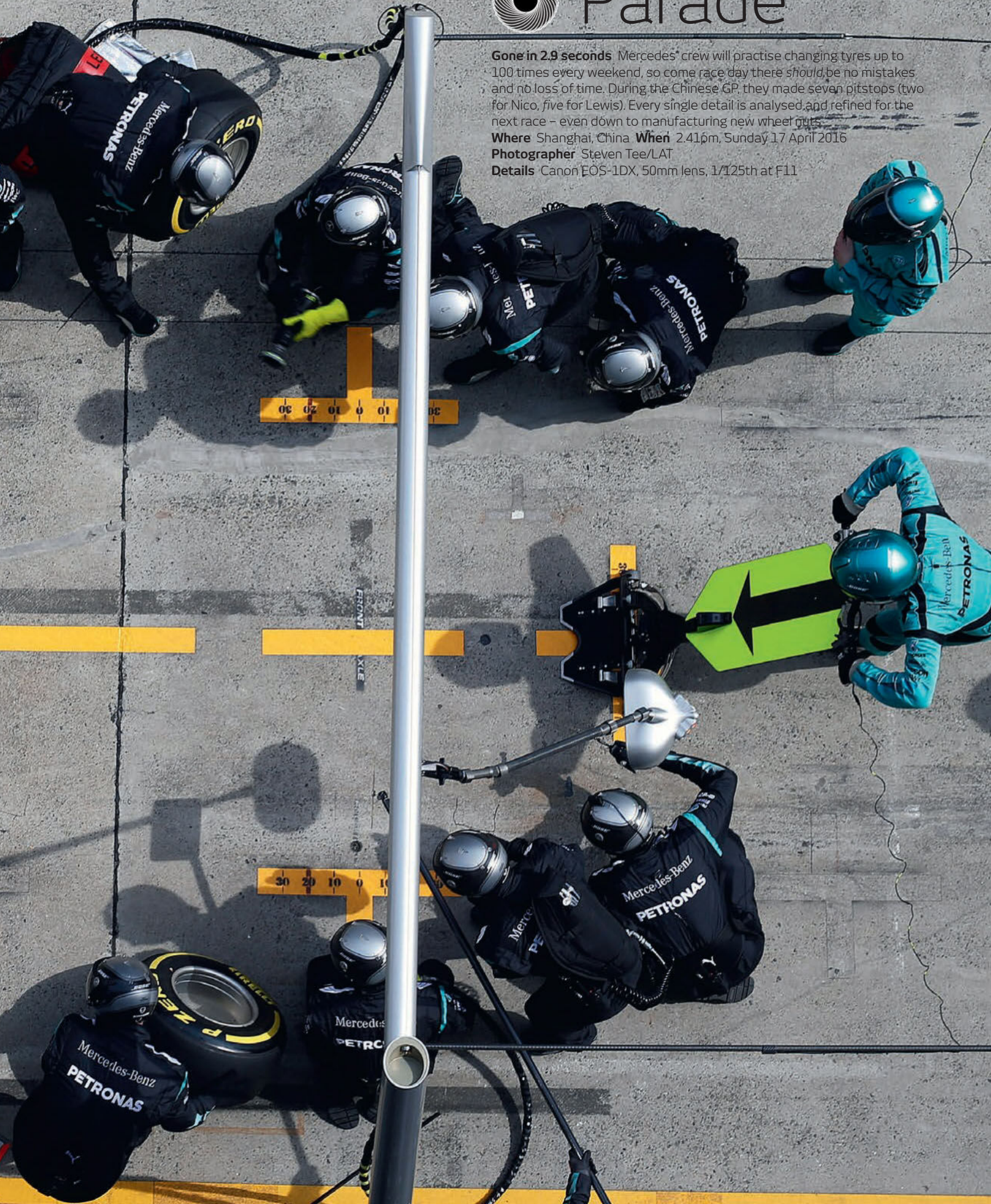
Parade

Gone in 2.9 seconds Mercedes' crew will practise changing tyres up to 100 times every weekend, so come race day there *should* be no mistakes and no loss of time. During the Chinese GP, they made seven pitstops (two for Nico, five for Lewis). Every single detail is analysed and refined for the next race – even down to manufacturing new wheel nuts.

Where Shanghai, China **When** 2.41pm, Sunday 17 April 2016

Photographer Steven Tee/LAT

Details Canon EOS-1DX, 50mm lens, 1/125th at F11





Parade

Feeling deflated It's not been an easy start to the year for the returning Kevin Magnussen. On Friday morning in Shanghai his Renault suffers a suspension failure that punctures his left-rear tyre. Despite the lack of running, he impresses in qualifying and outraces his team-mate Jolyon Palmer on Sunday

Where Shanghai, China **When** 10.55am, Friday 15 April 2016

Photographer Peter J Fox

Details Canon EOS-1DX, 600mm lens, 1/400th at F4.0





ROSBERG CONTRACT 18



VANDOORNE DRIVE 20



HAAS LOOPHOLE 24

F1 INSIDER

NEWS ■ OPINION ■ ANALYSIS

ANALYSIS

Red Bull *can* return to winning form

Following impressive engine developments over the winter, another step promised for this summer could reverse the four-time champions' form



The month's big stories at a glance

31.03.16 Fernando Alonso is ruled out of racing in Bahrain after suffering rib and lung injuries in his Melbourne crash **01.04.16** Force India tester Alfonso Celis Jr makes his Friday practice debut in Bahrain

07.04.16 F1 decides to drop elimination-style qualifying, agreeing to return to the 2015 format from the Chinese GP



08.04.16 Silverstone's current owners, the BRDC, narrowly vote in favour of Jaguar Land Rover's deal to buy the circuit, although a second bid has since cast doubt on the sale **11.04.16** Williams' latest financial figures report a return to profit and they appoint American businessman Brad Hollinger as a non-executive director **18.04.16** Pirelli are granted 25 test days in which to trial their 2017 rubber



Daniel Ricciardo is bullish about Red Bull's prospects this year: "We're getting there. We're definitely closing in, and if we keep closing in at this rate it's going to be a pretty spicy rest of the year"

Red Bull could be joining Mercedes and Ferrari in the fight for wins by this summer if development of their TAG Heuer-badged Renault engine lives up to expectations. They have shown encouraging pace in the first races of the season, their improvement largely explained by Renault making a performance step of about 50bhp over the winter in combination with a typically excellent Red Bull chassis.

A major upgrade to the turbocharger planned for the early summer – around the time of the Canadian Grand Prix – is said by insiders to be worth 0.45 of a second per lap. That would put the Renault close to the performance of the Mercedes and Ferrari.

The gap between Red Bull and Ferrari in the first two races in Australia and Bahrain, was about 0.8s per lap. In China, Red Bull were even closer to the pace. Daniel Ricciardo was only 0.5s off pole-setter Nico Rosberg's Mercedes in qualifying, and ahead of the Ferraris after Sebastian Vettel and Kimi Räikkönen both made errors on their qualifying laps.

Ricciardo led the early laps of the race in Shanghai after making a better start than Rosberg, only to suffer a puncture. He said: "We're getting there. We're definitely closing in, and if we keep closing in at this rate it's going to be a pretty spicy rest of the year."

His team-mate Daniil Kvyat, meanwhile, benefited from the first-corner mayhem, triggered by his dive down the inside of Vettel, to finish on the podium. He said: "Mercedes are still a step ahead, but with the developments in the future races, probably around Canada, I think we can make a bit of a step forward. In some circumstances, I think we can be quite a big challenge to them."

Red Bull have built on the progress they made with their chassis in the second half of last season when it was thought to be at least the second best car to Mercedes, if not its equal, in certain circumstances. The same has proved to be the case in 2016. The Red Bull is quicker than the Mercedes in some low-speed corners, even though Mercedes still have the highest levels of downforce and are quicker in the faster corners.

"We built on getting that performance back in the second half of last year," Ricciardo said. "The team really turned it around and that was refreshing to see. This year we've started off on an even better footing. Definitely the vibe is somewhat like 2014, and it feels good. It's really promising – in every race we have shown a strength we didn't expect."

Red Bull's hopes of actually living up to their own expectations will depend on whether Renault can make the steps forward they expect. Since the start of the hybrid formula in 2014, this has not been the case – each predicted development has tended not to work. The company started 2015, for example, with a worse engine than they finished the previous year. And an upgrade that was predicted to be worth 0.4s a lap was progressively downgraded to 0.15s – and again made the engine worse when introduced towards the end of the season.

Yet Red Bull say that since Renault increased their commitment to F1 by taking over the Lotus team, they can see a step-change in the effectiveness of the engine department and its development. The first evidence of that was the progress made over the winter.

This has been boosted by Renault's employment of British engine experts Ilmor to work with them on the development of the

engine, a move that has its origins in Red Bull recruiting Ilmor on a consultancy basis at the end of 2014 to look at the power unit.

Ilmor had a development engine in the middle of last season that they believed would give an improvement of 0.4s a lap – but Renault chose to pursue their own development path instead, believing it would give at least as much. It was the failure of this internal programme that led to the decision to extend the relationship with Ilmor, which is with Renault, not Red Bull – both teams get the same engine specification.

Renault Sport boss Cyril Abiteboul said the company was "impressed by the capacity of Ilmor to bring some positive stuff to the table". Abiteboul characterises Ilmor's role as "extending our engineering capacity and also adding an extra dyno, so we can scale up our development capacity and catch up quicker".

NEWS

Rosberg set to extend his Mercedes contract

The championship leader's current deal is due to end this year – and both sides of the table are already sharpening their pencils



Rosberg, winner of the past six races, is the perfect foil to team-mate Lewis Hamilton

Nico Rosberg looks likely to stay on at Mercedes beyond the end of his current contract this season. Both Rosberg himself and team boss Toto Wolff have dropped heavy hints that an extension to keep him on as Lewis Hamilton's team-mate is on the cards.

Wolff said: "It is between two parties and it needs to pan out in the right way. He has been in the family for such a long time; he is a very important pillar of the team and he performs well. There is nothing that speaks against him joining up again but it comes down to the detail and that needs to be discussed at a certain stage. Both sides feel comfortable about it."

Rosberg was asked whether he was concerned that he was battling for the title without any guarantees about his future and replied: "The contract is not something that is present in my mind. Why should it be? I'm very comfortable anyway here, I have a great relationship and I'll be here for some time to come, and that's it."

The relationship between Hamilton, who is contracted until the end of 2018, and Rosberg works well for Mercedes. In Hamilton, they

have arguably the fastest and undoubtedly the highest-profile driver in F1. Rosberg is quick enough to keep him honest and, importantly, to win when he does not. He is also realistic enough to know that, all things being equal, Hamilton is the better driver, yet is psychologically strong and mature enough to deal with that.

Retaining Rosberg would also be a reflection of the situations of the drivers who would be of most interest as a potential replacement. Top of the list are Daniel Ricciardo and Max Verstappen, but both are already under contract to Red Bull – Verstappen until the end of 2017 and Ricciardo for a year longer.

And while Mercedes would have no qualms about partnering Ricciardo with Hamilton on a personality basis, they might consider it was too early for Verstappen. He will be just 19 next year in what will be only his third season in F1.

Pascal Wehrlein, making his debut for Manor this year, is a contracted Mercedes protégé. But next season would also be too early for him as well – both in terms of development and in proving whether he is up to the challenge.

QUIZ



F1 Mastermind

Your chosen specialised subject: the world's greatest sport

THE MONACO GP

- Q1** Over the past 15 years, how many drivers who have won that year's Monaco GP have then gone on to win the championship?
- Q2** Which tyre compound will make its debut in Monaco this year?
- Q3** True or false: Ford engines have won more Monaco Grands Prix than any other engine make.
- Q4** In the famous 1982 Monaco GP, which no one seemed to want to win, who were the drivers who actually managed to lead a lap?

- Q5** Saint Dévote, Beau Rivage... what comes next?
- Q6** Which current F1 driver has set pole position at Monaco but has never taken a race win there?
- Q7** Name the one driver who has won the 'Triple Crown': the Monaco Grand Prix, the Indy 500 and the Le Mans 24 Hours.

- Q8** What was notable about the grid at the 1995 Monaco GP?
- Q9** What landmark was reached with Fernando Alonso's win in 2007?
- Q10** In which year did the water used to put out a fire in the Loews Hotel delay the GP start by an hour?
- Q11** Who has more Monaco poles: Stirling Moss or Sebastian Vettel?

- Q12** From where did Olivier Panis start when he won in 1996?
- Q13** What was used for the first time at the 2015 Monaco GP?
- Q14** When did a McLaren last finish on the podium in Monaco?
- Q15** Which champion once said racing at Monaco was like "riding a bicycle around your living room"?

1 Five: M Schumacher 2001; Alonso 2006; Hamilton 2008; Button 2009; and Vettel 2011 2 Ultrasoft 3 True 4 Prost, Arnoux, Patrese and Pironi 5 Massena 6 Felipe Massa 7 Graham Hill 8 It was the last to feature 26 cars 9 McLaren's 150th win 10 1981 11 Moss (3), Vettel (1) 12 14th 13 The Virtual Safety Car 14 2011 15 Nelson Piquet



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NEWS

Button and Vandoorne face off over race seat

With Button's current McLaren contract due to expire, he must prove he is a better prospect than highly rated rookie Vandoorne

Jenson Button will have to fight for his Formula 1 future as he enters the final months of his current McLaren deal.

Button signed a one-year extension late last season after convincing McLaren boss Ron Dennis that he still had the speed and, crucially, the hunger to continue as a competitive F1 driver. But he will have strong competition for a 2017 race seat after McLaren's reserve driver Stoffel Vandoorne made a stellar debut at the Bahrain Grand Prix.

Even before this, Button was already at risk of losing his place to the Belgian next season, and McLaren were already weighing up the 2009 world champion's experience against Vandoorne's promise.

Vandoorne stood in for Fernando Alonso in Bahrain after Alonso was ruled out of the race weekend by the FIA on medical grounds. The two-time champion had suffered a cracked rib

McLaren's 2017 lineup will most likely consist of Alonso, plus either Button or Vandoorne

in his 180mph accident at the Australian Grand Prix, and FIA medical delegate Jean-Charles Piette decided it was too big a risk to allow him to drive again less than two weeks later.

Vandoorne flew overnight from Japan, where he had been testing the car he races in Super Formula, to arrive in time for first practice in a car he had never driven before. He built up steadily and ended up outqualifying Button by 0.064secs. Button was forced to retire from the race with a power failure, but Vandoorne put in an accomplished performance and scored a point by finishing tenth. This has underlined his potential and the commonly held belief within the paddock that he is the most highly rated driver without a current full-time F1 seat.

Alonso's current contract will run out at the end of the 2017 season, and he has said he will not decide whether to continue in F1 beyond then until he has tried that year's cars and the new Pirelli tyres that will be designed for them. Currently, only Button and Vandoorne are in contention for McLaren's second seat.



F1 BANTER

PASSNOTES

Your essential F1 briefing
#26 Dinner



Name Dinner

Age It's about 700 years since the French coined the word *dîner*

Appearance

Variable in both quality and quantity

A bit early to be talking about dinner, isn't it? I can still taste the toothpaste.

For you perhaps, but there's been a 'big buzz' on social media about the Formula 1 drivers going out to dinner together and tweeting a group 'selfie' through the GPDA Twitter account.

Really? Everyone's got to eat, you know. You'll be telling me they don't put their trousers on one leg at a time next.

Quite so, but then Formula 1 drivers don't *really* tend to hang around together much nowadays, so it's actually quite unusual.

They're probably not even allowed to look at a menu without their trainers vetting its gluten content first...

Probably not.

Anyway, how do you know they don't hang out together all the time? Maybe they just put on a front of not socialising. Maybe they do wife-swapping as well? Who knows?

I dunno – Monaco's quite a crowded place. There probably aren't too many prime dogging spots.

Moving on. This dinner. Why the fuss?

Well, some people think that it was a calculated sign of unity, what with the drivers having sent that sniffy note to the sport's stakeholders a couple of months ago.

Meh. What about wine? Did they have wine?

What sort of wine?

That's probably of less import than the matter of who wasn't in the picture.

Who? The sommelier? Keyser Söze?

No – Kimi Räikkönen and Kevin Magnussen, to name just two.

You're really overthinking this now. Maybe they had a hot date elsewhere?

In the drivers' press conference in China, Kevin said he was at a Renault 'do' elsewhere.

I love the way the F1 press corps focuses on what's really important!

Do say You absolutely *must* try the roast cauliflower – it's very low GI...

Don't say Ewww! He eats off his knife!



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Current tyres cannot be pushed for more than a lap or two due to high thermal degradation – something Pirelli have been asked to address

NEWS

FIA sets tough conditions for Pirelli's 2017 tyres

The governing body has sent Formula 1's sole tyre supplier a 'target letter' outlining how the tyres should work next season

Pirelli have been tasked with producing tyres for next year that can be pushed hard throughout their life. The FIA has issued the company with a 'target letter' that defines the behaviours it wants to see in the tyres in 2017.

This follows growing disenchantment with the nature of the current tyres, which have high thermal degradation and cannot be pushed hard for more than a lap or two at a time. This has meant drivers must lap well below the limit in races to ensure the tyres make the optimum stint lengths. Growing pressure from the drivers over the past year or so brought this issue to a head.

But Pirelli have also made the letter a condition of their continued involvement in Formula 1. They had asked to be issued with a clear brief, since they felt they were already currently satisfying a brief given by Bernie Ecclestone, but that different stakeholders had other expectations and desires.



Pirelli's Paul Hembery: "We have to make tyres that will have less degradation and less wear"

F1 Racing can reveal the key details of that target letter, which focus on two main issues. First: degradation should be proportional to the performance of the tyre; so the lower the performance of the tyre, the longer it will go before it starts to degrade.

And second: Formula 1 does not want tyres that degrade to the extent that their performance can never be recovered when one car is following another closely.

The FIA feels that these two aims will ensure a tyre in which thermal degradation is a far less significant characteristic at all times. Pirelli motorsport boss Paul Hembery said: "We now have to make tyres that will have less degradation and less wear. And they have to be tyres that the drivers will have a wider window of opportunity to push on. So it is a big change, and big performance improvements.

"We're working on tyres that have a wider thermal working range, so they are less sensitive to thermal input, meaning that if there are conditions that create currently an overheating situation, that won't be the case."

The FIA and the teams had also initially wanted the target letter to include a requirement for Pirelli to set minimum pressures closer to the tyre's optimum performance level. This is because teams have complained about what they see as the excessively high minimum pressures imposed by Pirelli for safety reasons following the high-speed blow-outs suffered by Nico Rosberg and Sebastian Vettel at last year's Belgian Grand Prix.

But Pirelli objected to this on the grounds that it was too difficult to achieve and guarantee. The FIA, to which Michelin had expressed the same view when they were competing for the 2017-19 tyre tender won by Pirelli, backed down and left it out of the requirements.

PHOTOS: ANDY HONE/LAT



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ANALYSIS

Did Haas/Ferrari tie-up create unfair advantage?

The impressive new US team have put rivals' noses out of joint, and the loophole that's helped them do so well has been closed

The new US-based Haas team have impressed mightily at the start of their debut season, which has led to claims that they could have changed the model for new teams in the sport. But the advantages they had in preparing for their entry into Formula 1 will never be repeated, as a result of a rule change.

Haas have a close technical partnership with Ferrari, buying every single part they are permitted to buy from the Scuderia. This means that everything bar the monocoque and the car's aerodynamic surfaces is Ferrari's.

This is a considerable step beyond the technical partnerships that many smaller teams have with bigger ones – such as Manor buying their rear end from Williams, and Sauber and Force India buying engines and gearboxes from Ferrari and Mercedes. Force India deputy team principal Bob Fernley was critical of the Haas/Ferrari situation, and said: “The principles of how they got here and what it did for Ferrari as well, obviously they are questionable.”

Team owner Gene Haas responded by saying F1 was full of “whiners”, adding that any other

team could follow the same approach and that everything was above board.

Fernley's remarks can be taken as a reference to a widespread concern that existed among all teams last year that both Ferrari and Haas were both gaining an unfair advantage from their arrangement. Under last year's rules, any team preparing to enter Formula 1 were not bound by the usual restrictions on research and development – such as windtunnel hours

and computer design data – as the teams who were already competing.

This led to a two-fold complaint: that Haas had an unfair advantage in the design of their car; and that since Haas were using the Ferrari windtunnel, the approach was open to abuse. There were also claims that Ferrari used Haas windtunnel time to design their own car. And many continue to question the degree of help Haas have had from Ferrari with the design.

Haas and Ferrari were cleared of any wrongdoing late last year – but the loophole in the rules that had given them free use of resources has been closed. From now on, any team due to enter in a subsequent year will be governed by the same design restrictions as the current competitors.

Haas's approach has meant they have been able to enter F1 with very low staff levels compared with rivals. They started this year with about 125 staff, which is less than a quarter of the numbers employed by Williams. Force India employs around 380.

Fernley, who describes this year's Haas as “a turn-key car”, says that the measure of the team is not their current performance but how they move forward in development this year, and with their new car in 2017 now that they have to go it alone.

Haas, who are still using the Ferrari windtunnel, are undertaking a recruitment drive to be in a better position for 2017, but team boss Guenther Steiner says that while staff numbers will go up, it will be “not by a lot”.

Haas and Ferrari are facing strong criticism of their mutually beneficial relationship



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Engine solution found in 2017 rule wrangle

The sport's stakeholders have agreed on next year's technical package – predictably, power units were the main sticking point



Formula 1 is poised to sign off regulations for 2017 that will make the cars faster and more dramatic, guarantee engine stability until 2020 and reduce costs for small teams.

The new rules, which should increase speeds by up to four seconds a lap, were agreed a month ago. Cars will also be wider, with bigger fronts, a greater proportion of aerodynamic downforce created under the floor, and wider tyres.

The engine rules, however, have proved harder to agree. Manufacturers were given four targets by the FIA at the end of last season: making the engines cheaper for customers; performance convergence; guaranteed supply to all teams; and increased noise.

Red Bull team boss Christian Horner said at the Chinese GP that F1 was “nowhere near” achieving those targets. But he is not directly involved in discussions, since he does not represent an engine manufacturer.

Insiders told *F1 Racing* as this issue closed for press that manufacturers were “pretty much there” on agreeing all points. The agreement that had been reached at that stage was as follows. First, power units will be €1m lower in cost in 2017, and fixed at €12m a year from 2018.

All of the teams have now approved the 2017 regulations, with engine manufacturers agreeing to leave no team without a power unit

Performance convergence was initially targeted at within two per cent, until it was noted that this actually guaranteed a divergence since power outputs continue to rise. Instead, it will be measured as a lap-time delta on a reference circuit, following the calculation of a metric for power sensitivity by which it will be judged.

The token system restricting development will be reduced – but new parts can be introduced only when a new engine is fitted and the limit on engines per season remains.

Obligation to supply is not the same as a customer being able to demand the engine they want. Rather, manufacturers have agreed to ensure no team is without a power unit. This last issue arose because of the situation with Red Bull in 2015. Renault's new contract with F1 contains a clause that states they must supply a customer if asked, so Red Bull's supply is assured.

And on improving the noise, insiders say, “there is some promising stuff going on”, details of which will apparently be revealed soon.



FERRARI CLEARED OF CODED SIGNALS

The FIA have found Ferrari innocent of any wrongdoing, following a curious message on their pitboard at the Australian GP. This season the regulations have been tightened with regard to the rule that says: “drivers shall drive the car alone and unaided.” Ferrari's message to Sebastian Vettel during the race read: ‘-3.2 LFS6 P1’. Following an investigation, the message was considered permissible because it was found that the ECUs suffered software problems following the 20-minute red-flag period.

MERCEDES SEEK DAIMLER'S HELP

Mercedes are working with parent company Daimler on new clutch hardware in the hope of resolving their poor starts in races this year. A regulation change for 2016 means drivers no longer use a double-paddle clutch system. “The way we assess clutches, the way we run them and calibrate them, and how the drivers use them, needs to be optimised,” said Mercedes boss Toto Wolff.

TYRE-TESTING PLAN APPROVED

The Formula 1 Commission have granted permission for Pirelli to have 25 test days to prepare tyres for next year's championship. With more downforce and faster cars planned for 2017, Pirelli have been calling for a 2015 ‘mule car’ to test with that will simulate the aero package expected for next year.

IMOLA BOSS MEETS WITH BERNIE

Imola could be in the running to host a future grand prix, after the Italian circuit's boss Selvatico Estense met with Bernie Ecclestone at the Bahrain GP. The former home of the San Marino GP holds an FIA Grade 1 licence and with uncertainty over the future of the Italian GP at Monza, Imola could be ready to step in. The last time it hosted a Formula 1 race was in 2006.

PHOTOS: ANDY HONE/LAT; CHARLES COATES/LAT

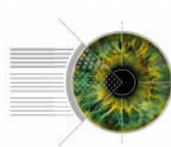
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Pat Symonds explains
THE SCIENCE BEHIND...
Car safety improvements

F1 TECH

We see continual improvements in safety year on year, but it wasn't always like this. When did the big drive for safety improvements begin?

Arguably it was Jackie Stewart who first brought safety into open discussion in the mid-1960s. Prior to this it appears that there was a tacit acceptance of both the dangers and the consequences, and the atmosphere was one of unconscious denial.

The focus on making cars more able to resist significant accidents took much longer and it was not until the mid-1980s that cars were first subjected to crash testing. I remember in 1984 at Toleman, we were working on the first frontal impact tests when Johnny Cecotto had his big accident at Brands Hatch. The front of the car was wiped off and Johnny suffered severe injuries that ended his F1 career. A few weeks later we carried out our first impact test at Cranfield University. As the impact occurred, there was an almighty bang and the nosecone shattered into thousands of shards of carbon fibre, many of which flew past the heads of the observers. The nose absorbed very little energy and indeed the rig suffered considerable damage. I realised then just how much work we had to do.

The development process was mainly empirical in those days, with a few hand calculations and some quasi-static tests of pyramidal shapes before building full size nose cones and impacting them on a pendulum rig. The requirement was that the pendulum was to weigh 780kg and would impact the nose at ten meters per second (22mph). That may not sound like much, but as the pendulum is extremely rigid it is equivalent to hitting a deformable barrier or other object at a much higher speed. The only requirement was that the average deceleration of the pendulum was not to exceed 25 times the force of gravity or 25g.

After ten years of this, the requirements were tightened by increasing the speed to 12 meters per second which represents an energy increase of 44 per cent. The pass criteria now included

that damage must be limited to the area in front of the driver's feet to avoid the type of life-changing injuries that Cecotto had suffered.

Today, not only has the impact speed gone up to 15 meters per second, a 225 per cent increase on those early years, but the criteria for passing are more complex as we have come to understand that simply keeping deceleration below a prescribed limit is not enough to make cars safe. Tests are also now done using a powered sled rather than the old fashioned pendulum.

Other than the frontal impact test, are there other safety tests that must be passed?

Yes, there are now a total of 18 tests that have to be passed before we can take the car out for pre-season testing and these have been steadily increasing in both number and rigour over the years. Interestingly, the word impact occurred only six times in those 1985 regulations but gets 80 mentions in the latest edition of the rulebook.

As well as the frontal test, the cars have an impact attenuator fitted to the rear of the gearbox, which is tested in a similar manner to the nose but at an impact speed of 11 meters per second. Most of the other requirements involve static tests in which enormous loads are applied to various parts of the monocoque to ensure that it will not fail in a severe accident. So it is no surprise that the monocoque is referred to in the regulations as the survival cell.

What have been the biggest safety improvements made to the cars over the years?

It is hard to single out one test that is more significant than any other. Perhaps of more relevance is that the ethos of safe construction and survivability is now an integral part of the Formula 1 design process. Perhaps the biggest physical improvement in terms of safety has been the widespread use of composite materials, which have made possible designs that can sustain enormous loads while maintaining reasonable chassis mass.



How difficult is it to pass the crash tests?

It isn't easy to pass them using a design that provides the aerodynamicists with the shapes that they desire. If we examine the frontal impact test for example, we are trying to absorb over 87kJ of kinetic energy. Given enough material and length of crushable structure to do this it doesn't sound too difficult, but when the regulations allow a nose to be as short as 850mm in length and the aerodynamics of the car are rewarded with the shortest nose of minimum cross-section the problem then becomes much more complex.

Even within these geometric constraints there is a particular crash pulse signature that needs to be obtained such that the structure is made rigid enough to absorb load but not so rigid that it passes excessive forces in to the driver. In addition, the first part of the impact needs to be quite 'soft' such that the relatively small cross sectional area of the nose doesn't act in

Following his horror crash at this year's Australian GP, Fernando Alonso attributed his survival to "all the fantastic work the FIA has done over the past 10 or 15 years to improve safety" and "everyone at McLaren, who built me such a strong and safe car"



such a way that it might pierce the monocoque of another car if it were to hit it. In all, there are six criteria that must be met simultaneously, meaning that the overall design is extremely complex. You could liken it to driving through a gate at high speed; it is no good steering away from one gatepost only to hit the other one. That

narrow gate is the envelope of acceleration that we have to design within.

What part does simulation play in safety improvements?

These days, simulation is essential if you want to achieve a decent level of performance. It

goes without saying that the static strength and general integrity of the chassis is established at an early stage by means of conventional finite element analysis, but teams are also now using highly non-linear dynamic transient analysis with explicit time integration to study the deformation of the crash structures and the ever-changing boundary conditions as they crumple.

Frontal impact tests are now carried out using a sled at an impact speed of 15 metres per second – which is a 225 per cent increase on the speeds used in the early days of Formula 1 safety tests

Is the design of the proposed halo device going to cause problems?

No, I don't think so. The halo device, just like the side impact structures, will be of a prescriptive design that all of the teams must use. Of course the loads it may impose on the monocoque will have to be considered and it will add to the testing regime, but the teams will gladly take this on since it considerably enhances the safety of the driver. **F1**



NEXT MONTH TRACK AND DRIVER SAFETY

STILL

THE GREATEST SHOW ON EARTH

Our beloved sport took a bit of a kicking after the self-inflicted qualifying imbroglio. But fear not, dear reader, F1 remains a brilliant sport – in fact, the most brilliant of all. And here's why...

WORDS JAMES ROBERTS **PHOTOS** LORENZO BELLANCA

TOP DOG

It's the fastest motor racing series on the planet. The 1.6-litre hybrid formula puts F1 well ahead of IndyCar and LMP1 sportscars.

SPEED

Top speeds are rising. In Mexico 2015, Felipe Massa recorded a V-Max of 226.3mph, and in Bahrain this year the fastest lap time was exceeded for the first time since 2005. "It's the sheer speed of the cars when they are on the limit with a little human being on board trying to keep it all under control," says Sir Frank Williams.

HERITAGE

Formula 1 is Ferrari and Ferrari is Formula 1. The Scuderia have been a mainstay of the sport since the first year of the world championship in 1950. Yes, they race in the World Endurance Championship – but Formula 1 is their lifeblood.

DRIVERS

F1 has the world's best drivers – and five active world champions: Sebastian Vettel, Lewis Hamilton, Fernando Alonso, Kimi Räikkönen and Jenson Button have 11 titles and 152 race wins between them.

PASSION

You want passion? Check out an F1 grandstand. At any circuit in the world there will always be grandstands filled with Ferrari flags and fans bedecked in merchandise hero-worshipping one of the current 22 drivers (who represent 13 different countries).

REFINEMENT

The quest for perfection is endless: even the most incremental gains can make an overall difference. For every 3mm lower a car is run to the ground, 0.1s per lap is gained.

GLOBAL REACH

The sport is *truly* global. When F1 touches down there in June, Azerbaijan will become the 32nd country to host a world championship grand prix. Currently there are races in Australia, North and South America and across Europe, the Middle East and Asia.

ENGINEERING

Engineers thrive in an environment that remains a compelling exercise in high-level problem solving. "Racing an F1 machine to its limits, pushing it to the edge of laws of physics, designed from the smartest engineers of automobile industry is just mind-blowingly cool," says former F1 driver Alex Wurz. →

"There are only three sports: bullfighting, motor racing and mountaineering; all the rest are merely games" Ernest Hemingway

WORKERS

The 900 people employed by the McLaren F1 team work in a building that is large enough to house nine Boeing 747s.

TALENT

The future is brighter than ever. Exciting talents are breaking into the sport, such as eighteen-year-old Max Verstappen and Stoffel Vandoorne – the latter having outqualified his world champion team-mate Jenson Button on his F1 debut in Bahrain. And then there's Carlos Sainz, Kevin Magnussen and Pascal Wehrlein...

PITSTOPS

Blink and you'll miss it... Formula 1 pitcrews can change four wheels and tyres in under three seconds, thanks to bespoke training programmes and up to 100 'dry runs' per weekend. The compressed-air wheelguns they use can consume 20,000 litres of air per minute.

ENGINES

The new power units are some of the most energy-efficient motors on the planet. Cars complete a grand prix distance (187 miles) with 35 per cent less fuel than three years ago. At peak speed an engine will still drink nearly 3.5-litres of fuel per minute.

RACES

The 2016 calendar boasts a record 21 of them, so there's F1 action on more than 40 per cent of the weekends this year. It's all beamed to a global audience of millions, so it's no surprise that so many of the world's biggest brands are irresistibly drawn to F1's 'reach'.

DATA

Unprecedented levels of data. More than 120 sensors on each car send back 15 to 20Mb of real-time data every lap. Post-race data acquisition will download a further 80GB of data.

STEERING

A Formula 1 steering wheel features around 40 different dials, switches and knobs to let drivers manage hundreds of different functions – anything from changing the engine electrical settings, to the differential, the torque map, the brake-bias or operating the DRS flap on the rear wing.

MARGINS

It's tight! The gap between second and eighth-placed drivers in Q3 qualifying at this year's season-opener in Australia was just 1.392s – and featured five different makes of car.

INTRIGUE

It's a sport rife with skulduggery. Off track, there's a constant soap-opera of intrigue and power struggles that form a narrative even the writers of *House of Cards* would struggle to dream up.

CASH

Mind-blowing sums of money make the wheels go round. The teams will scoop a total of \$965million in payments from Formula One Management this year, while top teams will spend upwards of \$400million a year to go racing.

TRACKS

A founding quartet of circuits, first raced on in 1950, still remain: Silverstone, Monaco, Spa and Monza. Few sports blend the old and the new so seamlessly.

MANUFACTURERS

Several of the world's biggest automotive manufacturers pit their wits against each other in F1. Alongside Ferrari and Mercedes, Renault are now back as a full works entry, while Honda returned last season as an engine supplier after a six-year absence.

GEAR CHANGES

No, not the endless switching of bespoke fireproof underwear and race suits, but the electronic shifting of gears a driver makes during a GP. He'll change gear between 2,500 and 4,000 times per race – and, on average, once every 1.3 seconds.

MOTORHOMES

The ultimate home from home. The McLaren Brand Centre travels to every European race via 17 trucks, and a team of 21 take four days to piece together its 500 components. Once erected, the edifice is three storeys high with a front façade of 13.5 metres of glass. Inside are a kitchen, three hospitality areas, four meeting rooms, eight offices, and drivers' rooms complete with showers and toilets.

BHP

Power outputs are rising: nearly 1,000bhp is being produced by the tiny 1.6-litre hybrid engines, with 50 per cent thermal efficiency. That's twice as good as your average road-car engine.

BRIGHT LIGHTS

In F1, three races finish after sunset: Singapore, whose streets are lit four times more brightly than an average football stadium; Bahrain; and the \$1bn Yas Marina circuit in Abu Dhabi.

SPORT

Yes, *F1 is still a sport*. It hasn't changed since 1950: "It's supremely talented drivers from all over the world competing in hazardous conditions in the most technically advanced cars in the world," says Murray Walker. And if his word isn't good enough, perhaps you'd better switch to croquet. **F1**



PETER WINDSOR

RACER'S EDGE

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

Before we write off another year as Mercedes-dominant (make that 'boring' in F1 vernacular), a word on how easy it is to lose. I didn't talk to Ayrton Senna immediately after the 1988 Monaco GP because I didn't need to: drive into an apex guard-rail and bin a 50-second lead and about the only thing you'll want to do is go away and hide. When I thought about it, though, on the frenetic Monday flight home, I understood finally, what Jim Clark used to say: "Concentration is critical. And it's never more difficult to concentrate than when you're out in front."

I knew then what Ayrton had been thinking in those moments afterwards. His accident – his mistake – had happened while he had been cruising, driving way out of his comfort zone. Friendly territory for Ayrton had been the pole lap at Monaco, when he'd been absolutely on the edge, millimetre-perfect over every kerb and every bump, probably with his breath partly held and his eyes unblinking.

By mid-race it was different. Ayrton's lead seemed to have grown with every lap, regardless of his pace. The pressure had evaporated. He would win his second Monaco.

There were a few fastest laps to trade with his team-mate, Alain Prost, who was some 50 seconds behind. Then, with 11 laps to run, the

Stay focused – there's always a barrier to hit

McLaren pitwall advised Ayrton to slow down. Ayrton tried to oblige.

At this point, I don't believe he began to think about the victory gala at the Sporting Club or hanging with his friends in Portugal; I think his mind was still on the job. Problem was, it wasn't the job he was best at: Ayrton was born to drive on the limit, not at what he would have called "seven tenths". He was still thinking about every gear change, every clutch movement, every brake pedal application, every throttle tease. But he was thinking also that he needed to be gentle, that he had to leave margin.

He was in foreign territory, in other words – in a strange sort of twilight zone, driving quickly but slowly, unsure of the balance between the two. And thus he made his bone-jarring mistake.

All this came into focus when Jordan Spieth recently backed out of golf's US Masters. Pressure lifted, thanks to a string of birdies on the front nine, Jordan began his final, triumphant holes in conservative mode: in Senna late-Monaco GP mode, in other words, when not making errors was suddenly just as important as dominating the day. Plopping two balls into the water on a par-three when you're about to win the Masters is, yes, about the same as clouting the Portier apex guard-rail; and, as Spieth said afterwards: "I went into that back nine sort of half-swinging at the ball and fell right out of my zone."

So yawn not at what Mercedes as a team are doing this year, for the parallels are undeniable. They've maintained their advantage despite the paradigm shift that comes from being *expected* to win when there's a huge amount to lose. It was in that twilight zone that John Cooper and Colin Chapman found themselves after the good years – as did Williams, and as have Ferrari, McLaren and Red Bull in recent times.



You ask yourself when a team stops winning: 'Why did it end? What metaphorical guardrail did they hit?' And you point to an engine company pulling out, or the regulations changing or the top driver or engineer switching teams or retiring. But in giving yourself those answers you are, in reality, tapping into the human nature of things as we like to pigeon-hole them into boxes in F1.

To me, it's astonishing that Ferrari, Renault and Honda haven't by now drawn level with Mercedes (in terms of power-unit design and build). I can't remember another period of F1 history when one engine was so contextually superior. Sure, the Coventry Climax fours and V8s had brilliant lives – but the BRM of those times was just about as quick, if not quicker

"Ayrton was born to drive on the limit, not at what he would have called 'seven tenths'"



Concentration is always harder when you're winning – as Senna discovered when he crashed out of the lead at Monaco in 1988. So Mercedes (below) deserve plaudits for getting it right for three straight seasons



and the Ferrari V8s/V12s were also hard to beat. The Cosworth DFV won consistently over 15 years – but, in the midst of that, Renault gave us the turbo V6 and Ferrari a flat-12 that failed only because it was so aerodynamically unsuited to the narrow-chassis/wide-diffuser ground-effect shape that evolved from 1977, not because it was a bad engine.

Honda were dominant from 1986-90 – but not in the way Mercedes are dominant today. When Nelson, Nigel, Ayrton and Alain were winning for Japan, the only team for them to beat was Ferrari. In this era, let's not forget, we have the best of Honda, Ferrari and Renault out there in F1, spending more or less what it takes to win on the world stage. Yet still Andy Cowell and his guys up in Northamptonshire

are finding an edge. On the one hand, their work is gargantuan; on the other, you can bet it's still about intelligent engineers chatting by a water cooler or mulling over a race in a sparsely-furnished meeting room.

Then there's the chassis side. Paddy Lowe and Aldo Costa – discarded by McLaren and Ferrari – now rule the world. What does that say about the teams they left behind? More important, what sort of motivation does it give them to prove their worth?

Winning in F1, year in, year out, is harder than winning itself. 'Ruin' the year by winning consistently and historically in F1 and you oblige your rivals and the governing bodies to come up with new rules to make your life harder – just as the FIA this year tried to mess

around with qualifying and are still fiddling about with radio transmissions; or, as we've seen in the past, how they banned innovation once the money was spent (the Lotus 88 and Williams' constantly variable transmission are good examples).

Then there's the more wearing but human issue – the moans when you win yet another race. F1's always been good at deflating the balloon. So plaudits to Merc for getting it right for three seasons – and again this year. Mind you, it's not over yet. There could still be a spate of Merc engine failures; Nico and Lewis could still trip one another up at the expense of the title. Unlikely? Yes. About as unlikely as Ayrton Senna blowing a 50sec lead with only 11 laps of Monaco still to run. **F1**

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DAMON HILL

KING OF THE HILL

Cockpit savvy from the 1996 world champ, exclusively in *F1R*

You could be forgiven for thinking that F1 is in a mess what with the fumbling of the qualifying format, the fudging of the 2017 regulations and the inability of the FIA to do anything about anything, except give out grid-place penalties. Everyone is in a kerfuffle. But hasn't it always been like this?

Remember when F1's design genius, Colin Chapman, left F1 in disgust to see the NASA Space Shuttle launch? "Because," he said, he "wanted to see something truly inspiring that celebrated ingenuity." In other words: 'Up yours, F1' for kiboshing his innovative twin-chassis idea, the Lotus 88. Sounds like Red Bull threatening to quit last year, doesn't it?

And then there was the energy crisis of the 1970s. We were told that there was a finite supply of fuel in the Earth's crust and that if we weren't careful it would run out, leaving us floating in space, all powerless and stone-aged.

People were pointing at F1 and shouting: "Sinners!" and saying the sport was doomed. The USA had to drive at 55mph. It saved fuel but also – purely incidentally – thousands of lives. If you really want to make a huge impact (probably the wrong word, but you know what I mean) on road safety and emissions then a global 50mph speed limit would probably get

There's no such thing as a free TV dinner

you the Nobel Prize for Being Very Clever and Humane but, ironically, make you simultaneously Very Unpopular.

We soon realized scientists had that 'finite fuel thing' a bit wrong. We are now told that they have enough oil under Gatwick North Terminal to keep Crawley self sufficient for thousands of years. So we're okay then. In fact, we now have so much oil that we can keep the whole planet warm, maybe, forever.

F1 has risen magnificently to the challenge and reduced its fuel consumption by one third, thanks to engines with a phenomenal thermal efficiency of nearly 50 per cent and which go faster, to boot! Run that past your Departments for Transport and the Environment and see how much they like it. F1 doing its bit in the War on Warming.

Oh, and remember when the F1 world was going to end because the Government were going to ban tobacco sponsorship? Some 50,000 jobs were to be affected by this 'draconian' and 'reckless' bit of do-gooding. Actually, all the 'blue chip' sponsors who didn't want to be associated with tobacco were waiting in the wings licking their lips ready to flood in the moment they were gone. Far more 'ethical' companies, like banks...

When I left Williams, then sponsored by Rothmans (very nice people with a great golf tournament in Scotland that sounds a bit like 'D. Hill'), there were 160 people working for the team. A few years later, there were 650! Er? I thought you told the Prime Minister, Max and Bernie, that 50,000 jobs were at stake? At that rate, F1 teams expanded their workforce by 400 per cent, without the evil weed. Poor Tony. I think he was a bit taken in by these two. He had to give the donation back, you know? One million smackers. Ouch. Still, the tobacco ban was generally good all round. At

least you don't stink like you've been in a pub when you come back from the pub.

And now free-to-air is a thing of the past. What? They'll be making us pay for *air* next! My god! No more free F1 coverage? Well, I have some sad news: there never was any 'free' F1 coverage. We were being used as ammunition in the war for TV ratings, much like Facebook and Google use us today. Ever heard the phrase, 'no free TV dinners' (I'm hoping I just invented it)? The point is you had to have a TV licence, which is, *de facto*, a subscription to watch anything broadcast on TV in the UK. Not 'free', see?

But there is the question here of how one measures the success of F1. Is it through



"I have some sad news: There never was any 'free' F1 coverage. We were being used as ammunition in the war for TV ratings"

mass appeal? Or is it through Return On Investment? What are we trying to achieve here? In an attempt to get more viewers we fiddle and fumble with the product in the hope of making it more appealing. Why? Because we want the numbers *and* the highest revenue per head. We want to have our cake and eat it. Making F1 an executive toy is not the way. There was nothing fundamentally wrong with qualifying across Fridays and Saturdays that could not be easily fixed. A provisional grid on Friday meant something. It was a real result and pumped up the next two days.

I have some other ideas but I will only tell you if you subscribe to my 'Damon's Brilliant Ideas' app. It works like this: pay me a pound and I tell you my idea. It's brilliant, don't you think? But it's not free. Sorry. **F1**

"We want the numbers *and* the highest revenue per head. We want to have our cake and eat it"

PORTRAIT: BENJAMIN WACHENIE; PHOTO: CHARLES COATES/LAT



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DIETER RENCKEN

POWER PLAY

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

F1's early-season qualifying fiasco marked a low point in the sport's so-called governance process. The debacle has been flogged beyond death, yet simply cannot be avoided, as every ill currently suffered by F1 is encapsulated in one regulation change that was framed for all the wrong reasons, then forced through without due regard to process.

To crown it all, the vote taken at F1 Commission-level that changed a format that was not even broken, did not, according to high-level sources, follow existing statutory timelines. How so? Because the rule-making procedure demands that amendments to technical or sporting regulations require at least seven days' notice to be given in writing to all teams before they are effective. In some instances that notice period is 14 days.

During the 2015-16 off-season, president of the F1 Commission Bernie Ecclestone (also, of course, CEO of Formula One Management) presented a pair of 'flawed' alternatives for a new qualifying format to the Strategy Group. This group, in turn, approved the 'least worst scenario' of the two (the 'eliminator' format seen in Australia and Bahrain) before escalating it to the F1 Commission session that followed almost immediately. No time

Oh, what a tangled web we weave...

had been allowed, therefore, for the full implications of the change to be evaluated.

The almost farcical result of this super-compressed schedule was clear to see in Melbourne and Sakhir: little wonder that team bosses later lamented a lack of time to run simulations on the new format.

That time was provided for, however: ie the notice period of seven or 14 days for regulatory changes. Somehow, though, no team insisted on the notice period being effected, or refused to implement the rule change on account of 'insufficient notice'.

In itself, this points to a comedy of lapses across the board, for the majority of teams (plus FIA/FOM) employ in-house lawyers, who should surely have a grasp of F1's covenants.

The implications of this inattention for due process extend more widely than a fumbled attempt to re-set how the grid lines up. For the evidence is that a raft of motions have passed through the F1 Commission – and upwards for ratification by the FIA World Motorsport Council – since November 2013, without having followed the process stipulated by the 2009 Concorde Agreement (in place till 2020).

It has, after all, become customary to hold Strategy Group and F1 Commission meetings back-to-back on the same day (to save costs). But that's a weak excuse, for with a bit of foresight the various options could be circulated well before the voting deadline.

The unpopular elimination-style qualifying was pushed through without regard to due process




Therein lies F1's latent problem: a lack of cohesive strategy despite the existence of a group going under that name. Result? Decisions being taken on a knee-jerk basis.

So how did *that* happen? The governance structure was changed in November 2013 by substituting the Technical/Sporting Working Groups with a Strategy Group to streamline the regulatory process. Yet documents from the F1 Commission meeting in November 2013 state: "Composition and voting structure to be as set out in the 2009 Concorde Agreement."

Sources say this clause was never rescinded. Thus any regulation change debated by what passes for a Strategy Group and then approved by the F1 Commission within a week (or two) could technically be illegal. Correct: the changes made to the 2016 qualifying procedure had no regulatory basis, so could have been challenged at any time, by any team, had they thought to do so! So the bluster and fuss of Australia and Bahrain – all that wasted hot air and ink – could easily have been avoided.

This kind of situation is not atypical. Several team bosses and other F1 Commission members say that agendas for meetings are distributed only a short time before meetings – or even during them. Yet members must vote on critical issues almost immediately. The recent motion to extend D-Day for 2017 body and power unit regulations beyond 30 April is just such an example. Strictly speaking, then, they should be delayed to 2018...

For the record, the F1 Commission consists of 25 seats: the FIA, FOM and all 11 teams are represented; then add eight race promoters; one each for tyre and engine suppliers; plus two sponsors. All 25 have a vote, meaning Mr Rolex (representing sponsors) has the same voting power as the FIA president. Yet no broadcasters are represented, despite their combined contributions to F1's coffers being roughly on a par with those of promoters.

In terms of regulatory process, F1 has buried itself deeper in holes it cannot reverse out of. But the lesson from the fiasco of early-2016 qualifying is that the sport can't just circumvent its own statutory processes if it wishes to avoid self-inflicted wounds. That governance process is there for a reason. 

"In terms of regulatory process, F1 has buried itself deeper in holes it cannot reverse out of"

The search to find
the next generation of
engineering talent
starts right here...

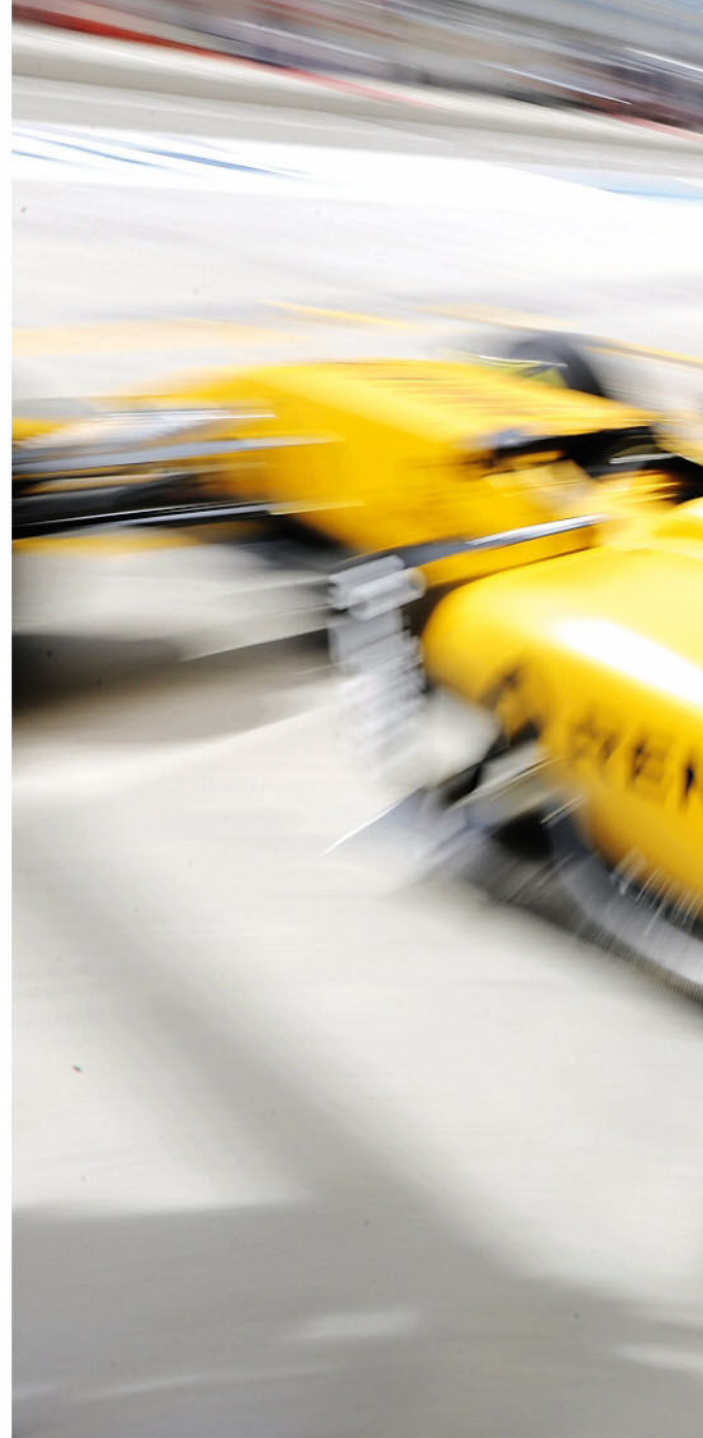
INFINITI LAUNCH 2016 ENGINEERING ACADEMY

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Infiniti's global search for the best up-and-coming student engineering talent for 2016 has just begun. Now into its third successive year, the academy provides a 12-month money-can't-buy opportunity for seven world-class students to work at Infiniti's Technical Center for Europe and the Renault Sport Formula One™ Team (each for six months).

The Infiniti Engineering Academy is an opportunity for future talents to experience the fundamentals of automotive and motorsports engineering. Specialising in areas such as aerodynamics, vehicle design and composite design, students will be able to cross-fertilise between the two industries and become well-rounded engineers. So what are you waiting for?

"Year on year, we continue to strive to improve the Academy, and now, with our new and deep-reaching Technical Partnership with the Renault Sport Formula One™ Team, we can offer seven engineers a truly technically rich, multi-discipline engineering placement," said Tommaso Volpe, Global Director, Infiniti Motorsport.



Candidates are initially vetted by their CV before going through to a video interview. Passing the interview phase will mean further consideration by veteran engineers at Infiniti and the Renault Sport Formula One™ Team.

If adjudged to have the technical and personal skills that the academy is looking for, candidates will be shortlisted for one of seven Regional Finals (China, Europe including Russia, Canada, Mexico, Asia-Pacific, US and Middle East) to be held this summer with all travel and accommodation expenses covered by Infiniti. Each Regional Final will play host to assessments testing aptitude, team work, individual knowledge and focus under pressure, resulting in one successful finalist per region.

The seven successful candidates will work in the UK this October. All current students (except first year students) of engineering-related disciplines can apply for this year's Infiniti Engineering Academy and they must be both a resident and a student of a participating region to qualify.

Turn over to find out how to apply...



The Infiniti Engineering Academy candidates learn the importance of teamwork in both the automotive and motorsport disciplines. The candidates work on the Infiniti Q30, the first Infiniti product produced in the UK

Q&A
DANIEL SANHAM



2015 INFINITI ENGINEERING ACADEMY WINNER

What types of projects did you work on at Infiniti?

“I worked on various aspects of the new Infiniti Q30, including the testing of the electronic systems and components within the vehicle. I’ve also designed and implemented two test bench systems.”

How has this helped you develop as an engineer?

“Working for such a large organization has been a real eye opener. Teamwork is key and working for an efficient organization introduces you to so many different cultures and personalities which has enabled me to work better within a team.”

You’ve recently started your work placement in Formula One™. What aspects are you enjoying so far?

“Every engineer wants to work at the pinnacle, the cutting-edge of their field of choice and just being hands-on with the cars has been amazing.”

What advice would you give to young engineers applying for this year’s Infiniti Engineering Academy?

“If you work hard, have a passion for the industry and perform well in a team, you’ve got as good a chance as anyone of winning.”



Multicultural experience: the 5 winners from the 2015 selection, currently part of the Academy, come from China, US, UK, Russia and Saudi Arabia

INFINITI HYBRID POWER FROM THE TRACK TO THE ROAD

After five successful years as a sponsor with Red Bull Racing, Infiniti took a daring step and became a Technical Partner to the Renault Sport Formula One™ Team. Leveraging its expertise in performance hybrids, Infiniti will contribute engineering resources to Renault’s Energy Recovery System (ERS).

Infiniti’s reputation for performance hybrid vehicles is built on the widely-acclaimed 3.5-litre hybrid engine. The Q70 sedan, equipped with this engine,

has been recognized by the Guinness Book of World Records as the fastest accelerating full-hybrid car, the same hybrid system is also offered on the Q50 sports sedan. Infiniti’s expertise will be used by the Renault Sport Formula One™ Team for the co-development of the second generation of the ERS in Viry-Châtillon. Gradually, Infiniti will apply the experience gained from the Technical Partnership to road legal cars.





PROMOTIONAL FEATURE

What's new in the 2016 Infiniti Engineering Academy? Tommaso Volpe, Director of Infiniti Motorsport explains...

TOMMASO VOLPE



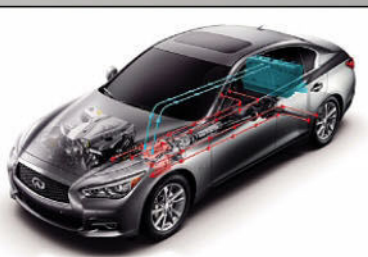
**DIRECTOR
INFINITI
MOTORSPORT**

"We're now in our third successive year, and year-on-year we've grown the number of Infiniti Engineering Academy placements available. From three, to five, and on to seven for 2016; our global engineering talent search continues to offer the ultimate work placement for the cream of engineering talent, not to mention working for one of the largest automotive alliances in the world and most iconic brands in Formula One™ history.

"Together with the co-development of the ERS, the Infiniti Engineering Academy is a key part of the technical collaboration with our Renault-Nissan Alliance partner (Renault Sport Formula One™ Team), and it will give us not only the opportunity to grow young talents but also to investigate new areas for collaboration with the team in the future.

"We are looking for candidates for the Infiniti Engineering Academy that dare to be different. Engineers who think about challenges from fresh angles; brimming with the kind of creative human talents that we believe drive the greatest advances in high performance technologies. 'Game changers' may sound clichéd, but the automotive industry and F1® have never been more competitive, so we need the best of the best."

The Infiniti Q50 Hybrid recovers kinetic energy from braking to supply extra electric torque to the internal combustion engine



HOW TO APPLY FOR THE 2016 INFINITI ENGINEERING ACADEMY

This is your opportunity to secure a once in a lifetime work placement across automotive and Formula One™ engineering. All applicants must be fluent in English, be a current engineering student and able to attend a regional final this summer. Successful candidates will commence their placement in October 2016.

For more information visit academy.infiniti.com

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McLAREN

50 YEARS IN F1

"It would be a waste of life to do nothing with one's ability... Life is measured in achievement, not in years alone." Bruce McLaren



Bruce McLaren 1937-1970

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The McLaren M7C

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Ron speaks. 'Nuff said

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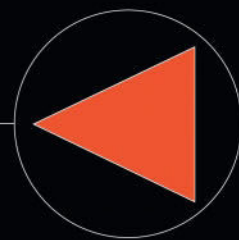
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McLaren's seven world champions by their team-mates



Now that was a car

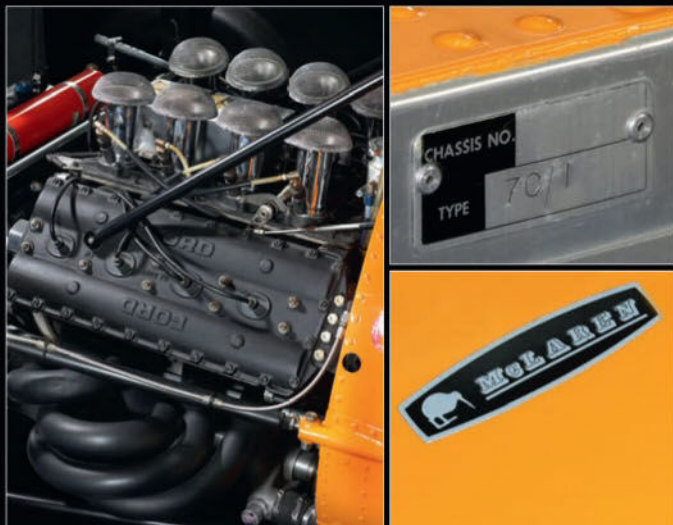


No. 50: The McLaren M7C

A masterpiece of aero-trickery that was consigned to Thursday running



WORDS ANTHONY ROWLINSON PICTURES JAMES MANN



McLAREN M7C TECH SPEC

Chassis	Aluminium monocoque
Suspension	Front: double wishbones, coil springs over dampers, anti-roll bar. Rear: reversed lower wishbones, top links, twin trailing arms, coil springs over dampers, anti-roll bar
Engine	Ford Cosworth DFV
Engine capacity	2,993bhp
Power output	430bhp
Gearbox	5-speed manual
Weight	540kg
Wheelbase	2,387mm
Tyres	Goodyear
Notable drivers	Bruce McLaren



Brutal but beautiful, the McLaren M7C was an archetypal iteration of the brief-flowering late-'60s genre of high-winged F1 cars.

It appeared, in all its papaya-orange, aero-tricked glory, on the Thursday of the 1969 Monaco Grand Prix: where better to reap the downforce benefits of twin wings mounted four feet or so above the monocoque, acting directly on the suspension? And these in addition to the obligatory winglets on either side of the nosecone. Drag be damned, team founder Bruce McLaren, who had co-authored the tech spec, would have his car veritably painted to the Riviera Tarmac.


Except governing body, the CSI, didn't quite see it that way: they deemed the front wing potentially lethal – "*C'est une guillotine!*" – and it was banned. Indeed, wings of any kind were banned for the race and thus this unique derivative of the M7 became jokingly known as McLaren's "Thursday car". Bruce raced his unadorned orange 'cigar' to fifth; team-mate Denny Hulme was sixth in an M7A.

The 'C' had enjoyed an encouraging debut a fortnight earlier, at the Spanish GP, where Bruce finished second in the same chassis equipped with a single, rear-mounted high wing. But that bald result hid a darker story. A series of shunts at Montjuïc Park that weekend related to high-wing failures – one of which almost killed future Lotus champion Jochen Rindt – led to the outright ban being put into effect at Monaco. So think of the twin-wing 'C' as the zenith, or nadir, of high-winged F1 cars and you wouldn't be far wrong.

But there was more to the 'C' than its wings. Following on from the M7A, its 1968 predecessor, which won four grands prix for Bruce and Denny (including the team's first, at Spa), it aimed to improve on its forebear with a stiffer, more fully enclosed aluminium monocoque. The M7B, incidentally, was a footnote to the 'A', with fatter fuel tanks.

Its twin-nostril 'body' aerodynamics were sophisticated, thanks to M7 co-designer Robin Herd, who had worked as senior scientific officer on the Concorde design team, before joining McLaren in 1965. There, he formed a strong partnership with designer Gordon Coppuck (who later penned the iconic McLaren M23) and Bruce himself – also a skilled engineer – with the result that the 'A' let McLaren become only the second man to win a grand prix in a car bearing his own name. When briefed about his win, the team's ever-modest founder commented: "It was about the nicest thing I'd ever been told."

The M7 was powered by a Cosworth V8, bolted to the three-quarter-length monocoque and acting as a fully-stressed component for the rear suspension. Glass fibre, magnesium and steel completed the build materials – all very *à la mode* – and the M7C, raced only by Bruce as a works entry, was decent enough: two P3s in Britain and Germany followed the Montjuïc podium and he finished third overall that year.

But up against Jackie Stewart, in a Dunlop-shod Matra MS80, who won six (of 11) of that year's races, the M7C couldn't quite cut it. The 1969 season finale in Mexico was won by Denny, in an M7A... 

NEXT MONTH THE LOTUS 98T 

RON DENNIS

THE LONG INTERVIEW

WORDS ANTHONY ROWLINSON

PORTRAITS STEVEN TEE/LAT

In this rare, exclusive interview, timed to mark McLaren's 50th anniversary in Formula 1, CEO Ron Dennis opens up about the past, the future, and lays bare his still-burning ambition

"If you wait by the river long enough, the bodies of your enemies will float by."

– Sun Tzu, *The Art of War*

At 68, 36 years into his tenure as McLaren's main man, Ron Dennis knows all about patience. Right now he's waiting, with the conviction and elongated perspective of a boss who has seen it all, for his team's return to winning form.

Ron Dennis also knows all about adversaries. Several have crossed his path over the decades. One or two have sought to wound the organisation he represents with such fierce pride. He has seen them float by. This sense of longevity, of permanence, is one of the most compelling aspects of the Dennis character; he seems as integral to McLaren as do McLaren to the sport in which they have competed with dauntless competitive spirit for the past 50 years.

As we note elsewhere in this special issue of *F1 Racing*, so great has been their contribution to F1 since their first entry, at the 1966 Monaco GP, that it's impossible to imagine grand prix racing without them. Through Hunt vs Lauda, Senna vs Prost, Mika vs Michael and Hamilton vs Massa, McLaren have been *right there*, essaying the narrative for so many of the sport's most electrifying moments. And, since 1980, Ron Dennis has been *right there* too, predominantly as team principal, latterly as chairman and CEO.

He's not the whole McLaren story, nor would he ever claim to be. But Dennis *has* been the architect of modern McLaren and is pre-eminent in a passing F1 generation: the once-archetypal entrepreneur-owners who helped lift their sport from its freewheeling beatnik days to the loftier plateau it occupies today, as a tech-driven, hard-moned, globe-trotting mega-circus.





An opportune moment, then, for this furiously restless and ambitious man to take a pause for conversation with *F1 Racing*, and reflect on what has been achieved and what is still to come.

F1R: Where do you see McLaren today – in racing and in a wider business sense?

Ron Dennis: One of my passions has been, and will always be, Formula 1. Whatever I'm thinking about, what lurks in the background of my thoughts is the competitiveness – or at this moment in time the uncompetitiveness – of the team. Of course, I have a very detailed understanding of why that is. We're a data-driven company and we have a very good and transparent relationship with Honda [McLaren's engine partner]. We think we've made an exceptionally good car this year, and we believe that recent managerial changes at Honda will result in really significant power-unit progress over the course of this year, too.

But there are also the challenges that come from McLaren being a group of companies that employ three-and-a-quarter-thousand people compared with 50 when I first acquired equity in 1980. And we have to come to terms with those challenges – not just headcount, but all the commercial consequences, such as turnover, profits and sometimes losses, diversification of the group and so on. They're all the pressures you would expect a truly multinational and significantly diverse group of companies to have.

At the time of writing, McLaren is comprised of two core businesses: McLaren Technology Group, which encompasses McLaren Racing, McLaren Marketing and McLaren Applied Technologies (MAT), and McLaren Automotive, which is necessarily a separate corporate entity from McLaren Technology Group, owing to its having a similar but not identical mix of shareholders. The racing exploits and luxury supercars coming under the 'McLaren' brand you'll be familiar with; you may well also be aware of the Formula 1 team's extensive sponsorship portfolio; less well known is MAT's pioneering work in fields as diverse as pharmaceuticals, aerospace, and sports equipment for elite athletes.

F1R: So how do you see the future? How are the next ten years mapped out, or even beyond that?

RD: The pace of growth of McLaren Automotive is consistent with plan. We'll make 3,800 cars this year, all of which we'll sell. In fact, our buyers face a healthy but not too long waiting period at the moment, which is what you want. We intend to plateau between 4,500 and 5,000 cars a year, which we think is the sweet spot →

in respect of a strategy that will retain good residual margins for our customers [ie not oversupplying the market].

McLaren Automotive will continue to mature and diversify, introducing more bespoke car customisation programmes and probably a one-make racing series of some kind. It's in a good place. Other aspects of the group, like the alternative technologies McLaren Applied Technologies is pursuing, are still in rapid growth, around 15 per cent a year in fact. We're projecting a £50m turnover for McLaren Applied Technologies in the near future, with bigger ambitions not far away.

And McLaren Racing is continuing to grow in accordance with the trajectory of a modern state-of-the-art Formula 1 team. Putting aside the ebbing and flowing of performance, it's a relative constant in terms of challenge: you want to win grands prix, you want to win world championships, but the ingredients constantly change, primarily driven by regulatory vagaries and variations. And so the challenge is always there, but it's not always the same challenge.

Lastly, McLaren Marketing has had a very good winter. We've recently announced important new long-term partnerships with Chandon and Richard Mille, and we've also recently renewed our long-standing relationships with GSK, Johnnie Walker, Santander, Hilton and JVC Kenwood. Added to that, we continue to enjoy the support of multinational corporations and household-name brands such as Mobil1, Esso, SAP, KPMG, CNN and many more.

So far, so business. But our interest is in Ron the racer, and we're happy to report that beneath that oh-so-immaculately groomed exterior there still beats the throbbing heart of grand prix titan...

F1R: How would you react to being called the founder of modern Formula 1? F1 was almost 'black and white' before it turned 'colour' around 1980. Were you a key part of that era? *[There's a long pause as Ron collects his thoughts before answering. His body is almost motionless apart from an upward tilt of the head, as he scans the ceiling of the silent McLaren hospitality unit – a study in mental composition.]*

RD: That's a surprisingly challenging question to answer. I don't think it's for me to judge. So I'll say only this. When I took charge of McLaren in late 1980, I was relatively young compared with most of my competitors [he was 32] and I had a tremendous ambition and hunger to succeed. I was keen to innovate, too, and to usher in improvements that owed themselves to a combination of big-picture thinking and attention to detail, which benign visionary blend I've attempted to maintain ever since. We inaugurated the TAG-Porsche turbo engine, and thereafter made the well-timed switch to Honda [in 1988 – eliciting F1's statistically most dominant season]; there was our ground-breaking carbon-fibre chassis driven by a stream of brilliantly competitive drivers, all of this made possible by having Philip Morris



Ron speaks. Exclusively to F1 Racing

[via their Marlboro brand] who stepped up to the plate to meet most of the financial challenge [after all, a Prost-Senna superteam doesn't come cheap]. In addition to that, we made a concerted effort to diversify into secondary sponsorship,

and our additional sponsor-partners gave us the ability to accrue surplus revenue that we could apply to other projects of various kinds, including the design and build of the McLaren Technology Centre [McLaren's award-winning, ultra-high-tech, Norman Foster-designed Woking HQ].

The MTC cost £270million and was mostly financed over three years by surplus cashflow. Most of the motor-racing world thought we were completely crazy to do it, but in fact it's been one of the best investments we've ever made, because it created a USP in our offering to people who wanted to invest in us, an advantage we enjoy to this day.

So those innovations, and others like them, all represented a cumulative step change that introduced interesting ideas to F1, most of which have been copied and are now the norm.

We'll take that as a 'yes' to our original question!

F1R: Would you also agree that the way McLaren went about F1 in the '80s and early '90s, winning the drivers' titles in '84-86, then '88-91, and six constructors' titles in that period, forced your rivals to raise their game?

RD: Again, I think most people would support that view, but such an opinion is better coming from other people. I prefer to look forward, and there's still a huge amount of ambition at McLaren to contribute to the future growth and development of Formula 1, although we're currently very constrained by both regulation and [F1 paddock] pass restrictions: let's just say that the policies of monetisation embraced by CVC and FOM tend to be quite constraining on the creativity of the teams. Unconstrained, we could make Formula 1 a lot more colourful than it currently is – and ultimately more successful, too – if we were permitted to input good ideas and then execute them. But sadly that side of the running of the sport is quite challenging at the moment.

Privately, Dennis has been highly critical of F1's private equity fund owners, who reap huge profits from their investment. Here and now, however, in the public domain, "quite challenging" is as far as he's prepared to go...

F1R: Do you think Formula 1 has got itself into a mess with, for example, the recent impasse [now resolved] over qualifying? Or do you think a few fixable problems are being overplayed by hyperactive elements of the media?

RD: First of all, I want to make clear that Formula 1 is far more stable than most people realise. Having said that, certain teams are currently experiencing hardship, and in fact I wouldn't be too surprised if one or two of those teams fail to make it to the end of the season.

“The pain experienced within our partnership with Honda was acute on both sides. It didn’t need to be amplified artificially”

The managers of such teams get into such positions because they spend more money than they have. It’s the same in any business: if you spend more money than you have, then you’re going to find yourself in difficult territory. But this sport is addictive, and people always think their car’s next performance upgrade is miraculously going to make it competitive, so they overspend.

One of the disciplines you need in Formula 1 is to learn how *not* to do that. You have to apportion your revenue meticulously. Even an organisation such as ours, which is robust, solvent and healthy, deliberately constrains capital spending at certain times in order to make sure we’re always able to execute perfectly the operation of our team.

But I don’t think that discipline necessarily sits in all the other teams. I don’t fear an implosion, but undoubtedly some teams are less secure than others. In addition, there’s clearly a degree of uncertainty about the future ownership of F1, but that’s been around for at least five years, possibly longer, and will inevitably work its way through. So I’m optimistic, and above all I’d like others to be optimistic too: specifically, people who criticise something – and there are plenty who criticise – should couple their criticism to a solution.

There are lots of things in F1 that the teams recognise could be better, but it’s not easy to find a solution everybody will support; and, even when the teams are unified in their position, if that position isn’t supported by either the FIA or CVC and its officers, then the process by which the series is governed at the moment provides for it not to happen.

At the moment, the power-output difference between the most competitive engines and the least competitive engines is quite large. It’s a big talking point, and in my view the best way to achieve consensus is to abandon the tokens model and instead extend the period in which the current engines are eligible and then, no matter who you are, you’ll ultimately be bouncing against margins of only 2-3 per cent. In other words, as long as we successfully extend the period in which the current engines are eligible, teams like ours will experience pain in the short term, but that pain will gradually dissipate as the power-unit engineers’ ingenuity begins to butt up against the performance limits of the regulations.

F1R: On that topic, last season was difficult for you [McLaren finished ninth in the constructors’ table – their worst placing since 1980]. What does it feel like to have had such a dismal year, given your past record?

RD: The pain experienced within our partnership with Honda was acute on both sides. It didn’t need to be amplified artificially, and we didn’t need to inflame it for strategic reasons; it was always there. So we were keen to make sure that there were never any conversations that contained apologies, or included anything of the nature of one company

Ron on overcoming early problems in the relationship with Honda: “The only approach that ever gets you out of a technical problem is complete transparency, total focus and sheer hard work”

humbling itself to another, for the simple reason that that kind of dialogue or action is a complete waste of energy. The only approach that ever gets you out of a technical problem is complete transparency, total focus and sheer hard work, and those are the essential philosophies that characterise the way McLaren and Honda are working together right now.

But it takes time for new people to buy into those essential philosophies. Meanwhile, all the time, the media are watching and writing, the results of which tend to burn energy. It’s distracting but unavoidable; it’s the nature of the beast.

We’re 100 per cent certain that our partnership is the correct way forward. Honda are a great company, and you’ll never consistently win world championships if you’re second-in-line or third-in-line on engine supply.

If you want to win world championships, plural, which we absolutely do, you have to be aligned with a manufacturer, toe to toe, head to head, and fully prioritised.

And after you’ve begun to reap the competitive benefits of that mutually loyal one-to-one commitment, and on-track success duly begins to come, then you can consider supplying other teams, but not before.

Yes, we at McLaren want to be good Formula 1 citizens, and we always have been, but altruistic behaviour of that nature must also be set against a background of fair, pragmatic and sensible business practices. *[The subtext of Dennis’s comments are overtures made by Red Bull to Honda as to the availability of a second supply of engines. That door, as Dennis makes clear, remains shut, thanks to exclusivity clauses in the McLaren-Honda contract.]*

So, if you want to hear it in blunt terms, let’s get to the point where we’ve won the world championship first and then we’ll think about it. Honda and ourselves fully embrace the fact that we need to be supportive of the Formula 1 community, but, if you look at McLaren in the round, you can’t possibly say we haven’t done just that.

Look at the number of young drivers we’ve brought into Formula 1, for example. The McLaren Young Driver Programme is a pyramid of young drivers, with a number of them at the bottom and just two at the top: namely our Formula 1 team with two cars and therefore just two seats. As the drivers at the bottom of the pyramid strive to get to the top, you help them, you train them, you educate them, but it can’t work out perfectly for all of them. That’s arithmetic.

Ideally, a driver works his way to the top, wins with our team, stays with our team, and retires from our team [Mika Häkkinen being the prime example]. Sometimes, a driver →





works his way to the top, wins with our team, then moves on to a different team [we're looking at you, Lewis Hamilton].

And some young drivers have had a decent start with us but, for whatever reason, never get to win [we're thinking Kevin Magnussen]. It's inevitable that you're going to see examples of all three career pathways, but I want to make this crystal-clear: there has never been, in the history of McLaren, any unkind or ill-considered action in respect of our drivers.

Ron is fully lit as he warms to one of his favourite themes and, unprompted, he opens up on what was widely reported

as 'shabby' treatment of Magnussen at the end of 2014, when he was 'released' in favour of Fernando Alonso.

There are people who say: 'Oh, you notified Kevin on his birthday, that's bad.' Well, if you saw the letter I wrote him, which was a nice and generous letter in the circumstances, and if you were aware – if the world was aware – of the conversations I'd had, not only with Kevin, but also with his mentor, Anders [Holch Povlsen, a Danish fashion magnate], then you would appreciate that they were fully informed and fully involved. The letter itself was in fact merely a

CV

Born 1 June 1947,
Woking, Surrey

2014 Returns to head up the F1 team as chief executive officer

2009 Dennis steps down as team principal and hands complete control of McLaren over to Martin Whitmarsh

2007 McLaren are embroiled in 'Spygate'.

They are found guilty, excluded from the constructors' championship and fined \$100m

2004 HM The Queen opens the McLaren Technology Centre

2000 Awarded CBE for services to motorsport

1982 Persuades TAG founder Mansour Ojeh to fund Porsche-built engines for the team

1981 Project 4 merges with McLaren to form McLaren International. Dennis becomes team principal and organises a buyout of original McLaren shareholders to assume full control

1975-1980 Finds and runs Project 3 and then Project 4 to race in F2 and F3

1974 Rondel attempts to enter Formula 1, but the project flounders due to the energy crisis

1971 Forms Rondel Racing with Neil Trundle

1968-1971 Works for the Brabham F1 team

1966 Starts working in Formula 1 at Cooper as a mechanic to Jochen Rindt



confirmation of what they already knew was being dictated by our decision to hire Fernando; it wasn't news to either Kevin or Anders.

So the letter was simply triggered by the fact that driver-team relationships are governed by contracts, and contracts require formalisation. The format of the letter wasn't 'We're firing you'; it was, 'We're going to do everything we can to help your career, we'll always be supportive of you, and we'll provide positive references – in other words information and data – to any other grand prix team that may be interested in you.' That's what the letter said.

The situation was simple. Entirely independent of our opinion of Kevin, who we knew to be a talented and capable driver, we'd already decided to go with Fernando and Jenson [Button], and three-into-two wouldn't go. So the letter formalised that position, in accordance with the relevant clause of our contract, and coincidentally it arrived on Kevin's birthday – and that one small detail portrayed McLaren and myself as being cold, ruthless and uncaring.

Far from it, *far from it*. In fact, you can even read the letter. I have no problem with you reading it, as there's nothing in it that's confidential. In fact, it's a nice letter. It's just unfortunate that Kevin received it on his birthday, but it didn't contain anything he didn't already know.

It should be noted that K-Mag himself never complained about the timing of the letter; that was done by media. When asked about its arrival date, Magnussen replied: "Oh, I didn't really mind. That's just a detail, isn't it? There's no need to make a fuss about stuff like that."

F1R: When you take a kicking like that in the media, and when times are tough, what do you do when you get home? Do you sit and think about it? Do you reflect on how you're going to act and how you show leadership?

RD: Of course, of course! I think most people in the company know what my values and principles are. There are – it's not for me to say – many, many times I've demonstrated, not for any other reason than that I'm principled, what the company is prepared to do for its employees. And that's how either the company steps up to the plate or I personally step up to the plate in moments of individual hardship or difficulty.

There are many examples, several of which have passed into paddock lore. At one Australian GP, the late Daily Mail F1 hack Ray Matts, an extremely popular figure, was taken ill. Dennis personally intervened to ensure Ray's wife, Val, was flown in some comfort from the UK to her husband's →

"Many, many times I've demonstrated, not for any other reason than that I'm principled, what the company is prepared to do for its employees"

“There’ll be no such thing as retirement for me; it doesn’t sit in my vocabulary. It’s not the way I’m put together”

sickbed Down Under, after which McLaren assisted with various other logistical details of Matts’ medical care.

Latterly, the extent to which Ron stepped up when Tyler Alexander, one of the team’s first employees, fell ill two years ago, is already the stuff of McLaren legend. Dennis managed Tyler’s palliative care up to his death in January.

That’s the company we are. It’s the way all companies should be. I don’t want to say we’re some sort of saintly organisation, because we also have to take painful decisions, especially when people aren’t doing their jobs to a level that’s satisfactory. But, by and large, if you speak to our workforce, the inside story is very different from the outside perception.

F1R: Why is that, do you think?

RD: We’re a fiercely competitive team. We want to be the best at everything we do, and that requires us to climb and climb fast. Even so, when I visualise the method by which we’re going to do that climbing, I’m careful to make sure we don’t trample on the hands of those gripping the rungs beneath us. I’ve always climbed my own ladder – and, although you sometimes slip a rung or two in your efforts to climb fast, I’ve always been anxious to ensure that the consequences of slipping have never been to knock someone down beneath me, and especially not anyone tied to me in the climbing process.

But people do occasionally slip up beneath you, often without your knowledge, and then it’s too late to do anything. Consequently, when such an occurrence has been misunderstood or misreported, I’ve often felt very aggrieved. While I accept that all leaders tend to become battle-scarred, and although you sometimes have to take bullets for your staff, it’s never a painless experience. If I’m honest, I wish the world at large were a little more tolerant when you’re up there, taking flak for things that aren’t within your direct control. But, ultimately, as I say, as the leader, you have to take responsibility; sometimes it can be *really* painful though.

F1R: You’ve been a leader for a long time, but you began working in F1, as a teenage technician for the Cooper team, in 1966. After all that time, do you feel you’re still climbing?

RD: I used to tell people that my tombstone epitaph should be: ‘Here lies a successful entrepreneur.’ I’ve modified that over the past couple of years, and now it would be: ‘Here lies an ever-ambitious, successful, entrepreneur.’

I’ll die ambitious. I’ve got so much left that I want to do. Every now and then, I’ve made the mistake of trying a bit of private diversification, only to find that, because I haven’t been able to give it enough attention, it hasn’t worked out as well as I’d have liked. But that’s a product of my insatiable ambition. I’m not complaining. My life is fantastic. The problem is that sometimes it’s fantastically difficult and painful, and sometimes it’s fantastically successful and pleasurable. Whatever the emotion, it always has ‘fantastic’ in it. I don’t have anything that comes at me in small doses. If I have pain, I have acute pain; if I have pleasure, I have acute pleasure.

F1R: You talk about pleasure and pain, and about success and difficulty, but do you ever have plain, simple, fun?

RD: Yes, I do, but, unfortunately, because of social media, nowadays I tend to have to be rather constrained. For example, on holiday recently, with a group of friends, there was a moment when I decided to create some spontaneous fun. The problem is – immaterial of what my little ruse was – everybody started taking pictures on their phones, and you suddenly realise that a moment of silliness could be out there in the world in a millisecond. Sadly, therefore, what should be private fun could be publicly shared against your wishes. And that fear makes you constrain yourself. [*We listen, agog, wondering what Ron’s “moment of silliness” might have been. Alas, we will never know...*] So social media to some extent constrains a public person’s personality, because in the past it didn’t matter if you had a moment of silliness because no one would have videoed it or shared it. But now they do.

It’s a pity, because there certainly is a ‘plain, simple fun’ side of Ron Dennis. If you knew me well, you’d know that, as serious and as focused as I am in business, I’m as much the opposite when I’m off duty. I tend to holiday well away from Europe, in places where everybody respects one another’s privacy, and you can relax and have fun. Unfortunately, we used to be able to do that in Formula 1, but no longer.

F1R: Would you ever consider taking to Twitter?

RD: I don’t think there’s even the remotest possibility of that ever happening. To be honest, if I sit down for a meal with my family, or in a restaurant with friends, or at a dinner party, if anybody even comes remotely close to using their mobile device, all hell breaks loose. I don’t like it.

F1R: You’ve been responsible for recruiting some of F1’s greatest drivers: Niki Lauda, Ayrton Senna, Alain Prost, Mika Häkkinen, Kimi Räikkönen, Juan Pablo Montoya, Lewis Hamilton, Fernando Alonso... What do they mean to you?

RD: All human beings have personalities, and racing drivers are no exception. Every single one of them has been different – and not only different in personality, but also different as regards their work ethic, their loyalty and their behaviour in the face of either adversity or success. You measure people according to how they react to different sorts of life experiences. So I can look back on the past with very different emotions according to the individual I’m recalling, but foremost on my checklist is loyalty, and not just with drivers but with people in the company, too.

Loyalty is a value that really tests a person. For a company to power through adversity, you require loyalty from everybody. It’s not a one-way street: I have to be loyal to the people who work for the company just as they have to be loyal to me – and, if anything bad ever happened to the company, one of the considerations that would sit very prominently in my mind would be a virtual index of mutual loyalty.

Conversely, drivers also have to be selfish. They have to have an unwavering belief that they’re the best. How can

you be a Formula 1 driver if you don't think you're capable of being champion? How can you be a Formula 1 driver if you aren't prepared to prioritise your own success above that of your team-mate? How can you be a Formula 1 driver if you're not happy always to put yourself first? Yet the best Formula 1 drivers, despite embracing that feverish level of personal ambition, also manage to engender great loyalty among engineers and everyone else in the team. They're a rare breed.

And I have to say that the Fernando of the past year has been remarkable in that regard. He's changed enormously – and for the better. I recently read an article in which a former driver [Ron's talking about Johnny Herbert] was saying it was time for Fernando to retire. But just look at Fernando: in my opinion, which I think I'm pretty well qualified to voice, he's still the fastest driver in Formula 1, it's as simple as that. And he's super-fit, too. His Melbourne injury was no more than a cracked rib. Every time he breathed deeply it hurt a bit, but for a matter of days, no more.

F1R: You've spoken in the past about how close you were to Mika Häkkinen. What was special about your relationship?

RD: Mika's loyalty was phenomenal. That was something I'd experienced already, with both Alain and Niki, but never as much as with Mika. At the beginning of 2001, Mika and I had a few chats about his future, and I remember that he came to me a few days before the Monaco Grand Prix and said he'd made up his mind: he would retire at the end of the season.

I've never known a driver come and tell me so early in the year that he was going to retire. I asked him why, and he gave me his reasons. I considered what he'd said, but I thought it was too soon. He was still only 32, he was still such a great driver, and it was still only May.

When I sit down to talk to Fernando or Jenson today, I'm aware of a large age gap, and for that reason I can give them something akin to parental advice. But when I started my McLaren career, in late 1980, I was just 32 – more or less exactly the same age as the team's drivers – so that relationship dynamic wasn't possible. In fact, our most senior driver in my first full season in charge at McLaren, 1981, was John Watson, who's actually a little older than I am.

But by 2001 the age difference between me and our drivers had grown to encompass the father-son 'window'. At the beginning of the 2001 season I was 53, and Mika was 32. So I felt able to give him a kind of parental guidance. We talked of a sabbatical, and perhaps it might have worked, because, after he'd made his decision, he drove better than he'd ever driven before. I relished seeing that, and, as the season wore on, I could sense that there was just a glimmer of hope that he'd continue for 2002 – and if he had, I'm absolutely sure he'd have been super-competitive. His final grand prix win, at



Dennis was close to Mika Häkkinen (below) and offers fatherly advice to his current drivers (above)



Indianapolis in 2001, which was his penultimate grand prix start, was just about as good a drive as I've ever seen.

F1R: Is there anything you still want to achieve?

RD: There are things I'm achieving that not a lot of people know anything about, and some give me a lot of satisfaction. People sometimes ask me if I'm ever going to write a book. If I find the time to put anything on paper, my motivation will only be so that my children and grandchildren can read my version of the story. I don't like the word 'autobiography', but I wouldn't mind putting down my account of my history.

There's also something I haven't got the time to do at the moment. I want to design and construct a new home, only because I've got some great ideas. I don't particularly want to build it to live in it; I just want to build it. I'm fortunate to have a nice home at the moment, and it gives me pleasure, because it's my sanctuary – it's where I go to let all the stress fall off me. But, apart from that, I don't think I've got a great deal more to prove, although I'd love still to be an integral part of McLaren when we return to winning – which we will.

F1R: So you're not about to pick up the golf clubs just yet?

RD: No. I enjoy scuba diving, I enjoy shooting, I enjoy skiing, but those things have to fit in around my 24/7 entrepreneurial business life. There'll be no such thing as retirement for me; it doesn't sit in my vocabulary. It's not the way I'm put together.

F1R: So you don't see yourself stepping back?

RD: I'll never stop. The definition of 'stop' varies from individual to individual. I occasionally start a speech by saying "I've never done a day's work in my life," and that's a very accurate statement. Because I love what I do, it doesn't feel like work, so why would I stop doing it? I feel privileged to be given the opportunity to pursue my ambitions, and I think that there are very, very few people – I can't think of anybody in fact – who have financially suffered from being supportive of me or the companies that I've been involved in. But if you're an entrepreneur, you're not always going to win, you're not always going to achieve everything you set out to achieve.

Other than that, I'm proud of the educational and professional achievements of my three children, and I'm proud to have a great partner [Carol Weatherall], because we all need support and she's a very clever lady whose support is absolutely first-rate. So I look back on the negatives of my life as just being par for the course. The more you're a leader, the more you're going to get scarred. It's inevitable.

Or, as Sun Tzu had it: "Never venture, never win!" 

The McLaren MP4-31

in numbers

0.03mm

The thickness of the anthracite grey base paint used on the car

Mobil 1 engine oil is just 20 micrometres thick. That's half the thickness of a human hair

16,000

individual parts make up the MP4-31

702kg

The car's overall weight, excluding driver and fuel

60-70

per cent of the structural weight of the car is carbon fibre

3 litres

of gloss lacquer are used on the car's surface, at a thickness of 0.056mm



125,000rpm

The number of times the turbo charger spins in a minute – nearly **100** times faster than a washing machine on a spin cycle

Acceleration is

0-60mph

in less than **2.3** seconds and

0-125mph

in less than **5** seconds

1,200°C

The peak temperature of the brake discs – hot enough to melt silver

120kW

The max MGU-K power output, which is nearly **70** times more powerful than a kettle

96 hours

or four full days, is the time it takes to sand, prime and paint the car

2,500-4,000

The number of gear changes made per GP

The Honda RA616H V6 engine has **3,500** components

Weighs **145kg**

Capacity **1.6-litres**

Revs to **15,000rpm**

Produces **900bhp**

Cylinders **6**

Valves **24**

34,400

linear metres of carbon fibre (1 metre wide) is used each year in construction. That's just over 20 miles – or the distance from the MTC in Woking to *F1 Racing's* HQ in Twickenham

500

fuel-injection pulses a second.

The power generated from the Esso fuel is enough to boil a cup of water in the blink of an eye **F1**





Should he

STAY?



Or should he

GO?

PHOTOS: STEVEN TEE/LAT



There have been a few bumps in Fernando Alonso's relationship with McLaren so far, but the catastrophic breakdown many people expected hasn't happened yet. **Andrew Benson** asks if this unlikely pairing can see it through

Even before Fernando Alonso's

move to McLaren-Honda became official, his commitment to the project was being questioned. People asked what he was thinking. How could a man so driven, who believes that "in equal cars and equal equipment, I'd beat them all", as he told Spanish TV earlier this year, and who has such a reputation for being demanding and often difficult, be happy in an unreliable car in the midfield? Surely the relationship is bound to collapse sooner or later?

Perhaps it will, but, one or two minor wobbles aside, the volcanic eruption many were expecting to tear McLaren and Alonso apart has not yet occurred. For the past 18 months, Alonso himself has talked about his belief that McLaren and Honda will win together and expressed his confidence that they are the team with the best chance of ultimately dethroning Mercedes. But it is by his actions that Alonso has provided the best answer yet for anyone wondering about his genuine feelings for the team.

In Bahrain this year, when FIA doctors ruled him out from competing in the second round as a result of a broken rib, McLaren told Alonso to go home and concentrate on getting well for the subsequent race in China. Instead, he stayed for all four days, helping his stand-in, reserve driver Stoffel Vandoorne, with his debut.

"The team told me: 'You will fly back home.' And I said: 'No way. I want to hear the cars. I want to help Stoffel. I want to see the new updates in the car, how they work.'"

And so he did. All weekend Alonso was in the garage, on the pitwall, in the debriefing room. Well after the race he could still be seen in the McLaren area, joking with colleagues and enjoying himself – to all appearances totally content with his world.

Bahrain also offered another glimpse into his commitment.

On Friday, after second practice, he went with chairman Ron Dennis to try to persuade the FIA to let him race.

Broken rib or not, he did press-ups in front of the doctors to try to convince them he was okay.

But, it has to be said, it's not hard to understand why outsiders would question the sincerity of Alonso's commitment to McLaren. This, after all, is a man with a thirst to win

arguably greater than that of any of his peers; a man whose frustration with his inability to win with Ferrari the third title for which he had been striving since 2007, ultimately drove him away from them, despite the Scuderia being the team closest to challenging F1's established pace-setters.

So how can that same man be happy with his current situation, notwithstanding the obvious progress McLaren-Honda have made even at this early stage of 2016? Alonso has an answer to that question, too.

"I am aware of the difficulties we had last year and I am aware of the difficulties we may face this year in terms of performance," he says. "While you are not winning you can never be happy. Only one team can be happy, all the others are in the same position. Sometimes we tend to forget; we tend to differentiate and assume whoever is finishing third, fifth, seventh is happier than whoever is finishing 12th or 18th, and that the person in 22nd is the unhappiest man in the world. This is not true, at least not in my case – finishing second, fifth, 11th or 21st is exactly the same pain, because you are not winning.

"This year I feel happy inside because I see the commitment and the project that one day will win. If that day will be in the short-, medium- or long-term, I don't know. But this McLaren-Honda partnership will win one day, and we want to make this time as short as possible and that is what we are working for. I understand that from a fan's point of view it could be easier to fight for fifth or fourth than P1 and it seems quite sad. But from the inside it is the same frustration. Sometimes even more frustration if you are fourth all the time."

In that one answer, Alonso has explained both why he is seemingly content for now at McLaren and why he left Ferrari. Since this article was written in the immediate aftermath of the Bahrain Grand Prix, it is too early to make any definitive judgements about Ferrari's absolute competitiveness. But one thing is very clear – they still do not have the same outright pace as Mercedes.

This season, 2016, would have been the final year of Alonso's contract with Ferrari, had he not chosen to end it two years early. So at this stage he can still console himself with →

Win-to-start ratios of McLaren's top racers*

Who has translated their drive at McLaren into the greatest success?

Ayrton Senna

Win ratio
36.46%

Starts 96
Wins 35
Poles 46
Fastest laps 12
Other podiums 20
Titles 3

Alain Prost

Win ratio
31.25%

Starts 96
Wins 30
Poles 10
Fastest laps 24
Other podiums 33
Titles 3

Lewis Hamilton

Win ratio
19.09%

Starts 110
Wins 21
Poles 26
Fastest laps 12
Other podiums 28
Titles 1



PHOTO: MCLAREN HONDA
*CORRECT AS OF 2016 CHINESE GP

James Hunt

Win ratio
18.37%

Starts 49
Wins 9
Poles 14
Fastest laps 5
Other podiums 4
Titles 1

Mika Häkkinen

Win ratio
15.38%

Starts 130
Wins 20
Poles 26
Fastest laps 25
Other podiums 31
Titles 2

Niki Lauda

Win ratio
13.79%

Starts 58
Wins 8
Poles 0
Fastest laps 8
Other podiums 8
Titles 1

Fernando Alonso

Win ratio
10.81%

Starts 37
Wins 4
Poles 2
Fastest laps 3
Other podiums 8
Titles 0

David Coulthard

Win ratio
8%

Starts 150
Wins 12
Poles 7
Fastest laps 14
Other podiums 39
Titles 0

Jenson Button

Win ratio
6.89%

Starts 116
Wins 8
Poles 1
Fastest laps 6
Other podiums 18
Titles 0

the thought that while he might not yet be winning at McLaren, neither would he have achieved a third title had he stayed at Ferrari. Which explains why, when asked in Australia whether he would feel regret if Ferrari were close enough to fight Mercedes this year, he replied as follows: "If they win the championship, probably yes, because I had a contract last year and this year. So if they win the title this year, I will probably feel I could have had that opportunity as well, if I was able to drive as well as the champion. But this is a big if."

There are two different explanations as to why Alonso ended up leaving Ferrari when he did. His own version is that he had lost his belief in their ability ever to give him the title, so he felt he had to leave. The other, the one popularly believed within the paddock, is that he had not completely committed to the idea of leaving when Ferrari themselves decided his negativity about the team was destructive. Having made that call, this theory goes, Ferrari pursued Sebastian Vettel, and signed him as soon as his poor performance in 2014 triggered an escape clause in his Red Bull contract, having already manipulated Alonso into a position where he had signed his own exit clause.

Whichever version is true, it is fair to say that Alonso's only option after leaving Ferrari was to join McLaren. And senior figures in that team believe he made the decision to do that when he paid his first visit to Honda's R&D facility in Sakura in Japan at some point in the late summer of 2014 and saw the company's commitment to F1. This tallies with what Alonso himself has said. He claims he saw an opportunity to make real a childhood fantasy. As he describes it, "I'm probably an F1 driver because I saw as a kid the McLaren-Honda domination on TV, so now it's a dream."

It was this longstanding love of McLaren that led him to join the team the first time round, back in 2007. Throughout his karting years, he had hoped that one day Ron Dennis would offer him a drive. That finally happened as he was waiting to go out on to the podium in Brazil in 2005 on the day he won his first championship for Renault: his answer was an immediate yes.

Everyone knows what happened next. The dream turned

into a nightmare. Dennis told Alonso he would lead the team, but did not carry through on his promise once Alonso's rookie team-mate Lewis Hamilton began to demonstrate his phenomenal talent.

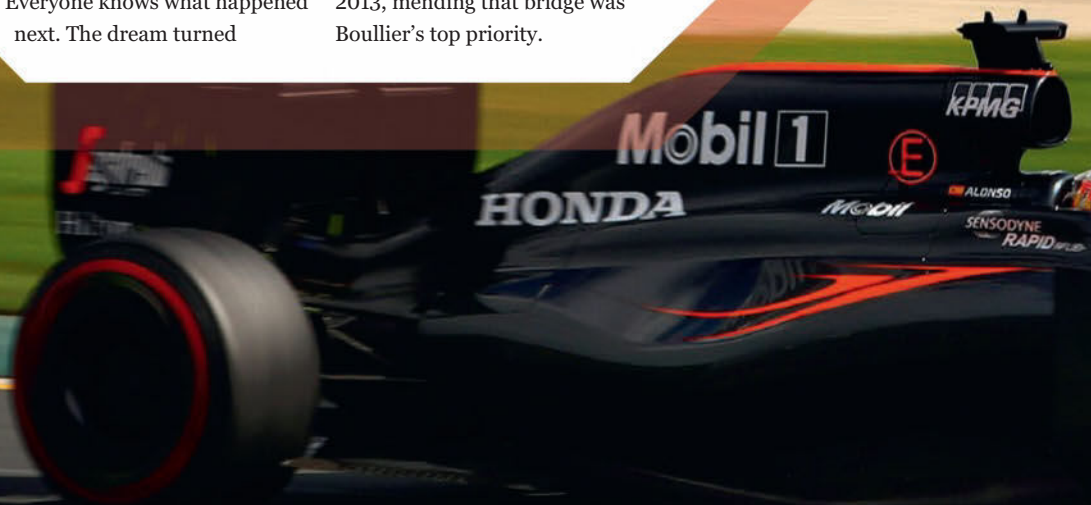
The fact that Dennis reneged on their deal, combined with Alonso's awareness that McLaren risked losing the title to a faster Ferrari if they did not commit to having one number-one driver, drove a wedge between them. The relationship finally collapsed during the weekend of the Hungarian Grand Prix.

In qualifying, Hamilton double-crossed Alonso, who returned the favour. Dennis and Alonso argued furiously. Alonso threatened to reveal incriminating emails about the 'Spygate' scandal to the FIA and stormed off. Dennis phoned FIA president Max Mosley in a panic and 'fessed up, only for Alonso's manager to come back and say that Alonso was sorry and retracted everything. By then it was too late. Mosley was on the warpath and the revelations in the emails Alonso had mentioned cost McLaren a \$100m fine for possessing confidential Ferrari information and got them thrown out of the constructors' championship – which they otherwise would have won.

It's easy to forget that, despite the breakdown of his relationship with McLaren, Alonso by and large drove superbly in 2007. There were one or two wobbles – particularly in Spain and Canada – as the extent of Hamilton's challenge became apparent. But once he had taken this on board, Alonso slugged it out with Hamilton to the very end. There was almost nothing to choose between them on qualifying pace, they won four races apiece, and they finished the season tied on points.

Leaving the McLaren offices for the last time in Brazil that year, Alonso turned around and said to the engineers: "Thanks for everything. I know where I screwed it up; it was in Hungary. I know exactly what I did wrong. I lost it. That's my regret, otherwise I would have won the championship."

In later years, Alonso always made it clear that his problem was not with McLaren *per se*, but with "one person" in the team – that person, being Dennis. So when McLaren racing director Eric Boullier picked up in 2014 negotiations Martin Whitmarsh had started in 2013, mending that bridge was Boullier's top priority.



Alonso and Dennis thrashed out their differences and Alonso concluded that while they may never be best of friends, they could work together. Once that was resolved, the idea of becoming the man to take McLaren-Honda to their first title since his childhood hero Ayrton Senna – and being paid a \$40m salary for doing so – was too powerful to resist.

Inevitably, there have been moments when Alonso's frustration at the inadequacies of the package has boiled over.

The first was in Canada last year, when in response to a request to save fuel while trying to fight off the Saubers, he said he was "fed up with driving around looking like amateurs". Then came Suzuka, and his now-infamous "GP2 engine" transmission – timed to create maximum embarrassment at Honda's home race.

In Abu Dhabi at the end of the season, Dennis admitted that he and Alonso had discussed the idea of Alonso taking a sabbatical in 2016 if performance continued to be so poor. Dennis's public revelation of this was a surprise to Alonso, who, clearly from his responses over the weekend, had already abandoned the idea.

Speaking before Alonso had driven a McLaren-Honda, Dennis was already preparing for bumps in the road ahead. "I'd rather have a bit of that and someone giving absolutely 100 per cent all the time," he told this writer, "than someone you are wrestling with and trying to kick into action. Once you have the core ingredients right, winning is not difficult. A core ingredient is a great driver.

One of the things about Fernando is he doesn't give up. He just never gives up. That's what I love about him."

In Bahrain this year, Dennis went further still, describing Alonso as "the fastest driver in F1".

Judging Alonso's career so far, it would be a stretch to say he had been a great McLaren driver – as opposed to being a great driver, which he undoubtedly is.

But his stats produce some interesting data. His win


percentage for McLaren (11.11 per cent), for example, is considerably higher than both Jenson Button's (6.95 per cent) and David Coulthard's (eight per cent). And not far off two-time McLaren champion Mika Häkkinen's (15.38 per cent).

On one level, it shouldn't be a surprise: Alonso is a greater driver than any of them. But, at the same time, each one of those three had many more seasons in a competitive McLaren than Alonso has had.

It's too early to say whether Alonso will deliver the title for McLaren-Honda. It is mostly out of his hands, depending as it does on Honda getting up to speed with their engine and McLaren producing a competitive car. Both of which are far from a given.

Also, time is not on Alonso's side. He turns 35 this summer, and his McLaren contract will run out at the end of 2017. He is yet to decide whether he will want to stay in Formula 1 beyond that point. He will make that decision, he says, part way through next season. "First, I will see if I enjoy driving these cars," he said. "If I keep enjoying and see the possibility of being world champion, I will keep chasing this third world championship."

It will depend partly on whether he likes the faster cars that will result from next year's rule changes, and particularly the new tyres Pirelli have been told to produce for them. Alonso has made no secret of the fact that he hates the current tyres, which drivers cannot push hard for more than a lap or two before they go off. Whether the new tyres can be pushed hard throughout their life "will be a big factor," Alonso says, before adding: "If I stay longer, it will be with McLaren."

However improbable it may seem, the dream, clearly, is still alive. 

Andrew Benson is BBC Sport's chief F1 writer

"One of the things about Fernando is he doesn't give up. He just never gives up. That's what I love about him"

Ron Dennis





McLaren's

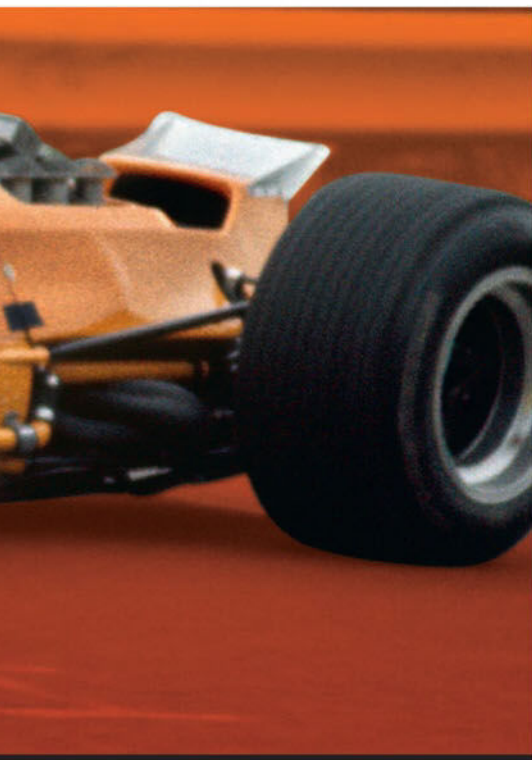
50



Mega moments

What better way to celebrate McLaren's 50 years in Formula 1 than to look back at the 50 most gripping incidents in their sporting history? **Matt Youson** trawls the archives to count down through the highlights, dramas and controversies. But which is number one? Read on to find out...





50 Mansell's curtain call

In Nigel Mansell, Ron Dennis saw an opportunity to repeat his successful experiment with Niki Lauda, coaxing a former champion back to the top table for one last hurrah. Sadly, 1995's narrow MP4/10 was designed for smaller men, and Mansell's bulky frame simply didn't fit. McLaren widened the car, but the idea that Mansell didn't fit took on a metaphorical as well as physical dimension. At Imola Mansell finished tenth, then after handling problems at the following grand prix in Spain, he retired – both from the race and the sport.



49 Anyone for tennis?

Did Juan Pablo Montoya injure his shoulder in 2005 playing tennis, or mucking around on a quad bike? It doesn't matter, McLaren needed a sub. It should have been Alex Wurz but the MP4/20 was too small. Pedro de la Rosa was sufficiently compact and stepped in at Bahrain. He finished fifth, driving the aggressive race of a man fighting for his career and *still* holds the lap record. By Imola, McLaren had made more space so Alex took over, finishing fourth, later upgraded to third, thanks to Honda's creative approach to minimum weights.

47 Royalty on board

An interesting footnote in the history of McLaren car design was the two-seater MP4/98T. While the two (or three)-seater Formula 1 car is not uncommon now, the tandem McLaren was a groundbreaking machine back in the late 1990s. In addition to delivering marketing gold to McLaren's sponsors, West, the car also provided not-so-cheap thrills to an eclectic range of guests. Martin Brundle drove the car regularly, with everyone from co-commentator Murray Walker to King Juan Carlos of Spain taking a turn at riding shotgun.

48 A promising start

McLaren started 2007 so well. After a lacklustre 2006, getting both drivers on the podium in Melbourne was a return to form, but Alonso's victory at Sepang three weeks later really sealed the deal. Alonso *was* going to take McLaren all the way: easily as quickly as the departed Kimi Räikkönen and Juan Pablo Montoya but without any of the annoying baggage. He was a driver you could build a team around. It was the start of a glorious new era, filled with possibilities. And that Hamilton kid was quick, too – this was going to be an awesome partnership.

46 Emmo's home win

Interlagos was a very different circuit in 1974. The race was delayed so broken glass could be swept away after the party started early, and the race was red-flagged after 32 of the 40 laps as rain turned the hillside circuit into a river. Home hero Emerson Fittipaldi was on pole position, but lost out during a confused start and only reclaimed the lead on lap 16 after a tussle with Ronnie Peterson. He held that lead until the end. Chequered flag; Emmo wins; crowd goes into orbit; McLaren score the first of their dozen Brazilian Grand Prix victories. →

45 Ron to the rescue

McLaren's year zero came in 1981. Marlboro-backed McLaren had become moribund in the late 1970s, while Ron Dennis's (also Marlboro-backed) Project Four racing team were doing great things in junior series. The solution, with a little bit of a nudge from Philip Morris, was a merger. The team that had begun life as Bruce McLaren Motor Racing became McLaren International. Subsequent cars have borne the now-famous MP4 designation but the real change was that the team once again had a clear direction and a firm hand on the tiller.

44 Pole #150

Because 2012 is remembered as the Sebastian Vettel vs Fernando Alonso show, it tends to be forgotten that McLaren won seven races that year and collected eight poles. Lewis Hamilton notched up McLaren's 150th pole in Hungary, making them only the second team to achieve that particular landmark. Peter Revson had captured pole number one at the 1972 Canadian Grand Prix at Mosport Park; Ayrton Senna took the 50th at Spa in 1989; and Mika Häkkinen grabbed the 100th a decade later at the 1999 German Grand Prix in Hockenheim.

43 Party time

With a new title sponsor in Vodafone and new drivers Fernando Alonso and Lewis Hamilton, McLaren decided on a low-key launch for 2007's MP4/22... except for the jugglers, fire-breathers, high-wire acts, and closing the roads around Valencia's City of Arts and Sciences to construct a 2.5-mile circuit with room for the quarter of a million fans they expected to show up. "The amount of money they've put into it is unreal!" said Lewis Hamilton. It was a far cry from the roll-it-out-of-the-garage-and-whip-off-a-sheet approach of modern times.

42 Mika beats the best

Despite his cabinet full of trophies and two world championships, there's a constituency who believe Mika Häkkinen's greatest achievement came on his debut. Häkkinen, then McLaren's test driver was drafted in to race in the final three rounds of 1993 after the team lost patience with Michael Andretti. Mika's McLaren debut came at Estoril and if he had any nerves, they certainly didn't show. Williams locked out the front row and the McLarens took row two, but it was Mika in P3 by 0.05 seconds, and Senna in P4. Impressive stuff.



41 In the silver corner...

At a sodden Spa in 1998, race leader Michael Schumacher came up to lap David Coulthard's McLaren. As they approached Pouhon, the McLaren lifted to let Schumacher pass but stayed on the racing line. Unsighted by the spray, the Ferrari slammed into the back of Coulthard. After three-wheeling back to the pits, Schumacher, convinced that Coulthard was at fault, stormed down to the McLaren pit and attempted to throttle DC, shouting: "Are you trying to fucking kill me?" The pair had to be separated by team personnel.

40 After you, Claude

The Adrian Newey-designed MP4/13 looked like a winner from the moment it was unveiled. In Australia 1998, Mika and DC locked out the front row, lapped the field and Häkkinen took a comfortable win. Much too comfortable. He led from the start but mistakenly pitted. DC inherited the lead – but yielded since the pair had an agreement that whoever made Turn 1 first would win. Furious accusations of race-rigging followed, and complaints were made by the promoter. The result stood, but the groundwork was laid for the 'no team orders' rule.

39 The closest finish

Today, **Alain Prost** is *le Professeur* but that wasn't always the case. Paired with Niki Lauda in 1984, Prost was faster but inexperienced. Going into the finale at Estoril, Lauda could afford to finish behind his team-mate. He made hard work of it, though, qualifying 11th. Despite turbo problems he dragged himself up to second and took the championship by half a point. The closest in F1 history. "I accepted Prost would always outqualify me," said Lauda afterwards, "but in the race, I'd blow him away. That's how I won. I beat him with experience."

37 TAG engines – take one

In a few short years turbo engines went from wild, uncontrollable novelties to wild, uncontrollable race winners. The problem for McLaren was that they didn't have one. In 1983 the team was still racing the venerable but anaemic DFV. They shopped around, but couldn't see what they wanted. Porsche were happy to build a stressed, compact V6 turbo to McLaren's specification – for a price. McLaren just needed someone to pay for it. TAG jumped ship from Williams and thus the branded TAG-McLaren was born. It's an idea so good you could do it twice.

36 The McLambo

McLaren's MP4/6 is the only V12 to have won the constructors' title, but could there have been another? In 1993 McLaren tested a Lamborghini V12. Ayrton Senna and Mika Häkkinen both rated it: while not particularly reliable it could match the power output of the Renault V10 being used by Williams. McLaren opted for a deal with Peugeot, who wanted to port their sportscar V10 to F1. In a way, the McLaren-Peugeot deal was a success – it was so awful it led to McLaren dumping Peugeot and relieving Sauber of their Mercedes deal...

38 Non-optimal relationship

The **Fernando vs Lewis** show had been getting ever more fractious, but toys were finally ejected from the pram in Hungary 2007. Hamilton was supposed to let Alonso through in the fuel-burn portion of qualifying, but didn't. Alonso retaliated by squatting in the pit box. Lewis queued, mechanics waved. Alonso eventually pulled away with just enough time to cross the line ahead of the chequered flag for another lap. When asked by how much he had missed his final run, Lewis deadpanned: "About the same amount of time that I was held up in the pitstop."



35 Alonso's lucky escapes

No one pushes harder, drives faster or frowns deeper than Fernando Alonso, which is why when he crashes, the car stays crashed. McLaren-Alonso Mk II began in less than perfect circumstances when he hit the wall so hard in testing he had to miss the opening race of 2015. He did make it to Melbourne in 2016, but shunted the McLaren so hard that track marshals swept rather than lifted away most of the wreckage. Fernando waved to the crowd, limped back to the paddock, grinned, and thanked the FIA and McLaren's designers for his survival cell.

32 Hulme assumes the mantle

Bruce McLaren died on 2 June 1970 in a testing accident at Goodwood, aged 32. He'd been team owner, lead driver, engineer and designer rolled into one. Other teams would have collapsed, yet McLaren endured, thanks in part to Denny Hulme. Badly burnt a few weeks earlier when his gloves caught fire at the Indy 500, the sight of Hulme, hands swathed in heavy bandages, climbing back into the cockpit is iconic. He made good his promise, winning the 1970 Can-Am title "for Bruce" and proving McLaren could survive without their founder.



34 Wattie is the winner!

As is the case with every team, the McLaren story is one of peaks and troughs. After the exhilarating exploits of Emerson Fittipaldi and James Hunt, the late 1970s were definitely a period spent in the doldrums. John Watson's British Grand Prix victory at Silverstone in 1981 was the first sign that the team were heading back to the top. It was McLaren's first win for five years, the first victory for John Barnard's carbon-fibre chassis MP4/1 and the team's first win under the aegis of Ron Dennis. Times, they were indeed a-changin'.



33 F1's longest partnership

You don't have to get along with each other to have a long and fruitful partnership in Formula 1: Mark Webber and Sebastian Vettel's odd-couple bitch-fest at Red Bull pretty much proves the truth of that statement, but Mika Häkkinen and DC did it differently. Put it down to personality, iron discipline or simply the presence of Michael Schumacher breathing down their necks, but there was always a sense that the Finn and the Scotsman got on perfectly well. They managed six seasons and 99 races together in total.

31 Honda and Alonso Part II

McLaren-Honda? Yes, of course. It just *sounds* right; balance restored in F1. But a McLaren-Honda driven by... Fernando Alonso? Never in a million years. But in 2015, after five years of underachieving over-achievement at Ferrari, and nothing on offer at Red Bull or Mercedes, Fernando was in need of a big team at exactly the same time McLaren-Honda had a vacancy for a megastar. The pictures of Ron and Fernando shaking hands on the MTC boulevard are... special. Necessity creates strange bedfellows – and the devil has all the best bargains.





30 McLaren does the ton

Not many teams can claim a century of wins – just three, if you’re counting – and for McLaren to get there with Ayrton Senna in São Paulo was sweet indeed. 1993 was always going to be a Williams year: the FW15C was too fast; Alain Prost too sure. But McLaren and Senna deserved their day. It was a typical Senna drive, adapting to mixed conditions that cycled from dry to atrocious and back. Williams held row one but Senna passed Hill at the start to inherit the lead when Prost crashed out. He waved to the crowd on his final lap, basking in their adoration.

28 Gordon Coppuck’s M23

McLaren’s design department followed the Liverpool Boot Room philosophy. Gordon Coppuck assisted designer Robin Herd before assuming the mantle of chief designer himself with John Barnard’s help. Coppuck’s M23 bagged drivers’ titles for Emerson Fittipaldi and James Hunt, plus a constructors’ in 1974. Denny Hulme set pole on the M23’s 1973 debut in South Africa and took its debut win in Sweden. Peter Revson added victories in Great Britain and Canada. By the time the M23 was retired in 1977, it had collected 16 victories.



29 Häkkinen doubles up

McLaren’s bond with Japan is strong. From James Hunt’s exploits at Fuji in 1976, through the Honda years at Suzuka, the team have prospered in the Far East. In 1999, Mika Häkkinen went to the final round with the odds against him. Eddie Irvine held a four-point lead and had Michael Schumacher, recovered from his broken leg, as the world’s best wingman. Häkkinen *had* to win the race. When Schumacher set pole, things didn’t look good for Mika. But on Sunday, he rocketed away at the start and never looked back. Double world champion.

27 Senna’s final triumph

The 1993 Australian Grand Prix was a race of lasts. It was the last grand prix for Alain Prost, Riccardo Patrese and Derek Warwick, the last race for active-ride cars, the last race for Ayrton Senna in McLaren colours... and also his 41st and final victory. Senna’s final pole position for McLaren also denied the dominant Williams team a clean sweep for the season, and Senna proved that it was no fluke by leading the race all the way to the flag. After the race Tina Turner, with Ayrton Senna up on stage with her, sang *The Best*.

26 Actions speak loudest

At the 2000 French GP, Michael Schumacher, on blistered tyres, attempted to defend his lead from David Coulthard’s McLaren. DC tried to go round the outside of the Ferrari at the Adelaide corner but was pushed wide by Schumacher. As they exited the corner, Coulthard used an array of hand gestures to make his feelings clear. “Everyone remembers that race because I gave Michael the finger,” DC recalls, “but I’d been pissed off from the start because he cut me up.” David eventually made one stick at Adelaide and won the race comfortably. →

25 Jenson the Unlikely

With the greatest of respect to John Watson, Jenson Button's victory at the 2011 Canadian Grand Prix must take the prize for being the most implausible McLaren win ever. Jenson, running a rarely seen five-stop strategy, survived two collisions (one of which was his with his team-mate), served a drive-through penalty and was running dead last well into the second half of the race. He led for less than a minute – but, taking the lead on the final lap from Sebastian Vettel, it was the minute that counted. If Roy of the Rovers raced cars...



24 Overcoming the odds

A good question for a pub quiz: what's the furthest grid position from which a grand prix has been won? The answer, cemented into F1 lore, is 22nd. John Watson achieved the feat at the 1983 US Grand Prix West at Long Beach. Team-mate Niki Lauda, in 23rd, finished second. McLaren's Michelins didn't work well in qualifying, but switched on with a full load of fuel. Watson and Lauda pulverised the opposition. Lauda, suffering from cramp, couldn't hold off Watson and finished 27s behind his team-mate – but 46s ahead of Ferrari's René Arnoux in third.

23 The MTC is unveiled

The McLaren Technology Centre is rather like the lair of a James Bond villain – although you can't imagine Ron ever picking up something that sheds as much as a fluffy white cat. Until the MTC was built, McLaren didn't really have a home, occupying a series of industrial units around Surrey. Lord Norman Foster designed the new integrated premises, but there's no doubting who's really responsible for the minimal aesthetic, stark white walls and sound deadening acoustics. The Queen cut the ribbon in May 2004.

22 Almost perfect

McLaren's 1988 season is the most dominant in F1 history. They won 15 of 16, the Italian GP being the only exception. Prost led at the start, but a misfire led to the MP4/4's only mechanical DNF. Senna took the lead, but tangled with Jean-Louis Schlesser two laps from the end while trying to lap him. Senna retired and Gerhard Berger lucked-in to head a Monza one-two for Ferrari. Such was the MP4/4's domination that Senna and Prost also claimed 15 of 16 poles (Berger again spoiled the clean sweep), led 1,003 of 1,031 laps and took ten one-two finishes.

21 "I want to race for you"

A young Lewis Hamilton encountered Ron Dennis for the very first time at the 1995 Autosport Awards ceremony and, with the sort of confidence that only a ten-year-old can muster, reputedly told the McLaren boss "I want to race for you one day... I want to race for McLaren." This comment, made in passing, has subsequently been picked up on and mythologised by an eager media into something resembling Michelangelo's *The Creation of Adam*. It probably wasn't quite so dramatic – but it still makes for a very nice story.

20 The start of something big

The origins of McLaren spring, like so many things in F1, from someone being told 'no' and deciding to do it anyway. Cooper F1 driver Bruce McLaren wanted to race in the Tasman series. Cooper offered the then-standard 1.5-litre engine; Bruce wanted 2.5-litres, the maximum allowed under Tasman rules, so formed his own team. He continued with Cooper in F1 but built and drove McLaren cars in other series. An F1 entry was inevitable. The Robin Herd-designed M2B made its debut at the 1966 Monaco GP on 22 May 1966. The team were up and running.

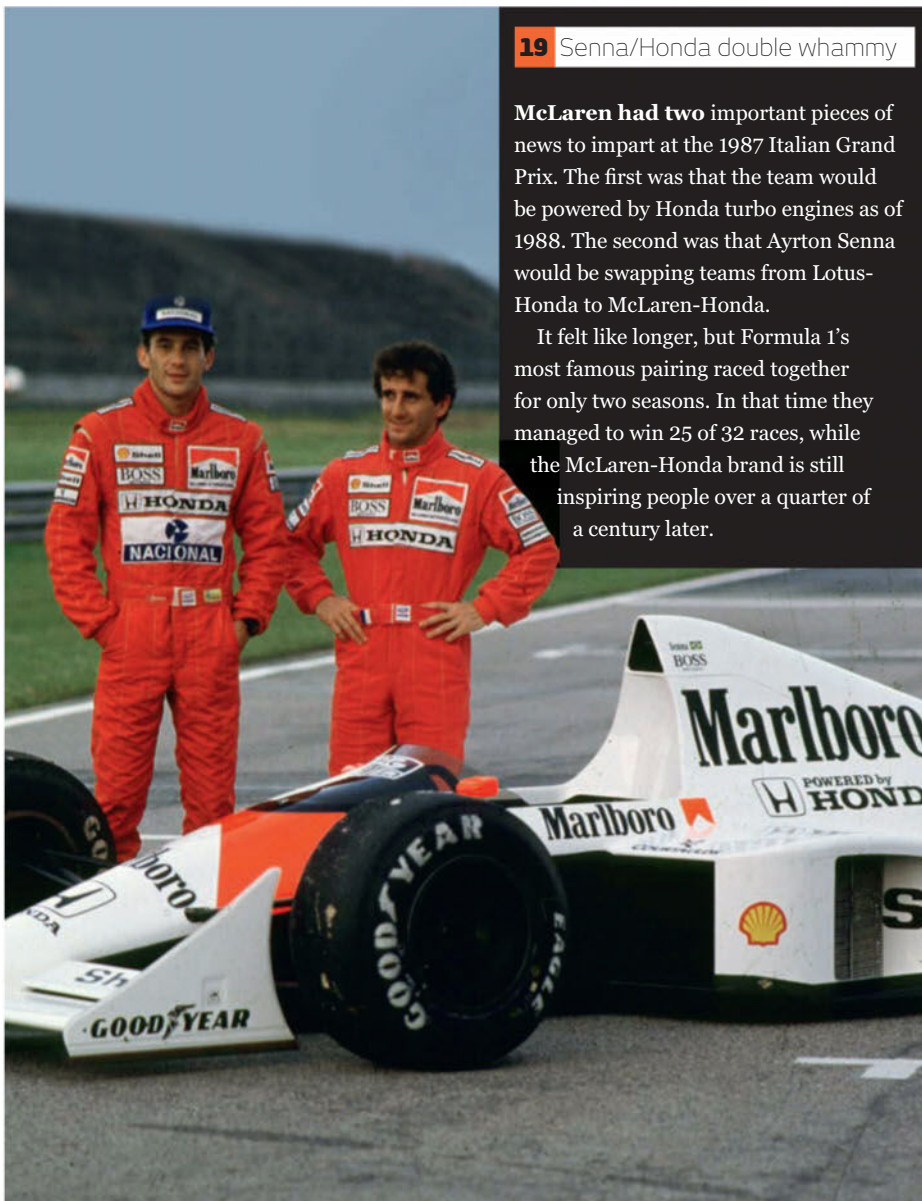
18 Mika's first victory

Jerez 1997 is remembered for Michael Schumacher and Jacques Villeneuve's combative title showdown, but it finished with a McLaren one-two and Mika Häkkinen's first victory on a record 96th attempt. It was a messy victory. Villeneuve, nursing a battered Williams, eyes firmly on the prize, made no attempt to hold onto the lead as the McLarens screamed past on the final lap. At the time, the teams, of course, denied any collusion, but both Williams and McLaren came away from Spain with what they wanted and Mika had the first of 20 wins.

19 Senna/Honda double whammy

McLaren had two important pieces of news to impart at the 1987 Italian Grand Prix. The first was that the team would be powered by Honda turbo engines as of 1988. The second was that Ayrton Senna would be swapping teams from Lotus-Honda to McLaren-Honda.

It felt like longer, but Formula 1's most famous pairing raced together for only two seasons. In that time they managed to win 25 of 32 races, while the McLaren-Honda brand is still inspiring people over a quarter of a century later.



17 Brakesteer: F1R exclusive!

At the 1997 Austrian GP, F1 Racing's photographer Darren Heath saw both McLarens lighting up a disc where they had no business braking. When both McLarens retired at the Nürburgring, Darren sprinted to Mika's Häkkinen's car, pointed his camera in the footwell and began shooting. The pictures revealed a third pedal that let drivers control the rear brakes independently. "We ran it during 1997 and then in 1998 made the mistake of looking too quick in the first race and got banned in the second," summarised Martin Whitmarsh a decade later.

16 Pants on fire

After 'Spygate', McLaren had to try to be better and cleaner than anyone. But in Australia 2009, Toyota's Jarno Trulli was relieved of P3 by stewards for passing Lewis Hamilton behind the Safety Car. Hamilton said he had not been instructed to let Trulli past – but he'd already told the media otherwise. Ron Dennis was declared *persona non grata*, while sporting director Dave Ryan took one for the team and resigned. Did Ron's departure change McLaren? Well, they were playing calypso music over a PA and handing out ice creams at the next race... →

15 On a roll

At the end of 1991, McLaren were at their zenith. They had done the double for the fourth year in a row. Senna had taken their seventh drivers' title in eight years, while the constructors' title was their sixth over the same period. It was a period of unprecedented dominance: no team in the history of F1 matches those statistics. They won 64 from 128 races and never missed a beat when switching from Porsche to Honda power, or from turbos to normally aspirated engines. They even won the 1991 championships with a V12. No one else has ever achieved that.

14 Enter, Newey

After the McLaren-Honda hegemony of the late '80s/early '90s, McLaren were reduced to mere bystanders as Williams battled with various iterations of the Michael Schumacher/Ross Brawn partnership. McLaren had the drivers, the backing and the will to win – but lacked that final spark of inspiration. That arrived, along with Adrian Newey in 1997, and three titles followed in short order. It was a brief interregnum before the Schumacher/Brawn partnership at Ferrari began to fly, but every McLaren Newey designed was a winner. Even the bad ones.

13 The crowd have their way

Drivers always say their home crowd provides a boost. For James Hunt at Brands Hatch in 1976, that was more than metaphorical. Lining up in P2, Hunt was involved in a first-lap crash. He cruised back to the pits – but took a short cut down an access road as the red flags came out. Stewards ruled he could not take the restart. When word got out the crowd were – to put it politely – less than thrilled. Fearing a riot, stewards capitulated and let Hunt restart. Hunt won, the crowd went wild – but he was disqualified a couple of months later.



12 Kimi the mighty

It was an odd season, 2005. Renault took both titles even though McLaren won more races. The MP4/20 and its Mercedes FO110R engine were fragile and thus Kimi Räikkönen went to Suzuka with Alonso already champion. Single-lap qualifying left Kimi at the back due to a rain shower, but Suzuka is a circuit where a good car and a brave driver can make magic: the McLaren was a very good car, and Kimi is a *very* brave driver. He scythed through the field from 17th and caught Renault's Giancarlo Fisichella on the last lap. Fisi defended – but Kimi wasn't to be denied.

11 Down to the wire

Some 150,000 people packed Adelaide for the three-way title decider in 1986. Williams had the constructors' title but the door was open for Alain Prost to take the drivers'. Williams locked out the front row but McLaren's Keke Rosberg took an early lead. Rosberg retired with an engine failure. Piquet led from Prost and Mansell, which was good enough for Nigel – who then suffered the tyre failure. Advantage Piquet... until Williams made a precautionary tyre stop. Piquet hammered out to catch Prost – but Prost retained his title with a four-second margin.

10 Carbon-fibre's F1 debut

Ron Dennis's Project Four team had considered building a carbon fibre monocoque but never had the resources to do it. That changed when the team merged with McLaren. John Barnard, lured back to McLaren from IndyCar, was responsible for the design of 1981's MP4 (later known as the MP4/1). Stiffer, lighter and offering greater protection than aluminium, the carbon tub was a step-change in F1. The problem was that it wasn't hugely difficult to replicate and, within months, it had become the industry standard it still is today.



8 Out of the zone

McLaren have 15 Monaco GP wins, but 1988 felt like a failure. Senna and Prost locked out the front row, but Prost, from P2, lost out to Gerhard Berger at the start and it took him 54 laps to find a way past. Senna was long gone – 50s up the road. Prost put the hammer down anyway and the pair started trading fastest laps. Keen to ensure a one-two finish, Ron Dennis told his drivers to back off. Senna, dragged out of that mystical zone he inhabited, promptly put his MP4/4 in the wall at Portier, and went home. Prost took his fourth and final Monaco win.

7 Spying, shaken and stirred

F1 rolled into Spa on 14 September 2007, to the news that McLaren had been stripped of their 2007 points and fined one hundred million dollars. Industrial espionage was the charge, but the gossip was of conspiracy; incompetence; a star driver spitting the dummy and a vindictive star chamber under the halls of power. Appearances, however, had to be maintained. Cue the most awkward photo-op ever, between Ron and FIA president Max Mosley. But Ron didn't break Max's fingers and Max didn't steal Ron's watch, so it was all okay in the end.



9 Emmo takes two

McLaren won their first titles in 1974, taking both in a tense season finale at Watkins Glen. Emerson Fittipaldi went to the US Grand Prix level on points with Ferrari's Clay Regazzoni. Jody Scheckter, driving for Tyrrell, was also in the hunt. The contenders qualified in the midfield and spent the race scrapping over the minor points. Regazzoni struggled with a damper problem, eventually finishing four laps down. Scheckter stayed in front of Fittipaldi, but then retired with a fuel issue. Emmo took a second drivers' title, McLaren claimed a first constructors'.

6 Their first ever win

McLaren cars appeared on and off in 1966-67, but 1968 was their first full season, with Bruce McLaren and fellow Kiwi Denny Hulme driving the Cosworth DFV-powered M7A. The car missed the New Year's Day South African GP, but, when the European season began, it was instantly competitive. Hulme was second in Spain and fifth in Monaco, but it was the eponymous McLaren who took the team's first win, crossing the line at Spa 12 seconds ahead of BRM's Pedro Rodríguez. Bruce McLaren's fourth and final victory would come ten seasons after his first. →

5 Senna denies Mansell

The streets of Monte Carlo, for all their charm, are a rotten place to hold a motor race. The circuit is too tight, too slow and you absolutely *can't* overtake. It's like holding a grand prix in a multi-storey car park. But, if any driver and any car could prove otherwise, it would be Nigel Mansell in the Williams FW14B in 1992. Even so, all the bravery, determination and frankly terrifying technical advantage in the world couldn't shift the one obstacle in Mansell's path: Ayrton Senna. Mansell badgered, Mansell hounded, but Senna simply refused to buckle.



4 Scandal at Suzuka

What happens when the immovable object meets the irresistible force at Suzuka in 1989? They go off at the Casio Triangle, one of them gets moving again and thinks he's won the championship, only for the stewards – perhaps with a little help from the president of the FIA – to decide otherwise. The otherwise excellent film *Senna* makes Prost out to be more of a Machiavellian schemer than was really the case, but even without the big-screen exposure it's a race etched into F1 history, footage of which is dragged out every time team-mates so much as dare to look at each other sideways.

3 That move!

It takes a great moment in sport for a new verb to emerge – but that's what we got at Spa in 2000. Häkkinen was climbing all over the gearbox of Schumacher, back when Spa was still the raging beast of the Ardennes. Schumacher used every ounce of nous – and quite a lot of the circuit – to stay ahead, much to Mika's frustration. Häkkinen got his chance when the pair lapped Ricardo Zonta on the Kemmel Straight. Schumacher dived left, Mika went right, they came back together before Les Combes... but Mika had the line. Brilliant stuff. It's still rare to see a driver so completely Zonta'd.

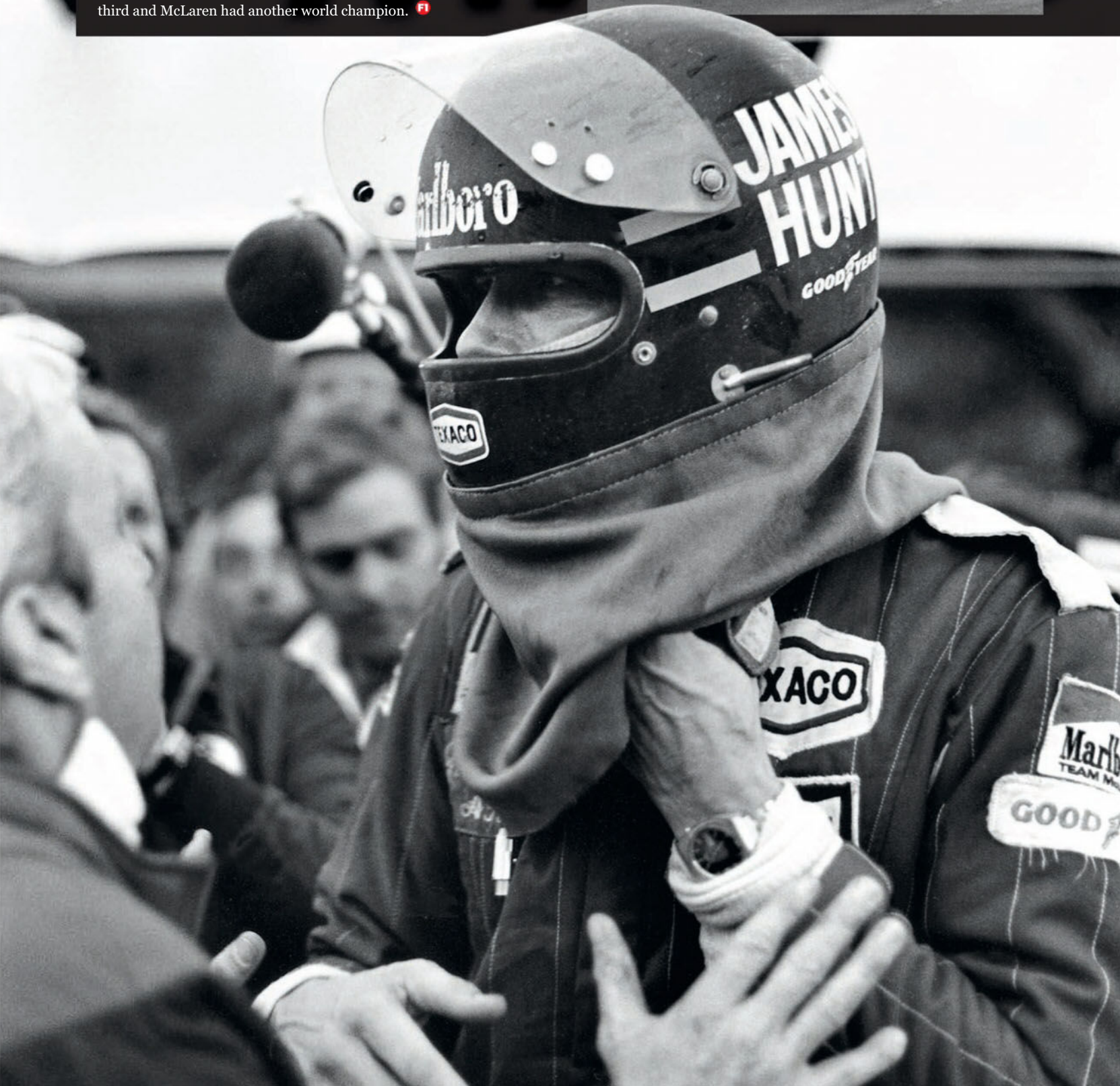


2 Best. Race. Ever

Has there ever been a better finish to the season than the 2008 Brazilian GP? Of course not. Felipe Massa glided to victory, Hamilton needed fifth to take the title but was running sixth. Then came jubilation in the Ferrari garage as Massa, the likeable understudy racing in his homeland, got his day in the sun – for 38 seconds. Meanwhile, with the rain getting heavier, Hamilton found the grip and passed the slithering Timo Glock at Junção. Deathly silence around Interlagos, shock in the Ferrari garage, punctured by the roof coming off next door. Cruel. Magnificent. F1 at its best.

1 Fuji film

Everyone makes the pilgrimage down past Turn 1 of the new, sanitised circuit to look at the dark asphalt banking of the old Fuji. Catch it right – during one of the regular rainstorms that strike – and it looks malevolent: a monster lurking in the woods. In '76 James Hunt and Niki Lauda went to Fuji with a title at stake. Come the deciding race, in conditions screaming 'red flag', Hunt grimly pressed on. Lauda, recently back from the dead, decided he didn't have anything to prove and retired. Hunt seized the chance to finish third and McLaren had another world champion. **F**





Jenson's McLaren A-Z

He's been a stalwart presence at McLaren ever since joining as a newly crowned world champion in 2010. Here we present an A-Z of Jenson Button's time with the British team

WORDS STEWART WILLIAMS

A is for **Australia**



JB's had more success in Australia than at any other GP during his time with McLaren, with two wins and a P3 in seven attempts

B is for **Belgium**

Jenson's newest team-mate, Stoffel Vandoorne, who covered for an injured Fernando Alonso in Bahrain, hails from here

C is for **Classified**

In 36 consecutive races, from India 2012 to Italy 2014, Button was a classified finisher

D is for **Debut**

His first appearance in a Formula 1 car was actually in a McLaren in 1999 at Silverstone, as part of his prize for winning the 1998 McLaren/Autosport Young Driver Award

E is for **Eight**

The number of wins Jenson has achieved at McLaren – more than in the rest of his drives for other teams put together

F is for **Finish**

In March 2013, Jenson said McLaren would be the last team he'd drive for in F1

G is for **GPDA**

As of 2013, he became a director of the Grand Prix Drivers' Association

H is for **Honda**

McLaren reunited with Honda in 2015, making 2016 Jenson's eighth in Formula 1 powered by the Japanese manufacturer

I is for **Interlagos**

This was the scene of a carjacking attempt before the 2010 Brazilian GP, in which Jenson and his party were held up at gunpoint. Luckily, nobody was harmed

J is for **Japan**

Where, everyone was told, Jenson would make known his retirement from F1 and be announced as one of the new presenters of *Top Gear*. Thankfully, the rumours came to nothing and he stayed on at McLaren

K is for **King**



Jenson is the King of the Mountain after he smashed the unofficial lap record at Bathurst's Mount Panorama in 2011, driving a three-year-old McLaren

L is for **Lewis**

Lewis Hamilton was Jenson's team-mate for three seasons at McLaren and Jenson is still the only driver to outscore him in a championship, as he did in 2011

M is for **Monaco**



This has been home for Jenson during most of his time at McLaren, apart from 18 months when he lived in Guernsey

N is for **Next**

Although his contract runs out at the end of 2016, Jenson has stated that he would ideally like to spend another year with McLaren in 2017, when he hopes they will be able to challenge Mercedes

O is for **Overtaking**

In winning the 2011 Canadian GP, Jenson managed 13 on-track passing manoeuvres after dropping to last place on lap 37

P is for **Pink**



The colour Jenson used for his race helmet at the 2014 British GP as part of the 'Pink for Papa' campaign in memory of his late father, John, and designed to raise funds for the Henry Surtees Foundation

Q is for **Questions**

When we enquired what the F1 paddock wanted to ask Jenson for *F1 Racing's* 'They Ask The Questions' in March, subjects included drinking (Lewis Hamilton), fitness (Carlos Sainz) and the toilet facilities at the Brazilian GP (Sebastian Vettel)

R is for **Ron**



Who else? Ron may not have been team principal when McLaren signed Jenson in late 2009, but it was Ron's decision to keep him on at the end of 2014

S is for **Seven**

This is Jenson's seventh season at McLaren – that's longer than he has spent with any other team in his Formula 1 career

T is for **Tooned**

Jenson voiced an animated version of himself in McLaren's cartoon series, which ran from mid-2012 to 2014

U is for **Unexpected**



McLaren's U-turn over their driver line-up in 2014 came out of the blue. Kevin Magnussen was poised to be signed to drive alongside Fernando Alonso, but then Ron Dennis changed his mind and offered Jenson a two-year contract instead

V is for **Veteran**

He's not the oldest driver on the grid (that's Kimi Räikkönen), but Jenson is the most experienced, having started 287 GPs* to date. And in Spain he will become the first driver to have started 100 races at two different teams (McLaren and Honda/BAR)

*CORRECT AS OF THE 2016 CHINESE GRAND PRIX

W is for **Whitmarsh**



Martin Whitmarsh was team principal for the first four years of Jenson's tenure at McLaren. Jenson backed him to succeed in turning the team's fortunes around in 2013, but after a podium-free season Whitmarsh was subsequently let go at the end of the year


X is for **MP4-X**

The McLaren concept car, the MP4-X, was branded "one sexy bit of kit" by Jenson when it appeared at the end of last year. He added: "When can I drive it? This is my Christmas bonus, right?"

Y is for **Year**

If Jenson manages another season with McLaren, he could break Rubens Barrichello's record of 322 GP starts

Z is for **Zero**

Jenson has failed to complete a single race lap in only three GPs while driving for McLaren: Korea 2012; Bahrain 2015; and Britain 2015 





McLAREN



FERRARI



A RIVALRY FOR THE AGES

In all sports form comes and goes, but when Ferrari and McLaren are both on song the results can be explosive. **David Tremayne** examines a rivalry to end all rivalries

Times change. Great sporting rivalries define eras that eventually pass and fade into memory. And yet the rivalry between McLaren and Ferrari – often vicious, always fascinating – has long outlived those people who set it in motion.

What is it that makes this rivalry so compelling? Why is McLaren vs Ferrari so much more engaging than, say, Red Bull vs Mercedes? Why, when you study the grandstands at any grand prix, do fans wearing Ferrari or McLaren merchandise vastly outnumber those flaunting allegiance with others?

Part of it is because they are the heavyweights, the undisputed giants, and when they meet on track it is a rumble in the jungle rather than a scuffle in the suburbs. Not only are they the most successful teams in the sport's history (see sidebar overleaf), each has a distinct personality, at odds with the other and yet, like yin and yang, their strengths and weaknesses almost interlocking.

Bruce McLaren was a quick and skilled driver, perhaps not in the same league as his contemporary, Jim Clark, but he was entrepreneurial, engineering-minded and a natural, inspiring leader. Likewise Enzo Ferrari was no Rudolf Caracciola, but he was a proven race-winner before he turned his hand to team management, and he successfully built his eponymous team in the chilly economic climate of the immediate post-war years. Each had suffered ill health in their formative years: Ferrari nearly succumbed to the Spanish Flu, while McLaren walked with a slight limp after contracting Legg-Calvé-Perthes disease at the age of nine.

And yet when the white and green McLaren M2B appeared at Monaco half a century ago, in May 1966, its creators must have seemed an unlikely nemesis for F1's most legendary team. The Scuderia had weathered the might of Alfa Romeo and Mercedes in the 1950s and remained on the field after those organisations had been forced to withdraw. Bruce and his cadre must have barely registered on Enzo's radar.

What the M2B did embody was fresh technical thinking, and over the next five decades McLaren would prove to be a force for innovation in F1. Perhaps they even spurred Ferrari to break new ground themselves, because in the 1960s Enzo's philosophy that the engine was the most important element of the car continued to define the team's approach. He had reluctantly accepted that the engine was better located behind the driver than in front, but he still regarded chassis design and aerodynamics as inferior sciences and means to an end.

McLaren had arguably pioneered wings on single-seater race cars in secret testing with the M2A development car in 1965, and the M2B featured the first composite monocoque with its Mallite balsa-and-aluminium sandwich construction. Though operating from makeshift facilities – a rented unit in Colnbrook, under the Heathrow flight path – McLaren were incredibly inventive and productive. Once Bruce had →



McLAREN

Bruce McLaren's eponymous team made their F1 debut at Monaco in 1966 in the white and green McLaren M2B (left). Within two years they were winning races and taking the fight to Ferrari

dreamed up a theory he would follow it through tenaciously, as with the hillclimb single-seater built in two weeks using sportscar suspension and known as the "Whooshbonk" car, on account of Bruce's instructions to his team: "You make this, you do that, put it all together – and whoosh bonk, there's your car."

Yin and yang. McLaren's problem was not engineering, but engines. Ferrari built their own, and they were usually among the best. McLaren had no facility to build engines, and in F1 they simply could not lay their hands on a decent one.

The 3-litre version of Ford's hefty 4.2-litre DOHC Indianapolis engine made more noise than power, and after Bruce had qualified the M2B a promising tenth in the team's F1 debut at Monaco he lasted only nine laps before an oil leak forced him into retirement. The Serenissima sportscar V8 tried later in the year (with which he scored the team's first world championship point with sixth at Brands Hatch), was more reliable but equally gutless. The season ended in Mexico, where Bruce retired with engine failure and Ferrari scratched their entry, and a figure who would later become pivotal in the Ferrari-McLaren rivalry made a low-key F1 debut.

Wielding the spanners on local entrant Moisés Solana's Cooper-Maserati was a young mechanic called Ron Dennis.

Bruce was a potential victor in the rain at Mosport with the V12 BRM-powered M5A in 1967, but it wasn't until Colin Chapman's extraordinarily generous decision to forego continuing exclusivity on the Ford Cosworth DFV for 1968 that McLaren finally got an engine worthy of their cars.

Bruce and Denny Hulme thrashed Ferrari and everyone else on the M7A's debut in the two non-championship races that opened the European season, Bruce in the Race of Champions at Brands Hatch, Denny in Silverstone's Daily Express International Trophy. Bruce then matched Jack Brabham to become only the second man in history to win a grand prix in a car bearing his own name, as Belgium yielded the first of the team's victories. Denny later

triumphed in Italy and Canada, and in Mexico the following year.

McLaren were in the ascendant, and meeting their Italian rivals in fields of combat other than F1, too. The M4A was competitive in Formula 2, in which Ferrari enjoyed success in the 1968 Temporada; they smashed Ferrari in the 1969 CanAm sportscar championship, despite Chris Amon's heroic efforts in the V12-powered 612P; and the M16 accounted for three victories in the Indianapolis 500, the arena from which Ferrari had largely steered clear after a brief dalliance in the early 1950s.

DFV-powered cars continued to frustrate Ferrari in the 1970s, first from Lotus but then – after a lean spell following Bruce's death – McLaren. The catalyst was Gordon Coppuck's sweet M23, in which Emerson Fittipaldi (who brought in the iconic Marlboro sponsorship) secured McLaren's first drivers' and constructors' championships in 1974 after a season-long tussle with Niki Lauda and Clay Regazzoni's Ferraris. This battle was not without rancour; at the final round, at Watkins Glen, an intransigent Regazzoni forced Emmo to put two wheels on the grass in order to pass him.

McLaren vs Ferrari was *the* F1 rivalry of the mid-1970s, and the two teams continued to push each other – and themselves – both on and off the track. Fittipaldi's sure touch and astute technical feedback helped drive race-by-race improvements at McLaren, while over at Ferrari the engine continued to take centre stage, although with Lauda's backing Enzo's engineers were allowed to innovate elsewhere, too. Ferrari introduced the transverse gearbox in 1975 and

Lauda ran away with the championship, while later in the decade they would make concerted use of Pininfarina's windtunnel to finesse the aerodynamics of the 312 series of cars.

In 1976 Lauda and the ebullient James Hunt went head-to-head, Ferrari vs McLaren. Hunt ultimately triumphed, but Ferrari took the constructors' honours. It is here, perhaps, that the first elements of bitterness crept in to the rivalry; in Spain, the victorious Hunt was disqualified when his car was found to be 1.8cm too wide, on account of a new set of wheels that pushed it marginally outside the recently redrawn dimensional rules. Team boss Teddy Mayer described it as "like being hanged for a parking offence". Second-placed Lauda was handed the win, although Hunt was reinstated after a lengthy legal process.

Making the M23 legal again required changes to the hubs and suspension mounting points, which dented its competitiveness and handed the advantage to Lauda and Ferrari in the short term. McLaren were under pressure and angry – more so when Ferrari joined the teams who protested Hunt's win at Brands Hatch. This time, once again after a lengthy legal battle, the disqualification stuck. A McLaren complaint about the location of Ferrari's oil coolers was not upheld. Later in the season, at Monza, where Lauda made his miraculous return to the cockpit after suffering life-threatening burns in his Nürburgring shunt, rumours circulated in the Italian press that McLaren were illegally adding methanol to their fuel. All in all, it made for a sour atmosphere.

McLaren struggled to follow up the M23 and faded alarmingly after 1977, while Ferrari went from strength to strength with their 312T3 and 312T4 machines, culminating in Jody Scheckter's double success in 1979. The clock was ticking on McLaren's first incarnation. In 1981 Marlboro ran out of patience and arranged a shotgun marriage between McLaren and Project Four Racing, a successful F3/F2 team founded by Dennis, the former Cooper and Brabham mechanic.

Tale of the tape

How Ferrari and McLaren's stats compare

	Ferrari	McLaren
Founded	1929	1963
First GP	Monaco 1950	Monaco 1966
Races started	911	783
Wins	224	182
Poles	208	155
Fastest laps	233	152
Points	6,323.5	5,041.5
Drivers' titles	15	12
Constructors' titles	16	8
Win/start ratio	24.59%	23.24%

FERRARI



Ferrari were contenders from the start, with Alberto Ascari finishing second in the 1950 Monaco GP (left). They flourished where early rivals Alfa Romeo and Mercedes foundered

“Just as Enzo was the heart and soul of Ferrari, Dennis rebuilt McLaren in his own resolute, punctilious image”

Dennis's previous attempts at entering F1 had failed, but with Marlboro's backing and the technical vision of John Barnard, he executed a rapid turnaround in McLaren's fortunes. Meanwhile, Ferrari were slipping into chaos. The 312T5 was a dud – Scheckter's title defence yielded just one points finish – and the revolving door in the engineering department began to spin. Enzo Ferrari had a history of sponsoring creative tension within his team and the politics could be vicious; Harvey Postlethwaite, recruited in 1981 to turn around development of the flawed 126C turbo car, once divulged that he wrote his salary down on a piece of paper he kept in his desk drawer, so that in times of crisis he could quickly consult it when he needed a reminder of why he remained...

Just as Enzo was the heart and soul of Ferrari, even as advancing years distanced him from day-to-day management, Dennis rebuilt McLaren in his own resolute, punctilious image. They were very different characters, but racers to the core. Like Enzo, Dennis prized the value of having a competitive engine; unlike Enzo, his vision was broad enough to see that competitive engine as one of many optimisable elements within a greater whole. He saw the future of F1.

Dennis backed Barnard's composite-chassis concept and the result was the MP4/1, the first carbon-chassis F1 car. But he also recognised that the time of the DFV was passing; in the era of the turbo, he needed a blown engine and preferably an exclusive one. Behind the scenes he secured funding from TAG-Heuer to underwrite a new V6 turbo to be developed and built by Porsche.

Williams, Brabham, McLaren, Renault and Ferrari shared the honours in the early years of

the new decade, but the TAG engine's winning combination of fuel efficiency, drivability and power made the MP4/2 the class of the field in 1984 and '85 once refuelling was banned. Where Ferrari won three races in those two years, Lauda (lured out of retirement by Dennis) and Alain Prost won 18 and added two more drivers' and constructors' championships.

Michele Alboreto finished fourth in 1984, and second to Prost in '85, but Ferrari continued to lag in crucial areas: chassis, aerodynamics, reliability and, increasingly, the engine. In an era where refuelling was outlawed and the FIA mandated ever stricter limits on cars' fuel capacity, outright power was no longer the sole performance benchmark.

It was when Dennis negotiated an engine supply deal with Honda for 1988, and brought in Ayrton Senna to join Prost, that things went stratospheric. Between them, the Brazilian and the Frenchman won 15 of the 16 races in 1988, and a further ten in 1989.

Ferrari were lucky to win at Monza in 1988, courtesy of Senna's contretemps with a backmarker, and their one-two at the temple of speed was particularly emotional since it was the first grand prix after Enzo Ferrari's death. This was a period of change at the Scuderia, and not in a uniformly good way.

Enzo's men had lured Barnard away from Woking, and for the first time in over a decade Ferrari began to trump McLaren on technical development, introducing the semi-automatic gearbox in 1989's naturally aspirated V12 639. Gerhard Berger and Nigel Mansell claimed three wins in '89, and then Prost, tired of the acrimony with Senna (a situation Enzo would no doubt have relished) decamped to Ferrari. Both teams scored six victories in 1990, and only Senna's outrageous removal of Prost from the Japanese GP at Suzuka robbed Ferrari of potential titles.

Thereafter, Enzo Ferrari's death caught up with the team he had created. He could be capricious and callous, but he understood racing. Those who followed did not. Cesare Fiorio aside, they were car-company executives drafted in to steer a rudderless ship. Ferrari's competitiveness went into a trough that would deny it a single victory until 1994.

Formula 1 has ever been a cyclical game, and McLaren, too, fell into a slump after the withdrawal of Honda at the end of 1992. Securing Mercedes power for 1995 set the team on their way again, but it would be 1997 before a McLaren driver stood atop the podium once more. In the interim the team suffered the painful embarrassment of Marlboro deciding to stay with Ferrari and to cease sponsorship of McLaren after a record 22 years.

Meanwhile, Ferrari had lured Michael Schumacher away from Benetton. He, Jean Todt, Ross Brawn and Rory Byrne would lead the Prancing Horse back from the wilderness. Over tea at Williams late in 1996, after his team had won 12 of the 16 races, Sir Frank had quietly suggested they might not win another race, →

In 1968, Colin Chapman let McLaren get their hands on a Ford Cosworth DFV, an engine that was finally a match for their excellent chassis. They immediately took their first win at Spa (right)





McLAREN

In 1988, McLaren built the most dominant car of all time, the MP4/4. Senna and Prost won 15 of 16 races and the constructors' championship, with Senna collecting the drivers' title

and that Ferrari were the team to watch. He was wrong, but also right. After a bitter campaign Jacques Villeneuve duly secured the 1997 titles for Williams, but Ferrari were on the move again.

The Todt-Schumacher-Brawn-Byrne axis restored the Scuderia to competitiveness just as McLaren were coming good again, with Mika Häkkinen and David Coulthard enjoying new sponsorship from West, ever-increasing Mercedes power and a chassis from ex-Williams boffin Adrian Newey.

McLaren vs Ferrari defined F1 around the turn of the millennium as Häkkinen and Schumacher went toe-to-toe. The battle was as rancorous as it was thrilling. Off-track politics

bled into the racing as each team

raced to innovate – and to have their rivals' inventions banned. McLaren's 'brake-steer' mechanism was outed and given the heave-ho as the team seethed that Ferrari seemed to be getting away with flexible aerodynamic devices.

Worse was to come. In 2007, 'Spygate' made Senna vs Prost look like a pre-school tantrum. It remains the most acrimonious season in F1 history, defined by the feud that set McLaren against Ferrari with a bitterness that even their most intense battles on-track had rarely kindled.

McLaren's pairing of Lewis Hamilton and Fernando Alonso was uneasy, and Ferrari were fiercely competitive as the on-track advantage




McLaren's sweetest victory came in the aftermath of 'Spygate', when they beat Ferrari on home turf in 2007 at Monza

went back and forth, but the real soap opera was 'Spygate', in which McLaren stood accused of using intellectual property supplied to designer Mike Coughlan by Ferrari's Nigel Stepney. The pair had really sought to sell it to Honda or Toyota, to become the technical force within either team, but the FIA held that McLaren must have used the information to their advantage. Dennis's team were fined \$100m and had their constructors' points deleted.

When the interminable hoopla of an acrimonious weekend was finally silenced by the racing engines at Monza, Alonso led Hamilton across the finish line to score McLaren's first-

ever one-two there, on Ferrari's home ground. An emotional Dennis wept.

There were more tears in Brazil, when Kimi Räikkönen snatched the world championship for Ferrari from beneath Hamilton's nose. A year later, and against a background of more off-track friction, Hamilton returned the favour when it seemed that Ferrari's Felipe Massa had his hands on the trophy. Massa's sportsmanlike conduct in the aftermath set the tone for the gradual reconciliation to come.

Since then, new faces at Ferrari and Dennis stepping aside from front-line F1 duties have helped scars heal. But what has Dennis been doing in the interim? Setting up a successful road-car business whose products challenge Ferrari on both performance and kerb appeal. This, perhaps, is the essence of what makes the rivalry between McLaren and Ferrari so fascinating. Faces come and go, but the narrative never stops evolving – and the fates of these two great teams seem destined to intertwine. 

“‘Spygate’ set McLaren against Ferrari with a bitterness that their most intense battles on-track had rarely kindled”

FERRARI



Ferrari's most successful car was 2004's F2004, which, driven by Michael Schumacher, collected 13 out of 18 possible wins, and took the drivers' and constructors' double for a fifth consecutive year

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McLaren's magnificent seven

*by those who
knew them best*

McLaren have produced seven – count 'em – world champions, starting with Emerson Fittipaldi who won a first drivers' title for them in 1974. So what made these men world-beaters? Why were they just that bit better than all the rest? *F1 Racing* spoke to the individuals who watched them most closely... their team-mates

PHOTOS LAT ARCHIVE



Emerson Fittipaldi
World champion in 1974



James Hunt
World champion in 1976



Niki Lauda
World champion in 1984



Alain Prost
World champion in 1985, 1986 and 1989



Ayrton Senna
World champion in 1988, 1990 and 1991



Mika Häkkinen
World champion in 1998 and 1999



Lewis Hamilton
World champion in 2008



David Hobbs on Emerson Fittipaldi

Fittipaldi won the world title driving a Marlboro Texaco McLaren in 1974. Team-mate Hobbs drove a couple of races that season in a Yardley McLaren M23

The difference between Emerson and your average driver was that like all the really top guys, he was super-dedicated and super-fast. There's just something about those top drivers that's hard to put your finger on. A lot of it is in the head: they are more focused, more dedicated and more ruthless. For example, I would suggest something to my engineer who would reply: "I'm not really sure that's a very good idea," and I would say: "Okay then."

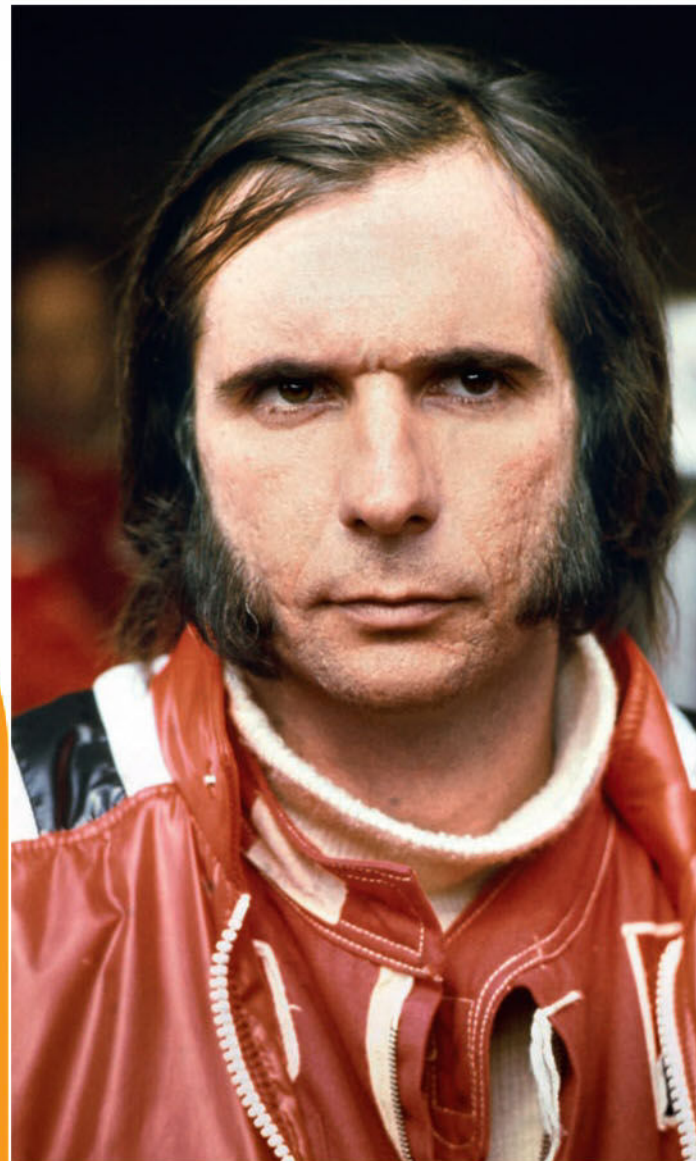
Someone like Emerson would say: "I want you to do this, this and this," and then add: "I want you to do it now, before I go out again."

If they're getting what they want and they're successful, then it suddenly becomes harder to say no to them. I only drove for McLaren a couple of times in 1974 and I remember letting myself be talked out of doing some things I really wanted to do with the car that I'm sure would have enabled me to do a lot better. But someone like Emerson would never let that happen to him.

He was already a champion when he came to McLaren and that made a hell of a difference to

the way the team responded to him. At that time, just after JYS had retired and with Lauda coming through, Emerson was top dog in the paddock, driver-wise. He'd won the title in 1972 with Lotus and become the youngest ever champion; he missed out narrowly in '73 and then in '74 he won it again.

Obviously he was very, very good and McLaren were top of the tree so the combination of the two was seen as absolutely the *crème de la crème*. There were a lot of good drivers around at the time, but being like Emerson was *everyone's* goal. →





Jochen Mass on James Hunt

Mass was team-mate to Hunt during Hunt's world championship-winning season in 1976, and then again in 1977

There was always quite a playboy image surrounding James, and why not? He was good-looking, like a British goldilocks, very charming, and fast as well. When he came into the team we knew each other already from Formula 3: we had always got on and enjoyed a good party together, although I was a bit older than James.

At McLaren the dynamic was different. James was the number one and of course he was British, so he got the best equipment. As a team, McLaren were pretty fair, so I'm not complaining. It wasn't always a

one-way street though, as there were some circuits where I was quicker than James: Jarama, Paul Ricard, even Monaco – I think that annoyed him.

The one that got away from me that year was the title-decider in Fuji. James needed to finish fifth or higher to take the title, but early on in that mad race I was just following him round dutifully – even though I was comfortably quicker. And it was probably because I was having to follow that I simply lost concentration for a second and aquaplaned, hitting the barrier. I got back to the pits but my car was too badly damaged to continue. Looking back on it, I should just have passed James and seen what happened: I had a

really good feeling that day. And then of course I would have stopped or dropped back later, if James needed me to in order to take the title. No question. But at least I would have proved a point.

James was one of the good guys. He lived a crazy life, and I guess that's what caught up with him in the end. He was way too young to go, and we all lost a very special character.



John Watson on Niki Lauda

Initially team-mates together at Brabham in 1978, they were reunited at McLaren in 1982 and 1983. Lauda took his third and final world title in 1984

Following on from being his team-mate at Brabham, the second time around I saw the skill of the man wasn't just in the cockpit but out of it, too. As well as being a double world champion, what he really wanted to do was to assert himself as the number-one guy in the team. He tried to convince Ron Dennis and John Barnard that he was the man who was going to get the job done.

One of the things about Niki is that he's very straight and it's always his way or the highway. One Sunday morning at Zolder, I did a tyre run and chose a particular set of tyres for the left-hand side of the car. I knew that if it stayed hot I would be in a good position for the race. Niki came to me and asked what I was doing and I told him I'd pass him in the race because of my choice of tyres. I suggested that he should also use them, but he stood there and thought about it and said: "No, no. I'm going to stick with the tyres I've got." I asked him why, because I was a friend as well as a team-mate. "Why not?"

With great reluctance he gave me an insight that I was able to benefit from. It simply went against his instinct to try that tyre. He wouldn't go outside the narrow framework that he already understood.

I've flown with him before and he's a very good pilot, but he does it strictly by the book; that is his basic personality and character. That was the same on this occasion. And guess what? I passed him, like I said I would, and went on and won the race.





Stefan Johansson on Alain Prost

Prost won the title at McLaren in 1985, '86, and '89, but it was during their lean year in 1987 that he was partnered by Johansson

When I joined Alain Prost at McLaren it was a revelation and a shock. I expected him to be good, obviously, but not *that* good. It soon became very clear to me that he was the most complete driver of all: maybe the best driver in Formula 1 history. Not necessarily the fastest – there were people like Ayrton Senna, who was my team-mate at Toleman, who were sometimes quicker – but certainly the most complete I have ever raced against. Throughout my F1 career I generally managed to get the better of all my team-mates, but the two that I couldn't quite crack were

Alain and Ayrton.

If I had to choose only one defining characteristic of Alain's, it would be his work ethic. He'd work incredibly hard, day and night, giving the best possible feedback to the engineers. That was way more important back then than it is now, because the level of telemetry was nothing like it is today. The most important sensor was the driver himself and Alain was always very skilful at communicating what needed to be done and getting the car exactly the way he wanted it.

I think that's something

all the truly great drivers have in common.

I enjoyed a very good relationship with Alain with no problems at all, political or otherwise. If you're straight with people, they tend to be straight with you. Alain was always pretty open and honest and that actually reflected the culture of McLaren, which I found to be quite an easy environment to work in. All the information was shared and nothing was held back. Of course Alain was a big threat from a sporting point of view because he was my team-mate and I wanted to beat him, which was easier said than done. But I also used my time with him as a great opportunity to learn, and I did pick up a lot, while trying my best. That is all you can do. So I look back on that time now as an important chapter of my career.



Gerhard Berger on Ayrton Senna

Senna took his second and third titles at McLaren in 1990 and 1991 with Gerhard Berger as his team-mate. The pair remained at the team in 1992

Ayrton was the fastest driver that I ever raced against. He was focused, he was disciplined and he was extremely strong both mentally and physically. I would love to have beaten him... but I couldn't beat him.

I got his attention because in my very first grand prix as his team-mate, I put my car on pole position at Phoenix in 1990 in the wet. That certainly woke him up. But I would say I had his attention the whole time because we had a lot of fights and I was pushing him to the limits in certain ways. He had so much more experience than me, starting out in karts at four years old. And he was probably the best driver of his era. To this day, I would have to say that I hadn't seen anyone that's above him.

Until Ayrton, I could have beaten my team-mates just with my natural talent alone. I didn't have to work extremely hard for it, but when I met Senna it was too late to catch up on all the work he had been doing all of his career – starting so young in karts, for example – and you couldn't beat him just with talent, because he had too much of that.

It was always hard for me at McLaren as Ayrton was world champion with them. Clearly I had less weight within the team, but they were never unfair to me.

If he had survived, do I think he would be president of the sport, the FIA? No, I think he set his sights higher than that. I saw him as a leader in support of poor people, people with problems. I think he realised more and more what a privileged situation we all are in, and I think his final goal was to use this leverage for people with difficulties. That's what I think he would have put his efforts into. →

"Ayrton was focused, he was disciplined and he was extremely strong both mentally and physically. I would love to have beaten him... but I couldn't beat him"





David Coulthard on Mika Häkkinen

The two were team-mates in 1996-2001, with Häkkinen taking his two drivers' titles with McLaren in 1998 and 1999

Mika was very good at delivering a time over a single lap and then the advantage of that track position made him a very difficult man to beat. We often reflect on our time together – I see Mika quite a lot in Monaco. I always had great respect for him, but I never realised he had quite so much respect for me. So we have a great time reminiscing.

For me, he had that quality that all great drivers have, which is inherent raw speed. Possibly he didn't have the work ethic of a Michael Schumacher, just looking at his physique and all that sort of thing, but then maybe he didn't need to. I don't know because I was never team-mates with Michael, but I had in my mind that maybe Mika was quicker over one lap. What Michael was able to do though, he did for lap, after lap, after lap, after lap.

Sometimes I was able to have the advantage over Mika, but I realise on reflection that for a long part of our tenure together I was losing a bit of performance by not left-foot-braking. For the majority of my career I was a right-foot braker and I only swapped to left-foot braking quite late on. So there were particular circuits, particularly those with medium-speed corners, where it's just very difficult to go throttle-brake-throttle with your right foot. And that's where he would have an advantage until I eventually learned how to do it.

We were a harmonious combination. The only time we ever had difficulty was Spa 1999, where we touched at the first corner and he didn't want to talk to me on the podium. But other than that it was always okay.

Mika is a fundamentally good person and I never heard him say a bad thing about anyone the whole time we were together. That in itself is a special quality.



Heikki Kovalainen on Lewis Hamilton

The two were team-mates at McLaren for two years, during the first of which, 2008, Hamilton won his first world championship



I got on really well with Lewis and I think I pushed him, especially in qualifying. I'm sure he had to raise his game a few times, and obviously where he was better than me was in the races. He was a tough competitor, he worked with the team very well and he got everything out of them all the time. When I looked at the telemetry, I never saw anything that I thought I couldn't do. The differences were always quite small, and in our final year together I think the differences were *very* small. But in the races, Lewis looked stronger and the gap looked bigger than it actually was.

I learned a lot from him, though. He drives the car aggressively, he is instantly on the pace, he pushes the car to the limit and sometimes he has a few shunts as well. But that is a good thing to have, and something that I thought I could perhaps work at more.

I remember at Silverstone in 2008, I was very quick in the practice sessions, but McLaren had a policy that the guy who has been most successful leading up to an event gets the advantage when it comes to refuelling in the last part of qualifying. The team don't want both drivers to do a pitstop on the same lap, so we always had two laps' difference in fuel, which could be around 0.2s-0.3s difference per lap.

Lewis was ahead of me in the championship and he was getting preferred treatment in qualifying, even when I had been quicker in practice. There was actually a bit of a fight on the Friday evening after the sessions at the British GP. Flavio Briatore [Kovalainen's manager] went nuts at McLaren and said *I* should get the preferred treatment. Eventually we agreed to make an exception on this occasion and I started from pole. It was the only time I got that treatment that year.

But I got on very well with Lewis. I think it worked out reasonably well for the team, although it didn't work out very well for me. **F1**

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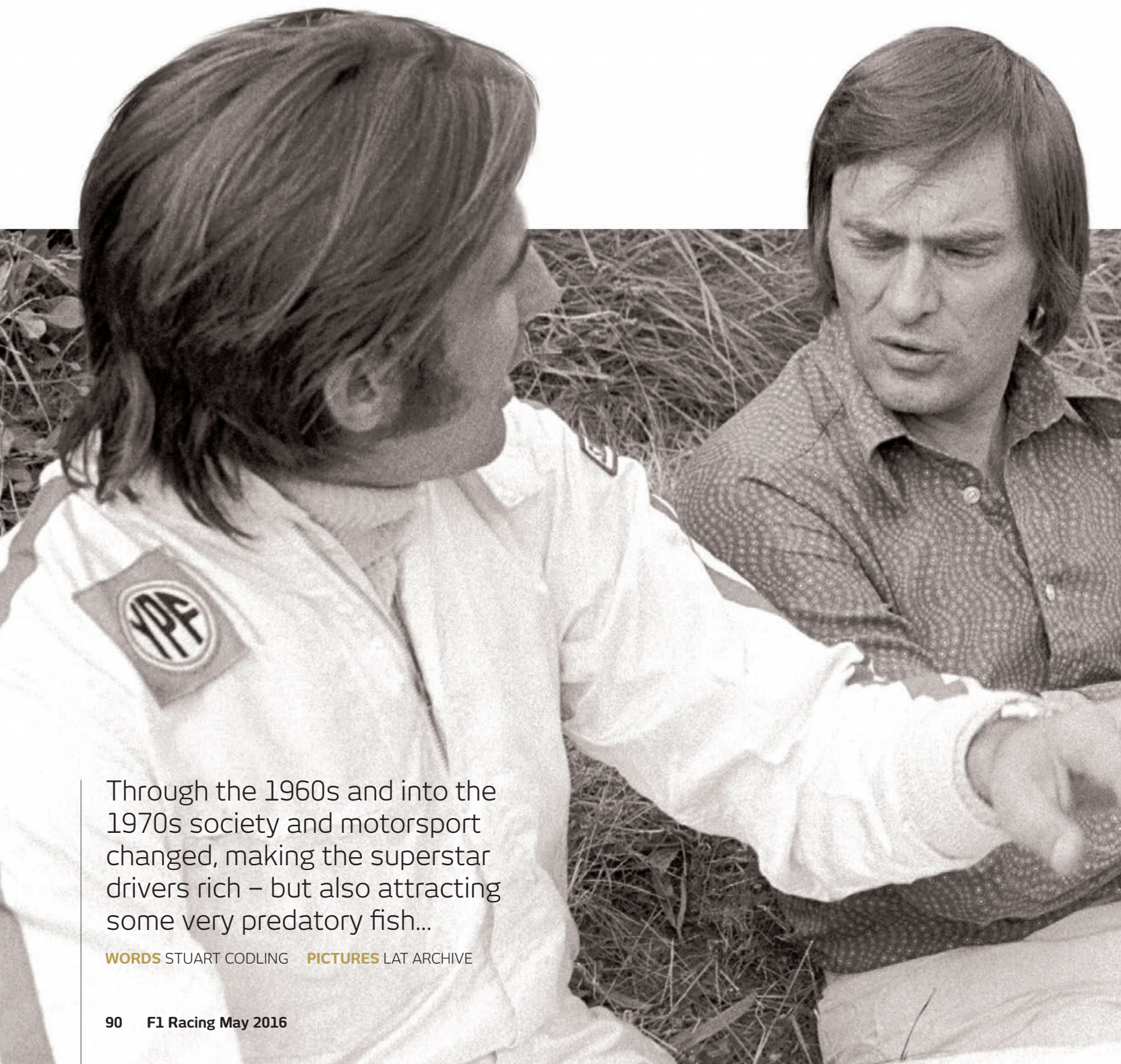
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THE HISTORY OF F1 PART 5

PLAYBOYS & PIRANHAS



Through the 1960s and into the 1970s society and motorsport changed, making the superstar drivers rich – but also attracting some very predatory fish...

WORDS STUART CODLING PICTURES LAT ARCHIVE



PHOTO: PHIPPS/SUTTON

An old saying, no less true for being repeated, is that the fastest way to make a small fortune in motor racing is to start with a large one. For some that will always be the case. For others, less so.

The 1960s began with F1 cars in traditional national racing colours, piloted by a rag-tag collection of drivers who ran the full spectrum of competence from amateur through to pro. It ended with sponsors' decals and colours running riot, and the best of the professionals living a rockstar lifestyle and shielding their ever-greater income in overseas tax havens. The 1970s brought the prospect of even more financial rewards, and with it came a new generation of people willing to fight for a bigger share.

"Society had loosened off," says Sir Jackie Stewart. "The Beatles had arrived, The Rolling Stones had arrived. London was swinging. It was a relaxing of the sort of constipation that life had gone through in the aftermath of World War II. And that was recognisable in motorsport: it was glamorous, colourful and exciting. The long hair and sideburns, somehow that was all trendy, and the drivers became trendy. The sport was being televised regularly for the first time.

"Jim Clark was very shy, almost introverted; Graham Hill was an extrovert, larger than life. Jack Brabham had come over from Australia, Bruce McLaren and Denny Hulme from New Zealand. I was a young Scot, and in the 1960s Jim Clark and Jackie Stewart were kind of like Batman and Robin."

Car technology had been changing, but so too had F1's commercial structure and (along with the influx of money men) the philosophy of the racers themselves. World champion in 1960, Brabham was no stranger to skinned knuckles, preferring to work on his T53 himself. That car, like most of the field, ran on Dunlop tyres. It was dark blue from nose to tail and unadorned, save for the Cooper badge and a pair of white stripes. Its alloy Coventry-Climax engine had been derived from a fire pump and was but a profitable sideline for its manufacturer.

As the decade progressed Brabham grew disenchanted as Cooper slipped from competitiveness, and quietly set up his own team on the side with fellow Australian Ron Tauranac, but building chassis for customers in lower formulae first as he disentangled himself from Cooper. The driver had become an entrepreneur. His young team-mate Bruce McLaren, suitably impressed, resolved to do the same.



"Jim Clark was very shy, almost introverted; Graham Hill was an extrovert, larger than life... and in the 1960s Jim Clark and Jackie Stewart were kind of like Batman and Robin"

Sir Jackie Stewart

Win on Sunday, sell on Monday was an established marketing mantra for companies involved in motorsport, but even greater opportunities to match product with sporting success were in the offing. As mass media coverage of F1 spread throughout the world, driven by more households owning televisions and seeing news coverage, its commercial value grew. Goodyear arrived to break Dunlop's stranglehold in 1965, followed by Firestone the next season, precipitating a tyre war that boosted on-track performance and proved financially lucrative for the leading teams.

On-track success was also providing bigger gains in terms of the 'start money' leading drivers could command simply for turning up, especially as F1 expanded abroad and events such as the United States Grand Prix offered better rewards than most European events. Having won the Indy 500 as well as the world championship in 1965, Clark became wealthy enough to make it worthwhile transferring his official residence to Bermuda for tax purposes.

F1's marketing value began to entice the kind of car manufacturers who had not been interested before – not the makers of rarefied sporting machinery, but volume builders who wanted to add lustre to otherwise humdrum

product line-ups. Honda dipped their toe in, winning the last race of the 1500cc era, but it was Ford who would have a transformative effect.

Ford PR supremo Walter Hayes had set the Lotus Cortina programme in motion (another winner for Clark), and as F1 became a three-litre formula in 1966 he commissioned Cosworth to build a bespoke V8 engine to carry the oval badge. Initially Lotus had exclusivity, but from 1968 the DFV was made available to customers.

Not only was it powerful and relatively reliable, its block was strong enough for it to be integrated into the chassis as a load-bearing element. Better still, it cost around £7,500 (not cheap, but affordable – a Mini Cooper S cost around £700 at the time), and it was built to precise and consistent tolerances that enabled parts to be interchangeable. By 1969 practically every regular entrant, with the notable exception of manufacturer-constructors BRM and Ferrari, relied on Ford Cosworth power.

Three historical pivot-points in this era set F1 on course to where it is today. The arrival of an affordable, and soon almost ubiquitous, engine is one (we'll take a closer look at the effects of that, positive and negative, next month). The others were the arrival of mainstream sponsorship and the death of Jochen Rindt.

Today's racing fans, middle-aged and younger, well used to the sight of racing cars acting as high-speed advertising hoardings, will struggle to grasp the horror that greeted Lotus's 1968 title sponsorship deal. Netting the team £60,000, it ushered in an ugly sponsor-first naming construction that persists in sport to this day – *Gold Leaf Team Lotus* – and, more offensively to contemporary fans, deposed Lotus's British Racing Green colourway in favour of tobacco branding. The red, white and gold Player's livery made its debut at the Lady Wigram Trophy – third round of the Tasman series – in Christchurch, New Zealand in January 1968.

Race organisers and broadcasters protested (motivated less by health concerns than a feeling of entitlement to a cut of the advertising monies), and indeed Lotus had to obscure the Player's 'sailor' logos in a non-championship F1 race at Brands Hatch. But sponsorship was here to stay. Before long, most competitive teams – Tyrrell with Elf fuels, BRM with Yardley cosmetics and then Marlboro cigarettes – were willing to provide a blank slate to commercial partners. Besides bringing more money into the sport, this opened up a lively market in subterfuge as →

Lotus were first to embrace the concept of title sponsors. Their much-loved British Racing Green colourway (below) was replaced by red, white and gold Player's livery (bottom) in the 1968 Tasman Cup, which was won by Jim Clark (right)

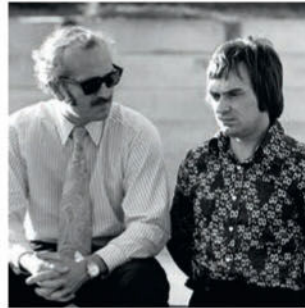


NEERBAI



MARTINI

Bernie Ecclestone returned to Formula 1 in the 1960s, first as a driver-manager and then team-owner, building up relationships with key figures along the way, such as (from left to right) Colin Chapman, John Cooper and James Hunt



team owners tried to poach sponsors from one another. The 'piranha club' was born.

One of the most voracious piranhas of all quietly re-entered the sport in the late 1960s. Bernard Charles Ecclestone, former Kent motorcycle dealer, former 500cc Formula 3 racer, former owner of the defunct Connaught team's rolling stock, former manager of Stuart Lewis-Evans, had been away from the scene for some time. He returned a wealthier man, superintending the affairs of the talented Rindt, for whom he had made use of old contacts to secure an F1 drive with Cooper in 1965. In spite of the age difference, the two were great friends, having bonded over a mutual enjoyment of gin rummy. Having established himself as a star in the making, Rindt moved to Brabham, taking his preferred mechanic, a meticulous young man called Ron Dennis, and then moved on to Colin Chapman's Lotus after Jim Clark's death.

Those close to Rindt believe he might have retired at the end of the 1970 season, had he lived, for that year he had been rocked by the deaths of his friends Bruce McLaren and Piers Courage. Prize money and the lucrative contract Ecclestone had negotiated for him to remain at Lotus in 1970 (Rindt liked the competitiveness of Colin Chapman's cars but not their fragility, and had been seriously contemplating a return to Brabham) enabled him to lead a playboy lifestyle. And he was already engaging in other business interests, having started a Formula 2 team with Ecclestone.

What makes Rindt's death so significant is not only that it added impetus to Stewart's campaign to make racing safer (see April's 'History of F1'), it changed Ecclestone's entire outlook. He remained passionate about racing but, having already lost Stuart Lewis-Evans in 1958, he would never again allow himself to develop a proper friendship with an F1 driver. Instead, he developed an interest in team ownership, buying out Jack Brabham when the three-time world champion decided to go back to Australia. And in that capacity, his astute commercial brain seized upon a greater opportunity: the fragmented system of 'start money', where teams negotiated their payments individually with race promoters, put the teams at a disadvantage. They were being divided and conquered, taken for a ride.

Over the course of the 1970s Ecclestone manoeuvred himself into a position of ever-greater influence, marshalling fellow team owners to collectively bargain for more money from promoters. In effect he unionised Formula 1.

Not every entrant enjoyed the wealth flowing into the sport. Piers Courage, for example, heir to the London brewing dynasty, in many ways epitomised the maxim with which we began this story. He and his cadre – including a former grocery salesman and aspiring racer named Frank Williams – raced in Europe in the junior formulae in the late 1960s, living on the fringes.

"I joined that little clique, hanging on by the shirt tails," recalls Sir Frank. "Even though they were from wealthy backgrounds it was a hand-

to-mouth existence, chasing the start money. Jonathan [Williams, no relation] slept on a beach before an F3 race in Sicily because if we'd stayed in a hotel we couldn't have afforded the ferry fare. Piers usually slept in his car, with his feet sticking out of the door.

"At all times my view was coloured by my financial ability to get to the next race. Once I'd started I never considered doing anything else."

Williams ducked and dived to get funding together for racing, conducting his business affairs from telephone boxes for the most part. In 1969 he entered F1 for the first time, running Courage in a second-hand Brabham BT26. Cosworth power gave the car the wallop and reliability it had not enjoyed as a works entry with the twin-cam Repco the previous season, and Courage was beginning to shake the wildness that had held his career back. He finished eighth in the drivers' championship.

What no one knew at the time was that another milestone had gone by, unnoticed because it was relatively unusual but not, in itself, remarkable. Only the passing of time gave it significance: Jo Siffert's victory in the 1967 British GP at Brands Hatch, driving a Rob Walker-entered Lotus 49, remains to this day the last win for a private entrant. As sponsorship continued to enrich and boost the performance of the manufacturer teams, those outside the privileged circle were on a hiding to nothing.

Williams did a deal with Italian sportscar manufacturer De Tomaso to run a chassis with their badge for 1970. It was an early effort by Gian Paolo Dallara, founder of the eponymous racing company, and wasn't very successful. Courage's fatal accident at the Dutch GP nearly brought Williams' enterprise to an end.

"I was very upset," says Williams. "It was devastating. And commercially it was very →

"Over the course of the 1970s, Bernie Ecclestone manoeuvred himself into a position of ever-greater influence, marshalling fellow team owners to collectively bargain for more money from promoters. In effect he unionised Formula 1"

HISTORY TIMELINE

1968

Lotus forgo exclusivity on the Ford-Cosworth DFV engine, and become the first team to take a sponsor's livery. After the death of Jim Clark, Graham Hill wins the title in a works Lotus 49B ahead of Jackie Stewart.

1969

Stewart wins the championship in a Cosworth-powered Matra entered by Ken Tyrrell, but the works partnership dissolves when Matra insist on using their own V12.

1970

Goodyear and Firestone introduce slick tyres. Team Surtees joins F1, running a McLaren chassis at first. Ferrari's Jackie Ickx finishes second to posthumous champion Jochen Rindt. Jack Brabham retires and sells his stake in his team to Bernie Ecclestone.

1971

March's Ronnie Peterson finishes second to Jackie Stewart as Lotus slump due to unsuitable new tyres.

1972

Lotus change to black-and-gold John Player Special livery and Fittipaldi wins five of 11 rounds in it. Jean-Pierre Beltoise takes BRM's final GP victory at Monaco – he is one of five BRM drivers in the race.

1973

Jackie Stewart fails to start his final GP after teammate François Cevert's fatal crash in practice, but still wins the title. Ron Dennis secures sponsorship from Motul to build an F1 car, but the oil crisis prompts Motul to withdraw and Dennis sells the project on.

1974

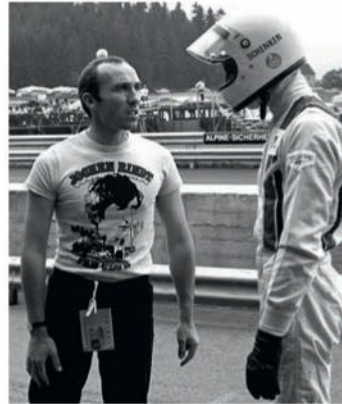
Hesketh enter their own chassis, driven by James Hunt. Surtees lose Bang & Olufsen backing and slip into decline. Marlboro drop BRM for McLaren, who win the title with Fittipaldi.

1975

Graham Hill's Embassy cigarettes-backed team field their own chassis, but the team collapses when Hill, driver Tony Brise and two staff die in an aircraft accident. Niki Lauda wins the title for Ferrari.

1976

McLaren throw James Hunt a lifeline after Hesketh shut down. His dramatic title battle with Lauda generates priceless publicity for F1. Surtees have a brief resurgence, carrying Durex sponsorship.



Frank Williams and Max Mosley entered the fray as team owners in the 1970s. Williams (pictured top with driver Tim Schencken) with his eponymous team and Mosley (pictured with Ronnie Peterson in 1971) as one of the owners of March

“In one of the first races I ever took part in, they put up the practice times, and when they came to my name I heard someone say, ‘Mosley? He must be some relation to [Leicester coachbuilder] Alf Moseley.’” **Max Mosley**

damaging. I had a series of interim drivers and just about survived the year, then regrouped just enough to start the next year.”

Frank Williams continued to occupy the fringes of F1 for several years, acquiring the uncomplimentary nickname ‘Wanker Williams’ and even being pushed out of his own team at one point by a pushy co-investor. But the survival skills he acquired would equip him for life in the piranha club. His next move after the 1970 catastrophe would bring him into contact with an individual freshly arrived on the scene, but destined to play a big part in F1's future.

Max Rufus Mosley's charm, legal training and great intellect would have equipped him for a very successful career in politics – had he not been the son of Oswald Mosley, the former leader of the British Union of Fascists. The political commentator Ferdinand Mount once described Mosley's parents as “plutocrats of the most unmitigated ghastliness”. But within the insular ecosystem of motor racing, Mosley found an escape from the baggage of his surname.

“In one of the first races I ever took part in,” he told an interviewer, “they put up the practice times, and when they came to my name I heard someone say, ‘Mosley? He must be some relation to [Leicester coachbuilder] Alf Moseley,’ and I thought to myself, ‘At last! I've found a world where they don't know about Oswald Mosley.’”

With Graham Coaker, Alan Rees and former McLaren designer Robin Herd, Mosley founded March Engineering (the name derives from the founders' initials) in 1969. Their first chassis was destined for F3 but in subsequent years they targeted F1, F2 and Can-Am as well. March's first F1 car, the 701, was one of the choices on the table for Rindt in 1970, but having examined the state of the start-up operation he passed, not wanting to drive a car “built in Graham's shack”.



Defending world champion Stewart had to run one as a stopgap that season, for his Tyrrell team had gone their separate ways with French chassis manufacturer Matra, who were determined to use their own engine in F1 rather than a DFV. Stewart did not rate the 701 highly – its own creators recognised it was an out-of-date design – and Tyrrell fast-tracked their own car, which, for the purpose of maintaining secrecy, designer Derek Gardner drew in his spare bedroom.

Over the coming years, Mosley's streetfighting skills came in to play as March juggled running a works team with supplying customers in F1 and the feeder formulae, not always successfully. But future stars Ronnie Peterson and Niki Lauda got their break in the March chassis, and they provided a fallback for Frank Williams in 1971, and again in 1972 when Williams' first self-built car was written off in a shunt.

At the front of the grid, the superstars continued to play. A young Emerson Fittipaldi, filling the space left by Rindt, found himself fighting for the world championship with his hero, Jackie Stewart. François Cevert brought movie-star looks and dynamite skill. The sport grew in popularity and its leading protagonists



Over the 1970s the sport increased in popularity and wealth and superstars emerged (top), including Jackie Stewart and François Cevert (above)

grew in wealth. Stewart had already decided to retire at the end of the 1973 season when Cevert, his protégé, was killed at Watkins Glen; thereafter, developing his business interests, Stewart never failed to earn less than a million dollars a year. Not bad for a lad sidelined by the education system on account of his dyslexia.

When the pull of family proved too strong for Fittipaldi, and he left McLaren to join his brother Wilson's team in 1976, he opened the door to F1's greatest playboy of all: James Hunt. And yet it could all have been very different. At that

point Hunt was in limbo after his patron, Lord Hesketh, had pulled the plug on his own team, one that had publicly brought the champagne lifestyle to F1 over four uproarious seasons. For this particular aristocrat, the party was over.

Other famous names also vanished into the ether as the 1970s progressed. John Surtees shuttered his team after a legal battle with sponsors Bang & Olufsen, who had taken their patronage elsewhere. BRM overstretched themselves by running too many cars early in the decade and ended with a whimper under nightwatchman Louis Stanley, another figure of aristocratic bearing, who told Surtees exactly what he thought of his sponsor roster: "Your car's circulating with a fag on one end and a condom on the other. I don't call that progress."

The departure of 'Big Lou', one of the sport's leading figures for over two decades, confirmed just what a cut-throat business F1 had become. In this game, you won or you got eaten. **F1**



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He stoops to conquer!

Nico's form continues, his victories in Bahrain and China putting him behind only Vettel, Ascari and Schumacher in terms of the most consecutive F1 wins

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Another win for Rosberg and a debut point for McLaren stand-in Vandoorne



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It looked like it was all over early for Rosberg... but of course it wasn't

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RACE DEBRIEF

by Anthony Rowlinson

Bahrain Grand Prix

03.04.2016 / Bahrain International Circuit, Sakhir



Rosberg takes five

Rosberg's winning streak continues as he overpowers his team-mate for a fifth consecutive victory

When a driver admits that he and his team have chosen "the safest strategy" for a grand prix, you know they haven't exactly had their toughest-ever day at the office.

So it was for Nico Rosberg, comfortable, composed winner of the 2016 Bahrain GP, now a back-to-back victor this year and author of a five-race winning streak stretching back to Mexico last November. Can this be the foundation for his first title? Certainly he couldn't have hoped for more from the first two grands prix of the season.

But questions still remain as to the fundamentals of Rosberg's victories. At the end of last year, as he rattled in a Mexico-Brazil-Abu Dhabi hat-trick, we wondered if his achievements had been the result of superior performance or whether they were more the consequence of a post-title lifting off the gas by the hitherto dominant Lewis Hamilton. This year it must be noted that both of Rosberg's

wins, immaculate though they have been, have followed start-line problems for Hamilton.

The charitable will say that the innately analytical Rosberg will have understood the potential for mishap introduced by the new-for-2016 single-clutch start procedure, and prepared himself to be best practised for the change. Those who believe Hamilton more gifted will simply think: "Wait till Lewis nails it."

These two remain terrifically closely matched, with the slightest advantage in any area of performance, be it mechanical, psychological, emotional, enough to tip the balance in either man's favour. For the past two seasons that edge has favoured Hamilton, particularly so in 2015.

This year... well, let's just say that when the 21 races are done, maybe we'll look back and realise that the tiny start-procedure advantage Rosberg found over the 2015-16 off-season had been sufficient to see him to a world title. Maybe.

Any advantage either finds will be telling, but almost certainly transitory.

In Bahrain qualifying they were separated by just 0.077s, to share the front row (Lewis on pole, his 51st). That gap equated to just one car-length around the BIC's 3.36 miles and both Nico's and Lewis's best times were good enough to beat the qualifying record set by here by Fernando Alonso in 2005. So with an engine barely half the size of Alonso's 3.0-litre Mercedes V10, and using only half as much fuel, a significant mark had been passed. That's progress.

Mercedes retain the edge over their closest rivals, Ferrari, and it was best displayed by a second consecutive recovery drive from Hamilton. Into T1 after the start, he was skewered by a rocket-launching Valtteri Bottas, whose Williams nerfed the right sidepod of Hamilton's Mercedes and pitched it into a half-spin. Bottas lost his left front-wing endplate

in the collision; Hamilton picked up damage that cost him around one second per lap. Both continued, though Bottas would later receive a drive-through penalty that contributed, along with dubious tyre strategy, to his slump to ninth.

With Felipe Massa finishing eighth, having qualified seventh and run second early on, Williams left Bahrain with questions as to their consistency. In the gaggle behind Ferrari and Mercedes, any lack of pace, or any questionable strategy will translate into lost positions with so many eager, swift rivals around.

Williams' choice of extended stints on Pirelli mediums for both its drivers was just such a call, in the context of Red Bull, Haas and Toro Rosso majoring on softs and supersofts.

Each of these midfield hustlers had reason to be cheerful this weekend, but what of Ferrari, self-appointed Mercedes-deniers in 2016? It was another mixed bag. Seb Vettel suffered an engine failure on the warm-up lap, which, following Räikkönen's motor-related retirement in Australia, suggests reliability concerns for the Scuderia that have already undermined their title hopes. Two races down, 50 points adrift.

Räikkönen, meanwhile, started poorly, blaming his "fingers slipping" on the steering-wheel-mounted clutch paddle. His tardiness and Vettel's absence cleared row two for Bottas to take the slingshot into T1 that would prove so significant for the eventual top-three placings. But Kimi has consistently excelled at this circuit over the years, and he recovered with a decisive, drama-free run to second, ten seconds behind Rosberg. It was his eighth Sakhir podium since 2006, though none of them have been as winner.

Behind the likely title contenders came the ever-charging Daniel Ricciardo. He had already performed with élan in qualifying to start from P5 in a car less powerful than those ahead and immediately behind; to gain a race place when all around are losing theirs indicates yet again that Red Bull and their star driver have lost nothing in performance, despite the ongoing deficiencies of the TAG-Heuer/Renault power unit.

They will, though, be looking over their shoulders at the emerging threat of Haas F1. Yes, really. Romain Grosjean, starting from an advantageous P9 (giving Haas a free tyre choice for the race, unlike the first eight, who must wear their Q3 tyres to the start line) was characteristically fleet and error-free on a charge to P5 crafted around an aggressive strategy of three sets of supersofts, plus one soft. "It's an American dream," said Romain post-race. For all but Haas's biggest and best-funded rivals, they're rapidly turning into an American nightmare.

And a debut point for Stoffel Vandoorne, last-minute sub for an injured Fernando Alonso? This was the stuff of champions. **F1**

The story of the race

Sebastian Vettel and Jolyon Palmer both fail to take the start after problems on the warm-up lap

SAKHIR



Polesitter Lewis Hamilton makes another slow start, and Nico Rosberg takes the lead



Hamilton and Bottas collide, with damage caused to both cars



Massa and Bottas run second and third from Ricciardo and Räikkönen. Hamilton recovers to sixth



Räikkönen takes advantage of Ricciardo running wide to snatch fourth and then moves into third



Ricciardo pits from third at the end of lap 6 and rejoins the race in 17th



Jenson Button retires on lap 7 following a power-unit failure



Massa pits from P2 and Hamilton, despite a damaged front wing, passes Bottas for third on lap 8



Just after his stop, Bottas is handed a drive-through penalty for his earlier collision with Hamilton

Grosjean moves up to fourth on lap 25, ahead of Ricciardo, but pits for new tyres two laps later



On lap 40, Rosberg makes his final stop and changes to softs. Hamilton leads for a lap and then pits



Rosberg takes his second win in two races from Hamilton and Räikkönen











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Bahrain Grand Prix stats

The lowdown on everything you need to know from the weekend at Sakhir...

THE GRID

 1. HAMILTON MERCEDES 1min 29.493secs Q3	 2. ROSBERG MERCEDES 1min 29.570secs Q3
 3. VETTEL FERRARI 1min 30.012secs Q3	 4. RÄIKKÖNEN FERRARI 1min 30.244secs Q3
 5. RICCIARDO RED BULL 1min 30.854secs Q3	 6. BOTTAS WILLIAMS 1min 31.153secs Q3
 7. MASSA WILLIAMS 1min 31.155secs Q3	 8. HÜLKENBERG FORCE INDIA 1min 31.620secs Q3
 9. GROSJEAN HAAS 1min 31.756secs Q2	 10. VERSTAPPEN TORO ROSSO 1min 31.772secs Q2
 11. SAINZ TORO ROSSO 1min 31.816secs Q2	 12. VANDOORNE MCLAREN 1min 31.934secs Q2
 13. GUTIÉRREZ HAAS 1min 31.945secs Q2	 14. BUTTON MCLAREN 1min 31.998secs Q2
 15. KVYAT RED BULL 1min 32.241secs Q2	 16. WEHRLEIN MANOR 1min 32.806secs Q1
 17. ERICSSON SAUBER 1min 32.840secs Q1	 18. PÉREZ FORCE INDIA 1min 32.911secs Q1
 19. PALMER RENAULT 1min 33.438secs Q1	 20. HARYANTO MANOR 1min 34.190secs Q1
 21. NASR SAUBER 1min 34.388secs Q1	 MAGNUSSEN* RENAULT 1min 33.181secs Q1

*Required to start from the pitlane for failing to stop for the official weight check

THE RACE



FASTEST LAP

Nico Rosberg, lap 41, 1min 34.482secs

THE RESULTS (57 LAPS)

1st	Nico Rosberg Mercedes	1h 33m 34.696s
2nd	Kimi Räikkönen Ferrari	+10.282s
3rd	Lewis Hamilton Mercedes	+30.148s
4th	Daniel Ricciardo Red Bull	+62.494s
5th	Romain Grosjean Haas	+78.299s
6th	Max Verstappen Toro Rosso	+80.929s
7th	Daniil Kvyat Red Bull	+1 lap
8th	Felipe Massa Williams	+1 lap
9th	Valtteri Bottas Williams	+1 lap
10th	Stoffel Vandoorne McLaren	+1 lap
11th	Kevin Magnussen Renault	+1 lap
12th	Marcus Ericsson Sauber	+1 lap
13th	Pascal Wehrlein Manor	+1 lap
14th	Felipe Nasr Sauber	+1 lap
15th	Nico Hülkenberg Force India	+1 lap
16th	Sergio Pérez Force India	+1 lap
17th	Rio Haryanto Manor	+1 lap

Retirements

Carlos Sainz Toro Rosso	29 laps - accident
Esteban Gutiérrez Haas	9 laps - brakes
Jenson Button McLaren	6 laps - engine
Sebastian Vettel Ferrari	did not start - engine
Jolyon Palmer Renault	did not start - hydraulics

THROUGH SPEED TRAP (QUALIFYING)



Fastest: Valtteri Bottas, 208.47mph
Slowest: Kevin Magnussen, 200.21mph

TYRE COMPOUNDS USED



Super soft Soft Medium Inter Wet

CLIMATE

Clear/moon  21°C

TRACK TEMP

30°C



FASTEST PITSTOP

Felipe Massa, 24.093secs (entry to exit)

DRIVERS' STANDINGS

1st	Nico Rosberg Mercedes	50pts
2nd	Lewis Hamilton Mercedes	33pts
3rd	Daniel Ricciardo Red Bull	24pts
4th	Kimi Räikkönen Ferrari	18pts
5th	Romain Grosjean Haas	18pts
6th	Sebastian Vettel Ferrari	15pts
7th	Felipe Massa Williams	14pts
8th	Max Verstappen Toro Rosso	9pts
9th	Nico Hülkenberg Force India	6pts
10th	Daniil Kvyat Red Bull	6pts
11th	Valtteri Bottas Williams	6pts
12th	Carlos Sainz Toro Rosso	2pts
13th	Stoffel Vandoorne McLaren	1pt
14th	Kevin Magnussen Renault	0pts
15th	Jolyon Palmer Renault	0pts
16th	Marcus Ericsson Sauber	0pts
17th	Sergio Pérez Force India	0pts
18th	Pascal Wehrlein Manor	0pts
19th	Felipe Nasr Sauber	0pts
20th	Jenson Button McLaren	0pts
21st	Rio Haryanto Manor	0pts
22nd	Esteban Gutiérrez Haas	0pts
23rd	Fernando Alonso McLaren	0pts

CONSTRUCTORS' STANDINGS

1st Mercedes	83pts	9th Renault	0pts
2nd Ferrari	33pts	10th Sauber	0pts
3rd Red Bull	30pts	11th Manor	0pts
4th Williams	20pts		
5th Haas	18pts		
6th Toro Rosso	11pts		
7th Force India	6pts		
8th McLaren	1pt		



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RACE DEBRIEF

by Stuart Codling

Chinese Grand Prix

17.04.2016 / Shanghai International Circuit



Little trouble in big China

Despite an early lost lead, Rosberg regained his composure to take *another* seemingly effortless win

Lewis Hamilton is fond of using the hashtag #blessed on social media, but so far this season he has been anything but. Indeed, as the MGU-H within his Mercedes power unit gave up the ghost during Q1 on Saturday, it reinforced the impression that team-mate Nico Rosberg is the one counting his blessings. Lewis was already facing a five-place grid penalty for a gearbox change, but now he would have to change engines, too – and start from the back.

Ferrari had demonstrated a threatening turn of speed during practice, but as the weather turned unfavourable on qualifying day – torrential rain and howling winds rendered the practice session meaningless and the track was still damp as the qualifying hour approached – Rosberg rose to the challenge. An exciting final segment justified the grudging decision of the sport's stakeholders to drop the half-baked elimination qualifying system used in Australia and Bahrain, where the action had fizzled out in Q3.

Rosberg had an indifferent first sector on his final qualifying run but went purple thereafter to nail pole position, while Ferrari held Sebastian Vettel back until the very last moment possible for a one-shot run. He went wide at the hairpin but in truth the lap was already not really good enough, and Räikkönen went on to make a similar mistake. To compound Ferrari's angst, Ricciardo then demoted Räikkönen and Vettel to third and fourth.

Having set his Q2 time on the soft tyre, using only one set, Rosberg was the sole frontrunner to start on that compound. Pirelli predicted that the ideal strategy would be a three-stop race, with two stints on the soft and one on the short-lived supersoft, but couldn't say definitively whether it would be better to dispose of the supersoft first or leave it until the end. Circumstances would render this scenario moot, since Rosberg ended up stopping just twice and running to the end on mediums.

Ricciardo got the better start and swept into the rising, tightening Turn 1 first. Rosberg elected not to contest the corner, tucking in to his slipstream, relatively unthreatened from behind because the Ferraris on the second row were slow away from the line. Räikkönen locked a wheel and slid wide before gathering it in again, while Vettel looked to the inside line but then had to change course suddenly as he spotted Kvyat approaching from aft.

Vettel turned his team-mate's car broadside and then spent the rest of the lap apologising to the team from his new position of seventh, behind Ricciardo, Rosberg, Kvyat, Sergio Pérez, Hülkenberg and Carlos Sainz. If Hülkenberg parlayed the first-corner tangle neatly to run fifth, having started 13th, Valtteri Bottas was less fortunate. Having started fifth, the Williams driver was hung out to dry at the periphery of Turn 2 after having to go around the outside of Räikkönen, dropping to tenth. Lewis Hamilton

was also in the wars, losing his front wing between Turns 2 and 3 as Felipe Nasr swerved across his bows.

Both Räikkönen and Hamilton had to pit for new noses, but the race would come back to them. Such is the Red Bull's straight-line deficit that Ricciardo was almost certain to lose the lead as soon as DRS became available on the third lap, but he could never have predicted that his rear-left tyre would lose pressure and shred itself as Rosberg breezed past on the back straight. Pirelli would later put the failure down to debris, most likely at the first corner.

To clear the mess left by Ricciardo's disintegrating left rear, Race Control deployed the Safety Car, setting in motion another strategic shake-up. Felipe Massa had complained before the race that low grip caused by Pirelli's insistence on high minimum tyre pressures would artificially promote overtaking, but instead it was the sheer variety of strategies that turned this grand prix into a riot of passing manoeuvres.

Kvyat, Pérez, Hülkenberg and Sainz all pitted under the Safety Car to dispose of their supersofts. Vettel followed them in to do the same, briefly gained two positions by nipping past as Hülkenberg slowed almost to a crawl at the pit entry, and left with a new front wing as well. The extra time to fit the new nose didn't hurt him too badly, for although he emerged in 15th place he had not lost many net positions – many of the drivers between him and the leader had started on soft tyres and didn't pit under the Safety Car.

The race was green-flagged after four laps and Rosberg simply eased away from the gaggle of non-stoppers (Massa, Alonso, Wehrlein and Gutiérrez) that separated him and Kvyat, whose fading hopes of victory now hinged on him clearing the slower cars ahead as soon as possible. As Rosberg consolidated his grip on the lead, the differing strategies created ripples of overtaking behind.

Those strategies shook out with Kvyat emerging from his third and final pitstop with Vettel just behind, making him easy prey for a DRS-assisted move on the back straight. That set the order of the podium positions ahead of the recovering Ricciardo, who had fought a race-long battle with Hamilton and Räikkönen as they picked their way through the field.

Ultimately it was the timing of their final pitstops that decided the matter: Ricciardo and Räikkönen stopped seven laps later and their tyres – particularly Räikkönen's new softs – were fresher when it mattered. Hamilton ended up stuck behind Felipe Massa in seventh, and will count himself blessed that the race ended when it did, given that Max Verstappen was looming in his mirrors... **F1**

The story of the race

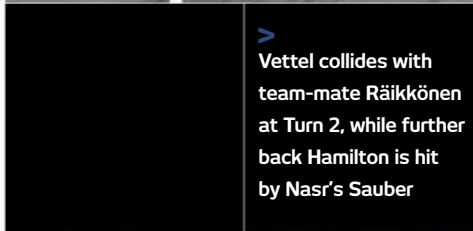
V As the red lights go out, Daniel Ricciardo blasts away from P2 into an instant lead from Rosberg



SHANGHAI



> Vettel collides with team-mate Räikkönen at Turn 2, while further back Hamilton is hit by Nasr's Sauber

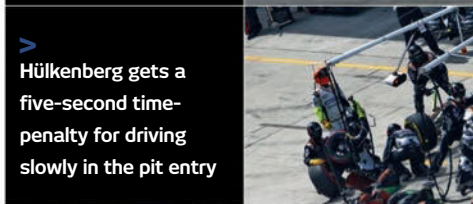


< On the third lap, Ricciardo suffers a left-rear puncture and Rosberg takes over the lead



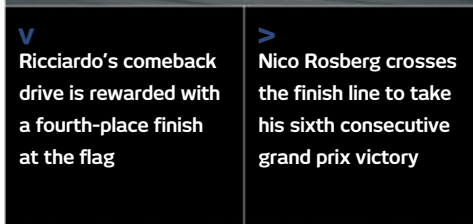
> The Safety Car is deployed to clear the circuit of debris, causing most of the field to pit

> On lap 12, Kvyat overtakes Massa on the back straight to snatch second place



> Hülkenberg gets a five-second time-penalty for driving slowly in the pit entry

< Kvyat and Vettel pit on lap 35. Kvyat finishes on mediums, while Vettel passes Kvyat for 2nd on softs



V Ricciardo's comeback drive is rewarded with a fourth-place finish at the flag

> Nico Rosberg crosses the finish line to take his sixth consecutive grand prix victory











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GLENN DUNBAR/LAT; SUTTON IMAGES

Chinese Grand Prix stats

The lowdown on everything you need to know from the weekend at Shanghai...

THE GRID

 1. ROSBERG MERCEDES 1min 35.402secs Q3	 2. RICCIARDO RED BULL 1min 35.917secs Q3
 3. RÄIKKÖNEN FERRARI 1min 35.972secs Q3	 4. VETTEL FERRARI 1min 36.246secs Q3
 5. BOTTAS WILLIAMS 1min 36.296secs Q3	 6. KVIYAT RED BULL 1min 36.399secs Q3
 7. PÉREZ FORCE INDIA 1min 36.865secs Q3	 8. SAINZ TORO ROSSO 1min 36.881secs Q3
 9. VERSTAPPEN TORO ROSSO 1min 37.194secs Q3	 10. MASSA WILLIAMS 1min 37.347secs Q2
 11. ALONSO McLAREN 1min 38.826secs Q2	 12. BUTTON McLAREN 1min 39.093secs Q2
 13. HÜLKENBERG* FORCE INDIA NO TIME IN Q3	 14. GROSJEAN HAAS 1min 39.830secs Q2
 15. ERICSSON SAUBER 1min 40.742secs Q2	 16. NASR SAUBER 1min 42.430secs Q2
 17. MAGNUSSEN RENAULT 1min 38.673secs Q1	 18. GUTIÉRREZ HAAS 1min 38.770secs Q1
 19. PALMER RENAULT 1min 39.528secs Q1	 20. HARYANTO MANOR 1min 40.264secs Q1
 21. WEHRLEIN** MANOR NO TIME IN Q1	 22. HAMILTON*** MERCEDES NO TIME IN Q1

THE RACE



THE RESULTS (56 LAPS)

1st	Nico Rosberg Mercedes	1h 38m 53.891s
2nd	Sebastian Vettel Ferrari	+37.776s
3rd	Daniil Kvyat Red Bull	+45.936s
4th	Daniel Ricciardo Red Bull	+52.688s
5th	Kimi Räikkönen Ferrari	+65.872s
6th	Felipe Massa Williams	+75.511s
7th	Lewis Hamilton Mercedes	+78.230s
8th	Max Verstappen Toro Rosso	+79.268s
9th	Carlos Sainz Toro Rosso	+84.127s
10th	Valtteri Bottas Williams	+86.192s
11th	Sergio Pérez Force India	+94.283s
12th	Fernando Alonso McLaren	+97.253s
13th	Jenson Button McLaren	+101.990s
14th	Esteban Gutiérrez Haas	+1 lap
15th	Nico Hülkenberg Force India	+1 lap
16th	Marcus Ericsson Sauber	+1 lap
17th	Kevin Magnussen Renault	+1 lap
18th	Pascal Wehrlein Manor	+1 lap
19th	Romain Grosjean Haas	+1 lap
20th	Felipe Nasr Sauber	+1 lap
21st	Rio Haryanto Manor	+1 lap
22nd	Jolyon Palmer Renault	+1 lap

THROUGH SPEED TRAP (QUALIFYING)



Fastest: Sergio Pérez, 207.85mph

Slowest: Pascal Wehrlein, 162.79mph

TYRE COMPOUNDS USED



Super soft

Soft

Medium

Inter

Wet

CLIMATE

Sunny

22°C

TRACK TEMP

45°C



FASTEST LAP

Nico Hülkenberg, lap 48, 1min 39.824secs



FASTEST PITSTOP

Sebastian Vettel, 22.276secs (entry to exit)

DRIVERS' STANDINGS

1st	Nico Rosberg Mercedes	75pts
2nd	Lewis Hamilton Mercedes	39pts
3rd	Daniel Ricciardo Red Bull	36pts
4th	Sebastian Vettel Ferrari	33pts
5th	Kimi Räikkönen Ferrari	28pts
6th	Felipe Massa Williams	22pts
7th	Daniil Kvyat Red Bull	21pts
8th	Romain Grosjean Haas	18pts
9th	Max Verstappen Toro Rosso	13pts
10th	Valtteri Bottas Williams	7pts
11th	Nico Hülkenberg Force India	6pts
12th	Carlos Sainz Toro Rosso	4pts
13th	Stoffel Vandoorne McLaren	1pt
14th	Kevin Magnussen Renault	0pts
15th	Sergio Pérez Force India	0pts
16th	Jolyon Palmer Renault	0pts
17th	Marcus Ericsson Sauber	0pts
18th	Fernando Alonso McLaren	0pts
19th	Jenson Button McLaren	0pts
20th	Pascal Wehrlein Manor	0pts
21st	Felipe Nasr Sauber	0pts
22nd	Esteban Gutiérrez Haas	0pts
23rd	Rio Haryanto Manor	0pts

CONSTRUCTORS' STANDINGS

1st	Mercedes	114pts	9th	Renault	0pts
2nd	Ferrari	61pts	10th	Sauber	0pts
3rd	Red Bull	57pts	11th	Manor	0pts
4th	Williams	29pts			
5th	Haas	18pts			
6th	Toro Rosso	17pts			
7th	Force India	6pts			
8th	McLaren	1pt			



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*Three-place grid penalty for unsafe release **Permitted to start by stewards *** Permitted to start by stewards and given five-place grid penalty for replacement gearbox

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2013 Mercedes Actros 1851 Gigaspace Euro 6 engine (left hand drive), Style Line interior with ambient lighting, Fridge, Bi Xenon headlights, Lane and brake assist, Water retarder, MB satellite navigation, two tone metallic paintwork, full skirting system, double sleeper cabs, MB multi function keys, Alcoa Alloy wheels, 50000 kms only

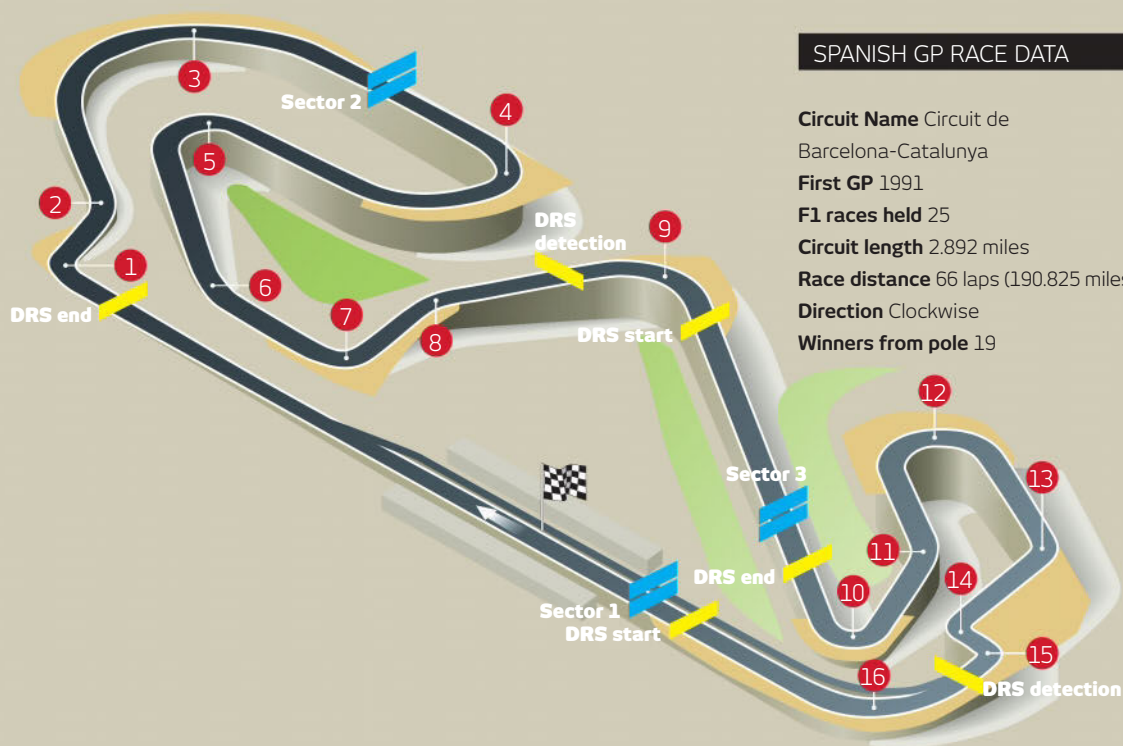
2013 Mercedes Actros 1848 Low Ride Gigaspace, Euro 6 engine (left hand drive), Style Line interior with ambient lighting, Fridge, Bi Xenon headlights, full infill skirts, 950mm fifth wheel height so ideal for teams going to Europe, double sleeper cabs, MB satellite navigation, two tone metallic paint, MB multi function keys, Alcoa Alloy wheels, 50000 kms only

Office: 01925 766527 Mobile: Chris Hart 07917 775599
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The Spanish GP preview

Round 5 / 13-15 May 2016 / Circuit de Barcelona-Catalunya, Barcelona



SPANISH GP RACE DATA

Circuit Name Circuit de Barcelona-Catalunya
First GP 1991
F1 races held 25
Circuit length 2.892 miles
Race distance 66 laps (190.825 miles)
Direction Clockwise
Winners from pole 19

TV TIMETABLE (UK TIME)

Friday 13 May

Practice 1 09:00-10:30

Practice 2 13:00-14:30

Saturday 14 May

Practice 3 10:00-11:00

Qualifying 13:00-14:00

Sunday 15 May

Race 13:00

Live coverage Sky Sports F1 and Channel 4

THE CIRCUS RETURNS TO FAMILAR TERRITORY

With the first tranche of flyaway races now over, it's a short and very welcome hop over to the familiar territory of the Circuit de Barcelona-Catalunya. For the fans, it's always great to go to a race where the city is so close to the circuit, so they can combine the racing with culture, restaurants and nightlife. For the teams, though, the start of the European season and the circuit's relative proximity to their bases means that upgrades are the order of the day, so there's bound to be some very hard work going on in the run-up to the Spanish GP.

If your car works around this circuit, then it *really* works around it. You can't manhandle a car if it's a reluctant through the blind Turn 9, or understeering through the long Turn 3. As usual, Pirelli's hard tyre makes its first appearance of year, where it will be joined by the medium and soft compounds. **F1**



The Circuit de Barcelona-Catalunya is well known to the teams from testing

WHAT GOES ON TOUR...

Barcelona is one of Europe's finest cities. But after years of travelling to the Circuit de Catalunya, we now know to avoid the traffic of the city and stay on the outskirts. Welcome to Granollers. The town is *just* close enough to walk to the track each morning – if you're as foolhardy as *F1 Racing* editor Anthony Rowlinson. Who, incidentally, is always on the look-out for a lift back to Granollers in the evenings.

En route to the hotel, *F1R* can occasionally be found at El Trabuc, where each evening you'll spot half the grid dining out with their entourages. That will usually consist of their manager, their trainer, their father, this month's girlfriend and a random subservient bag carrier – whose name you can never quite remember.

Granollers. While it isn't Barcelona, it does have its own charm for the travelling F1 crowd.

James Roberts

WHAT HAPPENED IN LAST YEAR'S RACE...?

Winner Nico Rosberg

Margin of victory 17.551s

Pole position 1m 24.681s, N Rosberg

Fastest lap 1m 28.270s, L Hamilton

Race leaders 3

Safety Cars 0

Pitstops 46

Overtakes 27



This was the most dominant performance for Mercedes since Australia, but this time it was Nico Rosberg on top. Rosberg converted pole into a straightforward first 2015 win, while team-mate Hamilton had to recover from a slow start that left him behind Vettel. A neat strategy switch to a three-stopper let Hamilton rejoin ahead of the Ferrari at his final stop, with Vettel a comfortable third.

The Monaco GP preview

Round 6 / 26-29 May 2016 / Circuit de Monaco, Monte Carlo



MONACO GP RACE DATA

Circuit Name Circuit de Monaco
First GP 1950
F1 races held 62
Circuit length 2.074 miles
Race distance 78 laps (161.734 miles)
Direction Clockwise
Winners from pole 28

TV TIMETABLE (UK TIME)

Thursday 26 May
Practice 1 09:00-10:30
Practice 2 13:00-14:30
Saturday 28 May
Practice 3 10:00-11:00
Qualifying 13:00-14:00
Sunday 29 May
Race 13:00
Live coverage Sky Sports F1
Highlights Channel 4

IT'S NOT ALL YACHTS AND CELEBRITIES, YOU KNOW

The Monaco Grand Prix is unlike any other. It has the glitz and the glamour. But beyond that, it's arguably the toughest of all the circuits to master. The narrow ribbon of asphalt winding through the Principality is lined with unrelenting Armco – waiting to punish even the smallest of mistakes.

The action, uniquely, begins early on a Thursday morning as drivers begin to familiarise themselves with the low grip levels and push the limits of adhesion. And as the track rubbers in, times start to tumble.

Because overtaking is so notoriously difficult here, race day is more akin to a high-speed chess match. Strategy and timing can be more beneficial than outright pace. And whether it's rain or a shunt that brings out the Safety Car, the Monaco Grand Prix is one of those races where you sense that *anything* can happen. **F1**



Can Nico continue his winning streak in Monaco? He's won three here already...

WHAT GOES ON TOUR...

Getting a pass to the inner sanctum of F1 is no easy task. You've more chance of finding the Holy Grail than accessing the paddock at the Monaco GP, this being the favoured race of VIPs. I tried to explain this to my mother on her visit to the Principality, but she insisted on the full tour.

So I begged a well-connected contact to lend me a pass "just for an hour". Thankfully this was the Friday, the so-called quiet day of the weekend. As he reached into his pocket he pulled out the gleaming paddock pass and handed it over. "If you do not return this in one hour's time, I will kill you," he said, with no hint of a smile.

Not wishing her son to be garrotted, the pass was promptly returned within 45 minutes. Lesson learnt. Never promise anyone – not even your mother – that you can get them a pass for the Monaco Grand Prix paddock.

James Roberts

WHAT HAPPENED IN LAST YEAR'S RACE...?

Winner Nico Rosberg
Margin of victory 4.486s
Pole position 1m 15.098s, L Hamilton
Fastest lap 1m 18.063s, D Ricciardo
Race leaders 2
Safety Cars 1 (7 laps)
Pitstops 31
Overtakes 13



A Hamilton masterclass, Monaco 2015 should have been his fourth win of the season. But when Verstappen crashed on lap 63 and the Safety Car was scrambled, Mercedes inexplicably pitted him from the lead and not second-placed Rosberg. "We've lost this, haven't we," Hamilton said to the team over the radio. He had, and he came home a despondent third behind Rosberg and Vettel.

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From 2019, F1 will be available only to paying UK viewers, exclusively on Sky

Our mailbag has been overflowing with letters...

This month we've been inundated with correspondence from you on various issues, from the controversial elimination qualifying format to the news that F1 will be available only on pay TV in the UK from 2019. So we've given over an extra page for you to air your views...

The end of the affair

I have been a fan of F1 for most of the 35 years of my life. F1 is the only sport that my wife, my children and I all enjoy together. And now, the day after the GPDA noted that the move to pay TV was a problem, Bernie announced the end of terrestrial F1 coverage altogether, and said this was "great".

I can't afford the £45 per month that Sky quote for me to watch F1. So from 2019, it looks as though I can't watch F1. Will my enthusiasm survive? Possibly. Will my 8-year-old son's obsession with the sport, and his ambition to be an F1

mechanic survive? I doubt it. Who can F1 most afford to lose: all its non-Sky subscribing fans and the younger generation, or Bernie? (Hint: it's not the fans).

Phil Evans
By email

Losing all respect

I've been an F1 fan for most of my life and in that time there have been many great moments, such as Brazil 2008 and Canada 2011. All of these, and the rise of greats such as Hamilton, Vettel and Alonso, have been seen on terrestrial TV by millions across the world.

The key word is 'millions'. I wasn't alive in the 1970s, but I am enough of a fan to know that TV coverage was nonexistent back then. The sport was amateurish in terms of regulation and safety. So all of us, since the 1980s, owe it to Bernie that we have been able to watch all of this on our television screens.

But I find it increasingly hard to respect the man who helped usher in this boom in television coverage. Increasingly, it feels as if Bernie is dazzled by the money offered by companies like Sky, and countries like Azerbaijan, and has forgotten the loyal fans like myself, and motorsport-loving countries like Italy, whose passion for the sport dwarfs the size of their pockets.

He seems not to care that Monza might not be able to afford a race fee and could drop off the calendar. He seems not to care that future generations, less well-off than previous ones, might not be able to afford pay-TV to continue to enjoy something that gives them so much pleasure. Is it any wonder that teams struggle to attract big name sponsors and audiences decline? He seems to shrug his shoulders, the world keeps turning and all that...

As one fan among many, I feel helpless to prevent further damage to the sport I love so much. I only hope that Bernie will one day wake up and remember what made him so successful and the sport such a phenomenon. But at his age, I doubt it. It is time for him to go.

James Reeson
By email

If I could turn back time

The sport that I have lived and breathed since the age of four is fast becoming a distant memory. The debacle with qualifying in Melbourne turned it into a joke

– a joke that was quickly retracted. But the latest news about losing live terrestrial coverage of F1 by 2019 will mean lights out for millions.

I wish we could rewind to the day when money *didn't* rule the sport, and organisers, sponsors, drivers and teams put on a show for the people at home. I am all for making a bit of money but not at the expense of true-blooded fans.

Money has become more important than the fans who really drive this sport. Without the fans to watch Formula 1, buy the merchandise and travel the world to attend races, there would be no money to be made. So much has already been taken from us. Why push some of us away for good?

F1 is not what it once was and I am sad to say that I am beginning to fall out of love with the sport that once ran through my veins.

At what point will the bigwigs finally take heed of what the fans want and need from F1 and stop seeing us as money bags?

Christina Eades
Warwick, UK

Sky's the limit

I expect I'm one of hundreds who will write to you following the Sky-only deal struck by Bernie Ecclestone. I have been watching F1 since I began work for Cosworth when Michael Schumacher was racing for Benetton. Every Monday when we came to work there would be Flavio Briatore's reports on our desks, to be discussed for at least the first two hours. So I got hooked.

For six years I watched F1 in Holland with a Dutch commentary that didn't help me master the language! But from 2019 it will all be over, thanks to the great god known as Greed.

Steve Axtell
Cumbria, UK

We don't need gimmicks

If anything, the Bahrain Grand Prix proved one thing: in terms of racing alone, F1 is in fine health.

The furore over qualifying rules and potential compromises on the

table to be discussed disguise the fact that when man and machine are left alone to the challenge of one lap against the clock and subsequently a full race distance, that is when the sport works best. That alone is the essence of racing and any gimmicks designed to mix up grids create only a negative attitude and outcome.

The drivers and stakeholders quite rightly spoke out over the need to provide a show and with the move to pay per view, plus new regulations on the horizon, it's clear that the sport should accede to the wishes of its key players and, most importantly, its fans, lest it slide down a slippery slope of decline.

Michael Brierley
Manchester, UK

Stop bad-mouthing F1

Bernie Ecclestone has long been the millstone around Formula 1's neck, and must go if the sport is to move forward. Name any other CEO or head of sport who consistently bashes their own people (teams and drivers), reverses their own poor decisions, and still can't figure out how to market their product in the 21st century? There isn't one.

The one forward-thinking move has been hybrid engines – yet Bernie constantly badmouths them. F1 is a joke, as publicly manifested by the qualifying debacle. I found it especially galling when Bernie called out the drivers for being greedy. Perhaps the most hypocritical statement Bernie has ever made! And now we see how skewed the prize money is for the

teams, ensuring the top few teams stay at the top, and the bottom teams have no chance of winning a race. F1 is not a sport: it is an exhibition of engineering talent.

Jim Factor
By email

On a wing and a prayer

To me, an obvious way to improve F1 would be to ban front wings. A corresponding reduction in the size of rear wings would be needed to maintain balance and this would reduce the cloud of dirty air that each car tows behind it. Following cars could get closer, and passing opportunities would be multiplied.

The costs of developing, manufacturing and replacing front wings after minor incidents would be eliminated and a major cause of punctures removed. And the cars would look much better. Just look at the F1 cars of the '60s; they were lethal... but beautiful.

Nigel Healey
Aberdeenshire, UK

Make do and mend

I marvel at how far Formula 1 has come since the early years, and your articles on its history are a great illustration of this. It's especially interesting to see the evolution of the cars from the 1950s and '60s.

Colin Chapman's Lotus cars had a reputation for breaking, so you printed a photo of his car stuck together with duct tape (*F1R* March, p143). *Duct tape!* Amazing.

Bruce Curtis
Wisconsin, USA



Nigel Healey argues that by getting rid of complex front wings, overtaking would increase, the cars will look better and costs would be reduced

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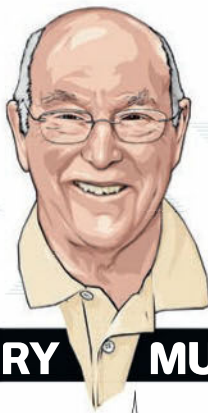
LEWIS IN THE SPOTLIGHT

Why does the three-time world champion and global icon have so many detractors? *F1R* investigates...

- > Back to Baku: We revisit the sport's newest venue
- > Force India's Nico Hülkenberg answers your questions
- > Our 'History of Formula 1' moves into the 1980s

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UNLESS I'M VERY MUCH MISTAKEN...

"Now, here's a declaration of passion from me. I love Formula 1. And here's why..."

I love it for the skill and bravery of the men who risk their lives in 200mph wheel-to-wheel combat. I love it because the cars they race are marvels of advanced automotive technology. I love it for the joy of being part of a globe-trotting sport peopled by outstanding individuals. I even love the drama of the political cut-and-thrust for power. It is a fascinating world, but at the moment it is in a very worrying delicate state.

F1 has always been a hotbed of disagreement. As long ago as 1961 there was uproar when the governing body changed the engine regulations.

In 1982 the drivers went on strike against a superlicence requirement that adversely affected them. In fact, the early 1980s were a constant battle between the teams, led by Bernie Ecclestone, and the governing body, and there have been plenty of confrontations since. But today's situation is especially challenging.

The sport's complicated governance system has led the normally apolitical drivers to call for reform. Major considerations are that the FIA seem unable or unwilling to lead from the front. Bernie Ecclestone, who for so long ruled the


sport with a rod of iron, seems to have lost his omnipotence since selling the commercial rights to CVC, who seem more interested in maximising their investment than in promoting the sport.

Bernie's power has also been affected by an apparent inability to work as closely with FIA boss Jean Todt as he did with Max Mosley. Plus, there's an ongoing fight between Bernie and the engine manufacturers, and contention between the teams and the commercial rights holder about how F1's income should be distributed.

On top of all this there's been constant mind-changing about 2016 qualifying and the 2017 regulations. All of which is of little interest to the public, who just want exciting racing on TV. And now, when viewing figures are declining, we are told there will be no more free live coverage of all the races after 2018. I have no criticism of Sky TV for using their financial clout to monopolise live coverage. They do a great job and they'll gain some more viewers from those who are prepared to pay, but, dependant on who, if anyone, is prepared to show highlights, overall viewing will suffer. And if viewing figures decrease, the future audience and sponsor interest will do so, too.

So what's the answer? I don't know: I'm just glad I don't have to try to clear up the mess. I'll concentrate on the upcoming races, which at least offer a glimmer of hope for entertaining viewing. Writing just after the Chinese GP, I'm looking forward to seeing whether Rosberg can maintain his superiority over Lewis Hamilton (I doubt it) and whether Ferrari can beat the Silver Arrows often enough (I doubt that, too).

Can the impressive Haas and Romain Grosjean at last make America, the market F1 needs so much, interested in F1? How will wunderkind Max Verstappen develop as his experience grows? Can McLaren and Honda give their two world champions the tools to get the job done? That'll keep me going for now.

But, for the future's sake, please Bernie Ecclestone, please Jean Todt, please CVC, please the teams and the engine manufacturers, get together and right the ship before it sinks. For the sake of the sport, all the fans who are so concerned, and, of course, yourselves. And to those who think I'm a naïve old fool for thinking it's possible, I say it's been done before and it has to be done again or we're all in the soup. 



"For the future's sake, please Bernie Ecclestone, please Jean Todt, get together and right the ship before it sinks"



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Anderson

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