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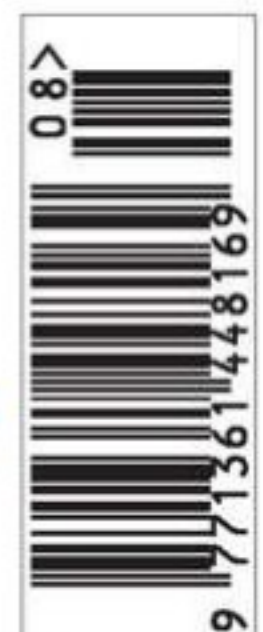
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Ron Howard: "We couldn't have made it up!"



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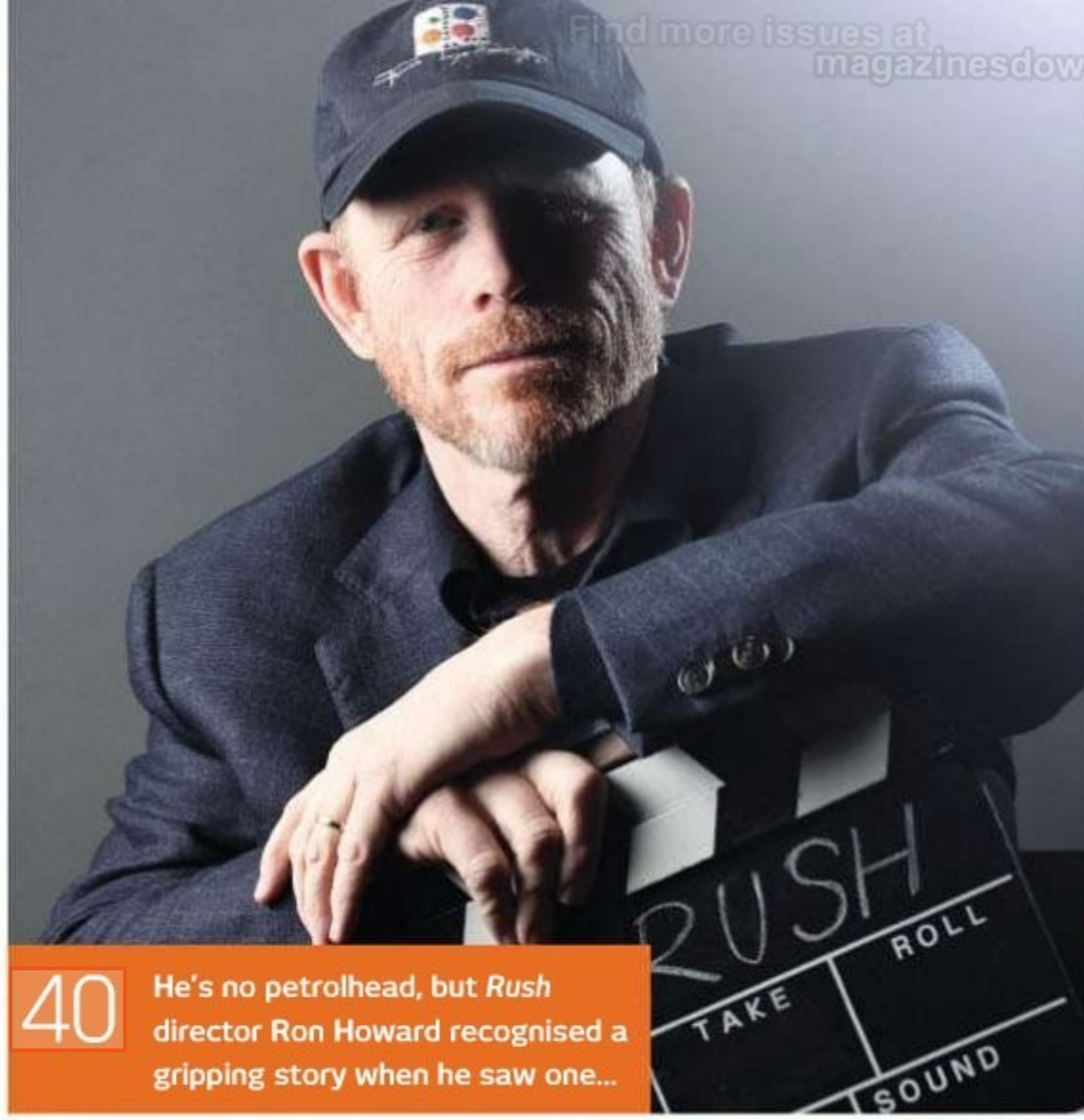
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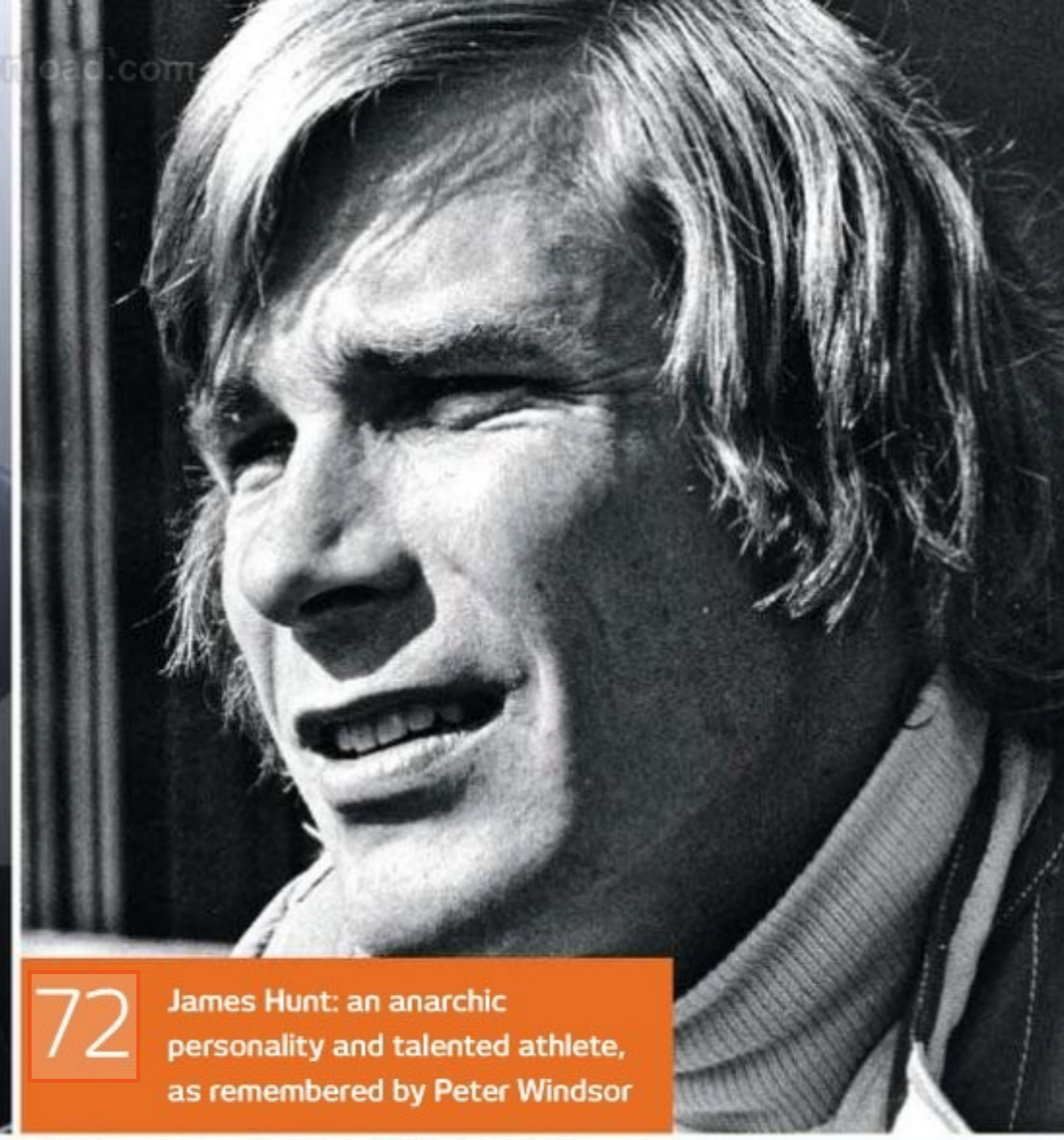
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HAYMARKET CONSUMER MEDIA, TEDDINGTON STUDIOS,  
BROOM ROAD, TEDDINGTON, MIDDLESEX, TW11 9BE, UK

**THE TEAM**

**Editor**  
Anthony Rowlinson  
**Managing Editor**  
Stewart Williams  
**Deputy Editor**  
Stuart Codling  
**Associate Editor**  
James Roberts  
**Chief Sub-Editor**  
Vanessa Longworth  
**Art Editor**  
Frank Foster  
**Senior Designer**  
Matt Dungate  
**Principal Photographer**  
Andrew Ferraro  
**Office Manager**  
Joanne Grove

**Editorial Tel**  
+44 (0)20 8267 5806

**CONTRIBUTORS**

**Columnists**  
Peter Windsor  
Dieter Rencken  
Valtteri Bottas  
Murray Walker  
**Technical Consultant**  
Pat Symonds  
**Special Contributor**  
Tom Clarkson  
**Agency Photographers**  
LAT Photographic  
Getty Images

**PUBLISHING**

**Director**  
Ian Burrows  
**F1 Racing Custom**  
Emma Shortt

**ADVERTISING**

**International Sales Manager**  
Chris Gowland  
**UK Sales Manager**  
Ben Fullick  
**Advertising Tel**  
+44 (0)20 8267 5179/5916

**LICENSING**

**Licensing Director**  
Jim James  
**Licensing Manager**  
David Ryan

**PRODUCTION**

**Production & Publishing Manager**  
Sunita Davies

**SUBSCRIPTIONS**

**Email** F1racing@  
Servicehelpline.co.uk  
**Fax** 01795 414 555  
**Customer Hotline**  
0844 848 8826  
**Subscriptions Marketing Executive**  
Michelle le Grice

**Missed an issue?**

**Back issues hotline:**  
08456 777 818

**Editorial director** Mark Payton  
**Creative director** Paul Harpin  
**Strategy and planning director** Bob McDowell  
**Managing director** David Prasher  
**Chairman and managing director** Kevin Costello  
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**Circulation queries**  
Frontline, Park House, 117 Park Road, Peterborough, Cambs PE1 2TR. Tel: +44 (0)1733 555161. ISSN 13614487. EAN 07713614480012. Printed by Wyndeham Heron, The Bentall Complex, Colchester Road, Heybridge, Maldon, Essex CN9 4NW. Covers printed by Wyndeham Group. Colour by FMC, 90-92 Pentonville Road, London N1 9HS. Reproduction in whole or in part of any photograph, text or illustration without written permission from the publisher is prohibited. Due care is taken to ensure that the content of F1 Racing is fully accurate, but the publisher and printer cannot accept liability for errors and omissions. F1 Racing is a member of the Audit Bureau of Circulations.  
**F1 Racing Subscriptions**  
PO Box 326, Sittingbourne, Kent ME9 8FA. Tel: 0844 848 8826. Fax: 01795 414 555. Overseas: +44 (0)1795 592990. Email: f1racing@servicehelpline.co.uk  
F1 Racing (ISSN number 74597X) is published monthly by Haymarket Media Group, Teddington Studios, Broom Road, Teddington TW11 9BE, United Kingdom. The US annual subscription price is \$89.95. Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431. Subscription records are maintained at Haymarket Media Group, Teddington Studios, Broom Road, Teddington TW11 9BE. Air Business Ltd is acting as our mailing agent. F1 Racing is published 12 times a year by Haymarket Consumer Media, © 1996 Haymarket Media Group Ltd



Ignition / Anthony Rowlinson / 08.13

# Time to remember the boys of summer (76)

**James Hunt would have been 63** last month.

It's hard to imagine such a glittering icon reaching his seventh decade, but let's indulge the notion anyway. How might he look? A little greyer? A few more laughter lines around the eyes? But still trim in the way natural athletes tend to remain. And still unafraid to cause a commotion, as he lived life to his own script.

Imagine what mischief he might be up to these days, were he still with us. What rumours (scurrilous and otherwise) he'd revel in spreading across a gossip-hungry Formula 1 paddock. And what a field day he'd have bursting ego-bubbles with rapier-thrust one-liners. He'd be a dream for the insatiable internet-age F1 media, ever in search of credible comment. TV, meanwhile, would still want to savour those Wellington-schooled tones. *F1R*, you can be sure, would also long ago have offered James a place as a star columnist.

Alas, such opportunities were denied him, after his untimely death from a heart attack on that sorry day in 1993. It's one of the sport's great ironies that he should have survived its deadliest era without a scratch, only to die quietly at his Wimbledon home.

There could be no greater contrast than with the fortunes of his fabled '76 sparring partner, Niki Lauda, whose scarred survival of *that* scrap gives us a living link with a story that's still hugely resonant today.

It's about to get all the more so with the imminent release of *Rush*, the hotly anticipated Hollywood take

on a classic grand prix head-to-head. We make no excuses for being all over *Rush* like a rash in this issue, as it's the first time Tinseltown has seen fit to cast its gaze on Formula 1 since John Frankenheimer's enduring 1966 classic *Grand Prix*.

That film set benchmarks for shooting F1 action sequences and, without giving too much away, we can happily confirm that *Rush* will allow you to view F1 as never before. Some car-to-car shots are simply breathtaking, and for that we can thank the enthusiastic guiding hand of director Ron Howard, who has brought all his A-list craft to a sport that doesn't exactly lack visual excitement. And while Howard admits he's no petrolhead, as you can read in our interview on [page 40](#), he found himself consumed by the Hunt/Lauda rivalry and the human drama it generated.

Lauda collaborated in the making of *Rush* and we've spoken to him about his memories of the season (p64). When he recounts being trapped in a burning Ferrari "at 800°C for 55 seconds" it's a reminder of how close he came to death in pursuit of a second title.

It seems a time so distant from the far less perilous world of contemporary F1, but if there's one man who carries a more carefree '70s spirit to the 21st-century racing scene, it's Kimi Räikkönen. He delighted in answering your questions (p76), but how we wish we could have brought you an exclusive 'when Kimi met James' story for this very special issue...

## Contributors



**Niki Lauda**  
Went to hell and back in pursuit of the world title

In an *F1 Racing* exclusive, Niki shares memories of the '76 season – including his engineer's suggestion that he fake engine failure in that climactic Japanese GP ([p64](#))



**Richard Williams**  
The doyen of broadsheet sports writers

How do you recreate the 1970s racing environment when many of the cars and locations are gone? Richard quizzed the movie magicians behind *Rush* on [p46](#)



**Peter Windsor**  
Our star columnist and host of *The Racer's Edge*

The V8 engine era has been characterised by incredible reliability. Peter went behind the scenes at the Mercedes factory at Brixworth ([p90](#)) to see how they do it



**Thomas Butler**  
Wrangling great art from the humblest light palette

Thomas doesn't just do posed portraits – he loves to capture his subjects on the hoof. Check out the results of his trip to Finland with Valtteri Bottas on [p84](#)



Thanks to Nicola Armstrong, Sarah Brown, Sophie Eden, Kevin Field, Lucy Genon, Ross Gregory, Lisa Haworth, Clarisse Hoffmann, Stuart Humm, Minna-Majja Jokisalo, Bradley Lord, Suzanne Noble, Isobel Postins, Anssi Rantasalo, Stephane Samson, Ricky Sowten, Andy Stobart, Jeremy Townsend, Jo Turley, Kevin Wood and the Charlotte Street Hotel in London



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winner

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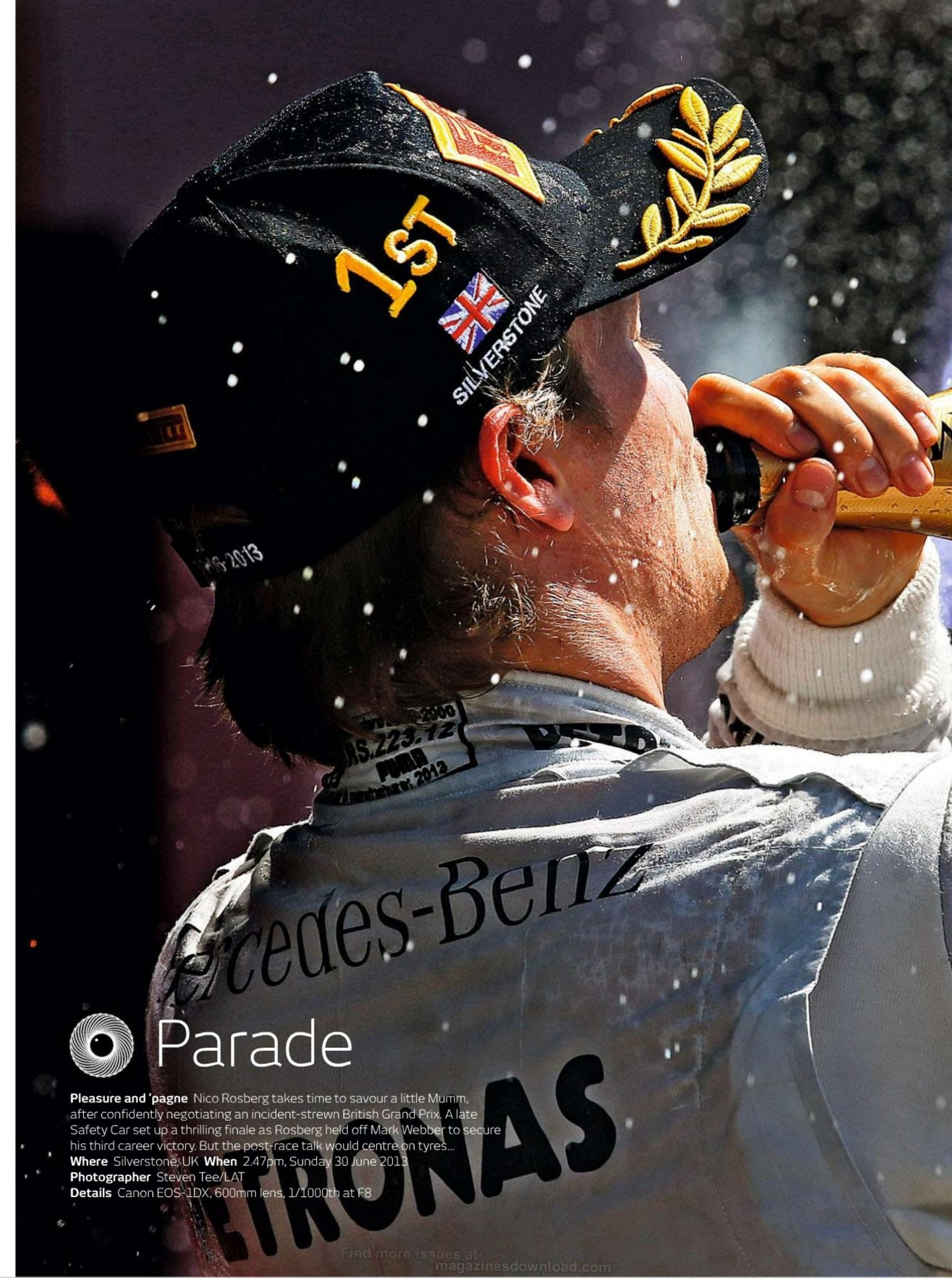


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# Parade

**Pleasure and 'paigne** Nico Rosberg takes time to savour a little Mumm, after confidently negotiating an incident-strewn British Grand Prix. A late Safety Car set up a thrilling finale as Rosberg held off Mark Webber to secure his third career victory. But the post-race talk would centre on tyres...

**Where** Silverstone, UK **When** 2.47pm, Sunday 30 June 2013

**Photographer** Steven Tee/LAT

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





# Parade

**The end of the road** Jenson Button eases himself into the cockpit of his MP4-28 before the start of first practice for the German Grand Prix. McLaren have now confirmed that they are ending development of the troubled machine, rendering the remaining races an exercise in damage limitation

**Where** Nürburgring, Germany **When** 9.57am, Friday 5 July 2013

**Photographer** Steven Tee/LAT

**Details** Canon EOS-1DX, 50mm lens, 1/250th at F6





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PETRONAS

CARA LUA

@lewishamilton





# Parade

**The eyes have it** Focus. With the guy in the garage next door doing such a good job – faster in the last session, indeed – Lewis Hamilton needs to summon every ounce of his talent to beat him in qualifying. Result? P1 by 0.4secs, with a lap one rival describes as “phenomenal”

**Where** Silverstone, UK **When** 1pm, Saturday 29 June 2013

**Photographer** Vladimir Rys/Getty Images

**Details** Canon EOS-1DX, 400mm lens, 1/800th at F2.8



INSIGHT

## Pirelli make a U-turn to avert F1 crisis

Drivers threaten to boycott races, 'Tyregate' flares up, and the British GP is filled with exploding rubber. It's been a tough year for Pirelli and now changes must be made...

**Formula 1's relationship** with tyre supplier Pirelli has always had its ups and downs, but it has now plummeted to a new low.

Pirelli, along with Mercedes, were hauled before the FIA International Tribunal in June, for conducting a tyre test with a 2013 car. Then, at the British GP, Pirelli's competence was brought into question by a series of dramatic tyre failures.

The recriminations started towards the end of May, when details of the controversial tyre test emerged on the eve of the Monaco Grand Prix. The way in which it emerged underlines the depth of concerns about Pirelli this year, and also how few of the parties involved – except the drivers – emerge blameless.

The drivers have been pushing for changes to be made



Merc boss Ross Brawn arrives at the 'Tyregate' Tribunal

to the Pirelli tyres on safety grounds ever since a series of delaminations in the early-season races. Pirelli refused to admit there was a safety issue, and the problem was conflated with a parallel push by Red Bull and Mercedes for more durable tyres.

Seeking to protect what they perceived to be an advantage in their cars' ability to look after the tyres, Ferrari, Lotus and Force India refused to accept that the

tyres needed changing. The FIA was unable to intervene, since it is constrained by its own rules, which state that tyre specification cannot be changed during the season without the unanimous approval of the teams.

Locked in this catch-22 situation, Pirelli organised two secret tests – one with Ferrari in Barcelona, between the Bahrain and Spanish Grands Prix, and one with Mercedes at the same

location, between the Spanish and Monaco Grands Prix.

Ferrari's test took place using a 2011 car, something that is clearly permitted by the rules. Mercedes did not have a 2011 car available, so they used their current 2013 car – something that is specifically *not* allowed.

Mercedes had initially approached the FIA for permission to use their current car, and the response was that the governing body thought this would be okay, provided the other teams were: a) informed; and b) given the same opportunity. Neither condition was met.

Mercedes were found guilty of breaking the rules, specifically article 22.4 of the sporting regs and 151c of the sporting code, for illegally running a current car in a test, but because they



Pirelli's motorsport director, Paul Hembery, outside the Tribunal

had 'qualified approval' from the FIA, they were issued only with a reprimand and banned from July's young driver test.

The Mercedes test first came to light in a meeting between FIA President Jean Todt, race director Charlie Whiting and three leading members of the Grand Prix Drivers' Association, Ferrari development driver Pedro de la Rosa, Red Bull's Sebastian Vettel and McLaren's Jenson Button.

The fall-out from 'Tyregate' resulted in the blocking of Pirelli's wish to change the 2013-spec tyres from using a steel belt to a Kevlar one for the Canadian GP. Instead, new tyres were given to the teams to evaluate in Montréal, but wet weather on Friday prevented meaningful conclusion.

Faced with continued intransigence, Pirelli conducted their own tests and decided they had solved the delamination issue with a better bond between tread and carcass. But as one problem was solved, another arose: Silverstone threw up the issue of a weak spot at the junction between the sidewall and the tread.

The horrendous sight of five tyres failing on live TV – and another on Fernando Alonso's Ferrari out of view of the cameras – underlined the fact that

something had to be done. The FIA duly took action.

The result was that enough Kevlar-belted tyres were made in the four days between the British and German GPs for the new tyres to be raced at the Nürburgring, which they did without a problem. A further change, taking the tyres back to their 2012 construction, will be in effect from Hungary onwards, since the more robust junction of these tyres is needed to handle the extreme demands of circuits such as Spa and Suzuka.

The way the situation has been handled by Pirelli has raised questions about their suitability as F1's sole tyre supplier. But while some – including Todt – would prefer the return of Michelin, that is not going to happen.

Pirelli have struck a commercial deal for circuit signage with Bernie Ecclestone, and no other tyre supplier will want to run their cars on a track surrounded by Pirelli billboards.

Todt doesn't want to antagonise Ecclestone because he needs the cash from a new FIA-FOM-teams Concorde Agreement – which has not yet been signed – to secure his plans for the FIA's future.

So it seems that Pirelli will be an F1 fixture for the next five years, whether F1 likes it or not.

## WINNERS + SPINNERS

UPS AND DOWNS ON THE F1 ROLLER COASTER

GOOD MONTH FOR

### Meeting Her Majesty

Red Bull team principal Christian Horner has been awarded an OBE (the medal of the Order of the British Empire) for his services to motorsport in the Queen's Birthday Honours list.

### Classic car owners

A Mercedes W196 raced by Juan Manuel Fangio has been sold at auction – to an unknown bidder – for a cool £15.4 million, making it one of the most expensive cars ever sold. The car won the 1954 German and Swiss GPs.

### Moviegoers

A special screening of the new *Rush* movie was shown at the German GP, with the film's director Ron Howard inviting the likes of Niki Lauda, Bernie Ecclestone and Lewis Hamilton along. The film, which is on general release from September, received a standing ovation.



### Sauber's workforce

Sauber's chief designer Matt Morris is to leave the team to take up a new role as engineering director at McLaren. Sauber have announced that Frenchman Eric Gandelin will replace the out-going Morris.

### British test drivers (part 1)

James Rossiter had been given the rare opportunity to drive for Force India in front of his home crowd in practice at Silverstone, when heavy rain forced him to sit out the session. Maybe next time, James.

### British test drivers (part 2)

In the aftermath of 'Tyregate', the FIA Tribunal banned Mercedes from competing at the Young Driver Test during British GP practice on 17-19 July. The unfortunate consequence of this was that their test driver, 26-year-old Brit Sam Bird, was deprived of any on-track running.



BAD MONTH FOR

## F1 Mastermind

Your chosen specialised subject:  
the world's greatest sport



- 1 Who finished third in his Ligier at the 1994 German GP?
- 2 With which team did Pedro Diniz make his F1 debut?
- 3 Which son of a world champion tested a Footwork in 1993?
- 4 For how many F1 teams has Mark Webber (below) started GPs – and can you name them?
- 5 Who scored his last Formula 1 victory at the 1982 Dutch GP?
- 6 Which driver raced for Ensign in 1982 and Theodore in 1983 (below)?
- 7 How many wins did Tyrrell score in F1 during 1974?
- 8 Which F1 team's HQ was based in Surbiton, Surrey?
- 9 Which former *Top Gear* presenter retired from the 1980 Belgian GP?
- 10 Italian F1 driver Dorino Serafini shared his only F1 drive with which famous world champion?



## THIS BOY CAN DRIVE

Keeping an eye out for the stars of tomorrow



### Kevin Korjus Who is he?

Korjus is a 20-year-old Estonian who races in the F1-supporting GP3 Series, having just switched disciplines. For the previous two seasons, he was competing in World Series by Renault.

### How good is he?

Korjus set his first pole at Silverstone and after the Nürburgring race was third in the standings. In 2011 he became the youngest driver to win a World Series race – aged 18 years, three months and eight days, eclipsing Charles Pic's 2008 record.

### Anything else we need to know about him?

He races for team Koiranen GP, a new Scandinavian GP3 team founded by brothers Marko and Jari Koiranen. In the past couple of years, Koiranen have made quite an impression in European Formula Renault, with Valtteri Bottas a former race winner.

### F1 chances

One multiple-title-winning Formula 3 team principal has privately identified Korjus as a star of the future, so he is certainly a driver whose career is worth following.

## NEWS

# Drivers to receive licence penalty points

From 2014, on-track offenders will rack up points on their licences. Score 12 and you get a one-race ban. Romain, you have been warned...



Grosjean's epic 2012 Spa crash

The new turbo V6 engines won't be the only novelties in F1 next year. The sport's governing body, the FIA, is also introducing a series of sporting rule changes.

Most high profile of these is the introduction of a penalty-points system for drivers – similar to the road-car system. The idea is that each transgression has a set amount of points allocated to it. Rack up 12 in a 12-month period and it triggers a race ban.

It sounds like a pretty radical step, but in fact no driver would have accrued sufficient points over the past 18 months to trigger such a ban – not even Lotus's Romain Grosjean.

The stewards retain the freedom to impose a ban without recourse to the points system, as they did when Grosjean caused a multiple pile-up at Spa last year.

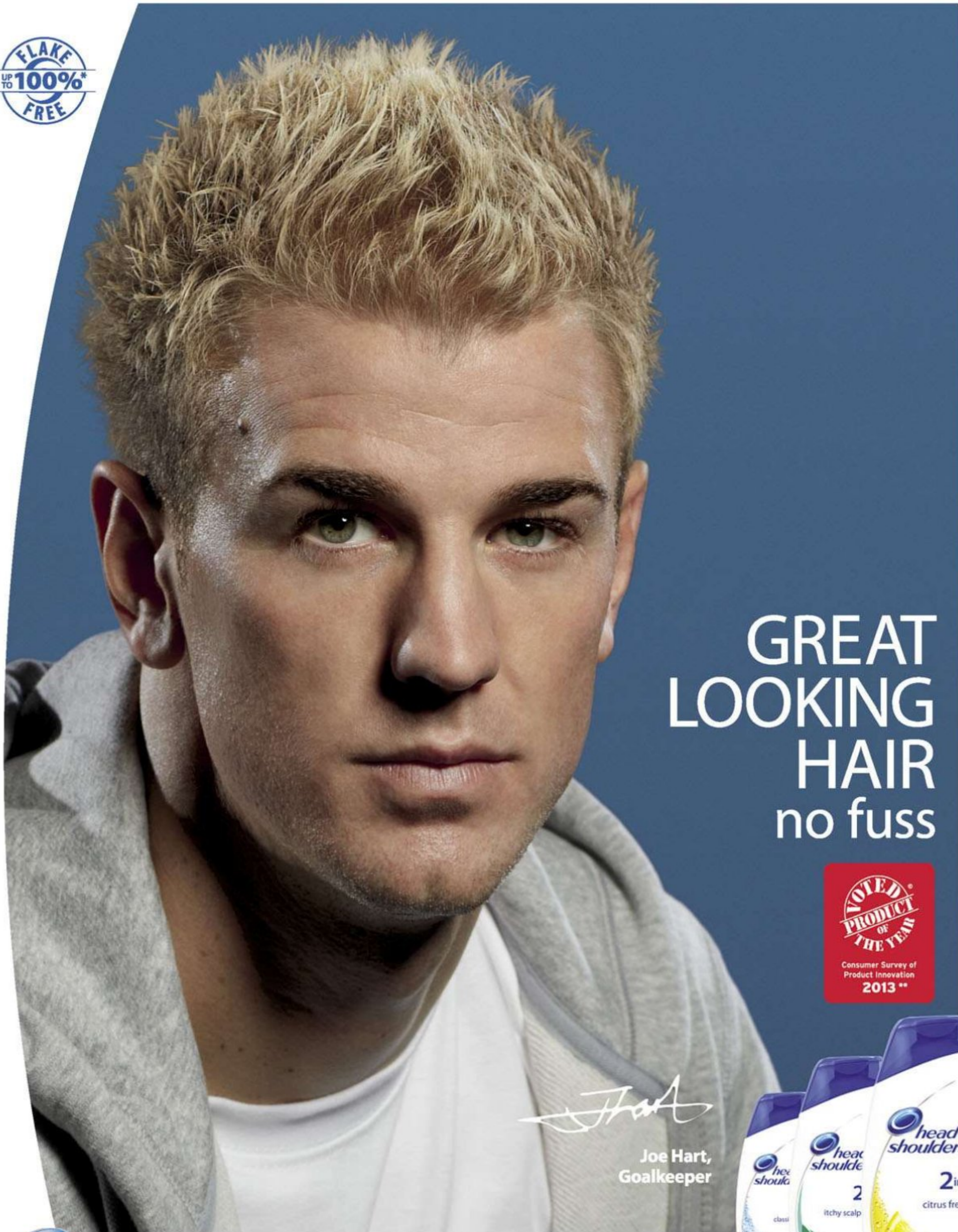
Two offences warrant the maximum five-point penalty: ignoring either a black or a black and orange flag, both of which

require a driver to stop in the pits immediately. Dangerous-driving offences are worth three points; reckless driving two points, and so on.

Other rule changes include the return of limited in-season testing, with four two-day tests after selected European races. This is part of a wider package to reduce costs, which includes a 'significant' reduction in the amount of aerodynamic testing in both windtunnels and through computational fluid dynamics.

The four days of aerodynamic tests on straights or constant-radius tracks and three days of young driver testing allowed this year have been removed. And the eight 'promotional' days on control tyres, which teams currently use to test new parts, have been reduced to two.

Technical rule tweaks now restrict drivers to five engines per season instead of eight, and gearboxes must last six races rather than five.



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*Joe Hart*

Joe Hart,  
Goalkeeper



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Hamilton battles Vettel and Webber at the start of the German Grand Prix

PHOTO: KER ROBERTSON/GETTY IMAGES

ANALYSIS

# Merc take the fight to Red Bull

The Silver Arrows have surged ahead, having got to grips with their rubber woes. But as tyres revert back to 2012 construction, can they keep the pressure on Vettel & co?

**Mercedes' run of** good form from Monaco to Silverstone has raised the possibility of Lewis Hamilton and Nico Rosberg shouldering their way into the championship battle to join Sebastian Vettel, Fernando Alonso and Kimi Räikkönen as 2013's main contenders.

Rosberg took wins in both Monaco and Britain, while Hamilton followed fourth place in Monaco and third place in Canada by confidently leading the British Grand Prix before a tyre failure put paid to his chances.

As this magazine goes to press pre-Hungarian Grand Prix, Hamilton sits 58 points behind championship leader Sebastian Vettel, while Mercedes have just moved up to second place in the constructors' standings, confirming their position as the only team with sufficient pace to consistently challenge Red Bull in qualifying.

Post-Canada, it seemed as if Mercedes had finally got to grips with the problems of heavy tyre usage that have blighted them over the

past few years. After Hamilton took third place in Montréal, Mercedes' executive director (technical), Paddy Lowe, remarked on the fact that the team had not suffered from their usual problems with heavy tyre wear, saying: "It felt like a normal race, with Lewis not quite having the pace of Sebastian [Vettel] or Fernando [Alonso]."

At Silverstone, Mercedes matched Red Bull blow for blow in the race, but Germany was a knock-back – and something of a shock. Kevlar-belted tyres were introduced here, as a result of the multiple failures at Silverstone, and Hamilton and Rosberg plummeted down the field to finish fifth and ninth respectively.

At the next race in Hungary, the Pirelli tyres will revert to their 2012 construction, which is bad news for Mercedes. And if restrictions on tyre usage remain in place, this could be another obstacle. The regulation that states tyres cannot be swapped from side to side on a car was cited by Ross Brawn, post-Germany, as the aspect of the restrictions that had hurt Mercedes the most.

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Räikkönen: a known quantity

NEWS

## Red Bull target Kimi for Webber's drive

Räikkönen is top of Red Bull's shortlist to fill Mark Webber's soon-to-be-vacant seat. But Kimi himself is undecided...

**Mark Webber's decision** to leave Formula 1 at the end of the season in favour of a new career with Porsche in sportscars opens up one of the most desirable vacancies in F1: a 2014 Red Bull drive.

Red Bull have said that the shortlist for Webber's replacement consists of Lotus driver Kimi Räikkönen and Toro Rosso's Daniel Ricciardo and Jean-Eric Vergne. *F1 Racing* understands Vergne is now out of the picture and that the choice is between Räikkönen and Ricciardo.

Räikkönen's manager, Steve Robertson, was at the British GP where preliminary



**Ricciardo: can be inconsistent**

Ricciardo. Räikkönen is a known quantity whom Red Bull can simply plug in, in the knowledge that they will get at least the level of performance they have from

discussions took place with both Lotus and Red Bull. It is believed that Red Bull are targeting Kimi, but that Kimi has yet to make up his mind.

There are pros and cons associated with both Räikkönen or

Webber, if not more. Plus they'd be rid of the political aggro of Webber's tense relationship with Vettel.

On the downside, Räikkönen is not as technically engaged as Webber is (or as Ricciardo is likely to be). Kimi will probably want to leave the track as early as possible, and that may prove a handicap as the team get to grips with next year's complicated turbo engines. Ricciardo, meanwhile, has demonstrated the odd burst of speed in qualifying and was particularly strong at both the British and German GPs. But he is inconsistent and may not be able to handle the pressure of being Vettel's team-mate.

It is understood that while Räikkönen's preference is to remain at Lotus, he is concerned about both the team's financial situation and the departure of their technical director, James Allison. There was a serious delay in paying Räikkönen this year, and although team boss Eric Boullier insists this has now been resolved, it's an aspect that will likely test Räikkönen's resolve to remain at Enstone.



OPINION

# Who next for Lotus?

The team are considering replacements for both their seats next season

**Whether or not** Kimi Räikkönen ends up moving to Red Bull for 2014, there could well be at least one new driver at Lotus next season. Räikkönen's potential switch opens up the possibility of one seat becoming available at Enstone, but both seats could come free due to growing doubts over Romain Grosjean's future at the team.

In Germany, Grosjean took a strong third place behind Vettel and Räikkönen that could well have been a second. If he could always perform at this level he would be a shoo-in for a third season, but his driving remains erratic. In Monaco he crashed four times in one weekend, and on four occasions this year he has finished ninth or lower.



Mixed results and big backing: enough for Grosjean to retain his Lotus drive?

Lotus are known to have cash-flow problems, and the reputed €6million of sponsorship money that Grosjean brings from French fuel company Total clearly makes his presence a valuable one. But even so, Lotus are unsurprisingly not short of suitors.

Nico Hülkenberg, whose relationship with Sauber has almost completely broken down, is interested, but he has little financial backing. Pastor Maldonado is also keen on a move, but Williams sources say he has no way out of his contract. This is bound up with the team's

five-year deal with Venezuelan oil giant PDVSA, which runs until the end of 2015.

Ex-Sauber driver Kamui Kobayashi now has Japanese backing and has also been linked with Lotus. Then there is Force India's Paul Di Resta, who would be an attractive prospect although, along with Hülkenberg and Marussia's Jules Bianchi, he is a Ferrari candidate if the Scuderia replace Felipe Massa.

It's a strong line-up of contenders, so a lot depends on Grosjean's performance over the remainder of 2013.

STATS

## Mark Webber in numbers

As the straight-talking Aussie gets set to depart F1, we celebrate his achievements

**9**  
GRAND PRIX WINS

laps raced in F1 since 2002  
**10,439**  
and a total of 941.5 points

**205**  
GPs STARTED  
**11**  
POLE POSITIONS

**2** **1**  
2 DOGS OWNED (SIMBA AND SHADOW) AND 1 CAT (KISKA)  
**26**  
RACES LED FOR A TOTAL OF 576 LAPS

**23 MILES**

from his home in Aylesbury to the gates of Silverstone

NEWS

## Williams set for staff overhaul

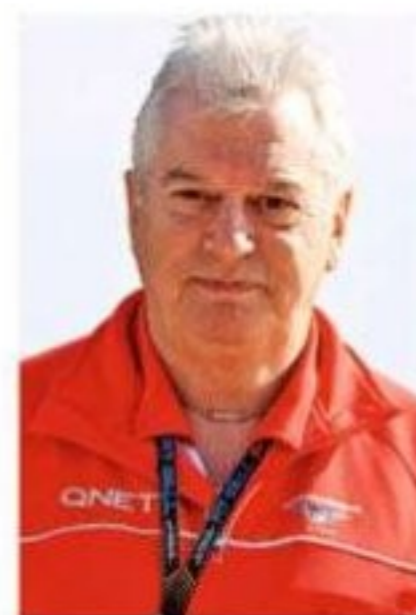
Pat Symonds replaces technical director Mike Coughlan, kickstarting a restructuring process



**The arrival of Pat Symonds**, formerly a consultant to Marussia and previously technical director of Renault, is the first in a raft of personnel changes at Williams. The team are in urgent need of a new technical structure following their worst ever start to a season. In the first nine races of 2013, they have failed to score a single point.

Symonds will join the team on 19 August 2013 as chief technical officer, while technical director Mike Coughlan has left the team with immediate effect. *F1 Racing* understands that former racer Alex Wurz, who has been acting behind the scenes at Williams for a number of months, has been instrumental in securing Symonds's appointment.

A leadership vacuum developed this year, following the departure of CEOs Toto Wolff and Alex Burns and chief operations engineer Mark Gillan. Former Jaguar MD Mike O'Driscoll has since been appointed as group CEO, while Claire Williams is now deputy team principal. But greater strength



Symonds: "Up there with Ross Brawn and Adrian Newey"

was needed on the technical side.

Symonds brings in a wealth of experience as former tech boss of a title-winning team and he will mentor and train Williams staff to encourage internal promotion. Further recruitments are planned over the next 18 months.

"Pat is one of the best technical guys in F1. He's up there with Ross Brawn and Adrian Newey," said one former team principal. "He proved at Renault he can win titles and he'll have a positive influence, especially if he's given the budget."

• *Symonds' former team, Marussia, have confirmed they will switch to a Ferrari powertrain and gearbox from 2014*

NEWS

## Sergey Sirotkin could set new record with Sauber

The Russian could become F1's youngest driver as part of a lucrative deal with cash-strapped Sauber

If **Sergey Sirotkin** makes his Formula 1 debut with Sauber next March, he will be the youngest driver in the history of the sport to start a grand prix. At 18 years and seven months old, the Russian racer will eclipse the record currently held by Jaime Alguersuari, who started the 2009 Hungarian GP aged 19 years and 126 days.

Cash-strapped Sauber revealed Sirotkin as a potential 2014 driver along with a plan for a lucrative tie-up with three Russian companies.

The deal, which has the tacit consent of Russia's President Vladimir Putin, will thrust Sirotkin into a development programme "to prepare him as a racing driver for the team in 2014," according to a statement by Sauber.

The teenager is currently competing for ISR in World Series by Renault and has so far scored a solitary podium finish. However, promoters of the inaugural Russian GP are pushing for a local driver to enter the 2014 event, and while Sirotkin has yet to obtain



Sirotkin: currently competes in World Series by Renault

a superlicence, it's unlikely that this will hinder his progress.

One of the three Russian companies planning to enter the alliance with Sauber is the National Institute of Aviation Technologies (NIAT), a scientific technology

company, whose director-general is Oleg Sirotkin, father of the up-and-coming racer.

The agreement was being discussed in Moscow by senior Sauber management as *F1 Racing* went to press. A team spokesman would not comment on the price of the investment, but we understand the deal could be worth as much as €25million.

If a deal is struck, it will be a timely lifeline for Sauber, who are struggling financially – particularly with regards to supplier payments.

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# Pat Symonds

# PITPASS TECH

Explaining the hidden brilliance that drives Formula 1 forward

## THE SCIENCE BEHIND...

# 2014 engines

### Can you explain what the new formula will entail?

Most people know that we are changing from a 2.4-litre normally aspirated V8 engine with a small KERS unit, to a 1.6-litre turbocharged V6 with a much larger Energy Recovery System (ERS). The ERS not only harvests additional power while the car is braking (through the ERS-K), but also harnesses power from the heat in the exhaust (through the ERS-H).

To understand the implications of this, we need to try to remember a few of the things we learnt at school...

**Lesson one: chemistry** One kilogram of petrol contains 43 megajoules of chemical energy. Mix this petrol with the right amount of air and burn it, and you will release that energy as heat. Current engines have no limitation on how much fuel is used; typically, at full throttle and near full speed, they will consume around 45 grams of fuel per second. Burning this yields 1,970 kilojoules of energy per second.

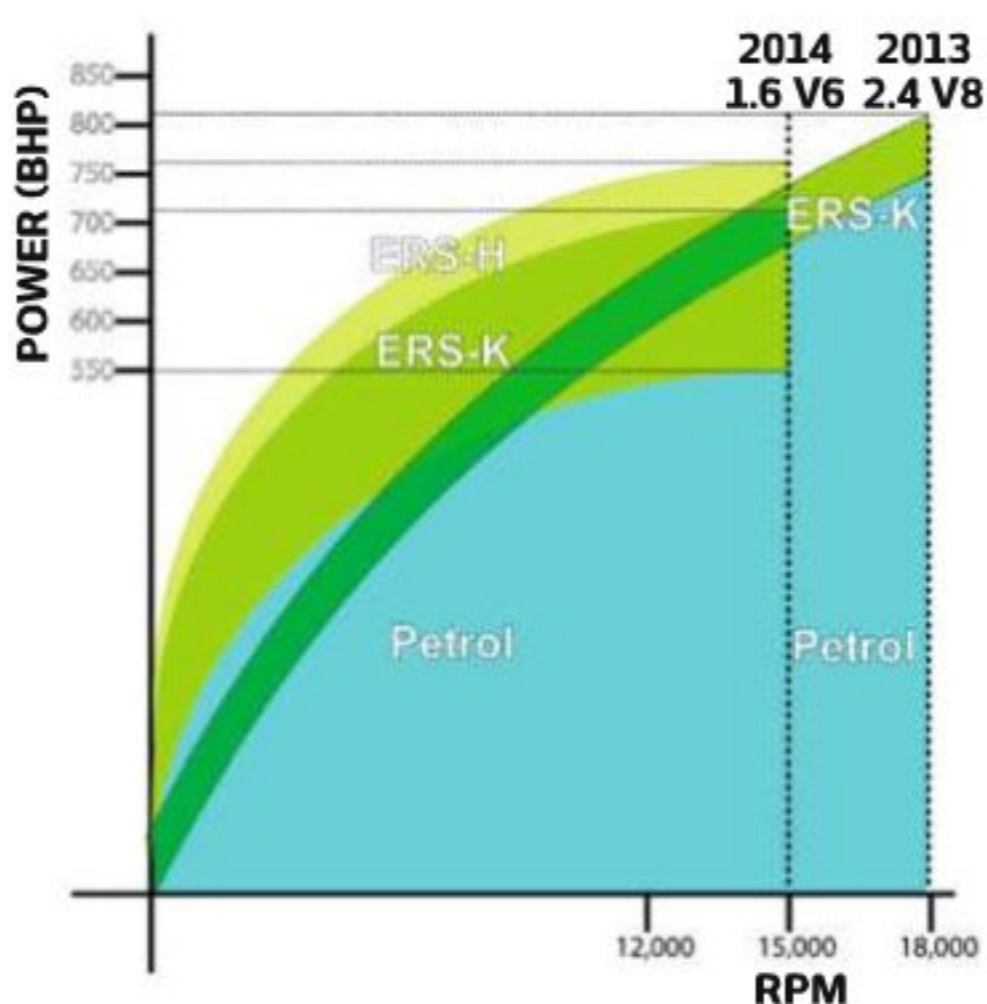
**Lesson two: physics** Power is a measure of energy use over a given time. One joule of energy released per second is termed a watt, and 1,000 joules per second is a kilowatt. So our current engines, consuming 45 grams of fuel per second, should produce over 1,900kW of power – which is over 2,500bhp!

**Lesson three: reality** Of course, the 2013 engine doesn't produce this much power: it produces around 750bhp or 550kW. The rest of its potential power is lost because no machine is ever 100 per cent efficient. In fact, a current Formula 1 engine has an efficiency of around 28 per cent at full throttle.

### What does all this mean?

The new engines are limited by regulation to using a maximum fuel flow of 100kg per hour,

## HOW THE 2013 V8 AND 2014 V6 COMPARE



- The 2014 line shows a more torque-y curve, flattening at 550bhp/15,000rpm, plus the 160bhp provided by the ERS-K and ERS-H
- The 2013 line shows a more peaky curve, topping at 750bhp/18,000rpm and including a 60bhp contribution from the current KERS.

or around 28g per second. If our new engine had similar efficiency to the current V8, then it would produce only around 450bhp from this amount of fuel. Even with the addition of the updated energy recovery systems, this would still lead to underperformance. The key, therefore, is to work on improving efficiency on both the base engine and the energy recovered from the exhaust. In fact, we can expect the new engines to be around 35 per cent efficient and therefore able to produce around 550bhp before we add the electric-motor power and exhaust-heat recovery.

### So what about the Energy Recovery System – how does that work?

The new ERS will be very different. Currently, we recover only kinetic energy under braking

and are allowed to release this energy at a rate of 80bhp for just 6.7 seconds per lap. This equates to 400 kilojoules of energy. In 2014, we will be able to release ten times as much energy from the batteries and at twice the power, which is going to provide a boost of 160bhp for around 33 seconds per lap. This power will be harvested and released through a motor generator unit known as the MGU-K, in which the letter 'K' stands for 'kinetic'.

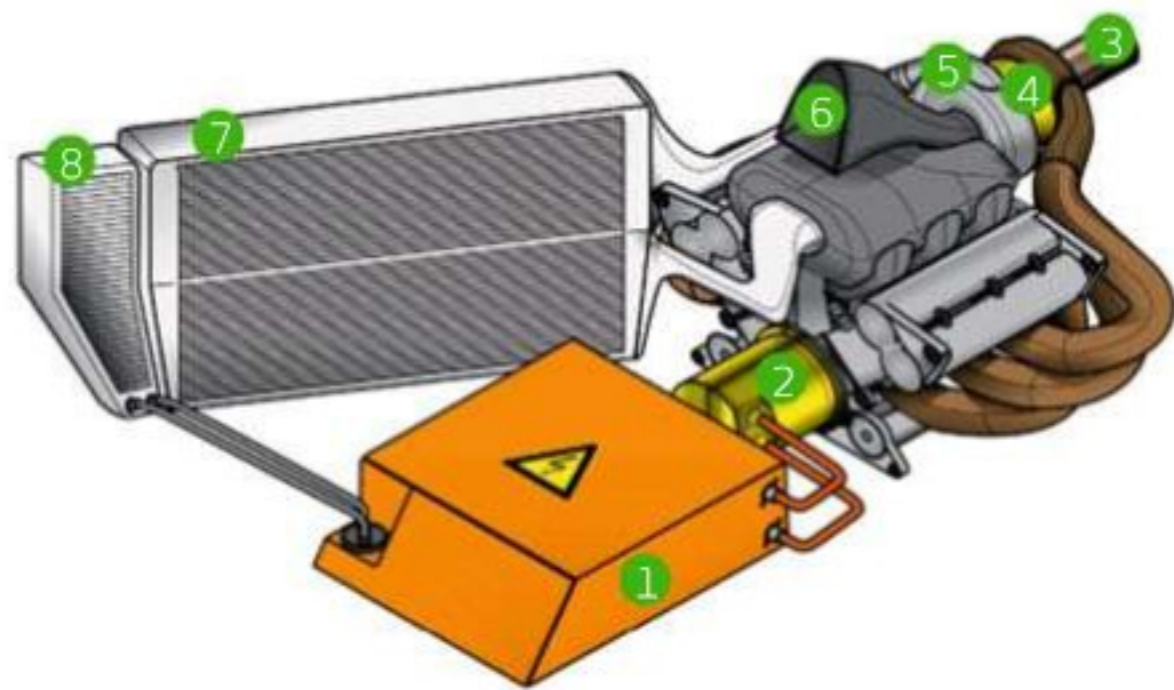
More importantly, there is now a further energy recovery system associated with the turbocharger. This is another motor generator unit (MGU-H where 'H' stands for 'heat'), but it is attached directly to the shaft of the turbocharger. It also produces electrical energy, but does not have to send that electrical energy to the battery – it can send it directly to the powertrain and, if it does so, is not subject to any energy-flow limitations. This further boosts the efficiency of the complete powertrain.

### So will this make Formula 1 engines more relevant to road-car engines?

Most certainly. A good measure of efficiency is how much fuel an engine uses for each kilowatt of power it produces per hour. Good road engines are now using somewhere in the region of 245g/kW-hour, but at full throttle and with high revs it can be much worse than this. The current Formula 1 engines use around 280g/kW-hour, which is already better than that of many road cars, but the 2014 engines will use less than 240g/kW-hour at maximum power, making them real leaders in the engine-efficiency league. The techniques that are used to achieve these impressive figures will definitely find their way into road cars over the next few years, since they are built on a foundation of emerging – rather than exotic – technologies.

### You described the 2014 regulations as one of the seismic changes in Formula 1 history. Why are they causing so many headaches?

The architecture of the engines will be rather different, so this is going to require some further thought, but, in itself, I wouldn't really describe



## A LOOK INSIDE THE 2014 1.6-LITRE TURBOCHARGED V6 ENGINE UNIT

- |                     |                     |
|---------------------|---------------------|
| 1 ERS battery pack  | 5 Turbocharger      |
| 2 ERS-K MGU         | 6 Air inlet         |
| 3 Exhaust tail pipe | 7 Turbo intercooler |
| 4 ERS-H MGU         | 8 ERS cooler        |

Renault's new V6 unit, which will be used by Red Bull, Toro Rosso, Caterham, and probably Lotus in 2014



the situation as a headache. The biggest problem is that we now have to package a significantly larger cooling area. The requirement for engine oil and water cooling is actually less than that of the current engines, but now we need much more KERS cooling and also have to deal with cooling the charge air that comes from the turbocharger before it enters the engine. This is something we never had to do on a normally aspirated engine. In all, we are looking at nearly twice as much area for the various heat exchangers as we have on the current cars.

On top of all that, we have significant changes to the chassis and aerodynamic rules that mean we are starting with a clean sheet of paper.


### At what point would teams have started working on the 2014 cars? And how long will already have been spent looking into the new rules?

At Marussia, we began studying the new rules in earnest in March 2012. We are a small team, so at that time we had just one aerodynamicist and one designer investigating the implications.

The aero team began their CFD investigations in 2012, but they were mainly concentrating on producing a car for 2013. However, the changes have meant we were forced to switch off development on this year's car relatively early and now, with the exception of a few people working on solving the inevitable problems that

arise on the current car, all of our design and aerodynamic teams are focused on 2014.

### Why is F1 going in this direction? Is it to encourage road-car manufacturers back to the sport?

We need to make the engines more road-relevant to bring in more manufacturers and to retain those we already have, but it's also good to see motorsport being proactive about environmental perception, rather than waiting for then reacting to severe criticism of our sport. We now need to ensure we get our message across to the wider public, rather than shrouding our technology in a veil of secrecy as is our usual practice. 



# Peter Windsor RACER'S EDGE

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

## ■ AGAINST EXPECTATIONS, NICO ROSBERG IS EMERGING AS MERCEDES' LEAD DRIVER. HOW LEWIS HAMILTON MEETS THIS CHALLENGE WILL PROVIDE THE MOST COMPELLING NARRATIVE OF 2013'S 'SECOND HALF'

Having Mercedes switch to his preferred Carbone Industrie brakes, doesn't seem to have helped Lewis

As 2013 will inevitably be remembered as 'The Pirelli Year', condemning it forever to the 'Blowouts' tab under a main heading of 'Politics', I think it's appropriate at this juncture to refocus on a matter of genuine racing importance – to wit, the battle between Nico and Lewis. Intra-team fights have always been the purest sort of fights in the history of our sport, for the simple reason that both drivers are controlling the same car (almost) and that both have access to the same team support system (kind of). Note that I am not talking here about the *fighting*, or potential fights. I'm talking about the contrasting styles of the two drivers in question, and about what we can learn from two great racers under the microscope.

Think Moss-Fangio (Mercedes), Andretti-Peterson (Lotus), Mansell-Piquet (Williams), Prost-Senna (McLaren), Hamilton-Alonso (McLaren) and Vettel-Webber (Red Bull) and you'll see what I mean. Now, as I say, we have Rosberg-Hamilton.

As regular readers of *F1 Racing* will know, Mercedes were my pre-pre-season testing pick to win the 2013 world title. But I assumed then that it would be Lewis who would be doing the winning – not Nico. For one thing, I took for granted the massive Merc money naturally finding its way to Lewis's side of the garage. For another, I've always felt that Lewis is the quicker driver.

Now, of course, I need to readjust. I still think Lewis is the most naturally gifted driver in F1 today, but I have to concede that Nico has now reached Prost-like proportions in terms of his ability to apply himself to the correct priorities and make them work.

I could be way wide of the mark here, but I think that Nico's climb to this highest level of application was triggered by two things last winter. One was Lewis's insistence that Merc switch from Brembo to Carbone Industrie brakes. Up there in Lewisphere,

you don't need the sensitivity afforded by Hitcos or Brembos. When you use a brake pedal as accurately as Lewis, particularly in the very big stops, all you need is *stopping power*. And that is the commodity in which CI deal very well.

For Nico, I suspect, this was good information. He had raced using CI brakes at Williams but at Mercedes he had been using the more compliant pedal of the Brembos. Now he was going to have to re-adapt to CIs. 'Why would Lewis be doing this?' he must have wondered. 'What does he like about the CIs?' Unlike Alonso, who fought Lewis at McLaren by obliging the team to switch from CI to Hitco, Nico used this news as a positive.

Nico in my view has always been a late braker, but what he never appeared to have – until last year – was perfect feel for the brake pedal, ie, perfect feel for the initial application (within the first milliseconds) and for the perfect rate at which to come out of the brakes, given all the sets of variables. Nico was much better than Michael in this regard last year – and over the winter, now with the Lewis incentive, I suspect Nico took this skill to even higher levels. How he did this, I'm not sure: I don't think these sorts of subtleties can be replicated on a simulator. I'll wager, though, that Mercedes' senior performance engineer, Jock Clear, had something to do with it. In any event, Nico was superb, even by Lewis standards, by the time the Australian GP was under way in Melbourne. He looked as though he'd been racing with CIs all his life.

Exit one of Lewis's trump cards.

"Mercedes were my pick to win the 2013 world title. But I assumed it would be Lewis who would be doing the winning – not Nico"

The other issue, I think, has been the amount of in-car information Nico has trained himself to digest and to implement. To watch his on-board footage is to watch a sound engineer mixing a 26-piece band while also adjusting the lights, or a computer nerd smoothly integrating five iPhones with two Macs, a multi-person Skype call and a six-head Google Hangout. Everything happens in its own time with





Nico sprays the champagne on the Silverstone podium. His team-mate Lewis (pictured below in parc fermé with Rosberg in P2), missed out on the win due to a tyre failure, despite starting from pole and putting in an incredible drive

Nico; nothing seems to be rushed (again in the way of Prost). I suspect this has been pretty much a natural progression for the multi-lingual, multi-tasking Nico – but imagine his interest last winter when he heard that Lewis was asking for fewer rotary switches on the Merc wheel, for less confusion! Lewis’s

rationale was simple: he’s a racing driver and he doesn’t want the gadgetry to grow to the point where it interferes with the *driving*. Just the essentials, please.

For Nico, though, this would have flagged another small opening to be exploited. There’s the racing and all that can affect it beyond your

control. And then there are the things a driver *can* control – his fitness, his off-track life, his total familiarity with all the car’s systems and a reflex knowledge of how to use them. Nico, without any doubt at all, has maximised this third point – and it looks as though he’s pretty much on top of the other two, as well. Lewis may be able to focus more on his driving, and producing laps like the one we saw in Q3 at Silverstone, where he was again just brilliant under high-speed braking, but Nico has more with which to play when it comes to managing the variables. And, in so doing, he hasn’t given much away in terms of one-lap pace or full-race consistency.

Lewis will do some more winning in the near future; he’s still *Lewis* after all. But he is having to dig very deep to beat a super-quick team-mate. The interesting thing, now that he’s spent time with his new team, is how he will react to this: will he be self-critical enough to tidy up the areas in which Nico has the edge? Or will he, like Michael in 2012, or Alonso at McLaren, assume that it’s “the car” or “the team” rather than Lewis Hamilton himself?

Pirelli or not, the answer to this, for me, is what the second half of the 2013 season is truly going to be all about. **F1**



PHOTOS: STEVEN TEE/LAT; CHARLES COATES/LAT; MARK THOMPSON/GETTY IMAGES

Read Peter Windsor’s personal recollections of James Hunt on [page 72](#) →

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"Singapore (2012) was a dream weekend for me!"  
**Max Chilton**

"Singapore has been good for F1", adding a new dimension to the sport"  
**Bernie Ecclestone**

"It's spectacular seeing the cars racing so close, at night, in the middle of the city!"  
**Sebastian Vettel**

# WELCOME TO SINGAPORE

The GP2 Series returns to Singapore this year as a support race to the FORMULA 1 SINGTEL SINGAPORE GRAND PRIX. The premier Formula 1® feeder category visited Singapore for the first time last season.

Sprint race victory in 2012 went to Brit Max Chilton, with Holland's Giedo van der Garde claiming the sprint race win. Both of these young drivers now compete in Formula 1® (Marussia, Caterham), following in the footsteps of other former GP2 stars such as Nico Rosberg, Lewis Hamilton, Pastor Maldonado, Nico Hülkenberg and Romain Grosjean.

The Porsche Carrera Cup Asia is more established in this part of the world, after a decade of competing here. Many of the current stars hail from Europe and New Zealand however, and Earl Bamber, Martin Ragginger et al will look to establish themselves at the top on a Marina Bay Street Circuit that looks a little different to last season...



### NEW CHALLENGE FOR 2013

Last year's F1® race winner Sebastian Vettel (left) will find Singapore's Marina Bay Street Circuit a different proposition this season.

Sections of the track, including Turns 1-3, 5 and 8 and the high-speed Esplanade Drive are undergoing minor resurfacing. This will allow drivers to attack the circuit without the need to conserve their energy at this toughest of Grand Prix challenges, a race that pushes competitors to their limit.

The Singapore Sling corner (Turn 10) has been reconfigured this year so the cars will now negotiate a flowing left-hander before accelerating towards the Anderson Bridge. Who will adapt to the new track quickest?

Visit [www.singaporegp.sg](http://www.singaporegp.sg) for your tickets.





Dieter Rencken

# POWERPLAY

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

## THERE'S STILL NO SIGN OF A DOCUMENT GOVERNING THE RIGHTS OF F1'S MAJOR PLAYERS

Sources claim Ecclestone believes teams have ceded power to FOM by signing individual commercial agreements... but Marussia have yet to see any agreement

For the past year, most press releases issued by the FIA, following its World Motor Sport Council summits, have included this paragraph: "The FIA President and Commercial Rights Holder advised that negotiations regarding the Concorde Agreement were close to conclusion with the intention that the contract between the FIA and FOM will be signed in the near future."

In fact, following the final 2012 WMSC meet in Istanbul, sources advised that FOM representative, Bernie Ecclestone, had stated that a successor to the 2010-2012 Concorde Agreement was 'just days away'. Yet seven months on, the world's most expensive sport still operates without a formal structure.

Following the June WMSC session, held in the palatial surrounds of the Goodwood Estate in Sussex, the latest word was that the 2013-20 agreement could be signed by the end of July. Really? The Concorde Agreement outlines commercial, technical and governance obligations of the sport's big players. Originally a two-way document between the governing body and the teams, it mutated into a three-way agreement – FIA, teams and FOM – following the sale of the sport's 100-year commercial rights by the FIA to FOM in 1999. Both agreements were signed by all three parties, with teams adding individual signatures.

Contrast this with the latest statement from the WMSC, which specifies "the contract between the FIA and FOM" – therefore indicating that teams are to be omitted from the process entirely. This reduces them to bit players, despite collective investments and manpower levels that dwarf those of the governing body and commercial rights holder combined.

The outgoing Concorde was driven by the teams, who ensured input into the governance process was commensurate with their status (for example granting them vetoes via majorities in Sporting/Technical Working Groups and the Formula 1 Commission). And

it provided the lever for them to cajole FIA and FOM into accepting their terms.

Its existence gave rise to in-built checks and balances that gave the sport greater stability in 2009-2012 than at any other period – but only after the teams, acting collectively as FOTA, threatened a breakaway series.

It couldn't last. In 2012 Ecclestone negotiated inequitable commercial terms with ten teams, leaving Marussia and the now-defunct HRT out in the cold. Apart from paying top-ten premium incomes, the deals outline a revised governance structure that gives primary voting power to four of the top six, and peripheral rights to two. This structure exists as an alternative to a full-on F1 Commission and is consistent with the *modus operandi* of CVC Capital Partners, the investment fund with a majority share in FOM. Unsurprisingly it hasn't found universal favour.

In 2012, the process was redefined, with the group of six forming a 'Strategy Group', which passes matters arising to a condensed F1 Commission. This escalates carried motions to the WMSC for ratification and implementation. So the Sporting/Working Groups have effectively been reduced to mere committees. In addition, sources claim Ecclestone believes teams have effectively ceded power to FOM by signing individual commercial agreements. This leaves Ecclestone free to negotiate directly with the FIA. If this is the case, the entire Concorde process faces a rocky road, as the teams insist they must be included in discussions.

When it was put to a team principal by this column that the Concorde could be signed during July his response was a surprised: "What? But we haven't even seen a draft!" Another said: "No way can the Concorde be legal unless all teams have signed it". A third stated: "I don't see how it can be unless we all agree."

Any assumption that signatory teams did indeed cede their rights to FOM raises the thorny question of Marussia, which has yet to see any form of commercial agreement. So the Russian-owned team, whose sporting rights are identical to those of a McLaren or Red Bull, could not have granted FOM any powers. At best then, a new Concorde would still need to be signed by the FIA, FOM and Marussia – and it seems unlikely the team would commit to a signature in 30 days and certainly not without referring the entire 150-page document to its legal team.

That being so, the remaining ten teams, anxious not to be outdone by a minnow operation, are likely to scurry for signing rights, for Ferrari simply cannot afford to be overshadowed by 'the other red team'.

The likely outcome? That the minutes of September and December's WMSC meetings will contain the recurrent strain: 'signed in the near future'. In the meantime, F1 continues to fly on autopilot.



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# VALTTERI BOTTAS ROOKIE YEAR

The Williams racer reveals all about his first season in F1

**WE STARTED  
OFF SO  
WELL IN  
CANADA...  
THAT'S  
INSPIRED US  
ALL TO DO  
BETTER**

**It has been a difficult** start to my F1 career, but last month's Canadian Grand Prix was an incredible highlight that I'll never forget. The team and my race engineer Jonathan Eddolls did a fantastic job in very difficult conditions, making some good calls that allowed me to put my car third on the grid. It was just a shame we couldn't convert that performance into points on Sunday. However, it gave everyone a real boost after a difficult couple of months.

I said in the build-up to the weekend that because we had a number of updates coming onto the car, if we did score points, I would jump into Montréal's old Olympic rowing lake behind the pits after the race...

I'd never driven at the Circuit Gilles Villeneuve before this year, and my only experience was a couple of half days in the simulator to learn the track. That's our standard preparation to ensure everything is correlated and to try a few new setups ahead of the race.

When I finally drove the circuit in Friday practice, it didn't take me long to learn it. I have to say, it's a great place, a little bit like a big karting track. I soon found that for a really quick lap you need to take the car as close to the wall as possible on the outside of some corners – but not to overdo it.

On Saturday the weather was very changeable and that made track conditions tricky. In both Q1 and Q2 I finished fourth in both sessions, which, if I'm honest was a bit surprising. Prior to Canada, the highest position I'd qualified this year was 14th – so to get into Q3 was a great feeling.

It seemed we were always able to find a good place on the track, without any traffic. We were always on the right tyres with the right pressures at the right time,

and I was happy with the balance of the car for the whole of qualifying.

When we ended up third overall, Jonathan shouted to me on the radio: "P3, mega job!" and I was cheering inside the cockpit. I was really excited and very happy. No one was really expecting us to finish in that position, but I knew the lap was going to be

strong, because of our performance in Q1 and Q2. Still, it was such a nice surprise to finish third overall.

When I pulled into parc fermé and saw all the mechanics with smiles on their faces it was a great feeling. They were so happy and I could see how much it meant to them. Then I stood in the pitlane to pose for the photographers. Lewis Hamilton and Sebastian Vettel said to me: "What are you doing here?!"

Sebastian congratulated me in the press conference, which was nice. Of course I would rather have been P1, but I didn't say that to him. One day, maybe next time.

After the main press conference I said some words in Finnish and mentioned that my father, Rauno, was at the track and that it was his birthday. He hasn't visited many races this year, but decided that because he was celebrating his 51st birthday he would come

"We had a number of updates coming onto the car for Canada, so I said that if we did score points, I'd jump into the Olympic rowing lake behind the pits after the race"

to Montréal. So we had double reason to enjoy a nice dinner together in town at The Keg Steakhouse on Saturday evening.

It was a shame our performance in the dry on race day wasn't as strong. Obviously we brought some updates, but it was clear that the other teams had made better progress, so we weren't able to stay at the sharp end of the field. Still, I had a great scrap with Fernando Alonso in the opening laps. I managed to defend my position from him a couple of times, but once he came past I couldn't keep up with him. It was great to be able to race at the head of the pack and see only a couple of cars in front of me during the race. Unfortunately, I didn't have the speed to keep up and sadly dropped out of the points to finish 14th. It was our best chance to get a great result and although we maximised our strategy, we just didn't have the pace in the dry.





Even so, that qualifying performance has given everyone at Williams a desire to be back in that position again soon. We want to improve and next time try for first place. The whole team enjoyed that feeling and it's given us the extra motivation to repeat the feat. It's been great for me to get such a strong result in what was only my seventh grand prix, but it looks as though I'll have to wait another year before jumping into the Montréal rowing lake...

The top three qualifiers at Montréal:  
"Lewis and Sebastian said to me:  
'what are you doing here?!'"



PHOTO: STEVE ETHERINGTON/LAT

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## ★ STAR LETTER

Fans shouldn't have revelled in the misfortune of Vettel and Red Bull at Silverstone



### A great event, but please: no booing!

Having just returned once more from an absolutely fantastic British Grand Prix, I wanted to highlight what an absolutely brilliant experience it was in almost every respect.

Great camping. Great seats. Great company and an amazing race. There was a wide variety of entertainment both inside the circuit and at the campsite. I would recommend it to everyone.

There was just one aspect that left a sour taste and this was some inappropriate behaviour towards Sebastian Vettel and also towards Red Bull, with some fans booing both at the racetrack and also at the post-race party. I completely understand cheering for the British drivers, but found it highly un-British to hear booing of select others. F1 provides us all with a great spectacle – lets not allow behaviour associated more with some other sports to change the carnival atmosphere we all love.

**Russell Lines**

*By email*




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### F1 doesn't deserve Pirelli

As an F1 devotee since the 1990s I've endured some dull times, but through it all I've always looked forward to (get this) *the racing*: one driver passing another driver, whether for first position or 12th.

I can't say I get too excited about the tyres. That said, I fully support Pirelli leaving F1 to wallow in its own self-pity as of 2014. The fact that we now talk about rubber compounds *ad nauseam* every weekend is beyond ridiculous.

I understand the technical challenge of F1 is an important part of the allure, but let's face it: nobody watches F1 to hear the drivers are holding back 20 per cent of their maximum efforts just to 'save tyres'. Maddening!

Above all, Pirelli have tried to comply with the demands F1 has made of them, and have done just what was asked of them. You want artificially enhanced racing due to accelerated tyre wear? You've got it.

Pirelli should quit F1 because they are not getting anything positive out of this charade. They are dumped on mercilessly by everyone including championship leaders and they are unable to do any reasonable testing to appease the vociferous prima donnas of the pitlane. F1 doesn't deserve them.

**Kerim Sursal**

*Toronto, Canada*

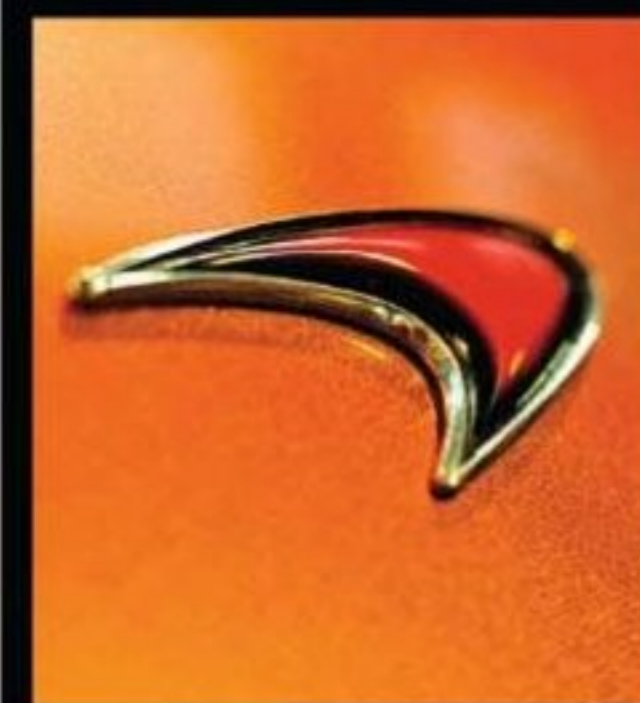
### First priority: make tyres safe

The nonsense about tyres must stop. If the reason for the rapid degradation is just to create more pitstops, address that directly: eg 'each car must make at least three pitstops in which all four wheels must be changed'. Tyres can then be made safe and fit for purpose.

**JP Trevor Hunt,**

*Somerset, UK*

## NEXT MONTH...

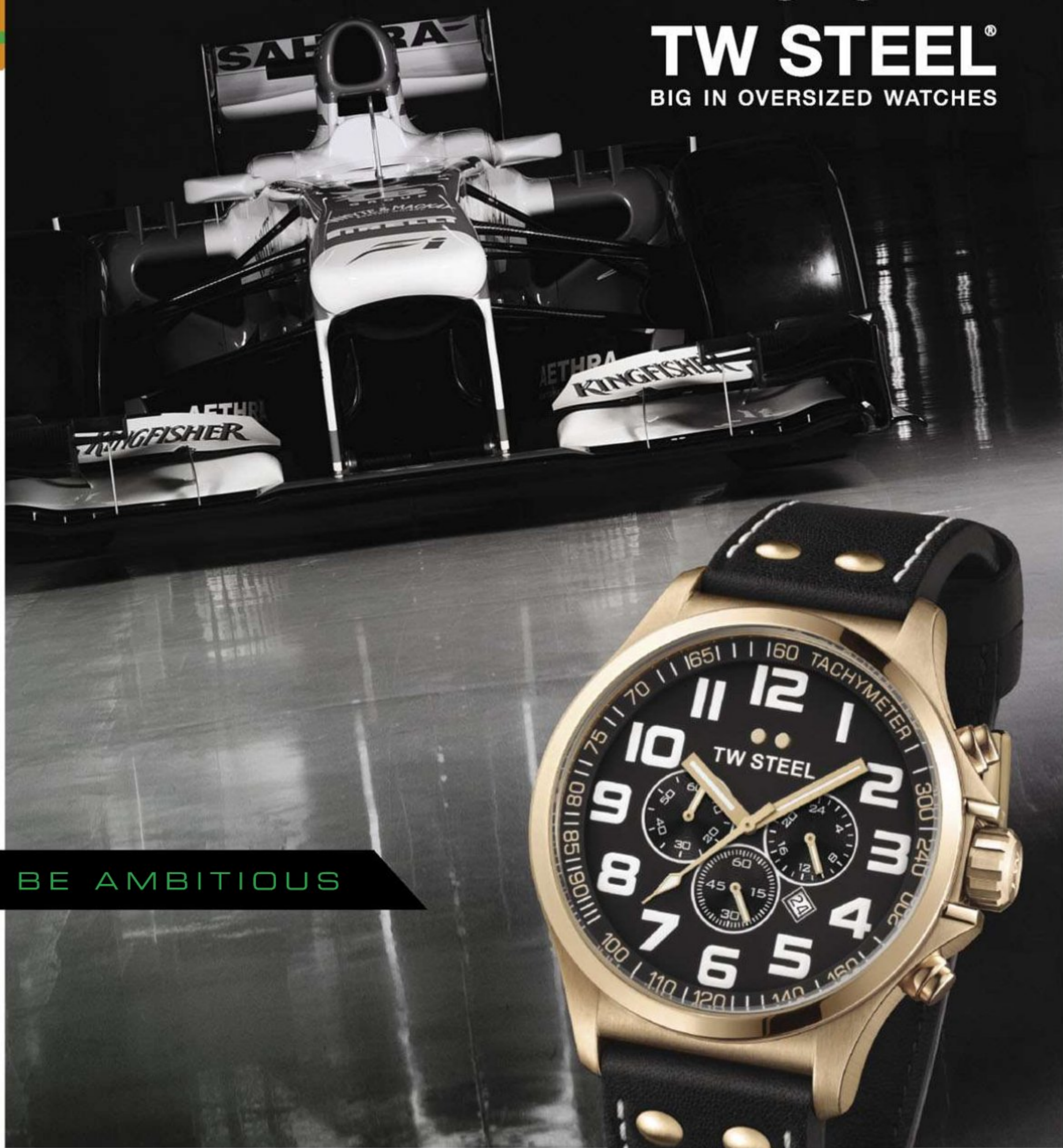


### 50 YEARS OF McLAREN

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# Now that was a car



## No 18 The Benetton B191

Yet another groundbreaking winner from the pen of John Barnard



**Designed by former McLaren** and Ferrari technical director John Barnard for the Benetton F1 team, the Cosworth-powered B191 was involved in a number of memorable racing moments during its season-and-a-bit of active service.

Before Pirelli's return to the sport as sole tyre supplier in 2011, its last Formula 1 victory came at the 1991 Canadian Grand Prix. This was the race where Nelson Piquet in his B191 inherited the lead on the last lap after Nigel Mansell's Williams slowed to a halt on the back straight, virtually within sight of the chequered flag.

That victory was a source of great pride for a delighted Barnard, who was not at the race and announced his departure from the team a week later. He remarked after the event: "Every car I had designed up to that point had won in its first season, and when Piquet won in Canada 1991, it maintained my record..."

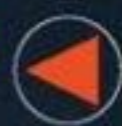
The B191 (the revised, Goodyear-shod B191B that competed in the first three races of 1992 is pictured above) caused a stir when it first appeared because of the height of its nose relative to the front wing. Although the difference wasn't as stark as that created by the high-nosed Tyrrell 019 that had appeared a year earlier, the concept set a trend in Formula 1 car design that continues to this day, opening the airflow to the underfloor.

"Everyone was jumping up and down about the nose of the Benetton B191," said Barnard. "It was similar in concept to that of the Tyrrell 019, swept up at the front to improve the aerodynamics, but I didn't think it needed the gull-wing arrangement used by Tyrrell."

Benetton used curved mounting pylons which freed up the middle of the wing and made a more solid mounting point. The intention of the raised nose with this twin-pylon support was to allow a cleaner

WORDS JAMES ROBERTS PICTURES TIM KENT

## BENETTON B191 TECH SPEC



<b>Engine</b>	3.5-litre Ford HBA5
<b>Layout</b>	V8 (72°)
<b>Power</b>	730bhp
<b>Maximum revs</b>	13,800rpm
<b>Engine weight</b>	120kg
<b>Wheelbase</b>	2,880mm
<b>Transmission</b>	Benetton 6-speed manual
<b>Fuel and oil</b>	Elf
<b>Tyres</b>	Pirelli & Goodyear
<b>Notable drivers</b>	Michael Schumacher, Nelson Piquet, Martin Brundle



flow of air under the car, which improved both front-end grip and the efficiency of the diffuser. In addition, the car's large rear wing helped to provide plentiful rear-end traction, which, in turn, helped to produce higher cornering speeds.

The gearbox was transversely mounted, but the software electronics weren't up to scratch, so a manual gearshift lever was used instead of an electronic paddleshift.


"The chassis was interesting," said Barnard. "For the most part it was conventionally moulded from the outside, but the front third was moulded from the inside, allowing us to mount things like pedals directly onto the monocoque without complicated machining. We then bonded a thin aerodynamic skin to the outside."

For 1992 Benetton returned to the Goodyear fold, and their interim car, the B191B, enabled young hotshoe Michael Schumacher to

demonstrate his remarkable racing skills. Indeed, the B191B pictured above, chassis 06, was the car in which he scored his first ever Formula 1 podium – third at the 1992 Mexican Grand Prix behind the dominant Williams-Renaults of Mansell and Riccardo Patrese.

"The Mexican circuit was a challenge in an F1 car," Schumacher recalls. "I liked it in one way, because it was very different from all the others, but you had to watch carefully. It was very bumpy. It was also very slippery because so much of the track had a new surface. It was a dangerous place to drive."

"The Benetton was extraordinarily good there – especially in terms of aerodynamics and setup. In fact, the aerodynamics were a strong point of the car, rather like the B195 of 1995. The B191B handled the bumps very well."

A landmark design, this Benetton, in many ways. 



# ACTION MAN

*Rush* will bring Formula 1 to the big screen in a way no film has ever done before. On the eve of its release, *F1 Racing* talked to director Ron Howard about his latest blockbuster

**WORDS** ANTHONY ROWLINSON **PORTRAITS** ANDREW FERRARO/LAT





# If ever there was a story that didn't need the Hollywood treatment, Hunt vs Lauda, 1976, is it.

Any reader of *F1 Racing* will know it as the season that had it all: underdog vs champion; England vs Germany (well, German-speaker); McLaren vs Ferrari; playboy vs automaton. It passed into legend and provided a 16-race narrative that F1 has never matched. But that epic contest took place 37 years ago and is on the cusp of fading into sepia with the advancing years of those who were there. Niki Lauda is 64; former team boss Luca di Montezemolo 65; Hunt died 20 years ago, and his team boss, Teddy Mayer, in 2009. So it's a tale ripe for the retelling and not only that, one ripe for a retina-searing makeover, Hollywood-style.

Enter Ron Howard. To one generation forever Richie Cunningham of *Happy Days* fame, he has since grown into a Hollywood A-list director, with a starry list of blockbusters (see opposite) to his credit: *Splash*, *Cocoon*, *Parenthood*, *Backdraft*, *Apollo 13*, *A Beautiful Mind*, *The Da Vinci Code* and *Frost/Nixon*, to name but a few.

*Rush*, due for release in September, is his latest, and it promises to present the drama of F1 action with a widescreen wow-factor even the real thing can't achieve. It is not, however, a definitive account of a season more sinuous than Spa. Rather, it aims to bring out the characters of the two protagonists who made the season what it was, while evoking the wide-lapelled, louche, deadly, spirit of the age. Absolute authenticity, says Howard, chatting to *F1R* in a private room at London's Charlotte Street Hotel, is impossible to achieve in a 120-minute movie format designed to drill audiences between the eyeballs.

"The first film I did that really tried to be authentic was a movie about journalists called *The Paper*. I really wanted to get the vernacular

right and I was tossing and turning and worrying about it... until I realised it was impossible to convey everything I was learning about in a movie built on these particular scenes that needed to move quickly from one to another.

"So I went back and started watching movies about movies and realised they never get it right. It's impossible. You can't fully express, in an authentic way, a complicated human undertaking. At least not in a concise enough way to let it continue to be drama. So what you try to do is to get certain details really right and allow other things to be shorthand or hinted at."

It's here that purists' antennae have twitched, fearing fast and loose play with history. There's word, for example, that Hunt and Lauda are depicted as cut-throat rivals, rather than as the racing buddies they truly were. And that moments of real drama have been unnecessarily gilded for the sake of silver-screen intensity. Does '76 need any embellishment, after all? Isn't it, and the heroes it bred, already bigger than anything Hollywood could conjure?

Howard seeks to reassure: he and his team were acutely aware, he tells us, that while a casual film-goer might only be able to tell a Hunt M23 from a Lauda 312T2 by their different colour schemes, hardcore F1 fans would delight in spotting even the most trivial blooper.

"The challenges were similar to what we experienced with *Apollo 13*," he says, "in that achieving authenticity was vital – and vital, actually, to the entertainment value of the movie. Part of what we're aiming to do is transport you into a very intense and interesting moment, a serious moment. That's a similar challenge to *Apollo 13*. But it presents a technical challenge as

well: you can understand the moment, but how do you recreate it? It's not something you can just go and shoot, because it doesn't exist."

Help came from a number of sources, most pertinently Lauda himself, who adopted a mentor role to his *Rush* avatar, Spanish-German actor Daniel Brühl. "It was great that Lauda spent time with Dan," Howard enthuses, "just as [Apollo astronaut] Jim Lovell did with Tom Hanks. And it was incredibly helpful, as you can imagine. Dan literally had Niki on speed-dial and when I would go up and discuss a moment about racing, especially things like the pre-race moments on the grid – the specific sequence of events and Niki's way of going about things – Daniel would call Niki and ask him those details. 'How did you pull on your gloves?' Stuff like that. 'When did the balaclava go on?' 'Did the helmet go on before or after getting in the car?'"

Characteristically there were Lauda brickbats along with the bouquets: "Yeah," admits Howard, "the biggest one was early on, when he saw a draft of the script. It said: 'Niki gets into the Ferrari, turns the key and the engine roars.' He threw his hands up in the air and said: 'It's terrible. It's all wrong! You're idiots!'"

"Peter Morgan, the scriptwriter, said: 'What's wrong?' and Niki blasted him: 'F1 cars have no key! It's a disaster!' So Niki himself helped us catch one or two things..."

Working closely with Lauda gave Howard a privileged insight into the working methods of a man who was a winner not only on track (three world titles, 25 wins), but went on to achieve significant business success in the airline industry. The experience allowed Howard to draw parallels between auteur and object. →

# RON HOWARD'S HOLLYWOOD HITS

From child star to Oscar-winning director

**HAPPY DAYS** (1974-84)

Howard was not quite 20 when he was cast in nostalgia show *Happy Days* as all-American teenager Richie Cunningham. He was already familiar to US TV audiences as a child actor, with parts in *The Fugitive*, *Dr Kildare* and *Lassie*, as well as an eight-year run, from the age of six, in *The Andy Griffith Show*.



**GRAND THEFT AUTO** (1977)

Howard's real ambition was to be a director, and while still appearing in *Happy Days*, he cut a deal with B-movie producer Roger Corman. In exchange for Howard's acting services on 1976 film *Eat My Dust*, Corman financed – on a shoestring budget – Howard's directorial debut, a low-budget rom-com that he co-wrote with his father, Rance Howard. Shooting wrapped in two weeks and the film made a modest profit.



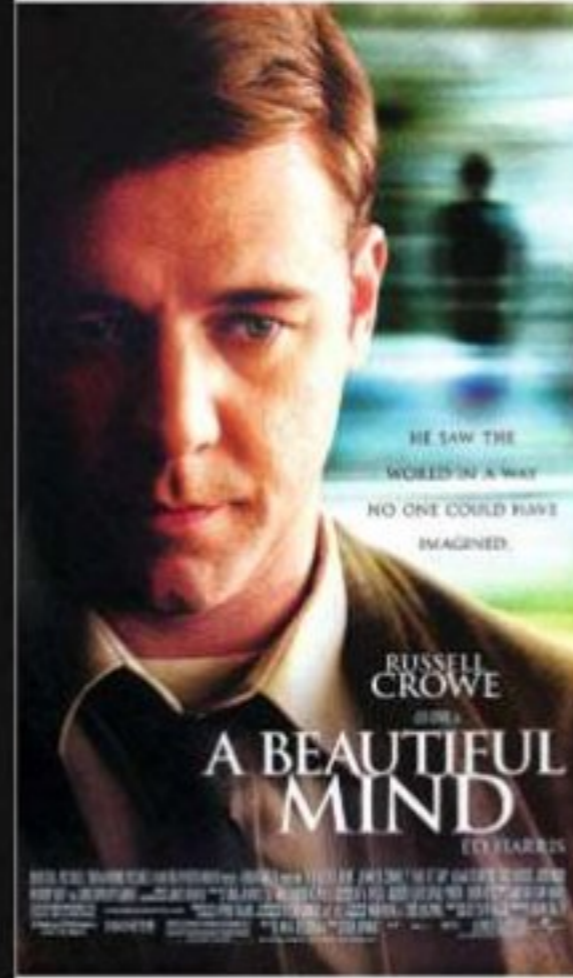
**COCOON** (1985)

Howard broke into the mainstream in the mid-1980s, directing hits including the Tom Hanks/Darryl Hannah mermaid comedy *Splash*. But it was *Cocoon* that demonstrated his abilities beyond broad-brush comedy. He effectively wrangled a potentially silly plot (a group of senior citizens regain their youth after trespassing in a swimming pool incubating alien cocoons) into a box-office hit that grossed over \$76million and won Oscars for Best Supporting Actor (Don Ameche) and Best Visual Effects.



**BACKDRAFT** (1991)

Howard's eighth big-screen outing garnered Oscar nominations for its special effects and sound, but in the context of his career it's more significant in that it has a harder edge than his previous films. The story of two firefighter brothers, their dysfunctional relationship and their investigation into an arsonist is garlanded with clichés, but Howard marshals the action sequences with great proficiency. It was a hit with audiences, although critics weren't yet ready to accept Howard as a heavyweight director.



**A BEAUTIFUL MIND** (2001)

Ten years after *Backdraft*, and with more hits under his belt – from the lightweight *How The Grinch Stole Christmas* to the more hard-hitting *Apollo 13* and *Ransom* – Howard finally became an Oscar-winning director with this biopic of the schizophrenic mathematical genius John Forbes Nash Jr. While the film was criticised in some quarters for glossing over certain aspects of Nash's life, it was close enough to the source material to scoop the Best Adapted Screenplay Oscar, as well as Best Picture, Best Director and Best Supporting Actress (for Jennifer Connelly).



**FROST/NIXON** (2008)

Howard first worked with *Rush* writer Peter Morgan on the real tale of the encounter between disgraced ex-US President Richard Nixon and ambitious TV presenter David Frost. Howard resisted the temptation to simplify a complex tale into a good vs evil yarn; Frank Langella's Nixon is shifty and dishonest, while Michael Sheen's Frost is a preening chancer out of his depth. Ironically, considering Howard's early reputation as a director of knockabout feel-good films, it lost out at the Oscars to *Slumdog Millionaire*.



INSETS: REX FEATURES; ALAMY; DREAMWORKS/UNIVERSAL/THE KOBAL COLLECTION; UNIVERSAL



**“James and Niki were wildly entertaining characters who pursued their lives and their careers in different ways”**

“My approach is a lot more Lauda,” he notes. “I have never considered myself a natural talent. So for me there’s kind of an ‘on’ switch and an ‘off’ switch. If it’s ‘on’ it takes all the concentration I have and all I can muster to try to rise above the norm. But James was a natural talent. I don’t think I would ever fully understand that kind of trust in your own athleticism, your own talent in that moment, to just carry you to victory. But all interesting characters are paradoxes and James, of course, was famous for throwing up at the start of every race.”

Notable foibles such as this infamous Hunt reflex were brought to *Rush* from the likes of Alastair Caldwell, Hunt’s McLaren team manager. Caldwell was retained as *Rush* technical adviser and, less formally, as a touchstone, to ensure the desired ’76 mood could be recaptured. Also vital was the help of the historic F1 racing community, which Howard credits warmly for the loan of cars and period kit, to make possible filming of the action scenes for which *Rush* is most likely to be celebrated.

But more than any of this nitty-gritty, it’s the human drama of two contrasting lead characters that Howard and Morgan [who also collaborated on *Frost/Nixon*] have sought hardest to portray. “James and Niki were just wildly entertaining


characters,” Howard says, “and characters that surprise you in the way they entertain you. Both these guys pursued their lives and their careers on the track in different ways in pursuit of greatness and that’s what’s entertaining about it. And so while *Rush* works for the action on the track, it also describes what it is they’re pursuing. And then if there is a surprise in the movie it’s how engrossing it is to see the different approaches incredibly talented people can take to try to get to that goal.”

That central strand, the pursuit of glory, is what lent the film its title, Morgan choosing it over something more obvious, such as *Hunt/Lauda*. “It’s appropriate,” Howard reckons, “because an important part of the story that broadens it as an entertainment beyond a historic recreation of a great time in racing, is the

different ways people pursue greatness. In this case, along with achieving brilliance, it’s feeling that rush and feeling excitement. And victory. It’s the speed, but more than anything it’s what you can attain with that speed. The respect you can garner. And the excitement you can generate.”

Howard speaks with great passion for a man who makes no pretence of being a motorsport fan (“baseball and basketball – they’re what I follow”) and it’s evident that the thrill of the subject proved increasingly addictive the longer he spent immersed in it. At last year’s US GP – a race he was not scheduled to attend on publicity duties – he suddenly felt “such a pang at not going” that he convinced himself and his media team that it was essential he attend.

The challenge, now, for *Rush*, is to prove as irresistible to cinema-goers as its narrative did to Howard – although he maintains box-office returns are not the sole measure of success. “If people who know and love the sport respect what we’ve put on screen and people who don’t know the sport are engaged by the characters and understand it, I’ve done my job,” he concludes. “We’ve done everything we could to make it a cinematic experience and transport people both emotionally and viscerally.”

Go judge for yourself. 

**Actor Daniel Brühl (left) as Niki Lauda, on the set of *Rush* with director Ron Howard (right)**



INSET: ©UNIVERSAL PICTURES

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# MAKING MOVIE MAGIC

Bringing the sights and soul of 1970s F1 to 21st-century cinema screens proved a technical challenge to rival that of the sport itself. **Richard Williams** delves into the recreation of Formula 1 history

PICTURES STUDIO CANAL AND RON HOWARD

**James Hunt's two sons** never saw him race. But there they are, Tom and Freddie Hunt, born several years after their father's retirement from F1 and now grown men, in the front row of the grandstand at Brands Hatch, watching him take the chequered flag to win the controversial 1976 British Grand Prix, one of the most dramatic moments of his world championship season.

"Tom and Freddie came to visit us," explains *Rush* co-producer Andrew Eaton. "If you freeze-frame the scene, you can see them. Which was quite weird for them, watching someone recreate a race that their dad won."

The making of *Rush* involved many such poignant moments, another of which involved the Hunt family. In 2011, two of James's brothers, Peter and David, had not greeted the news of the project with enthusiasm. "When someone's dead, they're in the public domain," Eaton says, with an apologetic shrug. "We approached the Hunts early on – Peter has unfortunately died since then – and there was a dinner. They were very antagonistic. I think they thought it was going to be all about how many air stewardesses he had sex with. I understood their sensitivity. We just said, 'Look, we're going to crack on and let's see how you feel about it.'"

The finished film does not disguise the fact that Hunt occasionally had sex with flight attendants. And nurses. And others. Still, earlier this year, once filming was complete, a special screening was arranged. Eaton was present. "It

was for the relatives – his mother and the whole family, about 30 of them," he says. "I sat in – unless you're in the room, you never know what people truly think. After about 20 minutes I was thinking, 'This was a big mistake' – sitting in a room with a woman whose son is dead, and all his relatives. I felt I shouldn't have been there. But they seemed to respond to it very well."

There were no such problems from the other side of the film's central rivalry. Niki Lauda had been on board almost from the start, when the British scriptwriter Peter Morgan – best known for *Frost/Nixon*, *The Queen* and *Tinker Tailor Soldier Spy* – got hold of an idea that had already been kicked around by producer Jeremy Thomas and director Paul Greengrass. Morgan lives in Vienna with his wife, Lila Schwarzenberg, who is an Austrian princess and a friend of Niki Lauda. Although the writer knew nothing about motor racing, he became intrigued by the story and wrote a script on spec.

"Someone had approached Peter to write a '70s story about Sir Jackie Stewart," says Eaton. "Peter didn't think that was such a great story. He'd met Niki a few times, done his own research and reckoned the Hunt/Lauda story was much better. But Peter never gave the script to Niki to read, and we never sought Niki's approval. It was only technical things – details of helmets and overalls, and the things they said to each other. Peter said: 'I'm not going to get your approval – we're going to tell it the way

we think it is.' Everyone has to accept that you're trying to create a dramatic story.

"Some of the stories Niki told Peter, you wouldn't dare make up. At the Nürburgring, on the day he had the accident, a fan asked for his autograph then asked him to add the date. Niki said 'Why?' And the fan said, 'In case it's your last ever.' Ron Howard, the film's director, said if someone had written that story without it having happened, people just wouldn't believe it."

Howard's arrival, once Greengrass had opted out, was key to getting the project off the ground. "That gave it more status," Eaton says. By then, Eaton, having just finished a film with Morgan, had joined the team, and they had approached Eric Fellner of Working Title, the production company behind *Senna*. Fellner is a friend of Morgan, while Howard had directed Morgan's screen adaptation of his play *Frost/Nixon*. The pieces of the jigsaw were coming together.

The reaction within F1 was initially sceptical. "We went to see Bernie Ecclestone," Eaton says. "He told us that once a year someone comes along and says, 'I'm going to make an F1 movie,' and it never happens. There was an element of: 'Come back and see me when you've done it.'"

Since the story is set in a period pre-dating Ecclestone's control of F1, his go-ahead was not required. "It wasn't an issue," says Eaton, "but Ferrari and McLaren are so prominent and there were definitely issues about getting them on board." Here, Fellner's acquaintanceship with →



## The devil's in the detail

Original cars were sourced, replicas built, and archive footage blended with new...



Ron Dennis and relationship with Ferrari, whose road cars he collects, helped smooth the way.

Fellner took the project to Universal Pictures, the £50m budget was raised, and a cast and crew assembled, with lead roles assigned to Chris Hemsworth and Daniel Brühl. As with all attempts at making a film set in the world of motorsport, problems posed by the technology played a major part in planning and execution.

Jim Hajicosta, a motorsport fan with some 30 years of experience as a film accountant, became a co-producer and took charge of sourcing the necessary hardware. Helped by Stuart McCrudden of Historic Formula One, he assembled a grid of 24 original 1976 grand prix cars. Owners of priceless machinery were cajoled into co-operating – “I’m told it’s the first time the two six-wheeled Tyrrells have been together since 1977,” Eaton says – and some were persuaded to allow cameras to be fitted, with extreme care. Among the drivers recruited were Jochen Mass, the former McLaren F1 pilot, and Chris Drake, the well-known historic racer.

Hajicosta also commissioned several replicas, based on various F2 chassis, which could be driven by the main actors “If you look closely, you can tell they’re not the real thing,” Eaton admits, “but for driving in or out of a pitlane, we get away with it. It meant we could do a shot with Chris Hemsworth coming into the pits and when he flips up his visor, it really is him.”

At a cost of £70,000-£100,000 each, two replica Heskeths and a Brabham came from WDK Motorsport in Stockbridge, Hampshire, three replica Ferraris from Rob Austin Racing in Pershore, Worcestershire, and a couple of BRMs, a Penske and a March from Mirage Motorsport in Norfolk, who built their cars from scratch, using Rover V8 engines. They are now in storage and will probably be sold – “So we’ll get some of our money back,” says Hajicosta, the accountant in him momentarily taking over from the fan.

The film’s racing sequences include events at Crystal Palace, Kyalami, Interlagos, Brands Hatch, the Nürburgring, Paul Ricard, Monza, Watkins Glen and Fuji. Since it would not have been practicable to visit them all (and since the Crystal Palace track has disappeared altogether), cinematic ingenuity was used to blend archive footage with film newly shot at venues including Snetterton, Donington Park, Brands Hatch, Cadwell Park and Blackbushe Airport.

At the old airfield, whose last moment of glory came when Bob Dylan and Eric Clapton played an open-air concert there to an audience of 200,000 in 1978, one side of the track was mocked up to represent the start at Interlagos, while the other was made to resemble Kyalami; the cars ran first in one direction, then in the other, with cameras switching sides. Brands doubles for Paul Ricard, where Lauda’s BRM test is shown (“Anyone who knows Brands will

recognise that grandstand,” Eaton admits), and also for Monza. Cadwell Park becomes Crystal Palace for an F3 battle during the early careers of the two protagonists at Crystal Palace (although Howard has used artistic licence here: Hunt’s F3 scrap involved Dave Morgan, not Niki Lauda), while a hilly section of that circuit masquerades as part of the old Nürburgring Nordschleife. Blackbushe, Snetterton and Donington double for sections of Fuji during the climactic sequence in which the title is settled. Original helicopter shots from Monza and the Nürburgring are used to set the scene, depicting crowds thronging the circuits: “Ron wanted to make people aware of what huge events these were,” Eaton explains.

Big crashes are a key feature of motor racing films: think of a BRM P261 being catapulted into the Monaco harbour in John Frankenheimer’s *Grand Prix*, or a Ferrari 512 exploding during Lee H Katzin’s *Le Mans*. Given its subject matter, *Rush* is no exception. For Lauda’s near-fatal crash on the Nordschleife, archive footage was blended with new film taken of the exact spot, the fast left-hander approaching Bergwerk, into which digitally scanned 3D images taken from a real Ferrari 312T2 were inserted. And since an accident that took place in August had to be filmed in April, the lush foliage of the Eifel mountains was, as Hajicosta puts it, “probably greened up a bit” in post-production. →



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## HUNT LAUDA RUSH SPECIAL



**Clockwise from above: Hemsworth and Brühl in their replica cars; Hemsworth very much in character as James Hunt; director Ron Howard (left) with screenwriter Peter Morgan (right)**

In general, though, the crew were lucky with the weather. They needed rain for the Fuji and Nürburgring sequences, shot at various English locations, and got it, although Eaton has a vivid memory of a day when they were filming the Fuji starting grid with 150 extras, most of them Japanese, and needed help from the special effects department. “The first shot of the day was 8.30 on a Thursday morning, and they said, ‘Okay, turn on the rain’ – and these poor people realised their entire day was going to be spent standing there getting soaked. One woman was taken to hospital suffering from exposure.”

The recreation of period signage and branding required care. “It’s tricky,” says Eaton. “You’d think brands would be going, ‘Yeah, great!’ But you’ve got things like Niki’s helmet flying off, and no manufacturer wants to be identified with that. But the McLaren guys’ faces lit up when they visited and saw we had Marlboro branding on the cars. There was a lot of discussion with lawyers about that; it’s particularly sensitive in the US. When you buy the model cars now, there’s no tobacco advertising on them. But we just said, when we’re going to such lengths to get everything right, it would be ridiculous to take the Marlboro branding off the cars. We did take it off some of the helmets, because they’re featured in the close-ups so much and we thought we should draw a line.”

The man charged with capturing all this on a multiplicity of cameras – up to 35 for the most complex sequences – was Anthony Dod Mantle, an English-born, Danish-based cinematographer whose skills had previously been used on Danny Boyle’s *Slumdog Millionaire* and *28 Days Later*,

Lars von Trier’s *Antichrist* and *Dogville* and Thomas Vinterberg’s *Festen*. “The Japanese send him every new camera they make,” Eaton elaborates. “They say, ‘This is what we think it can do – now tell us what it can really do.’”

The film is certainly a showcase for Dod Mantle, as well as for Mark Coulier, the prosthetics specialist who won an Oscar and a BAFTA for turning Meryl Streep into *The Iron Lady* and was hired to undertake the task of recreating the dreadful head and facial injuries suffered by Lauda at the Nürburgring. Likewise for Jody Johnson, the visual effects supervisor, whose previous credits include *In Bruges* and *The Best Exotic Marigold Hotel*. In Eaton’s view, the specialist skills and ingenuity of the film’s British technicians reflect those found in F1.

“We have a bit of a problem with low self-esteem in this country,” he says, “but when you go to somewhere like the McLaren factory, you realise we are very, very good at things that we don’t shout about enough. This is not a Hollywood movie. This is a British independent movie made by the best talent we have. The only Americans on the film were Ron Howard and Todd Hallowell, his second-unit director.

“One reason the film went so smoothly is due to the wonderful engineering expertise that someone like Ron Dennis is so proud of – we have that. It’s in our blood. You’ve got people who’re good at organisation, and then you’ve got problem solvers, people who may be a bit crazy and eccentric but who can tinker and come up

with an almost Heath Robinson solution to a problem that must be solved there and then because otherwise it’s going to cost £50,000. That’s a great talent, and it’s a talent we have.”

The £50m budget, he notes, is “quite high” for a British-made film. “But Ron and I worked out that if it had been made by an American studio, it would have cost £90-£100million. I grew up making documentaries and I think the money should go on the screen. When you see 20 executives flying over on a private jet, burning money, it’s a bit hard to take.”

Eventually the world of F1 realised that *Rush* was a serious proposition and began to embrace it. “There was a big turning point last year,” Eaton says, “when Ron went down to Monaco with George Lucas, who’s a good friend of his, and he walked the grid and there was a sense of people saying, ‘Wow, you’ve actually done this – it sounds really exciting.’ People were welcoming him. It was the first time that people in F1 went, ‘Oh, this could be quite fun.’”

The critical and box-office success of *Senna*, he says, helped to pave the way. “Funnily enough, one of the most important things it did was to attract a lot of women to a sport they’d probably thought was boring. That’s because Senna himself was such a sexy, interesting, empathetic character. A lot of women I met said, ‘I knew nothing about F1 but I loved the film.’ When we’ve tested *Rush*, women of 35 and older get the highest scores. And I thought we were making the film for a bunch of petrolheads.”



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# HUNT

VS

# LAUDA

No actors, no script.  
This is how the  
extraordinary 1976  
Formula 1 season  
played out in real time...  
**In their own words**

# 76

**It's been said** that the epic battle between James Hunt and Niki Lauda in 1976 was so improbable that if it were made into a film, nobody would believe it was true. As *Rush* presents Hollywood's 123-minute take on this topsy-turvy season, we've gone back to the original reports to see what the protagonists themselves had to say – and to bring out nuances that the film-makers just couldn't squeeze in.

We've scoured the archives of our sister titles, *Motoring News*, *Autosport* and *Autocar*, for contemporary reportage from authors who covered every aspect of the season – from Ferrari's early-season dominance to the courtroom infighting that ensued, and Hunt's late charge coupled with Lauda's extraordinary comeback. This is 1976, as it happened.

**PICTURES** LAT ARCHIVE  
**RESEARCH** JAMES ROBERTS



**BRAZILIAN GRAND PRIX**

**R 1/16**  
25 January

**Lauda:** 1st (9pts)  
**Hunt:** DNF, stuck throttle (0pts)

*Autosport:* "If there is any doubt in your mind about the colour of the new season, Niki Lauda would like to suggest a nice bright red. The Austrian world champion began the new year as he ended the old, with a solid victory for Ferrari in the New World. Brazil didn't go all his way, for James Hunt had started his new career with McLaren by taking the first pole position of his life – by two hundredths of a second from Lauda. Thereafter it was Lauda all the way and a spin into the catch fences from James."



**SOUTH AFRICAN GRAND PRIX**

**R 2/16**  
6 March

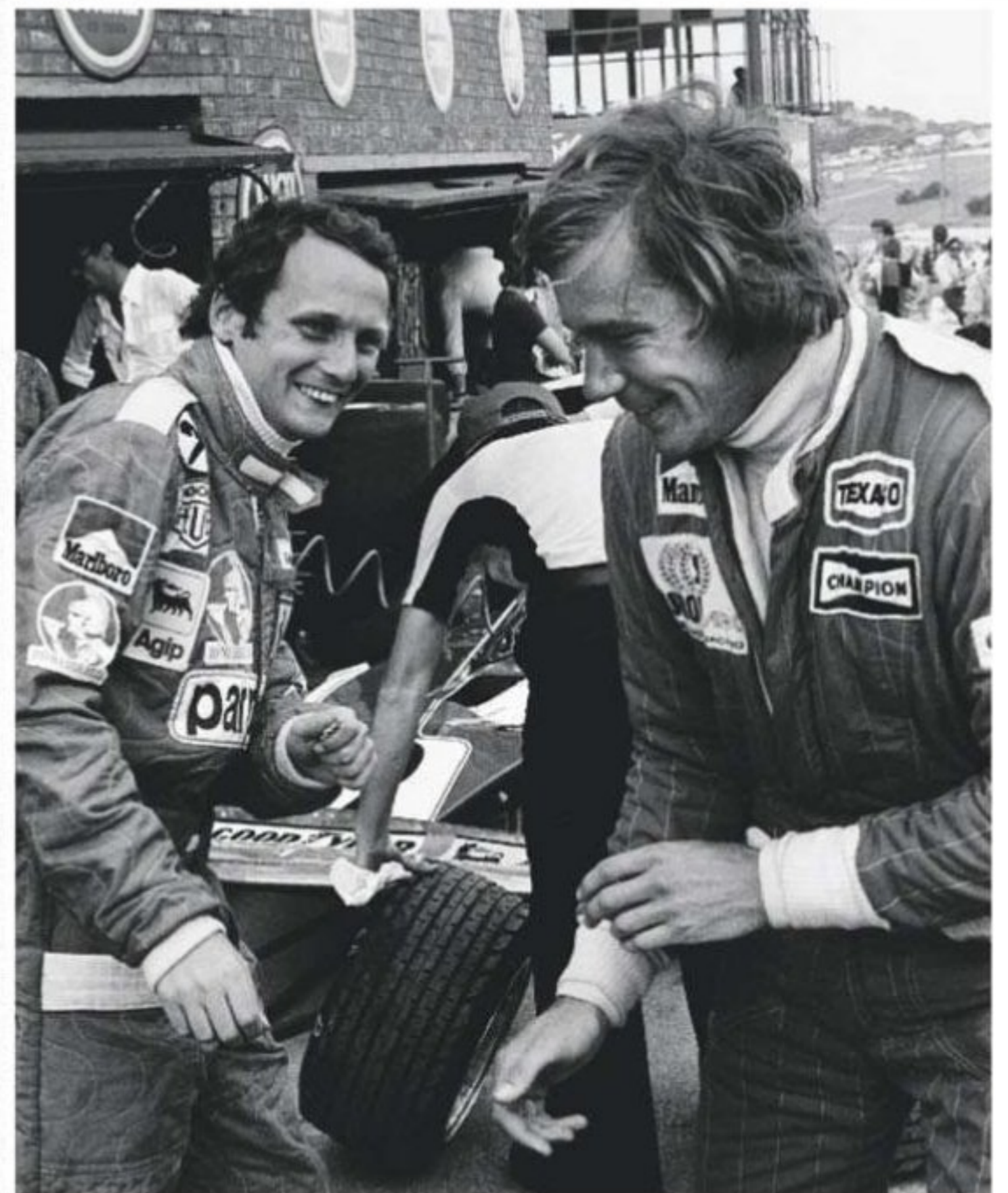
**Lauda:** 1st (18pts)  
**Hunt:** 2nd (6pts)

*Autosport:* "At Crowthorne corner Hunt caught up with the slowing Lauda; then he pulled alongside as they drove away into Barbeque bend and exchanged a jaunty salute. The world champion, as he headed for his second champagne-spraying party of the new year, had the comfort of thrice the points of his (at this stage, anyway) most threatening rival. But the expression on James's face after he took off his helmet was of quiet contentment, and he grinned often. It was a grin that promised that it's a long way still to the end of the season and if Niki Lauda thinks he can relax he'd best keep a sharp watch in his mirrors." →



**"It was a grin that promised that it's a long way still to the end of the season"**

*Autosport*





### US GRAND PRIX (WEST)

R 3/16  
28 March

**Lauda:** 2nd (24 pts)

**Hunt:** DNF, crash (6 pts)



**“Patrick [Depailler] was on the inside and I was alongside him on the outside, he saw me in his mirrors and then edged me over into a cement wall. It was either hit it or hit him. He simply pushed me into the wall – there could be no misunderstanding”**

James Hunt



**Teddy Mayer, McLaren team manager, on Lauda:** “Anyone with half a brain could win in that [Ferrari] car... When Emerson [Fittipaldi] was considering retirement in the middle of last year, the two drivers I had on my short list were Hunt and Lauda. They were the only ones. Anyway, in the event we got James.”



### SPANISH GRAND PRIX

R 4/16  
2 May

**Lauda:** 1st (33pts) [subsequently 2nd, after Hunt's win was reinstated in July]

**Hunt:** DQ (6 pts) [win reinstated in July, following appeal]

**Motoring News:** “Hunt's M23 was 1.7 centimetres (5/8th of an inch) wider than the regulation 215 centimetres stipulated in the FIA yearbook. This decision handed first place to Niki Lauda, the world champion having finished the race over half a minute behind Hunt on the road.”

**Teddy Mayer:** “Parking on a yellow line and murder are both against the law but you don't expect the same penalty for both. I think it's totally unreasonable to inflict that sort of penalty for this kind of infringement.”





BELGIAN GRAND PRIX

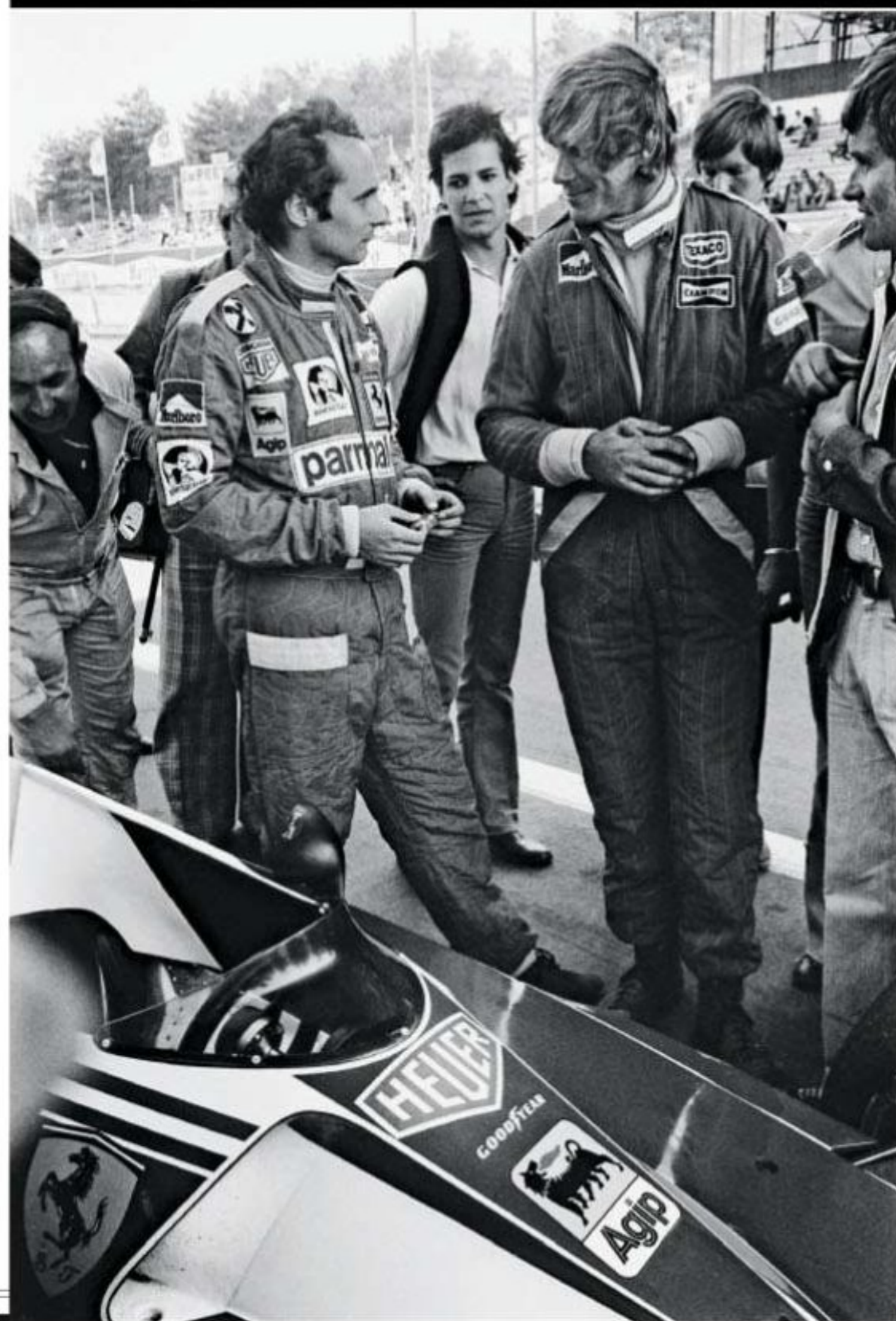
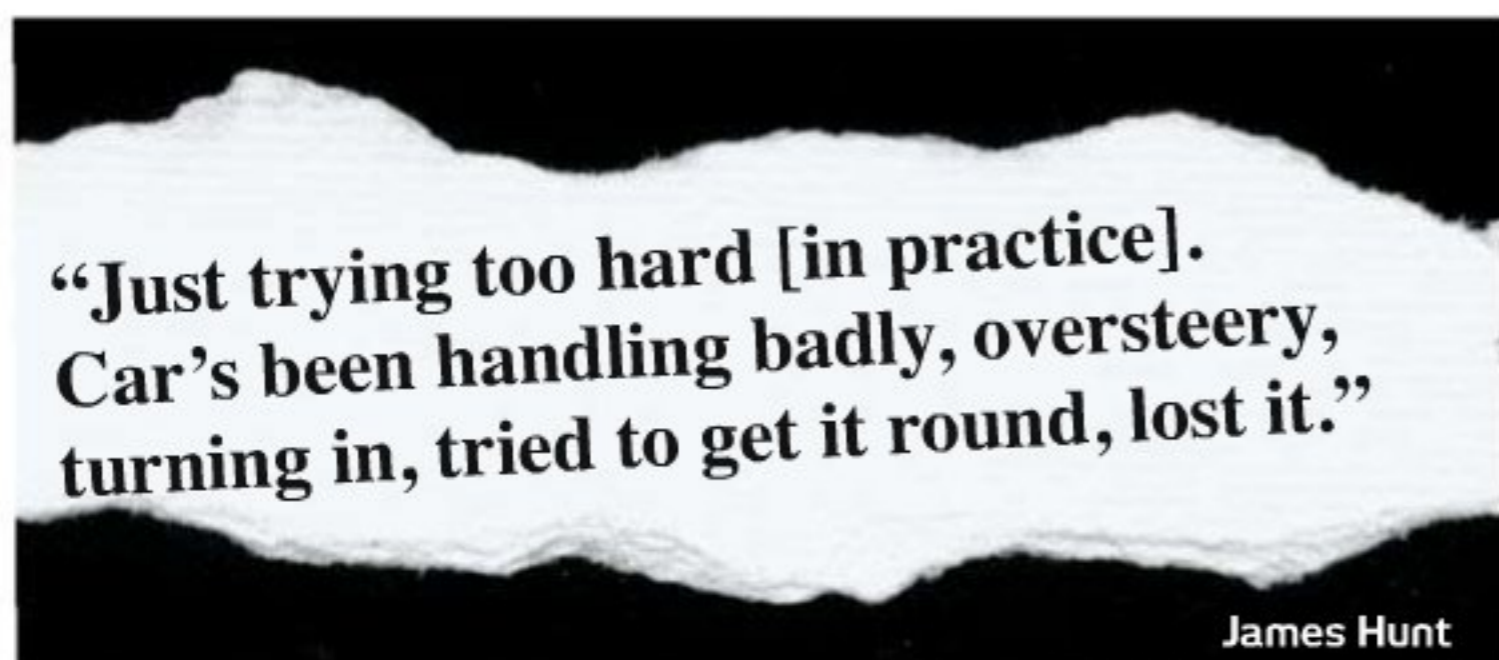
R 5/16  
16 May

Lauda: 1st (42pts)

Hunt: DNF, oil leak (6pts)

**Motoring News:** "For their rivals it was another demoralising display of incredible superiority. Surely Ferrari can't really win all the races?"

**Autosport:** "It is now nine months, yes really, since anything other than a Ferrari has officially won a grand prix. It's certainly not a surprise any more. But the Belgian GP seemed to take the F1 people aback. It really seemed to sink in this time that this is going to be written down in history as The Twelve Cylinder Era."



MONACO GRAND PRIX

R 6/16  
30 May

Lauda: 1st (51pts)

Hunt: DNF, engine (6pts)

**Motoring News:** "Niki Lauda completely demolished the opposition again on Sunday, leading the Monaco GP from start to finish in his Ferrari 312T2 to score his fifth world championship victory of the season."

**Lauda:** "I wasn't just sitting there cruising around – I had to work bloody hard, but I expect I'll get the usual treatment from some of the British press."



**Hunt:** "I was quick in the morning warm-up, but quite frankly there was hardly any point in running in the race. If you don't start on the first two rows you can forget Monte Carlo as a race to win, because you can't overtake. All right, I had a spin. I spun through a lack of interest. Then I was catching them up after I spun at two seconds a lap, I was lapping in the same times as Niki who was leading the race – when I caught that group I didn't even look like passing them. I wasn't even able to have a sniff. That's not a motor race, that's just a stupid procession." →



## SWEDISH GRAND PRIX

R 7/16  
13 June

**Lauda:** 3rd (55pts)

**Hunt:** 5th (8pts)

**Hunt:** "I was particularly pleased with the way I drove because the car wasn't very good here; it was terrible. It was trying to spin every time I turned into a corner. I went really absolutely on the limit and over it."



**Autosport:** "Oh – you want to know about Niki Lauda don't you? Well, he came in third, HIS WORST RESULT OF THE YEAR, after starting fifth. He wasn't able to do more than run in sixth position at the start, and only benefited by proxy as others had trouble. He's still going to be world champion, let's face it. He's still going to wipe the floor with the rest of them at Paul Ricard. But Anderstorp was a lovely refreshing reprieve. A most welcome weekend."



**Lauda:** "I'm trying bloody hard! If you were inside you'd think it was bloody impressive! I don't drive the car sideways because I think it's no good, it's a waste, you get nothing. So Lauda's a wanker. If I drove like Tom Pryce and was the world champion, oh, I'd be fantastic, a hero. But if I drove like Tom Pryce I wouldn't be world champion."



## FRENCH GRAND PRIX

R 8/16  
4 July

**Lauda:** DNF, engine (52 pts) [three points deducted following retrospective demotion to second place at Spanish GP]

**Hunt:** 1st (26 pts) [nine points added after reinstatement of win in Spain]

**Motoring News:** "James Hunt became the first driver to 'win' two grands epreuves within just two days when a Court of Appeal in Paris on Monday revoked his exclusion from the May 2 Spanish Grand Prix."

**Hunt:** "I made a good start, we both did, and we were still level as we changed into second gear. Then his [Lauda's] car simply out-dragged mine. Nothing one can do about that, it's a Ferrari. So he was getting away pretty quickly initially, but I knew his tyres were going to change and the balance of his car would alter, and I expect the second half of the race would have been pretty good for me."

"Then I started to retch a bit. My tummy's been upset for a couple of days, something I ate. I think I overdid it on the Friday night."



**"Which is important? To make the big show, to have long hair, to be in the evening around with girls, I don't know, the playboy life, arrive with a Rolls-Royce or a Cadillac, whatever – or to be able to win? I think to win is the better show"**

Niki Lauda





BRITISH GRAND PRIX

R 9/16  
18 July

**Lauda:** 2nd (58pts) [promoted to 1st following Hunt's disqualification]  
**Hunt:** 1st (35pts) [subsequently disqualified]

**Hunt:** "I would like to thank all the spectators at the British Grand Prix for their fantastic support. Their reaction, first when it looked as though I would not be allowed to restart, and then when I passed Lauda, gave me an enormous boost and I am most grateful."



**Motoring News:** "The crowd in the main grandstand were quick to greet the decision that Hunt wouldn't be allowed to run with vociferous disapproval. One is tempted to suggest that the RAC might have been intimidated into letting Hunt run by the possibilities of ugly scenes if they didn't."

**Mauro Forghieri, Ferrari's chief engineer:** "Niki drives the whole race fighting with a damaged gearbox – probably damaged in the accident – and Hunt wins in a car that was repaired. And he didn't even complete a lap of the first race. I think it is disgusting, this race in England. Disgusting. Why they hold up the grid? Just so Hunt can start his engine"



GERMAN GRAND PRIX

R10/16  
1 August

**Lauda:** DNF, crash (58pts)  
**Hunt:** 1st (44pts)



**Lauda [pre-race]:** "The Nürburgring is too dangerous to drive on nowadays. We're not discussing if I make a mistake. If I make a mistake and I kill myself, then tough shit. If I have been so stupid to make a mistake, to kill myself, this is my risk in motor racing... I compare the Nürburgring with 260 kilometre-an-hour jumping – only God saves you. So therefore I think it is too dangerous."

**Helmut Zwickl, Austrian journalist:** "I drove round the 'Ring with Niki on the Wednesday before the race. And I'm not joking, it's 100 per cent true: we came to the exact corner where Niki later crashed and he said: 'Look, see what I mean? There's some new catch fencing on the outside but then just a bank. If something happened here there is nothing to stop you having a very big accident...'"

**Motoring News:** "Lauda is suffering from first and third degree burns on his face in addition to a broken cheekbone, but most medical concerns surround the serious corrosion of his lungs and throat as a result of inhaling toxic fumes from the burning plastic cockpit section of his car... Lauda's helmet was part ripped off and he had a broken cheekbone which was pouring blood."

**Autosport:** "Time is the deciding factor now and it is now up to Lauda's own will if he is to survive. As to his racing career, one must fear that that, anyway, is over." →

## AUSTRIAN GRAND PRIX

R 11/16  
15 August

Lauda: DNS (58pts)

Hunt: 4th (47pts)

**Motoring News:** "Enzo Ferrari's decision to withdraw from grand prix racing for the remainder of the season is not perhaps as surprising as it sounds. An old man, who still has complete control of the racing programme, Ferrari is deeply upset by Niki Lauda's accident, by the allegations that it was caused by suspension failure or a lost wheel, and not least by the recent tribunal decisions which have given James Hunt 18 disputed championship points."

**Hunt:** "I can't understand Old Man Ferrari. With Niki away they ought to be entering two, maybe three cars to try and keep me out of the points. This way they're giving Niki no help at all."



## DUTCH GRAND PRIX

R 12/16  
29 August

Lauda: DNS (58pts)

Hunt: 1st (56pts)

**Hunt:** "My main rival for the rest of the season is going to be me. We're in a good position now, we're on form. So our job is going to be to finish races; we're competitive enough to overhaul Niki's points situation if we do that."

"McLarens [sic] don't give me any discipline at all. They let me do exactly what I want to do. I run a very simple report system. I only report things that matter. I think McLarens probably appreciate that, because we don't surround things with BS."



 ITALIAN GRAND PRIX

R13/16  
12 September

**Lauda:** 4th (61pts)  
**Hunt:** DNF, crash (56pts)

**Motoring News:** "Reigning world champion Niki Lauda left everyone gaping with disbelief by finishing an astounding fourth in his first race since his near-fatal crash at Nürburgring six weeks earlier. Even the most optimistic observers reckoned Niki wouldn't be able to make it. It's the end of a remarkable six weeks' human endeavour. The single-mindedness, the incredible physical and mental resilience that had pulled him away from the brink of death."

**Lauda:** [on hearing that Hunt is being demoted the back of the grid for fuel irregularities]: "But why should Hunt be allowed to start? Where's [team manager Daniele] Audetto? Protest it. Where's Audetto? Mauro? Get him to protest it. I'll go..."

**Motoring News:** "The RAC are to make a two-fold protest in Paris. Firstly Mr Delamont will lay a complaint about the manner in which the fuel checks were carried out, arguing that they were 'hasty' and that the treatment handed out to the McLaren team was 'unfair'. The second complaint, and probably the strongest, will be about the incident in which the black flag was shown to stop the race when it rained. All but four drivers ignored the official signal and carried on, and it is this action that has really incensed the RAC."

**Dean Delamont, RAC director:** "This race [the Italian GP] should not be counted. The handicapping of the drivers after the fuel checks was illegal and that business over the flags was an absolute nonsense."



 CANADIAN GRAND PRIX

R 14/16  
3 October

**Lauda:** 8th (64pts) [three points gained for promotion to win at British GP]  
**Hunt:** 1st (56pts) [nine points deducted after disqualification from British GP]

**Motoring News:** "James Hunt was disqualified from his victory in the 1976 British Grand Prix after a CSI Court of Appeal considered and upheld a protest from the Ferrari team. The shame of the whole sordid business is that it's clouded the whole 1976 world championship struggle, a contest between two fine drivers who don't need to argue the toss in courtrooms in order to win motor races."

**Lauda:** "McLarens [sic] shouldn't have won in Spain but they were allowed the victory, so Brands Hatch merely evens the score."

**Autocar:** "Hunt fidgets around the garage, complains about his arm, he smokes, he talks distractedly to journalists. He is even sick. For him, racing is nothing scientific or coolly mathematical; it is merely the way he most naturally expresses himself as a competitive sportsman." →





## US GRAND PRIX (EAST)

R 15/16  
10 October

Lauda: 3rd (68pts)

Hunt: 1st (65pts)

**Lauda:** "I was disappointed that when James lost victory at Brands Hatch he didn't react the same way as I'd done when I'd lost victory at Spain. Rules are rules. And drivers simply do their job and drive."



**"As far as I'm concerned you can forget the sport, the sport's gone out of it. I resigned from the safety committee and everything else. I'm out now for winning and for the money; what else is left?"**

Hunt's response after learning of his disqualification from the British GP

**Motoring News:** "Niki showed untypical traces of tenseness, almost as if the whole series of tribulations that have hampered his progress in recent months have suddenly got on top of him. He was not a happy man."



**"I can't really believe I've done it. I really thought we'd blown it with that pitstop. When I came into the pits after the race I didn't know where I'd finished but I was convinced that Niki had retained the championship. I was heart-broken."**

James Hunt






JAPANESE GRAND PRIX

R16/16  
24 October

**Lauda:** DNF, withdrew (68pts)

**Hunt:** 3rd (69pts world champion)

**Autosport:** *"I'm not going to race," said Lauda in a very small slow voice. 'I can't. I'm just going to drive around.' Then he leaned his head back as far as the crash structure behind it would allow and shut his eyes. Either side of his hips was a bath of 40 gallons of fuel. Behind his shoulders was 485 horsepower. Ahead of him was a road covered in many places by water inches deep. Above him the air was heavy with mist. Steady rain fell out of it. This mist was so thick on the main straight that visibility was 200 yards. Then, incredibly, they got on with it."*

**Autocar:** *"As the mechanics packed up their tools and their beloved cars for the last time, this year's championship was captured in a conversation between two of them, one asking the other what he intended to do over the winter. 'After a finish like that and the season we've had, I'm going to go home and write it as a film script and make a million. Only trouble is, I don't suppose anyone could believe it could all happen.'" *



# GO FIGURE

Hunt vs Lauda wasn't the only newsworthy saga 37 years ago. We take a look at the numbers of a very eventful year: 1976



# 7

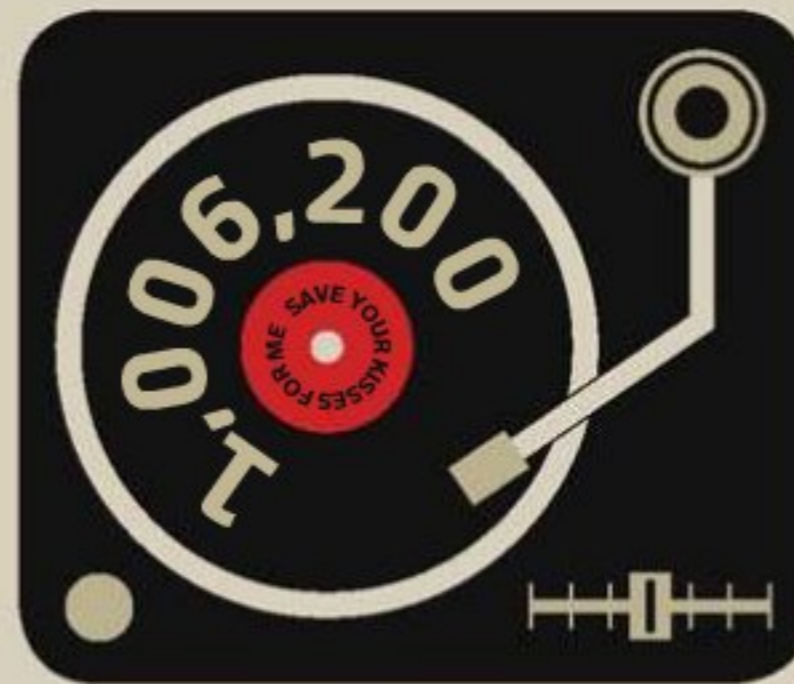
grand prix winners: **Niki Lauda, Clay Regazzoni, James Hunt, Jody Scheckter, John Watson, Ronnie Peterson** and **Mario Andretti**

# ONE

Drought Act passed, along with the appointment of a Minister for Drought, Denis Howell

# £70

the **average weekly wage** in the UK



Number of copies sold of 1976's **best-selling UK single**, the Eurovision Song contest winner, *Save Your Kisses For Me*, by **Brotherhood of Man**



The number of Steves (**Jobs and Wozniak**) it took to found Apple on 1 April



The total number of race laps led during the season by **James Hunt** – ten more than **Niki Lauda**



**Björn Borg** wins the first of his **five** consecutive men's single titles at **Wimbledon**

# 8850

miles covered by **Concorde's first commercial flights** on 21 January, from **London to Bahrain** and **Paris to Rio**

# 👤 x 46

different **drivers started** at least **one race** during the **1976** season but only **12 drivers** started all **16** grands prix

# 32



**pence:** the average price of a **pint of beer**

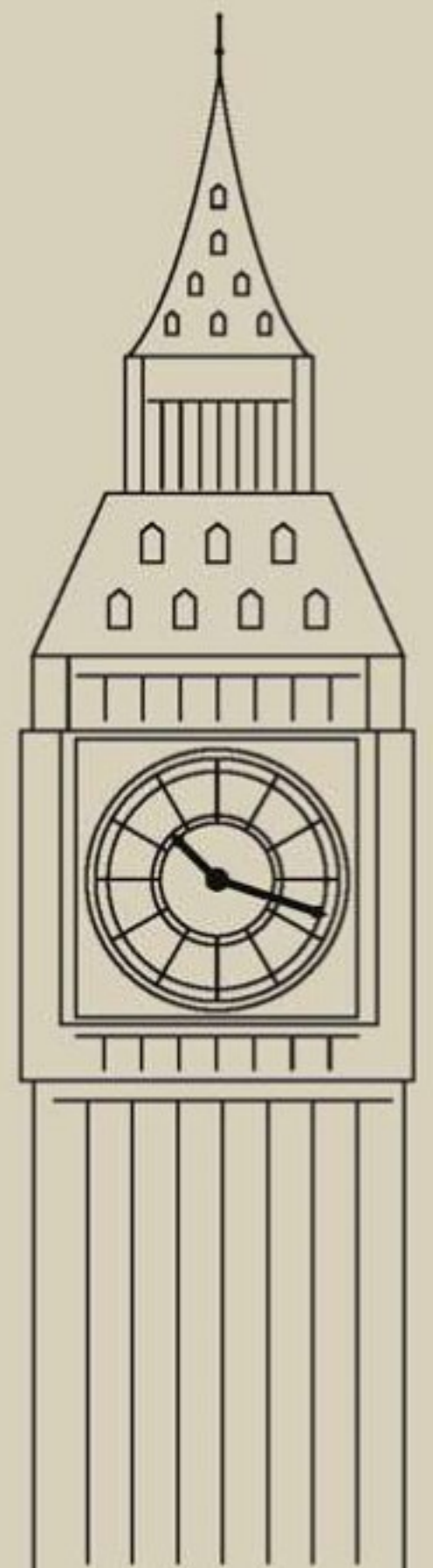
# 16.5%

average **inflation** – down from **24.2 per cent** the year before

# 49

At the 49th Academy Awards

**Rocky**, starring **Sylvester Stallone** at his monosyllabic best, won **Best Picture**



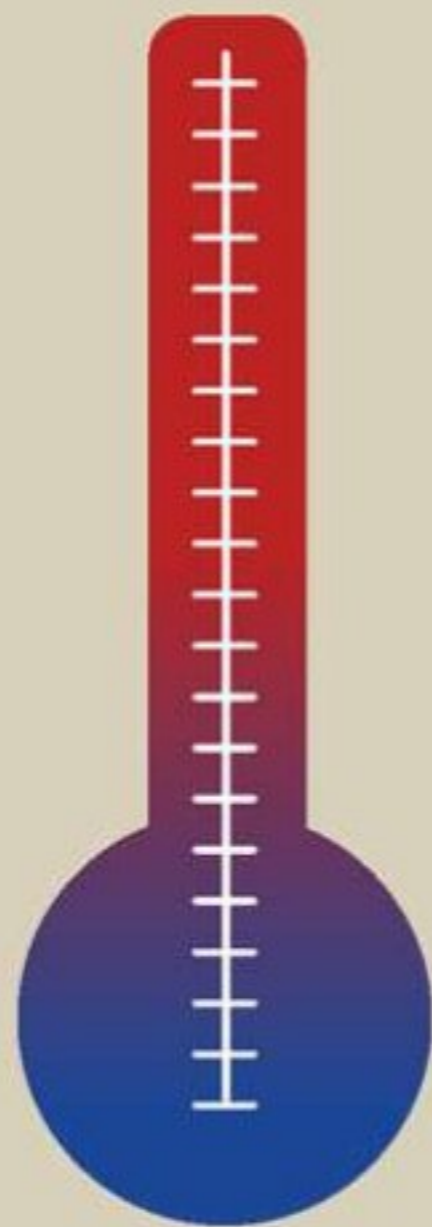
# 9

The number of months Big Ben was out of action, due to damage suffered on 5 August

# 91

The number of years it took **Southampton** to win their **first major trophy** with a **1-0 win over Manchester**

**United** in the FA Cup Final



# FIFTEEN

**consecutive** record-breaking **days**, from 23 June to 7 July, saw temperatures in England remain at **32°C (90°F)**

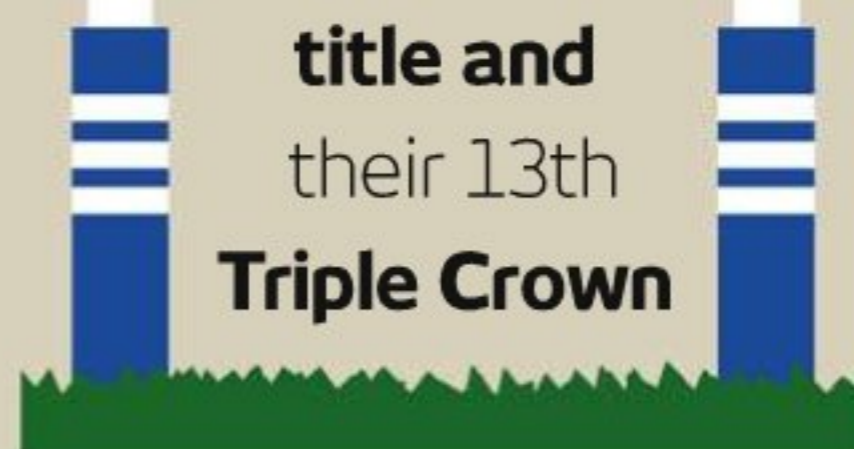
# 4:

 The number of letters in words scandalously uttered by the **Sex Pistols** on **live TV** on 1 December

# 19

**Wales** claimed their **19th Five Nations** rugby

**title and** their **13th Triple Crown**





# THE YEAR OF LIVING

Niki Lauda almost died in pursuit of the 1976 title. *F1 Racing* sat down with him





PORTRAITS: LAT ARCHIVE

# DANGEROUSLY

to recall that life-changing season, with the help of a few archive images



### The defending world champion

*Reports in the British press at the time claimed that Lauda had become somewhat truculent after winning the world championship in 1975...*

“Journalists, sure, they have their own views about a lot of things but I don’t think I changed at all, being world champion or not. And if you look at this picture here – I look pretty happy and handsome, I would say. So they were wrong!”



### Luca di Montezemolo

*The look of a man who knows he’s going places... Ferrari’s inspirational team manager was moved ‘upstairs’ in 1976.*

“Look at him. Does he look like he knows he’ll do great things? Yeah. He was very good. He gave me the Ferrari contract in 1973. He had full responsibility for the team. He was inexperienced at first, but turned things around at Ferrari quickly, doing things *his* way. We were very competitive, no question about it. We had a good relationship and still do – even today.”

## A winning start

*James Hunt was 0.02secs faster around Interlagos in qualifying, but Lauda beat him away from the line – and went on to win by a commanding margin.*

“Where was this? São Paulo, Brazil? I remember I was very quick at the beginning of 1976. The car was very good and reliable. Mauro Forghieri [Ferrari’s chief engineer] had great skill. I was well in the lead of the championship. It was an easy year in a way. You must tell me – how many races did I win? Six? [Actually five] Well, most of them were at the beginning, including this one and the next. I was dominating. Maybe it was all going too smoothly, yes...”



## Life in the pitlane

*This picture epitomises the contrast with modern team operations – note the mechanics hanging around, seemingly unsure what to do next.*

“Oh yes, things were completely different in those days. No computers, no data. It all very much depended on me – on my arse and the short linkage to my head. It was up to me to tell them what had to be changed on the car and what should not be changed. I’d speak to the technician there and the mechanics would fix it. Today it’s computerised, gadgets all over the place... things are completely different. So, for me, it was either much easier or more difficult, depending on how you look at it. There was no support, basically.

[F1 Racing points out the tape over the front brake ducts and asks how, given the lack of data, they decided how much tape to apply. Lauda chuckles] “They do this today, the same thing: it just looks less stupid. How did we decide? A guy held his hand on the brake disc and then, ‘Shit! It’s too hot!’ Or ‘Too cold!’ [Laughs again] Today everything is certainly different...” →



PHOTOS: ANDREW FERRARO/LAT; LAT ARCHIVE

## On team-mates and team orders

**It's thought that Lauda seldom rated his team-mates highly. When asked by Nigel Roebuck if he viewed Carlos Reutemann as a team-mate or rival in 1977, Lauda famously replied, "Neither." And yet here at Long Beach in 1976, Clay Regazzoni qualified his Ferrari on pole and won by nearly 50 seconds.**

"Clay, on his day, was very competitive, there's no question about that. He pushed me, even though I was quicker than he was, all through the season. He pushed me all the way to the limit. And he was a good guy. If he won a race, it was because he was better than I was.

"Was there any question of team orders? [He speaks emphatically, jabbing the table] No, no, no! I was not the lead driver. Ferrari always had the cars in the same way prepared, and you were only lead driver if you were running first. Here, in this race, he must have been the lead driver.



"There was one time, 1974, in Monte Carlo, I had pole position. I had chosen the right side of the circuit – because we could choose which side of the grid was pole position back in those days. Regazzoni was second. Then on Sunday I turned up for the race, and it was reversed.

"So I went to Montezemolo and said, 'What the hell has happened here?' He said, 'I've changed it.' 'Why the hell have you changed it?' 'Because Peterson, our biggest competitor, is on the second row and we want him to start on the

left, so it's easy for Clay and us to go into the first corner.'

"I was *really* pissed off. I knew what I was doing and we were starting next to each other, not like this. [He gesticulates to indicate the staggered format of the modern GP grid]

"So what happened? Clay took the lead of the race, I was second. I pushed him so hard without caring much what happened, and he spun. I was well in the lead and then my generator broke. So it was all... unnecessary."



## A different view of the Jarama drama

**In this intriguing photo, Hunt, usually thought of as a carefree playboy, is staring into the middle distance with fierce intensity, while Lauda looks utterly relaxed. It's a complete reversal of how we usually remember these two rivals.**

"Where is this? Jarama, '76? No, I was not relaxed at all. I had three broken ribs after turning the tractor over at home. I had Willi Dungl there, my trainer, to give me injections in my back to get rid of the pain. I was in the lead of that race, but James outbraked me at the end of the straight and I did not know he was coming. So I pulled in for the corner, saw him next to me and pulled out again. That pushed my ribs into my lung. I had a pain like you would not believe. I finished the race – just – in second place and then I went to the doctor so he could straighten me out.

"Is he crying? Maybe because of my pain! They had to take the body off the car to get me out. I took an ambulance plane home. Over Geneva I learned I had won [Hunt, first over the line had been disqualified, although his win was reinstated on appeal]. So it was worth going with the broken ribs..."





A blame-free retirement?

*When a title is decided by a small margin, it's tempting to look back at earlier races where certain points were lost. In this iconic French GP shot, Lauda is leading – yet he didn't win.*

"This was a very important race for me and my memory of it is very clear. Slipstreaming and passing was the issue – it was always that way at Paul Ricard. I put on a new set of tyres, to make sure I was quick on my first lap – to get everybody out of my tow. So this picture is at the start, yes? I was five seconds in the lead, then I increased it to ten seconds. The race was well under control. Then my crankshaft broke and I had to retire.

"I used this race as one of the examples at the end of the year, after Fuji, when they blamed me for losing the championship. I said: 'By the way, I had three races in the hospital, fighting for my life, and one race it was your fault, Ferrari, that the fucking crankshaft broke.' It was a horrible feeling when the engine went. You go so quick, then nothing comes of it."

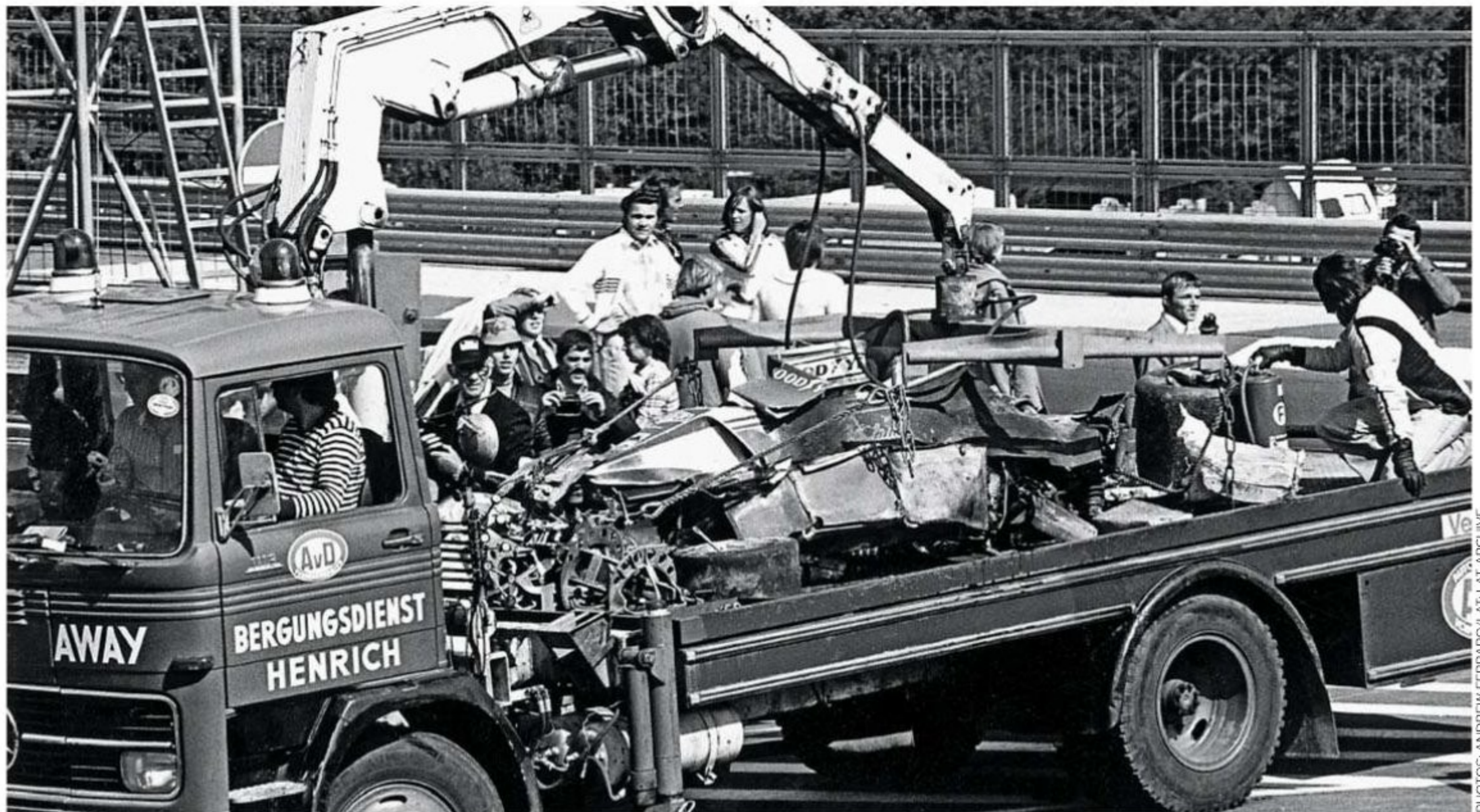
Proved right – the wrong way

*Few photos can convey the full horror of the Nürburgring accident like this one.*

"It was really very simple. At Long Beach we'd had the discussion, I was the spokesman of the GPDA – more or less – and I said it was not worth going to the Nürburgring because the cars had got too quick for what they'd done to the circuit. The argument of the other drivers, which I had to accept, was that they had a three-year programme of improvements and that the Nürburgring had done everything it had committed to. The vote went three to two. I was

still against it because of the danger, but we went there without bad feelings.

"No way would I have survived if Arturo Merzario had not pulled me out. I would not be here. He was the only one who went into the fire, opened the belts and got me out. He, himself, not the others [Guy Edwards, Brett Lunger and Harald Ertl also stopped]. One guy. Everyone else was running around like crazy. I sat there with 800°C and no oxygen, for 55 seconds. The marshal nearby had no fireproof clothing. A few more seconds and I would have been gone. Merzario did an incredible job." →



PHOTOS: ANDREW FERRARO/LAT; LAT ARCHIVE

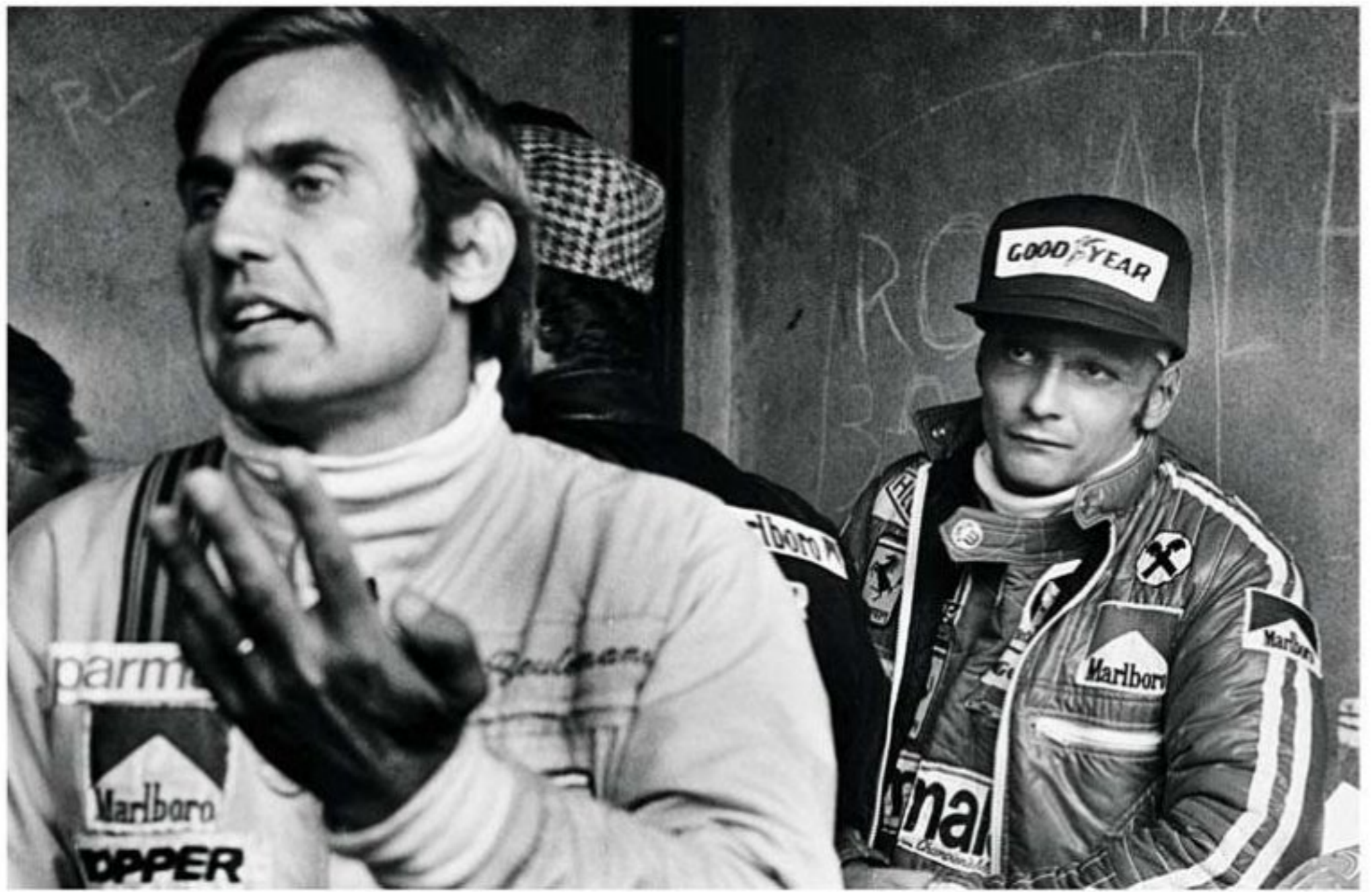
## Reutemann in, Lauda out?

*Despite his injuries, Lauda returned to F1 just weeks after the accident. His missing eyelids had been replaced with skin grafted from the back of his head. But Enzo Ferrari had hired Carlos Reutemann as a replacement and wasn't expecting Lauda back...*

"It was typical Ferrari that he asked for Reutemann to come! He asked me not to go to Monza because he didn't feel comfortable about it. Well, I could not just lie there in bed thinking about my accident. I had missed three races but I was still leading the championship. Still, I had to fight.

"I had trained a lot to get back in condition, then we had to make a principled decision about whether to go back and risk my life or not. For me it was simple – yes, because I knew of the danger before, so it was not a surprise to me to end up in hospital. It was good to have this pragmatic approach. Don't wait too long to come back – if you're fit, come back right away and overcome the issue.

"On the Friday in the wet in Monza it was difficult to get going. I was frightened to drive – I had to stop. I was ready to throw up. I went there on Saturday without thinking about the race, but I was confident again in the car and



I was the quickest Ferrari. Regazzoni and Reutemann were there so that gave me some confidence back, that coming out of death I was quickest again in my first real practice, having done nothing on Friday.

"Then, in the race... disaster. They had changed the starting procedure while I was away. I was still in neutral, looking for the guy

with the starting flag, when the green light came on. Instead of fifth on the grid I was in 13th, something like that. But this is not important because I learned my lesson! Yeah, apart from the start I did a good job.

"It was not easy. My head was bleeding, true. I was back on the track but in a different way. It was not like before."



## Struggling in the final races

*Here at the Canadian Grand Prix, Lauda isn't even in the picture – that's Ronnie Peterson and Vittorio Brambilla getting away from the start with James Hunt.*

"I had a big problem with my rear suspension here – it broke. I was not able to perform the way I should have done. It was not that the circuit was dangerous, no – just we had this broken suspension piece. No, I didn't feel that the championship was slipping away from me – I was still fighting for it as hard as I could. This was another example of a time when it was not my fault that we failed to score!"



“Get out and say the engine is broken”

**Two contrasting images: Lauda's relaxed pre-race demeanour makes way for slump-shouldered defeat in a shot taken just after he climbed out of the car.**

“The race was delayed – for hours. The circuit was flooded. It was terrible, ridiculous. By four o'clock, nothing had changed but the race director said, ‘Okay, we're going to start now.’ I said, ‘What? Are you nuts? What's different?’ He said, ‘It has to be televised in Europe, and if

we don't start it now it won't be televised.’ Can you believe that? *Ridiculous!* And I told him that. I said, ‘We've been waiting because of the flooded circuit and you haven't done anything about it.’ That's why I didn't race.

“The other drivers were clear that we could not start the race. It wasn't only me who did one lap and then stopped, it was Carlos Pace and Emerson Fittipaldi and somebody else [Larry Perkins]. The reason we did one lap was so that the teams would still get the starting money.

“For me, it was clear I would not race. I told Mauro Forghieri before the start. See him here – just before this picture was taken he leaned into the cockpit and said: ‘The engine is broken. Get out and say the engine is broken.’ When he told me this I had a great relief – ah! – this is the right way of getting out of this shit. Then I thought again – no way. I had to tell the truth. It was important, with all the pressure – I had to. We should not have started the race.

“Basically I went home. Left straight away. I arrived at the airport and they told me James was the world champion. I telephoned Enzo Ferrari from the airport and his first reaction was good – he said, ‘Yes, I understand.’ Later on, he was less helpful. He believed what he read in the newspapers.

“In the movie it's different. In the movie I stay there, at the circuit. And... [a pause, then he taps the photograph thoughtfully] I wish I had. It was the correct thing to do. I should have stayed.”



PHOTOS: ANDREW FERRARO/LAT; LAT ARCHIVE

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# The James Hunt

## I knew

Twenty years after his death, the James Hunt, legend still burns bright. His former neighbour, **Peter Windsor**, remembers a world champion who raced even harder than he lived

PHOTOS LAT ARCHIVE







Hunt takes a maiden win for both himself and his team, Hesketh, at the Dutch GP at Zandvoort in 1975



**I first met James in 1972,**

when he was experiencing a kind of wilderness. The Hesketh connection was yet to blossom, although James was working hard at it. We spoke at Brands Hatch, where I asked him a boring question about the Dastle F3 car and all its problems. “Actually,” he said. “It was quite a good car. I always said that. It just lacked development. We simply didn’t have the budget.”

To see James’s words lying blandly on the page is to see him as just another racing driver, speaking the driver’s vernacular. James was anything but. He was that type of Englishman you meet only rarely. He was educated at Wellington College, true enough, but he was not your average public schoolboy. He was tough and hard. And practical. And penniless. A snob he was not. On the contrary, he was the guy who dug roads in Fulham Broadway to pay for his Formula Ford season. He was not a rich kid. He was not spoiled. He had a public schoolboy’s humour, yes – but tinged with wit and irony.

Conversation initiated, I made the mistake of asking James about Dave Morgan and that 1970 punch-up at the F3 Daily Express Trophy Final at Crystal Palace. “Thoroughly deserved,” he replied. “Don’t ask stupid questions.”

“But David just won at Mallory,” I stuttered. “He can’t be *that* bad...?”

“Different driver now. Amazing what a change to Formula 2 will do.”

With that, he was off. I was slightly wary of James from then on. Nothing about him said ‘arrogant’. Everything said: ‘Argue with me at your peril... but I’ll enjoy it just the same.’

I recently spoke to another driver who raced James in those F3 days, Bev Bond: “The thing about racing then was that we all basically understood one another,” he told me. “Yes, we’d fan out on the straights and try to lose or gain a tow, but when the braking area approached we’d all slip back into single file. It was lovely to see. There was very little T-boning of the type you see today. We grew up knowing that you couldn’t be stupid in a racing car. You’d kill yourself and probably other drivers if you didn’t behave.”

James had a peculiar stance and body language. He was long-legged but round-shouldered. His right foot splayed outwards and he walked that way – briskly, slightly favouring his right-hand side. As early as ’72 he used to stand by his racing car, preparing to climb in, as a middle-distance runner stands poised at the startline, one foot ahead of the other. It was →

Hunt raced Dan Gurney's prototype Jorgensen Eagle at the last two F5000 races of 1974



as if he was taking that big leap: with one step he'd be in another place. Flat-out commitment. No excuses. No margin.

Had he been born in an earlier age, I have no doubt that James would have been a Spitfire pilot. And he would have put down his pint and donned his flying gear the minute he heard the world 'scramble'. In 1976, at Mosport, just before a crucial race for James in terms of the world championship, I sat next to him on the grass by the grid, chatting about this and that – I think it was mainly the demands of the first corner – when suddenly he looked at his watch and said: "Goodness. Is that the time? I must get my man to start my engine."

It's difficult to do justice to him. I can say that he was intelligent and articulate and that he was very, *very* racing-savvy but these are merely words. How to paint the James I knew?

Will Dan Gurney do? James, a racing driver who was basically prepared to drive anything so long as he had a reasonable chance of winning, drove Dan's pale-blue Jorgensen F5000 Eagle in a couple of races in 1974.

"James was just the most wonderful person," Dan recently told me. "We had him stay with us in our house and he couldn't have been more charming. Lovely guy. And a very, *very* fast racing driver."

And then there was Gilles Villeneuve, a driver who to some extent owed his European profile to

one James Hunt. James loved racing Formula Atlantic cars in Trois-Rivières, even in his Formula 1 days, and he followed Gilles around that startling street circuit, noting his wall-kissing balance. He and Patrick Tambay then urged McLaren to give Gilles a try-out. McLaren duly did. The act was typical of James. From his point of view, why not? Villeneuve was obviously brilliant.

James was always beautifully concise and perceptive but he could also be dismissive. He had little time for Riccardo Patrese because Riccardo, to James's mind, gave his best only when contract time came calling. "That's an unforgivable sin," he used to say to me. "When you're in a racing car you always give 100 per

There was a finesse to James's driving that came under the heading 'pure athleticism'

cent. Always. Any driver who responds to incentives shouldn't be in the business."

James won his first grand prix at Zandvoort in 1975 and, in many ways, this race became the template of what he *could* do. He was the first to switch to slicks on a still-greasy track. He carved out a lead mainly on fast corners, where the Hesketh was a little understeery but for the most part full of grip. Niki Lauda, by contrast tentative, was one of the last to switch from wets. James then used the traffic perfectly. He did likewise in that Canadian GP of 1976, when Patrick Depailler put him under pressure.

James was confident in his own ability but by no means presumptuous. When he signed up with McLaren for 1976 he knew he was joining a team in which Emerson Fittipaldi had completed excellent development work towards the end of 1975. The new four-ply Goodyears seemed to suit the McLaren M23 perfectly; the car was stiffer than a Ferrari – and Ferrari, for their part, were heading down a de Dion rear-axle development route to nowhere; for James, in other words, there were no real excuses.

Having driven only for Hesketh, though – for a one-car team – James genuinely didn't know how quick he was going to be. I remember him talking about it over the winter. His biggest concern was Jochen Mass – the driver who had once replaced him in an F3 team. Logically, this German team-mate was going to be his main



Leading Ronnie Peterson in an F3 race in 1969 at Cadwell Park



Rose Bearings were Hunt's sponsors in F2 and F3 (above); Hunt in the Hesketh March 712 at the 1972 Rothmans 50,000 (left)

With first wife Suzy Miller (this picture); and Barry Sheene (above)

opponent. After first practice at Interlagos, though, it was clear: James was going to have about as much trouble with Jochen as he would with the desk girls at the Hilton when he asked them to join him for a quick drink after supper.

James drove in a very Kimi-like way, never overloading the outside rear and never letting the car slide more than a few degrees out of line. All his pace came from his commitment towards the minimum-speed point – from the entry phase of the corner – and all his consistency came from that beautiful feel for load. His hand-foot co-ordination was up there with Michele Alboreto's; he braked late – but never joltingly so. There was a finesse to his driving that came under the heading, 'pure athleticism'. Fast corners were his forté. So were pole laps.

He was organised and packaged, despite the aura of the gnarled toes and the nicotine-stained fingers. He knew what was important; he had no time for the irrelevant. In his retirement years he lived near me – first in Comeragh Mews by Barons Court, then in Normand Mews near Queen's Club Gardens. I'd see him walking Oscar, his beloved German shepherd dog, on a crisp Tuesday morning.

"Morning James."

"Morning Windsor."

"Much on?"

"First thing is Oscar's ablutions. Have you seen the new fenced area down there by the

park? Wonderful. It's basically a dog toilet. Oscar's extremely impressed. Come on Oscar. Don't shilly-shally..."

Up at Turnberry, where James was scheduled to play a round with Lee Trevino and Seve Ballesteros, he arrived looking a bit tired in his massive 6.9-litre Merc. "I've had to drive up half-throttle. Can't afford the petrol."

James, not for the first time, was being eaten alive by carnivorous divorce lawyers.

"Wonderful news, though. The hotel has a special room for Oscar. He has his own running water and can come and go as he likes."

To this day, Oscar remains the only dog ever to have been given permission to accompany its master on rounds of golf at either Wentworth or Sunningdale. Oscar would cease to pant during backswings and would make himself useful by spotting balls lost in the undergrowth.

At the Nürburgring in 1975, I was eating in a tavern when I walked James, accompanied by Alexander Hesketh.

"Well, I've won the bet," said James loudly.

"What bet?" we asked.

"I bet James that the bollards were made of plastic, not concrete," announced the corpulent Lord Hesketh. "He was right and I was wrong. My crumpled 911 bears testament. James, here's your five quid. I assume dinner's on you?"


James and Niki were good friends in 1976 – better friends than two championship rivals

could ever be today. They respected each other as the two best drivers in F1. They didn't have to say it. They *knew* it. To James, Niki was the scientist who rationed his skill according to the risk. To Niki, James was an eloquent, intelligent and fast racer, who never backed away.

Their only edgy moment came after James lost his points from Brands Hatch [he'd crashed, failed to complete a full lap on his return to the pits and was subsequently not allowed to join the restart. This decision was reversed due to an angry reaction from the crowd, but Hunt was later disqualified]. Niki was quoted in the press as saying "Good." James thought that was pretty poor. They met in the lobby of the Holiday Inn. Stony looks all round. James announced he would not attend the afternoon's safety meeting. He wanted Niki, when next he saw McLaren number 11 alongside him on track, to know he was more interested in *racing* than *talking*.

And James was *funny*. At Imola, in 1981, just before the race start, I saw him staggering from the Marlboro motorhome. He'd never raced at Imola; the place was new to him.

"Where are the pits here?" he asked, deadpan.

And that, for me, said a thousand words, not least of which were, "F1 often takes itself a little too seriously"; "I can do this job with my hands tied"; "Why do we have to keep spoiling happy Sunday afternoons with an F1 race?"; and "Life's good. I'm glad I'm alive..." 

# Kimi Räikkönen

Famously a man of few words, Lotus's reticent Finn was persuaded to open up in response to your questions about cocktails, punch-ups, hard rock, late nights... and badminton

WORDS JAMES ROBERTS PORTRAITS ANDREW FERRARO/LAT

The word 'maverick' doesn't quite do justice to Kimi Räikkönen. The lightning-fast Finn has one of the most unorthodox approaches to life when compared with the rest of the F1 fraternity – as you're about to discover. Yet despite his off-track antics, there has been no indication that his freakish pace and on-track brilliance have been compromised

Given his usual reluctance to share too many of his thoughts with interviewers, we were nervous that this might be quite a short chat. But, as it happened, Kimi enjoyed not having to answer the same mundane questions that are thrown at him at every single GP. These were *your* questions, and you weren't afraid to tackle some of the more interesting aspects of his life.

The one question you didn't ask – and the one he was refusing to speak about when he sat down with *F1 Racing*, was the state of his hair: the

sides of his head had just been shaved, to curious effect. A dare gone wrong? An eventful late night? That will be a question for another time...

**What was the relationship like between you and your rally co driver, Kaj Lindström?**

*Briony Dixon, UK*

The relationship with Kaj? He was my co-driver, but I knew him from before. He's my friend and still is, so hopefully one day we can again be in the same car and do some more rallies together. I enjoyed the time I rallied with him. Obviously you have to have a good co-driver – he's very experienced and he knows exactly what to do. He taught me a lot. We had a very good relationship and when you are sitting in a car for 12 hours a day, it doesn't work if you're not friends. That would just be a nightmare. So, yes, he's a great guy.

**Kimi, of all the road cars you've ever owned or driven, which is your favourite?**

*Shane Wood, UK*

My favourite road car is a Volkswagen Multivan because you can put a lot of stuff in it and you can leave it anywhere you want and if someone scratches it, it doesn't matter. Nobody looks at it, nobody notices it. It's very useful and it's just like driving a normal car. That's what I use daily.

**I read a few years ago that in Formula Renault, you had to be woken up to get in your car before races. Do you often get caught sleeping before races now?**

*Richard Beard, UK*

I usually sleep before a race if I have got the time, but it depends on the schedule. It might only be half an hour at times. I like to sleep when I can. →





"I met Sebastian at a party. He's just a normal guy. We're friends and we used to live very close to each other, so we ended up playing badminton"



**Does the tattoo on your forearm hold any meaning?**

*Brian Waldron, USA*

No. It doesn't have any meaning at all.

**How did you become close friends with Sebastian Vettel? And which of you is better at badminton?**

*Lily Fenton, UK*

I'm definitely better at badminton; I've won every time so far. We met, I don't remember at which race, but it was a party and then we started to talk. He's just a normal guy. We're friends and we used to live very close to each other, so we ended up playing badminton. We haven't played for a while though because he's moved further away. So the last time was last year.

**Kimi, I'm also a big fan of James Hunt – what do you admire most about him?**

*Andrew Creed, UK*

It's not just him: I like mostly the time in which he raced. It looked fun and more relaxed and I'm sure that it would have been nice to be racing at the same time as him. I liked the style then... it was a bit different to now.

**Your name is on Axl Rose's 'thanks' on the Guns 'n' Roses Chinese Democracy album sleeve. Can you enlighten us as to why?**

*Natalie Bartholomew, UK*

I know Axl and the first time I met him was in England, I can't remember the year, something like 2004. Guns 'n' Roses played, I went to see him and we got talking, so maybe that's why. When I was younger I was a fan of their music.

**What benefits did you get from leaving F1 to concentrate on the WRC? Would you recommend it to more drivers in F1?**

*Chris Graham, UK*

I would still like to do rallies at the same time as F1. I don't think there is any harm, I know the

reasons why they don't let people do it because there has been one bad experience, but you can have an accident anywhere on the normal roads. I enjoy it; it's such a different and difficult sport and it's good fun. I don't know if doing it helped, but it certainly didn't harm. It's not easy, but I'd definitely like to do it again – hopefully as soon as I can. But it depends on many things.

**Kimi, you are renowned for being a man of few words. How would you describe your 2013 season so far in three words?**

*Stella Kourtellidou, UK*

Not too bad.

**Is this media obligation boring you? What would you do if you had free time now?**

*Kyle Griffiths, UK*

It's a part of the work, the media – it always has been. To be honest, it's not the reason I am here, I'm not the biggest fan of it, but I know there are a lot of other things in Formula 1 beyond just driving. It's normal, it's the same story, the same people over the years, so it's just part of it.

**Are you likely to drive for Red Bull next year alongside Sebastian Vettel?**

*Jessica Kelsey, UK*

I don't know. I've said many times I have no contract yet for next year. That's why I cannot answer. If I knew then I would happily say, so people would stop asking me the same question – I have nothing so far.

**Were you really "having a shit" in Brazil '06 when Martin Brundle asked why you weren't at the Schumacher/Pelé tribute?**

*Jorge Murillo, Spain*

Actually, yes. I don't lie, otherwise I wouldn't have said it. I was in the toilet.

**Would you like to go out with me?**

*Mari Armant, USA*

I don't know. It depends on many things. You go out with someone you think is a nice person and you have a good time – you cannot just say yes.

**What Formula 1 car from any era would you most like to have driven?**

*David Leon Adams, New Zealand*

I would like to drive cars from the 1970s or 1960s. I've only seen cars from that era close up and sat in them, but never driven them. It would be nice to see and feel how they drive. I think it would be quite a different story to a modern car.

**Given the choice: vodka or Red Bull?**

*Bob Mcewan, UK*

Vodka.

## Of all the Formula 1 cars that you've driven over the years, which one is your favourite and why?

*Christian Marin Kaldman, Mexico*

There have been quite a few, so it's hard for me to choose just one. Maybe the Ferrari with which I won the championship in 2007 – it was probably the most important one I drove. And also in 2005, the McLaren was really quick.



Kimi's F1 favourites: the 2005 MP4-20 (above) and 2007's title-winning F2007 (far right). His 2011 WRC Citroën is pictured to the right

### **Kimi, what is your favourite meal, favourite drink and favourite city?**

*Adam Jaros, Czech Republic*

I don't have one favourite. I like chicken and pasta and I quite like milk, especially when I'm at home. Not White Russians, I stopped those... And my favourite city is probably Zurich in Switzerland. It's fun and not too big.

### **Kimi, if a cocktail should bear your name, what would be the recipe?**

*Yannick Hedou, France*

Probably vodka, soda and orange juice.

### **Which is a better showcase of a driver's skill and talent: F1 or WRC?**

*Chris Hand, USA*

I would have to say rallying because it's so difficult and there are so many things that you have to concentrate on all at the same time. In Formula 1 you can learn the circuit, but in a world rally car every corner is different on different stages, so I personally think that rallying is much more difficult. Maybe the rally

guys would say Formula 1 is harder, but from my point of view it is the other way around.

### **Kimi, what makes you smile?**

*Paul Williams, UK*

Many things make me smile, not just one thing. Good things.

### **Hey Kimi, how difficult is it to race a speedboat while wearing a gorilla suit?**

*Adam Richard, Australia*

I actually didn't race it, but everybody thinks I did. I was in it, but I didn't drive it. In the picture published it wasn't me, but nobody knows that because I was also in a suit – there were six of us.

### **What was going through your mind last year when you drove up that escape road in Brazil and found the gate was locked?**

*Peter Sim, UK*

I'd been up that escape road once before and on that occasion there was no gate. Once I went off the circuit I knew that it was quicker to go up that way, but there was the gate this time so I had to turn around and come back. Hopefully next time it'll be open.

### **How did you first become interested in motor racing?**

*Ronald Ooms, Belgium*

One of my parents' friends' sons was driving a kart – I went to see him, then I had a go. But →





before that, I used to do a bit of motocross. My brother used to race motocross, too.

**Which is your favourite ice cream?**

*Jason Batty, UK*

Probably vanilla and chocolate.

**Given your love of motorbikes, have you ever considered trying your hand at racing them instead of cars?**

*Simon Andrews, UK*

I still do it when I can. In Finland I've done some small races, and if I had some more time available then I would do more.

**Would you ever go back to Ferrari?**

*Marek Sawczuk, Poland*

I don't know. I've said many things that I never do... but you never know.

**Do you like any of the other drivers?**

*Philip Waterman, UK*

I get on with most of them okay, but the driver I know the most is Sebastian. I don't know the others, I don't know what they do and, to be honest, I'm not that interested.

**You love gadgets, so what is your most recent must-have toy?**

*Mike Stafford, UK*

To be honest, I don't really have that much stuff: I had a few cars but I sold them. My most favourite toy that I have now is a motocross bike.

**What would keep you awake at night?**

*Steve Barlow, UK*

Many things: I like to stay awake at night. If I'm at home then I get up late in the day. I've always preferred being up at night.

**With almost half of the season already gone, how do you feel about your chances of being able to win the world championship this year?**

*Deborah Hargreaves, Isle of Man*

Difficult, for sure. If you look at our speed right now and over the past couple of races it hasn't been easy. We'll keep on trying until it's no longer possible and, you never know, things can happen.

**Of all the different forms of motor racing you've tried, what's been most challenging? And is there anything you've not yet tried that you really would like to?**

*Wayne Scobie, UK*

I once got offered to try a Ducati MotoGP bike but I'm not sure if I'll have the time to do it – it would be nice to try it one day just to see how fast it will be.

**Did you enjoy the time you spent doing national service?**

*Steve Bather, UK*

No, I didn't. Afterwards it was fun – I mean when I look back on it now. But at the time I didn't enjoy it and wanted to stop it.

**How close were you to a Williams drive before your return to F1?**

*Stratos Filalithis, UK*

I was pretty close to it. We had discussions, but how close? It wasn't as close as Lotus – but it wasn't far off. I don't think it would have gone entirely as expected.

**Who would you rather punch? Sergio Pérez or Luca di Montezemolo?**

*Thomas Halstead, UK*

I don't answer this one.

**Do you smoke?**

*Roman Pacak, UK*

Sometimes. 🚬

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Scan this code with your smart phone and you'll be taken straight to our reader panel page





“THE EXIGE S ROADSTER  
IS A QUICK, AGILE LITTLE  
SPORTSCAR AND LOOKS  
REALLY COOL.”

**KIMI RÄIKKÖNEN**



A stylized, handwritten signature of Kimi Räikkönen in yellow ink.

**KIMI RÄIKKÖNEN**

FOR MORE INFORMATION OR TO ARRANGE A TEST DRIVE,  
PLEASE VISIT [LOTUSCARS.COM](http://LOTUSCARS.COM)

Official fuel consumption, Lotus Exige S Roadster in mpg (l/100km): Urban 19.5 (14.5), Extra Urban 37.2 (7.6), Combined 28.0 (10.1). CO<sub>2</sub> emissions: 236 g/km.

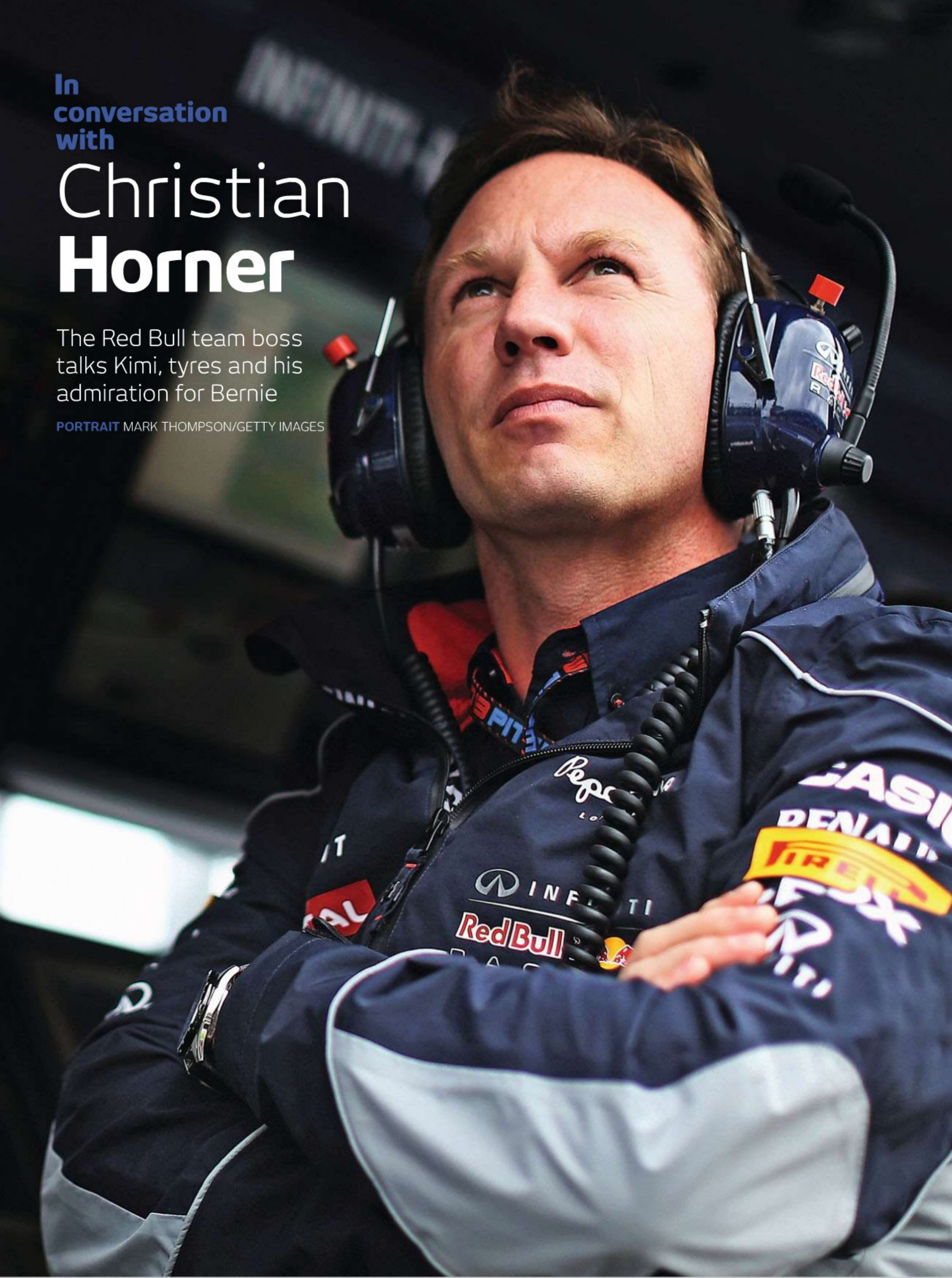
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In  
conversation  
with

# Christian Horner

The Red Bull team boss  
talks Kimi, tyres and his  
admiration for Bernie

PORTRAIT MARK THOMPSON/GETTY IMAGES





**Can you share your thoughts on Mark Webber's announcement that he is quitting F1, the timing of it, and who will replace him next season?**

Firstly, I think we need to recognise everything Mark has done for the team. Since joining us in 2007 he's grown with us, and all nine of his victories [pre-Hungary] and all but one of his 37 podiums have come in Red Bull cars. He's made a significant contribution to our three constructors' world championships and also to how the team have performed over the past few years.

Obviously it's a big decision for any driver to draw a close to their career. He's decided to do that early and he's therefore removed himself from any speculation about next year. That puts us in a situation where we want to pick the best candidate for that role. We're fortunate that we have the pool of talented young drivers at Toro Rosso to draw upon, and we will also gauge who else is available in the marketplace.

Kimi Räikkönen is a driver you would be foolish to ignore. However, we're going to take our time. It's important that we make the right decision as we don't need to rush. We'll evaluate the options available to us and try to make the best decision we can.

**Do you think Kimi Räikkönen will see the attraction of driving for Red Bull?**

Any driver is going to be interested by the equipment at their disposal. Any driver, any competitive driver, is going to want to be in the most competitive environment he can be in. I guess that's the same for Kimi as it would be for any driver. But let's just be clear here, we're not just looking at Kimi Räikkönen: we also have Daniel Ricciardo and Jean-Eric Vergne who are true contenders for that seat. We just need to take a bit of time to look at all of the options available to us.

**If you choose a driver who isn't currently racing with Toro Rosso, what does that say about the success of your sister team, given that their purpose is to blood stars for the future?**

The whole purpose of that team is to give young drivers within the Red Bull Junior programme the opportunity, but there's no prerequisite that they have to end up in a Red Bull seat. They have to earn that on merit. They have the opportunity, they're both at Toro Rosso on merit because of what they've achieved in the lower categories. Both Jean-Eric Vergne and Daniel Ricciardo had excellent junior careers and they're both in a learning phase, as they've come into Formula 1. Both are exciting prospects for the future.

The fundamental question is whether either of them is ready? That's something we will have to look at and contemplate quite carefully, but they certainly both deserve their place in Formula 1. Toro Rosso do an excellent job in developing those young drivers and we've seen that Sebastian Vettel is obviously the most successful graduate from that team.

**What do you make of the outcome of the FIA Tribunal over the Pirelli tyre test carried out by Mercedes at Barcelona?**

I think the relevant parties made their case and the judges did a good job in running the Tribunal and had all the facts placed in front of them. The verdict they reached was, I think, the right one. The penalty they applied? Possibly it was a bit soft, but it was a fair process and it was certainly interesting to see how it panned out. The biggest thing to come out of it is clarity. We need to know what the rules are – whether you can test a 2011 car for more than a 1,000km or whether you can test a 2013 car.

The big thing for us moving on from the Tribunal is to get absolute clarity for the remainder of this year and moving forward as to what constitutes testing and what does not. For example, are we allowed to test our 2014 engine from our third-party supplier?

**In any large commercial organisation, when a senior official manager is under threat of legal action, it would be normal for him to step down until the matter is settled. Do you agree that Bernie Ecclestone should move aside while the German legal prosecutors pursue their case?**

To be quite frank, Formula 1 is what it is because of Bernie Ecclestone, the way he's built the sport over the past 35 years. Everything we see here is based on what he's done and achieved and I think that without him we'd be in a lot of trouble. I think the deals he's still doing and the circuits and countries to which he's still taking Formula 1 are quite outstanding, and while he has the passion and enthusiasm to keep doing his job, it's in our interests that he does it for as long as absolutely possible. I think the day after he isn't there, the sport will be a lot worse off.

So whatever his situation, I think it's entirely right that he does continue because I can't see there being a better person for the role than Bernie.

**What is your view on the new-for-2014 FIA rule changes, bringing in driver penalty points and the return of in-season testing?**

By and large I think they're good. I think the aero restrictions and testing changes make sense. We've gone to eight days or four two-day tests so we've got rid of promotional days and straightline running and so on to now create proper testing. Arguably it's maybe slightly more expensive, but it gives young drivers and test drivers a chance to actually run at those events.

I'm not a fan of the licence points system; I don't like the thought of points carrying from one season into the next. In our position, we would have preferred penalties within a season to be dealt with within a year. But I think that by and large the changes are good and positive. Certainly on the technical side and from a sporting side with the testing, they make sense.

**Factfile**

Date of birth

**16 November 1973**

Birthplace

**Leamington Spa, England**

Team

**Red Bull**

Role

**Team principal**

**1991**

After six years in karting, Horner enters and wins the Formula Renault scholarship scheme. This gives him a sponsored drive in Formula Renault for the following year, with John Booth's Manor Motorsport. Horner takes one win and finishes fourth overall

After another uninspiring season behind the wheel, he decides it is time to stop and turns his attention to running the team

**1997**

After competing in a couple of campaigns in British Formula 3 with limited success, Horner graduates to FIA Formula 3000 and establishes his own team, Arden. With help from Prodrive and money from Lukoil, Horner manages a best result of sixth place in Jerez

**2005**

Arden win the FIA F3000 championship for a third consecutive year. Horner is then given the job by Red Bull of running their new F1 team, after they buy out Jaguar Racing

**2013**

Horner has now guided Red Bull to three drivers' and constructors' F1 world championships and is eyeing up a fourth consecutive title double this year

# Swimming with Finns

Williams rookie racer **Valtteri Bottas** might just be the latest big star to roll off Finland's Formula 1 production line. We joined him on a rare trip back to his homeland to find out more...

**WORDS** ANTHONY ROWLINSON  
**PICTURES** THOMAS BUTLER

## **There are so many Volvo**

estates on the E75 north-east out of Helsinki, we've surely driven straight into the pages of *Wallander*. Wide, flat rural spaces speed past us on either side – livestock curiously absent – then deep, dark swathes of pine forest, stretching to

the horizon. At a later time of day, nearer dusk, a mood of Nordic Noir would be inescapable... Who's to say that isn't Sarah Lund, snug in her Faroese knit, creeping up in the rear-view mirror? Is that Inspector Kurt Wallander slamming down the outside lane, late, desperate and drunk, as always? We're in Finland, of course, not Denmark or Sweden, the storied beats of those celebrated Scandi-sleuths, but the clean-aired reaches of northern Europe's craggy land masses feel so distinct from anywhere else on the continent, it's easy to lapse into mental cliché of time and place when passing →





through. So, too, when considering the clan of racing drivers these wide open spaces have bred. Will Valtteri Bottas, we wonder, as we pass swiftly across roads he has known intimately since his youth, happily inherit the 'Flying Finn' mantle carried with such verve by the likes of Keke Rosberg, Mika Häkkinen and Kimi Räikkönen before him? Or would that be cookie-cutter reductive of an individual whose F1 mission must be to make his *own* mark, distinct from those who have scorched the tracks before him, even as he acknowledges their legacy? We shall see...

Before travelling north into Finnish back country, to one of Valtteri's old stomping grounds, *F1 Racing* had spent much of the previous evening in his company, along with his sports-star girlfriend Emilia Pikkarainen, a member of the Finnish Olympic swimming squad and one of the country's most promising athletes. Considering they're a proto-Posh 'n' Becks, they make a distinctly low-key, un-starry couple, tucked away in a quiet corner of Helsinki's poshest hotel – the five-star Kamp. There's not much chit-chat going on, though they're obviously happy in each other's company and enjoying the early-evening midsummer vibe.

"Finns communicate without speaking," Valtteri jokes later and perhaps the lack of small talk can be explained by his preoccupation with the lightly scripted Williams F1 media schedule for that evening, which will juggle dinner with prime-time TV guest spots. His return is big news in the sports bulletins: this visit is a rare homecoming for Bottas, and being joined by the camera-friendly Emilia, who's also used to balancing a demanding race/training schedule, vaults them up the running order.

These pressures aside, Valtteri's happy enough to shoot the breeze, chatting first about *lonkero*, Finland's universally imbibed grapefruit and gin tippale, which is being consumed with gusto by some of the Kamp's terrace customers. For an abstemious racing driver, Bottas is surprisingly

knowledgeable about this popular beverage, recounting how it was introduced in 1952, during Finland's Olympic summer and proved such a hit with locals and visitors alike it's now regularly sold on draught, like beer. Gin and grapefruit juice by the pint... goes some way to explaining Finns' party-loving reputation.

Such tittle-tattle isn't why he's here though and talk moves swiftly to racing, his F1 year to date and the challenges of a rookie season. He's fresh from that stellar P3 in Montréal qualifying, and a smile creeps across his face when we mention that it was the first true affirmation of his widely hailed talent. "In those conditions the car was really good," he says. "Everything went right and the team did a really good job. Also, in the wet, the car is a bit more equal – for some reason it's suited me quite well – and I had a nice lap in all periods of qualifying. So, yeah, it was okay."

His features morph into an expression of bashful satisfaction that's an exact replica of the look on his face when he stepped from the cockpit of his FW35 in Montréal parc fermé, to be greeted by a thousand popping flash guns. 'Did I do that?' his visage demanded. Yes, Valtteri, you did.



**It's still early days in Bottas's** F1 career and international superstardom is some way off. So plugging a three-day media trip into his schedule isn't yet the logistical nightmare it could one day become. Indeed, he's happy to be home in Finland, having encouraged the team's media troupe to 'send him back' and allow him to share some of the delights of Finland's lung- and head-cleansing emptiness, divvied up among a population of just 5.4million.

That equates to a *lot* of acreage per person, as well as a whole lot of lakes – more than 100,000 by some counts. So a lake for every 54 people and some are vast. The biggest, →



**Valtteri takes to the ice at Pajulahti – he was a keen ice-hockey player in his youth and it runs in the blood... father Rauno also played to a high level**



“Everything  
went right.  
So, yeah, it  
was okay”

*Valtteri on that storming  
P3 in Montréal qualifying*





Saimaa, in the south-east, covers 1,700 square miles. No surprise, then, that a bracing dip is scheduled for the afternoon. "He's a country boy at heart," observes one member of the Williams team. "He's always talking about how much he loves Finland." And there's no faking the sense of contentment apparent in Valtteri's manner as he treads his home turf. "It's nice being home," he admits, with that oh-so-characteristic Finnish understatement. "I spent a lot of time here when I was younger, so everything feels very familiar. It's good to be back." We soon learn precisely why he's so at ease. We've tailed Valtteri to the Pajulahti ice hockey rink, where he once showed terrific form on skates in Finland's junior ice hockey leagues.

That was seven years ago, though, and today will be the first time he's stepped onto the ice since giving up the sport to concentrate on his accelerating motorsport career.

The rink and adjoining sports centre are perched on the shores of Lake Iso-Kukannen, the site being something of a honeypot for athletically inclined Finns. Word has spread fast among the Pajulahti massive that their speedy local lad might be making an appearance and, by 10am, the car park is filled with enthusiastic teens. They're as keen to see Bottas and score an autograph as they are to watch top local ice hockey team The Pelicans, against whom Valtteri will play, in a scratch side. Bottas, bless him, looks a tad nervous as he enters the team changing room. And well he might, for at 70kg against opponents averaging 95kg per man, he's a pint against quarts.

This will not, assuredly, be full-blooded, full-contact ice hockey, but Valtteri's taking no chances, strapping protective gear across his frame and posing for the cameras with the carbon-fibre codpiece that'll be protecting his cojones (essential equipment, of course, for those 'big balls' corners that remain on the F1 calendar).

He's tentative at first as he tours the rink, stick in hand, feeling for grip, just as he might in a race car. But within ten minutes the connectedness he once took for granted has returned and he's spearing around the ice, performing all the sprint starts, arced curves and scraping halts essential for gameplay. Be it on ice or on asphalt, that neural pathway between playing surface and seat-of-the-pants is attuned most finely in the Bottas spinal column. And he's one mean shot at goal. Within a quarter of an hour, he's smashing the puck ruthlessly towards the hapless Pelicans goalkeeper. One of his shots is an inch too high and – brilliantly – blasts a GoPro camera mounted on the crossbar to smithereens. The shot prompts a hearty roar from the spectating throng.

He looks to be in his element and as he pulls up in front of *F1R* during a break in play, his exhilaration is evident from his fast-paced chatter and the cloud of steam that rises from his head as he lifts off his lid. The boy's been working and has the sweat trails to prove it. "It feels great, yeah," he laughs, "I'm really enjoying myself. It's a shame I don't get the chance

to do this any more. I was a bit nervous, but as soon as I got in the changing rooms, it felt the same."

Bottas Sr, Rauno, played ice-hockey to a high level, Valtteri tells us, although his career was curtailed by a leg-breaking shunt on this very rink. "I was lucky," Valtteri adds. "I never got injured in ten years." Given his father's love of the sport – a Finnish national obsession – it was inevitable that Valtteri, a physically gifted youth, should be drawn towards the rinks. But it was Finland's *other* fixation, motorsport, that made his heart beat fastest.

"My dad used to drive me here to play, and one day – I must have been five or six – I saw a kart track and got really excited. That was it; there was no turning back." Ice hockey's loss, motorsport's gain and maybe, if those flashes of talent can be applied to a fleeter chassis, Williams' gain too. Bottas is philosophical about the shortcomings of this year's FW35, specifying corner entry and mid-corner performance as areas of weakness. Then he mentions traction issues and it dawns that Bottas has just described all the elements of cornering. "There are still some technical issues with the car that can't be fixed just like that," he says, "but there are positives."


For a young man of limited F1 experience, Bottas conveys a deep sense of self-possession when he talks – evidence of an inner certainty that all will come good in time. And when he mentions compatriot double world champ Mika Häkkinen, now Valtteri's co-manager, he reveals the foundation of that conviction.

"You learn so much from him," says Valtteri, "whether it's details of circuits or the general approach to F1. But the main thing he tells me is: 'trust yourself and everything will be okay. Believe in your talent and don't stress about anything extra. Just do your best and that's it.' So that's what I try to do."

The reflective moment passes almost before it has begun, as Valtteri is whisked away to prepare

for a lake plunge. Preliminaries, inevitably, include time in a sauna hot enough to turn Emilia – so fair-skinned she appears almost translucent in bright sunlight – lobster pink. They emerge and sprint to the lake, knowing that temperatures of 20°C (that's 7-8°C cooler than your local pool) await. The dive, the splash, the squeals of shock as warm bodies are assaulted by cold water... but once again Valtteri is in his element, surfacing from his dunking with an ecstatic grin. Together, Valtteri and Emilia look like any other weekendend sweethearts taking a break from the city. Just so happens they're Finland's hottest sporting couple.

Competition emerges between them, as it must given their DNA, and a slow stroke to the shore soon becomes a head-to-head sprint. It's won convincingly by Emilia – she's a world-class swimmer, after all – but a quiet aside is more revealing than her 'victory'. "Three years ago, when we met, he couldn't swim," she says, "now we can train in the pool together."

A fast learner is Valtteri Bottas. And dare we say it, a Finn to his ice-cool core. 

"I saw a kart track and that was it... there was no turning back"



**Bottas greets his fans then braves the rather chilly water of lake Iso-Kukannen, with Olympic swim squad girlfriend Emilia Pikkarainen – who taught him to swim, three years ago**





# THE BIG

# BANG



# THEORY

F1's 2.4-litre V8 engines are a potent cocktail of reliability, power and efficiency. In this final season of their use, we go behind the scenes at Mercedes' power house to find out how they do it

WORDS PETER WINDSOR  
PICTURES STEVE ETHERINGTON/LAT & MERCEDES

**It's easy to take today's 750bhp F1 powertrains for granted.** They're a bit like tyres: if they do what they *should* do, all the talk surrounds the chassis and the driver. If they don't, the 'experts' of the F1 world gather around to point their fingers. →

Enter, then, the engine men. They're not a part of the race-by-race glitter show; they see F1 daylight only on occasion. Yet they critically affect the ongoing beat of the F1 pulse. They don't speak PR pap: they deal with numbers, forces, temperatures, speeds... and with how these elements crucially affect the winning.

So you approach the headquarters of Mercedes AMG High Performance Powertrains in the knowledge that it will all be okay. The name may bedazzle; the vast expanses of grey and glass may bemuse. But inside, you know that real F1 people will be gathering by the coffee machines or chatting by the microwaves. Inside, you know, will lurk the racer's heart.

Andy Cowell, a straight-talking engine man with the bespectacled air of a college lecturer, is a classic product of the British motor-racing industry at its highest level: he is neat, organised, self-critical, logical and ultra-competitive. He is the man that Daimler, to their credit, appointed managing director of Powertrains last winter.

Cost reduction has been a huge goal for the F1 industry over the past few years and, regardless of what the purists say about the sameness of templated F1 engines, there's no denying the success of the current V8 era in terms of economy. Over nine years, engine costs have been reduced by around 60 per cent. That's a very impressive figure.

"For us, extending engine life reduces our production costs," says Andy. "Some parts are homologated by the FIA – but they're not big

performance differentiators, so even if we were allowed to change them we probably wouldn't. The main thing is stability. Stability means you can buy bigger batch sizes and tolerate longer lead times. Then the piece-price comes down."

Ilmor – as they were before they became AMG Mercedes High Performance Powertrains – were famous for introducing beryllium con-rods into F1. They played with ceramics, too. So how important – or frustrating – was the banning of these exotics?

"They were good cost savers," says Andy. "The regulations that came out with the new V8 in 2006 had significant material restrictions as well as dimensional standards. That took us away from some of the higher-cost materials, as well as the processing cost of those materials. Has it reduced performance? Not significantly."

Then there's headcount: "In terms of the number of people looking after the V8, it has reduced from the days of 2005-06, 2005 being the last year of the V10, when we were also developing the V8. We needed lots of people back then to develop normally aspirated engines. I think our headcount has remained stable over the past eight years, but people are working on more projects now. With the V8 homologation, the headcount came down, but a lot of people who worked on valve-trains and con-rods back then now work on KERS and ERS [the new-for-2014, heat-based energy recovery system]."

A 2013 engine is built to last 1,243 miles – and it usually does, if you include Friday running



INSETS: LAT ARCHIVE

## The history of engine capacity in F1

### 1950-1951: Make do and mend

In the post-war austerity era it was expedient to use pre-war machinery, so for the first two years of its existence the Formula 1 world championship permitted two types of engines: 4.5-litre naturally aspirated and 1.5-litre supercharged. These seasons were dominated by Alfa Romeo's 158s, commissioned

in the late 1930s by Enzo Ferrari when he worked for Alfa. With fuel additives, their 1.5-litre supercharged straight-eights could produce over 400bhp, but fuel economy was best expressed in gallons per mile...

### 1952-1953: Formula 2 rules

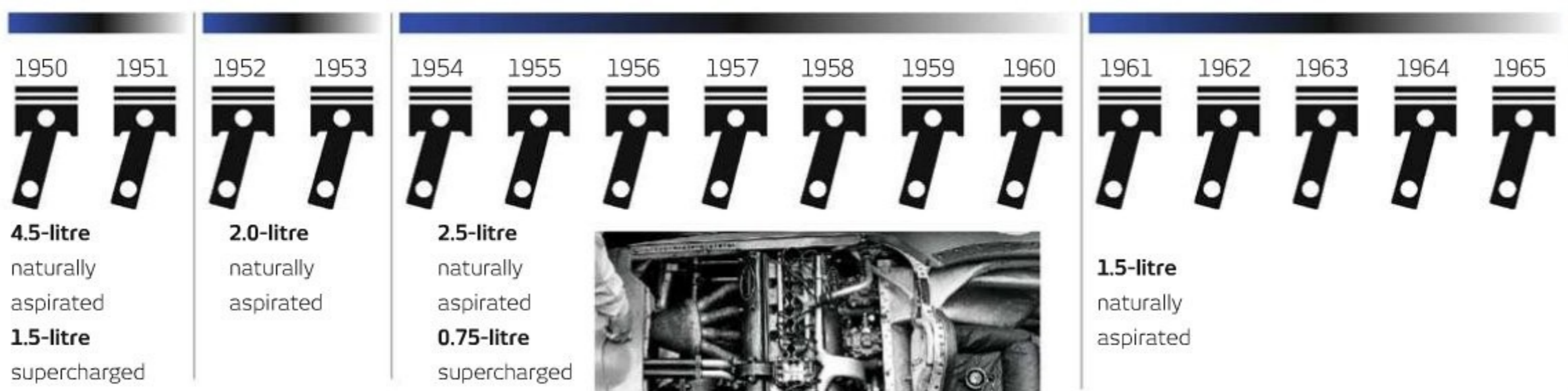
As the pre-war machinery became obsolete, F1 grids began to dwindle.

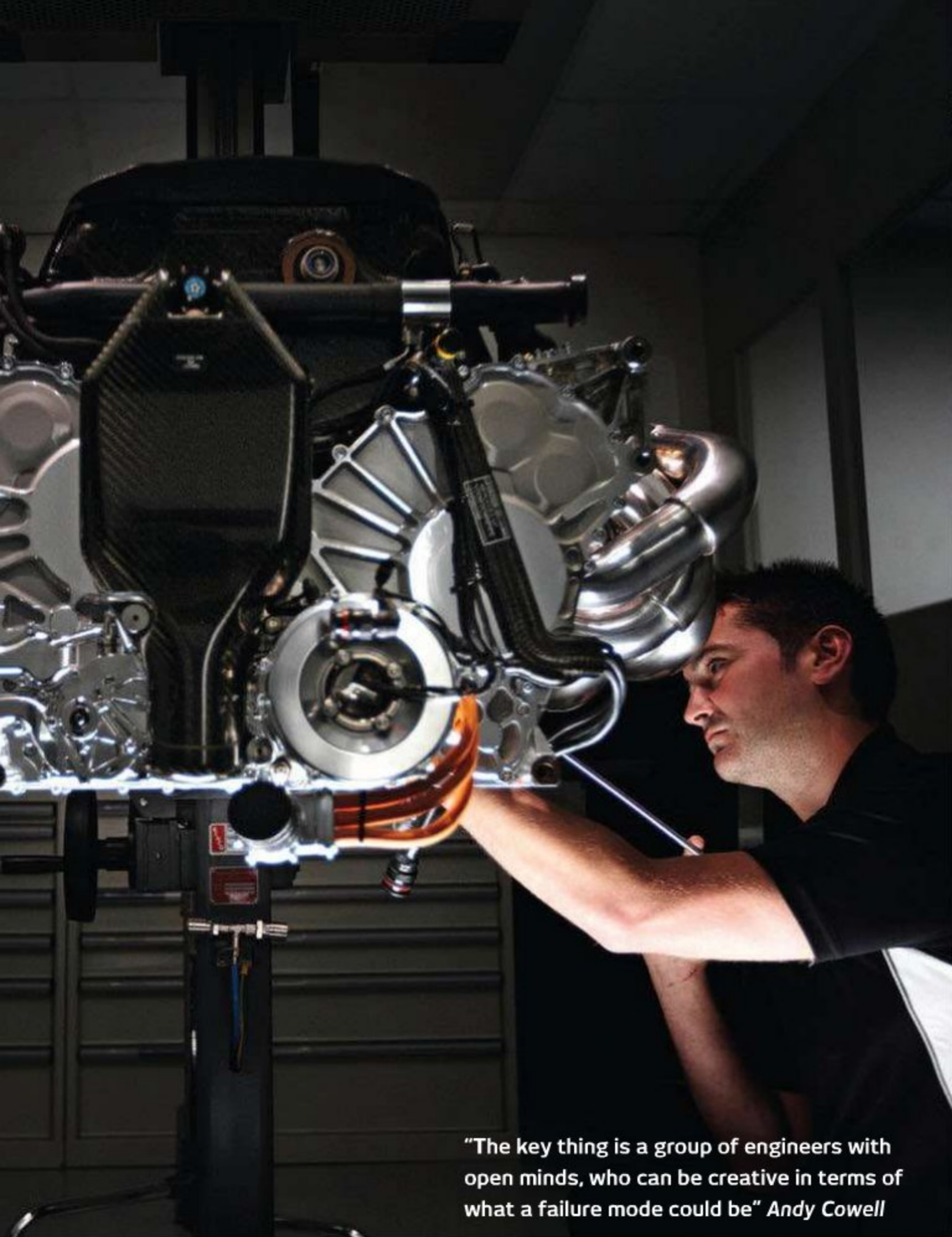
As a stop-gap before new rules came into force in 1954, the world championship ran to Formula 2 rules for two years – engines could be no bigger than two litres, although existing F1 cars were still welcome in non-championship races. Ferrari's Aurelio-Lampredi-designed four-cylinder '500' engine (named after a single cylinder's volume in cubic

centimetres) powered Alberto Ascari to the title in both years.

### 1954-1960: All change

New 2.5-litre regulations proved popular because they offered the possibility of increasing the displacement of existing engines. Ferrari initially persisted with their in-line 'four' before designing a new





"The key thing is a group of engineers with open minds, who can be creative in terms of what a failure mode could be" Andy Cowell

– but I wondered how long a current F1 engine could *actually* live if it was really extended?

Andy laughs. "We've had current F1 engines still running at around the mileage you require for Le Mans – about 3,418 miles. Would every engine go that distance? No it wouldn't. With any fatigue-based failure – and a lot of the failures do have a fatigue or wear element to them – you've got a normal distribution curve where some will go a Le Mans distance. You need to ensure that the few engines at the low end of the scale will never spoil a race weekend. They are the engines on which we focus. You have to really understand the poor performers out of each batch. What accelerates where? What induces fatigue failures? It's understanding this, and making sure you're very carefully monitoring all the parameters that accelerate those phenomena that is important."

I wonder if there's still a certain amount of 'black art' to it – whether one engine can defy logic, despite the numbers it produces? "I don't think it's a *black art*," says Andy, speaking as an engineer. "One of the good things that came out of homologation is that we had to build ten engines to an identical specification. We give them exactly the same pass-off in terms of running them in, and then you look at the power curves. And there is a spread; there's a spread across the ten engines. Why is that? This was something we never had time to examine before. Now we've spent time digging into it and understanding it. Before, we were too busy changing everything. It's a very potent →

V6; Maserati went from four cylinders to an inline six. Mercedes and Lancia arrived on the scene with new engines, a straight-eight and a V8. Exciting times on track.

**1961-1965: The drop to 1.5 litres**

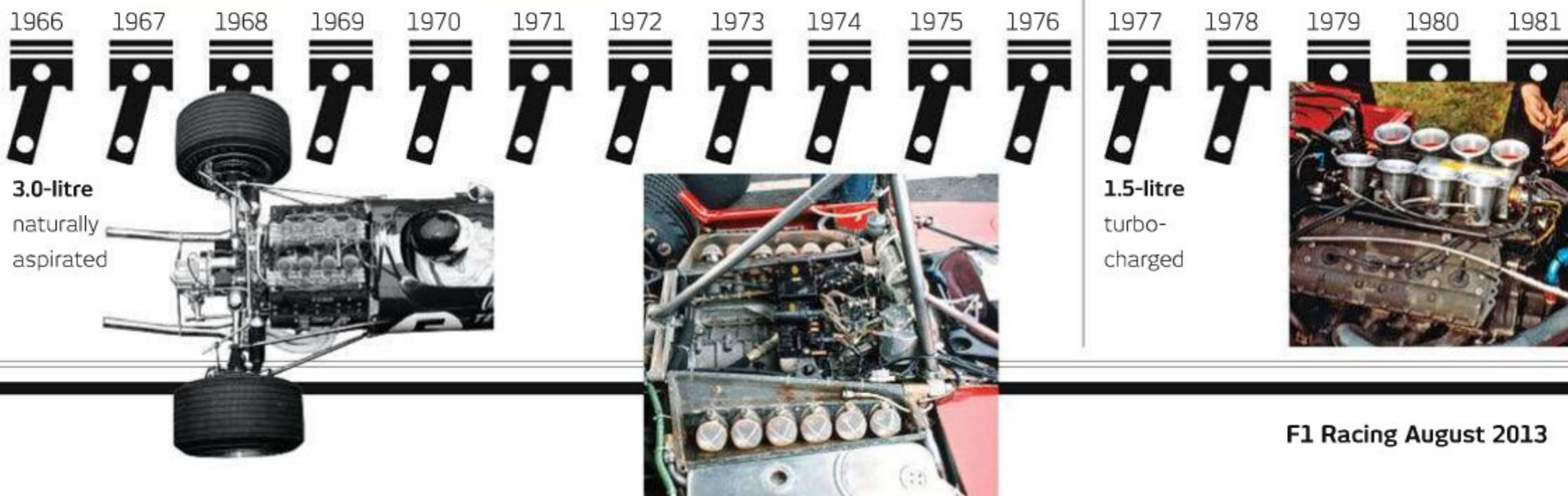
Once again Ferrari got the drop on their competitors as F1 became a 1.5-litre formula. Many manufacturers

wasted valuable development time lobbying against the changes instead of embracing them, which enabled Phil Hill to win the title for Ferrari in '61. The scene then became more competitive as the likes of BRM (with their own V8) and Lotus (with a Coventry Climax inline four and V8) caught up. Honda's V12 of 1964 was something to be heard...

**1966-1985: A boost to the formula**

Many drivers and manufacturers disliked the 1.5-litre formula, feeling the cars lacked power, and that as sportscar racing embraced ever more powerful prototypes, F1 should change. For 1966 the permitted displacement increased to three litres and, again, the fastest to adapt prospered: Jack Brabham secured a

supply of Repco's parts-bin special V8s, which propelled him and teammate Denny Hulme to titles in '66 and '67. BRM pitched in with the too-complex H16 before taking on V12s; Ferrari went from V12 to flat-12. Ford's Cosworth DFV V8 wasn't reliable enough on its 1967 debut, but it – and its successors – ran at the cutting edge until the 1990s.



performance upgrade, understanding that spread! It's free, in terms of components. It's not a new design. It's a careful understanding. It's not an increase in cost, because the best and the worst part in terms of performance and reliability cost the same. It's just understanding what the subtleties are."

Okay – so when is an engine not an engine? What entity, when you begin to strip down an engine, 'owns' its characteristic? "It's down to hard, careful thinking," says Andy. "Swapping bits around. Experimenting between the best and the worst – and being brave enough to take components from the best engine when the inclination is to keep it running in the front line. We're better off doing some carefully thought-out experiments in the factory, swapping bits around. Our performance-development guys are brilliant at that sort of thing."

All this involves engines comprising approximately 3,000 components. "A lot of those parts are in the cylinder head. There are a lot of components for the valve-train, and in the ancillaries for the pumps and so on. At the bottom end perhaps less so, but up in the gear-train – the bearings, the thrust-washers – it's a relatively complicated assembly."

What does Andy, as an engineer, think about the shrill, shrieking sound of the current V8? "I think that pitch is due to the exhaust and the firing orders we all run. The engine is also significantly higher-revving than we'd see in any other racing category. I'm not sure the sound of the engine is the most pleasant of noises. I'm not

a sound engineer, so I don't know whether it's because I'm always thinking about the bits inside the engine and what they're doing, but in some ways I think it's offensively loud."

Power increases have been made year on V8 year, despite regulations that allow development only in the areas of fuel, oil, airhorn and exhausts. Yet fuel consumption has reduced dramatically, by 11 per cent to be precise, since 2006. "This comes from attention to detail – to looking after every single droplet of fuel. Some of that has come as a consequence of the ban on refuelling, some from reminding ourselves that burning a droplet of fuel produces heat rejection. So don't burn a droplet unless it's going to propel the car. Be careful. Look for step-by-step gains. It's largely down to the calibration and the sophistication of the calibration."

"A weight saving of 2.5 kg, in terms of fuel produces about 0.1 seconds per lap. That's doable. In terms of power, all the hardware is fixed and homologated as far as the surface treatments (coatings and base materials) are concerned, so the focus is what we do with the oil to reduce friction. In an internal combustion engine, friction is the devil. It subtracts from the created power and manifests itself in a big radiator requirement. For every kilowatt you can lose in terms of friction it's an extra kilowatt out of the crankshaft and a kilowatt less to reject in the radiator. It's always good to go chasing that."

McLaren and Force India use ExxonMobil oil, AMG Mercedes use Petronas. Amazingly, the scientists behind the products have no idea about

the chemical constitution of their rival's oil. All Andy will say is that the two oils are "different".

As the time of writing, the Mercedes V8 has had only eight failures from 600 race starts. That's an impressive stat – but it perversely makes the failures all the more interesting. Lewis Hamilton's last year in Abu Dhabi was a case in point: he was leading the race – and then he stopped. In full view of the world.

"We understand that issue now," says Andy ruefully. "The problem in Abu Dhabi was down to a part failure in the fuel pump that caused the pump to stop working – but we then found another part in the pump was also failing. We did a lot of testing to recreate that failure and now we've done so. This drives you to do a lot more 'what if'-type analysis. You need a group of engineers who will start thinking of things some engineers would class as 'improbable' or 'impossible'. But you do it anyway. That's 'learning'. In the case of Abu Dhabi we had a eureka moment as a result of nice, clean experimentation and now have more confidence in the life-cycle of that assembly. The key thing is a group of engineers with open minds, who can be creative in terms of what a failure mode could be. That is using the emotional side of an engineer. But you also need them to be exceptionally structured and diligent as they do the experiment, then to be robotic in the belief in the output from the experiment."

No surprise, then, that Andy has a very open-plan layout in the engineering offices at Brixworth. It's easy to chat with whoever you

STEVEN TEE/LAT; GLENN DUNBAR/LAT; TOYOTA; RENAULT

## The history of engine capacity in F1 (continued)

### 1977-1988: Turbo power

Renault pioneered turbocharging, and from 1977 1.5-litre turbo engines ran alongside normally aspirated cars. By the mid-'80s turbos were reliable and powerful enough to become *de rigueur*. Renault never had

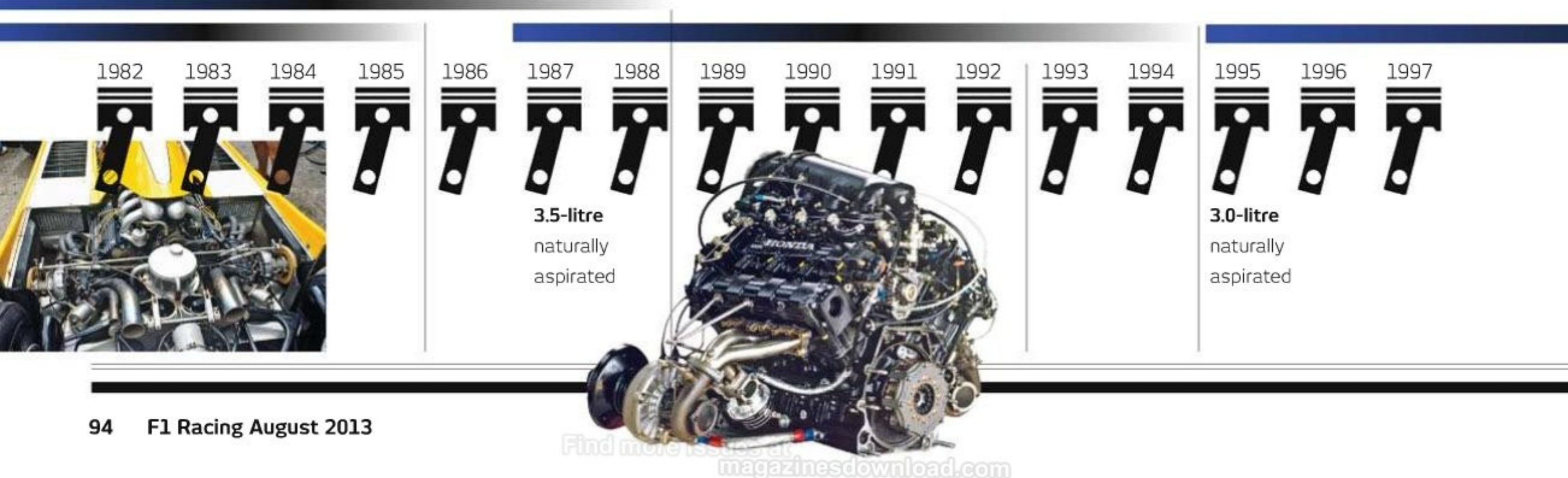
a consistent or reliable enough car/engine combination, so most wins fell to TAG-Porsche, Honda and Ferrari V6s, and the BMW in-line four. The FIA tried to balance performance by increasing naturally aspirated engines to 3.5 litres in 1987 and

cutting turbos' boost pressures to 4 bar in '87 and 2.5 bar in '88, before banning forced induction entirely.

### 1987-1994: Return to form

The 3.5-litre formula of 1987 came into its own once turbos were

banned. Honda and Renault V10s ruled from 1989-94, eyed enviously by those with Ford HBs and Judd V8s. Italians preferred V12s, though Ferrari did better than Lamborghini. Of Life's W12 – three in-line fours, 60° apart – the less said the better.



“We fully understand that issue now. We had a eureka moment as a result of nice, clean experimentation”

Andy Cowell on Lewis Hamilton's Abu Dhabi 2012 engine failure




like. “For people to work long hours – which is what every boss wants – it’s best for people to have fun,” he says. “For people’s brains to be free-flowing it *has* to be fun. Time flies when you’re enjoying your work.”

The assembly plant, likewise, is beautifully conceived. “If you want to be prepared in motorsport, you must be prepared for change. Regulations can change quickly. Technologies can change quickly. And therefore the ethos behind the manufacturing hall is that you could quickly swap those machines for others. The services are installed in a very flexible way. The manufacturing hall is one big hall rather than lots of separate boxes, and down the far end you could get an articulated lorry through a doorway. It’s designed to be flexible and responsive. That helps for machine servicing as well. It works well. It’s a nice environment.”

As is the UK for a company like this. “We’re in the middle of England, and that means we’re not far from anywhere. It’s good for relationships with suppliers, it’s good for employment. Mercedes GP are 30-40 minutes away. Force India are in between the two. We’re pretty well-placed.”

Indeed. In more senses of the word than one, you might say. Cosworth to some extent begat Ilmor (founders Paul Morgan and Mario Illien met at Cosworth); and Ilmor begat the Powertrains colossus we see today. The genes are good. The financial strength is huge.

And the company, full of brilliant people, is in very good hands. 



Teamwork and communication are essential, so the engineering offices at kept open-plan



**1995-2005: Safety measures**

Displacement was reduced to three litres in performance curbs brought in after the death of Senna in '94. V10 became the *de facto* configuration – Ferrari adopted it from 1996 onwards – but, as ever, performance crept

back up as cunning engineers found ways to circumvent the spirit of the law. Renault continued to dominate until the late 1990s, but once Ferrari and Mercedes got on top of their reliability issues they became the dominant forces out on track.

**2006-2013: Cost-cutting**

Spiralling spending and performance prompted the FIA to impose smaller engines, with tightly worded regs. Exotic metals, variable valve timing and variable inlet/exhaust systems were banned. At the end of 2006,

engines were homologated and development was banned, although tweaks ‘to improve reliability’ could be made with FIA permission. The number of engines permitted per season was reduced, and in 2009 the rev limit was set to 18,000rpm.



2.4-litre naturally aspirated – V8 configuration mandatory



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"I have always fought really hard, any time, anywhere, for one point. But seeing Michael in front of me that day was special. It was a present from God"

Always the bridesmaid at Ferrari; just out of contention for the '09 title with Brawn; very nearly a McLaren driver; and infamously nearly crushed into the wall by Michael Schumacher in Hungary 2010. **Rubens Barrichello's** career reads like a catalogue of near misses but, as F1's Mr Affable explains, he's not bitter...

PORTRAITS GLENN DUNBAR/LAT

**T**ypical Rubens. Having experienced with Williams a disappointing end to his distinguished and lengthy Formula 1 career, you'd think his former team motorhome would be the last place he would want to be seen having lunch. He doesn't give it a second thought. No problem at all; he says that we'll meet there on the Friday of the Spanish Grand Prix weekend.

Not only is Rubens made welcome, he is immediately at home and happy to see his old friends. The ever-efficient *maitre d'*, Jo Turley, has reserved a table at the window, all the better to assist with the photographs – but also, as it turns out, to provide occasional diversions. Passers-by, spotting Rubens, pop in to say hello. We have Brazilian journo; there's Dickie Stanford, the Williams team manager – not to mention Alan Jones and Alain Prost – all stopping by the table, and Ferrari personnel saluting cheerfully as they walk past. The hour or so we spend in conversation fills in detail of the impromptu display of widespread affection for this most popular of drivers.

Rubens has been part of the scene for a long time – as I know only too well, having kept company with him while writing a fly-on-the-wall account of Jordan GP during his debut season with the team in 1993. Then, by another stroke of good fortune, Barrichello happened to be driving for Stewart GP when I was recording their extraordinary first year in 1997.

Our relationship subsequently became more distant thanks to the media defences in position in the very different surroundings of Ferrari, a situation that was completely reversed during an eventful and unique season with Brawn in 2009.



A lot of ground to cover, then, as he arrives smiling and bang on time. Typical Rubens.

**Maurice Hamilton:** It's a nice surprise, seeing you again at grands prix. What are you up to?

**Rubens Barrichello:** I'm doing ten races for Globo TV, including the European GPs, Abu Dhabi, Singapore and Brazil.

**MH:** Have you done TV commentary before?

**RB:** They invited me to try it for the first time in Brazil last year. To be honest, I've always liked working on camera. People think F1 is very technical, which it is, but if I can make my son understand, I can tell others as well.

**MH:** Aside from expressing it in layman's terms, drivers can get across what it actually *feels* like in the car, whereas the rest of us have no idea. What impresses me most is how drivers look at a car on the move and detect all sorts of things about the fuel load or tyre degradation or whatever.

**RB:** Yes, you can point something out and people suddenly say: "Oh, right! I see that now." At the Bahrain Grand Prix, for example, I noticed there was a problem with Alonso's rear wing before →



the TV cameras picked it up. When I saw the drop in his performance, I began to look really closely at the Ferrari and, as he went by the commentary box, I could see the DRS flap was way beyond its limit.

**MH:** You've always enjoyed the technical side, haven't you? I'm reminded of that when I recall your first F1 season in 1993 with Jordan. They didn't have any other driver initially and there you were, doing all the testing with the new car and the new Hart engine – a novice carrying all the responsibility of giving feedback.

**RB:** Before that, I remember my first test at Silverstone at the end of 1992. They allowed me only six laps because Stefano Modena, a team driver that year, was going around. So it was like: 'Okay, let this Brazilian kid who's brought in money do some laps.' And I went faster than Modena ever did. After that, I took care of the tests. I had a great relationship with Gary Anderson [Jordan's then technical director] and he could see that although I had very little experience, I had such a feeling for the car.

**MH:** But weren't you overawed by that? I mean, there you were – what age were you?

**RB:** I was 19 at the time.

**MH:** And you were in an F1 car after F3000 and, before that, F3 and Formula Vauxhall Lotus. In the space of three years you were in an F1 car. But the team was growing as well; it was only the start of Jordan's third year in F1. How do you look back on all that?

**RB:** It was a great experience, a great way to begin my F1 career. It was a small team with not a lot of cash to get things done. The 1993 car wasn't great to qualify, but it was okay on full tanks. The best thing I remember was running seventh in Brazil, which was only my second race, before I had a hydraulics problem.

**MH:** It was the next race that mattered, wasn't it?

**RB:** Yeah, Donington Park (the European Grand Prix). I started 12th and by the end of the first

lap I was fourth. Unfortunately there was a problem because the race was wet, dry and then wet again: the traction control was working too hard and using too much fuel. They calculated it wrongly, although at the time they said it was a fuel-pump failure – or something like that.

**MH:** We all remember that race for Ayrton Senna's fantastic drive. It was such a shame you couldn't get on the podium with your hero because you were in third when the car stopped.

**RB:** If I had finished third, I would not have been able to stand up on the podium. I had a modified seat because of a lower-back problem. The seat was pushing my lower back forwards. When I got out of the car, I couldn't stand up; they took me straight to the medical centre. Saying that, I probably would have found a way to stand beside Ayrton if I'd finished. Then we almost got a point at Magny-Cours. I had a very long brake pedal and I lost a position to Michael Andretti's McLaren two laps from the end.

**MH:** You have fantastic recall. Can you remember all of your 326 F1 races?

**RB:** Yes, all of them. My wife thinks there's something wrong with me! But when I write my book, it won't just be the straightforward facts. I will want readers to know there has been much more to my life, from a poor – financially poor, I mean – background. When you think what we achieved, it's been phenomenal. The way my father went to great lengths and through great hardship to make sure I had the best equipment.

**MH:** I was always impressed by the way your dad was quietly in the background; he never got in the way, but he made sure he was there for you.

**RB:** I had a lot of support. He was a fanatic; he loved racing, but he didn't understand very much, so at one point we were learning together.

**MH:** Have you learned from that when dealing with your boys?

**RB:** Absolutely. Eduardo is 11 and he is already racing. I was there for his first race. He did very

well and when it was over, I asked him: "Did I talk too much? Is it something that I need to watch?" He said it was okay, although sometimes I was talking about two or three things at the same time and it was a bit much. So I need to step back. The fact that I'm not there for two or three races is actually good. He will have a lot more pressure than I did.

**MH:** Are his helmet colours like yours?

**RB:** Yes, mainly white – but, if you remember, there was one he painted for me when I was racing for Williams. That's become his helmet livery, with the orange at the sides having splits, instead of being round like mine.

**MH:** That reminds me of Interlagos 1995 [the first grand prix in Brazil since Senna's death] when you had Ayrton's colours incorporated into your helmet design. I don't think I've ever seen you so stressed as that weekend. That was a lot of pressure, wasn't it?

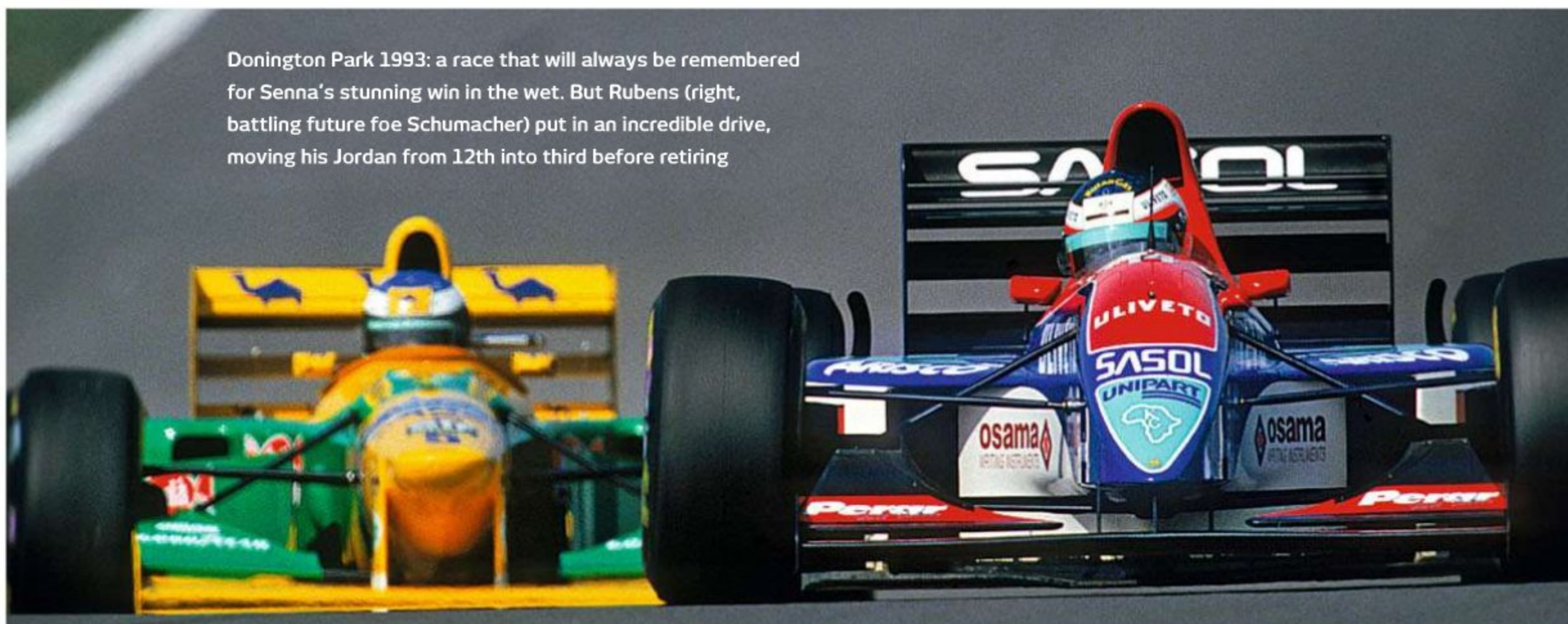
**RB:** Even if I could re-live that weekend, I wouldn't. I felt it was like I was doing something for somebody else; I wasn't being myself. You may have seen the moment when I embraced my father and I cried – big time.

There were a lot of other pressures that weekend. This was when I was trying left-foot braking for the first time. The telemetry then was not as good as it is now. I didn't know it, but I was touching the brake pedal a little when on the straight and it was putting temperature into the carbon discs. I was something like 3-4mph slower than Eddie Irvine on the straight. But we didn't know why. It felt like I was putting my hand in front of the airbox and the engine power would drop. I told my father I was going to have an accident because I was overdriving. I couldn't understand why I was quicker than Eddie in most of the corners but losing out. After five or six races, when I went back to right-foot braking, I finished second in Canada and the pressure eased off. But it was a tough time in Brazil.



"Jackie Stewart was the best teacher. People sometimes make fun of him, but I disagree with them"

Donington Park 1993: a race that will always be remembered for Senna's stunning win in the wet. But Rubens (right, battling future foe Schumacher) put in an incredible drive, moving his Jordan from 12th into third before retiring



**MH:** The pressure seemed to ease all round when you moved to Stewart in 1997 – even though there was more responsibility in a sense because you were leading a new team into F1. As you may remember, I was lucky enough to be able to watch the whole thing come together.

**RB:** Yeah, you seemed to be following me! But for me – and I guess for you – it was very special to be with a team that was starting off. Fascinating. So much to learn; an incredible ambience. What made it for me was working with Jackie Stewart. He was the best teacher you could have. People

**Sir Jackie re-signs Rubens in Japan. Rolex, courtesy of a happy boss, displayed proudly**



Second place with Stewart GP in Monaco '97: a few tears – and one of his best races ever

sometimes make fun of him – you know, what he says and how he says it – but I disagree with them. He is a guy who really put his heart and his passion into being a racing driver and making the show better.

**MH:** And how about as a driver? How did you feel about his words of advice?

**RB:** He loved my smoothness behind the wheel. He never told me anything about my driving because when you choose someone to drive for you and you are really sure, then it works. Maybe we wouldn't agree over this or that, but we would talk it through. We never fell out over anything.

**MH:** I remember Jackie had a thing about appearance – not you personally – but the appearance of drivers generally.

**RB:** I still have the suit he had made for me.

**MH:** And the hand-made shoes?

**RB:** Yeah, everything was perfect. I haven't changed much physically, which means I can still wear the suit. It's so nice.

**MH:** Then there was the story about the Rolex...

**RB:** Ah, yes. My watch was a Timex and, as you know, Jackie had a thing with Rolex. So I →

said to him as a kind of joke: "Jackie, you need to give me a Rolex Daytona." He said: "Okay, if you qualify in the top ten at the first two races, I'll get one for you." The first race, I qualified 11th, so – no watch. The second race, I was 11th again. I asked for one more chance. I qualified fifth for the next race in Argentina. I have this picture that one of the mechanics took and you can see the Timex in the air as I throw it from the cockpit! I got my Rolex – with an inscription from Jackie on the back.

**MH:** Monaco 1997 must be a great memory. How does that rate?

**RB:** The wins [with Ferrari and Brawn] mean more, for obvious reasons, but second place with that car at Monaco was as good as a win. It was our fifth race. I watched it the other day with my kids. They love to watch races they were not able to see at the time and I can talk them through it.

**MH:** That must be a wonderful thing to do.

**RB:** Yeah, it is. I love it. We watched the 1996 Spanish GP, the one in the wet, which Michael won. I was doing so well with the Jordan and then we had a problem with the hydraulics. They said it couldn't be fixed. I was getting changed when they shouted: "It's fixed! Get back in



Victories at Silverstone and Suzuka in 2003 rank as Barrichello's two favourite wins as a Ferrari driver

the car!" I put my helmet back on without the balaclava and without earplugs. I didn't get too far before the car stopped again – which was lucky for me because it would have exploded my ears if I'd been able to finish. I can tell you: never, *ever* drive an F1 car without earplugs. I had that 'Buuuuuzzzzz' in my head for weeks.

**MH:** I interviewed you when you left Stewart for Ferrari and I questioned the wisdom of it all, given the fact it was more or less Michael's team. You said you felt your talent would be enough;



just get in and drive the car. Which, in effect, is what you did. But it didn't quite work out as you'd hoped, did it?

**RB:** At my first meeting, I told Jean Todt: "If it's written in my contract that I will not be able to race for myself and win, I'm not interested. I want to be free to race." He said that's what Ferrari wanted from me. I knew Michael was really good and felt sure this was good for me as I was going to be able to prove myself.

In the first few races, nothing much happened because Michael was quicker. Michael didn't have bad days... but I was getting faster and faster, closer and closer. Then they started to talk about things that were not written in the contract. Like the T-car, for example. They said it was always Michael's. But why? That wasn't written in my contract – but it *was* written in his. They talked about strategy but, when my engineer left the room, they turned their chairs away and they started to talk. Instead of fighting, I took my chair and sat with them. So, I've always taken it positively without much blah, blah, blah.

There is no question that Michael was better than me – on average. I've always said this in Portuguese, so hopefully in English it will come out okay. If you put myself and Michael into a cage with a lion, I will probably be the only one that will come out. Because I'll find my way. I'll make it happen. So in the six years that I was there, I was finding my way. Driving for Ferrari was such an enormous, great feeling. There was a lot of pressure, but I've always liked the pressure. But things started to collapse because they never allowed me to be... good enough. At the end of the day, they didn't want it to change. That's why I said to myself: I have the best car available, but am I happy? I wasn't happy any more and I left one year before the end of the contract.



Look who it is: Alain Prost is one of many F1 'names', who swing by mid-interview to say hello to Rubens



**MH:** Was there a particular turning point when you thought: enough is enough?

**RB:** The US Grand Prix in 2005. There were only six cars racing.

**MH:** And you had the pitstops and almost collided when Michael rejoined.

**RB:** Yes, but that wasn't the thing. Something happened in the middle of the race that I will reserve for my book, if you don't mind. That incident you referred to when leaving the pits was a pure racing incident. I tried on the outside and he hung onto his line. That was okay. During the race, there was talking and... well, there were only six cars and that's what made me frustrated. The way the conversation developed made me furious and that's when I decided to leave.

**MH:** I can't wait to learn exactly what went on there. It must have been significant for you to feel that way. Moving on to more positive experiences at Ferrari, which of those wins stands out? I'm sure the first, Germany 2000, must mean the most?

**RB:** The first is always the most emotional. The reason I cried on the podium when I looked at the sky was because, for some reason, I remembered my father selling his car – the only

**RB:** It was horrible. But, for some reason, I knew it I would be okay. My wife was thinking I was crazy; my friends thought I had lost it. But I had two little guys who knew their daddy would go racing again some time. When Ross Brawn called me, I was actually by myself in the pool area of our country house, thinking about life. When he asked if I could be there by Friday, I said: "I can be there any time you tell me." He said: "We have a contract." When I went to tell my wife – I still become emotional when I think about it – it was the best day of my life. It was such a great feeling: I'm going to be driving!

To make it even better, it was here in Barcelona that Jenson had the first run in the new car. There was a lot of fuel on board and he came back and said: "We're going to have a lot of fun this year!"

**MH:** And if you hadn't had such a difficult start to the year with the brakes, the story might have been even better.

**RB:** That might sound like an excuse, but it wasn't. Jenson used Brembo and I used AP. In 2006, I couldn't get Jenson's brakes to work. So I changed to AP. In '07 we tested again; no way for me with Brembo. In 2008, the same thing.

six races at the beginning of the year. That package with the Mercedes engine was just phenomenal. It was a lovely car.

**MH:** Do you have one of the Brawn cars?

**RB:** I have one of the Honda cars. But I wish I had a Brawn.

**MH:** I'll bet you do! There was talk of you going to McLaren after that. What's the story there?

**RB:** I had a contract with Williams for 2010. I really thought about McLaren, but I've always had a good relationship with Sam Michael. I went to Williams to make it work with Sam. I was happy with that, but I have to say the offer from McLaren was very tempting. I'd like to think that if the F1 paddock remembers me for one thing, it will be for my honesty. I couldn't do that to Sam – or to Williams. I say that without any regret whatsoever. Unfortunately, I came in when Sam was about to leave.

**MH:** So things never really went as planned for you at Williams?

**RB:** Adam Parr was a financially driven man. The rules had changed inside the team; Adam needed to bring in money so it was not going very well and the car was not fantastic. The first year with Nico Hülkenberg was okay – I rate Nico very highly. But there were a lot of politics in the second year and even though I tried very hard to stay in Formula 1 for my 20th year, I was happy enough not to be involved in any of the politics. If F1 didn't want me any more, I didn't want to stay.

**MH:** Before we leave Williams and F1, I have to ask you about Hungary and Michael Schumacher in 2010. I remember you said that it actually looked worse from outside the car than it did from the cockpit. Even so, it looked pretty bloody awful from where I was sitting.

**RB:** I have always fought really hard, any time, anywhere, for one point. But seeing Michael in front of me that day was special. It was a present from God.

**MH:** What do you mean exactly?

**RB:** It was special because I was fighting Michael without anyone in my ear telling me shit about what I could and couldn't do.

**MH:** Ah, right! Sorry, carry on...

**RB:** I said to myself: "If I have one chance I'm going to take it." Although I had a softer tyre and it was coming good, it was very difficult to follow Michael. I think I had about six laps behind and I was trying to find a way. I could only manage if he made a mistake. He made one going onto the pit straight and I thought: "This is it! He's" →

.....

"Things started to collapse because Ferrari never allowed me to be... good enough"

.....

car we had – so I could race in the Brazilian kart championship in 1987. If he hadn't sold that car, maybe I wouldn't have been driving in F1.

But I have three top wins. Silverstone 2003: magic in a place I've always loved. Even if I had bad days, I had something over Michael then. I knew Silverstone better than I knew Interlagos.

**MH:** Really? Even though Interlagos was just over the fence from where you were brought up?

**RB:** Yes, really. Don't forget, I came to Europe when I was 16. At Interlagos I only did a couple of tests, whereas I raced so much at Silverstone. Suzuka 2003 was also special because I rate Suzuka and Spa as driver's circuits. And then Valencia 2009 – that was super.

**MH:** By then, you were in the Brawn. But it must have seemed during the winter that you would not be driving anything at all in 2009.

In 2009, I started with AP as usual but for some reason I was running hotter rear callipers than Jenson, which affected the tyres. It was minimal, but I was always a little bit behind even though I sometimes qualified ahead of him.

After six races, they suggested we try the brakes again. We changed the brake material and they worked perfectly for me on the '09 car. After Turkey, Jenson never qualified ahead of me again [apart from at the Hungarian GP, when Rubens suffered a mechanical failure in Q2] but, by then, Red Bull were coming strong, so I couldn't get as many points as I would have liked. It was a phenomenal year. If you ask me when was my best chance of becoming champion, I'd have to say it was 2009. I won at Valencia and Monza with a car that was not the best any more. But Jenson had won

“With Indycar – like F1 now – they needed money. They needed \$2million from me”



going to go on the inside and I am going to go outside, and that's the way it will be.'

I thought it was strange when he went to the middle of the track because he was not protecting his line. So I went on the inside and he started coming across. I then realised he knew he had zero chance of staying ahead because, if I came left or right, I would be faster. So, when I decided which way to go, he would close the door and I would back off. Well, that's what *he* thought! When people ask me how close to the wall I was, I say I don't know: I closed my eyes!

**MH:** Did you go into a year of Indycar with your eyes wide open?

**RB:** I did. And I'm happy to say that, even though F1 people think it's crazy stuff. But it was a difficult decision to start with. I had been watching the race when Dan Wheldon died. When my wife looked at me, I said: "No way. Don't worry – I'm never going to do that." When I went testing, she thought: "There's trouble there." When I went fast, she thought: "Oh, the trouble is getting bigger." But, in the end, she said: "If you're happy doing it, then I'm happy for you to do it." That was important to me.

So, yes, I enjoyed it. The paddock, the way they do things and the way they go racing is

really nice. But, although the cars are very safe, the tracks are not. You race in places where it's so bumpy your feet cannot stay on the pedals. If I had stayed, I would have tried to become president of the drivers' association and do something, because there was a lack of respect.

I struggled with the lack of power steering at first. Not because I was weak but because I had lost my smoothness. To drive an Indycar fast you've got to be brutal. But when I went to the ovals, I got my smoothness back because they had no downforce and, all of a sudden, I was up at the front when everyone was expecting me to be at the back.

It's a great feeling to say that I have done it and raced on the ovals. I worked very hard to get a second year because I thought I could do a lot better, knowing the car and trying different things. But, like everything else – like F1 now – they needed money. I told them they didn't need to pay me anything. But they still needed \$2million from me. I said I wasn't going to take it from my pocket, because I don't think I deserve that. But don't get me wrong; I never disliked my Indycar year. I'm proud I achieved so much in a not-so-competitive car in my first year.


**MH:** So, what are you racing now?

**Having overcome brake issues that ruled him out of the title, Rubens wins for Brawn in Valencia '09**

**RB:** Stock cars were something I'd always wanted to try. I thought: 'I'm gonna go back home and do that.' When I did three races last year for charity, I actually found the stock car was much easier to drive than an Indycar, so I decided to have a go.

**MH:** One final thought while we finish our coffee. I'm not sure you know this but around the time you were joining F1, Eddie Jordan was talking to Ayrton Senna about 1994. It was a very slim chance, obviously, but if you remember, Ayrton was looking to leave McLaren and the deal EJ proposed was to have Honda come to the team on the condition that Ayrton would be there and he would make it his team, run the team the way he wanted with his mates at Honda. It appealed to him. And you would have been the perfect number two; a young Brazilian he liked. Unfortunately, as we know, it came to nothing.

**RB:** I didn't know that. That would have been perfect. I tell you, just to have Ayrton sometimes sit at my table for dinner was great. Imagine having him as a team-mate. I had such a passion for him as a person and a driver. Thank you for telling me that.

**MH:** Not at all. You can put it in your book! 





## BE PART OF THE ACTION

57:41

**It has been a hectic month for *The Racer's Edge* team, with three live shows in a week ahead of the British Grand Prix in June!**

In the lead-up to the race, the production team behind the online F1 chat show set up base at Lotus F1 Team HQ at Enstone. There, host Peter Windsor was joined by Alan Permane, Lotus's Trackside Operations Director, and Julian Tomison, Senior VP of Lotus's technology partner Avanade.

The following day, the team made the short trip to the F1 Racing Fan

Village at Whittlebury Park, near Silverstone, where Episodes 17 and 18 were filmed in front of live audiences made up of British Grand Prix fans staying at the campsite. Peter's guests included Richard Cregan, CEO of Yas Marina Circuit, technical expert Craig Scarborough, veteran journalist Andrew Marriot and the editor of *F1 Racing* magazine, Anthony Rowlinson. Possibly the highlight of the two shows was a guest appearance from Mercedes test driver Sam Bird, who dropped by to explain how the steering wheel on his F1 car works.

Back home at Teddington Studios, the first of a special Mobil double-header in July featured Bruce Crawley, Global Motorsport Technology Manager at ExxonMobil, and Tim Goss, Technical Director at Vodafone McLaren Mercedes. The second show takes place on 25 July, so don't forget to tune in for live debate on topics including the new 2014 regulations.

*The Racer's Edge* is broadcast free on the internet; simply subscribe to our YouTube channel at [youtube.com/peterwindsor](http://youtube.com/peterwindsor). You can also download each episode from iTunes as audio or video files, or visit [autosport.com](http://autosport.com) to catch up with the latest episode.



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# His life's work

Author and über-fan Peter Higham has finally finished writing the *ultimate* motor racing encyclopaedia

WORDS STUART CODLING PORTRAIT ANDREW FERRARO/LAT

Well, this is peculiar. I find myself interviewing someone who, not so long ago, sat some way above me in the corporate hierarchy. Long-time readers of *F1 Racing* may recall the name Peter Higham from the days when it featured in the magazine's 'flannel panel' next to the description 'publishing director', to the left of the editor's introduction.

Fittingly, given Peter's encyclopaedic knowledge of motor racing, since vacating that position he has written a motor racing encyclopaedia. And this one's the daddy of 'em all: *World Encyclopaedia of Racing Drivers* took six years to compile, arrives in three volumes, and its 2,500 biographies reputedly run to nearly a million words.

"It's 923,000 words," clarifies the author. "At the last count..."

Peter isn't a full-time writer. His day job is managing photographic agency LAT. He entered the world of publishing by accident: "My first job was with a Formula Ford team that never actually raced. I knew I had to get a proper job, something that paid, to keep my father happy. *Autosport* were looking for an ad salesman and I got the job. I didn't expect to last more than three weeks..."

That was 1986 – "August, Gerhard Berger was on the cover" – and he's still working for the same publishing empire some 27 years later, a spell unbroken but for a sabbatical to nudge the final tens of thousands of words over the finishing line.

Magazine publishers tend to come from a sales background, the better to keep the figures in order, so seldom get involved in the detail of the contents. As such, Peter is perhaps the only publisher of *F1 Racing* ever to have had a vigorous debate with the deputy editor over whether Bernie Ecclestone's presence at the 1958 British Grand Prix is best classified as a DNS or a DNQ (the truth is closer to 'neither of the above'). That same delight in obscure detail pervades the encyclopaedia, which provides results and biographies for pretty much every driver to have raced at international level since records began. And why not? Books about

motor racing don't sell in *Harry Potter* numbers; the satisfaction comes from thoroughly exploring a subject about which the author is passionate.

"You'd have to describe it as a labour of love," says Higham. "When I started watching motor racing in the late 1970s I was a massive Ronnie Peterson fan, but I developed an interest in the lesser-known drivers. People like Jim Crawford, who raced in F1 only a couple of times. I wanted to know more about them. And that's why I chose to write about a wider group of people than just the world champions.

"Will it recoup? Not in terms of time spent, if you were to look at it from a purely financial point of view, but that was never the point."

It takes a certain kind of mindset to see a large-scale reference work through to fruition. The first *Oxford English Dictionary* took around 70 years from the start of the project to completion, and occupied the full-time attention of a succession of editors as well as an army of volunteers who submitted definitions and word origins on paper slips (one of the most prolific contributors, as detailed in the book *The Surgeon Of Crowthorne*, turned out to be an inmate at Broadmoor).

"It's about breadth as well as specifics, so the remit was international racing drivers. In terms of Formula 1, it's anyone who has driven during

an F1 weekend – so you have everyone from the likes of Michael Schumacher to Chanoch Nissany [the Israeli driver, famously christened 'Stirling Mossad' by *Motorsport News* wag Simon Arron, who practiced for Minardi at the 2005 Hungarian GP], plus winners of non-championship races.

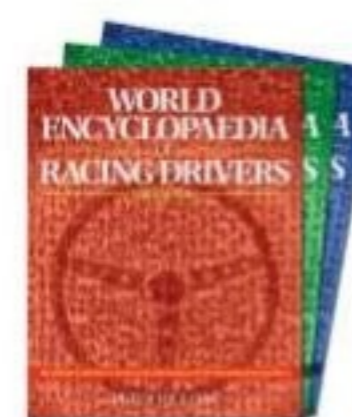
"I also love pre-war grand prix racing," he says, glancing over his shoulder at the picture on the wall behind him, of Tazio Nuvolari and colleagues at the 1935 Monaco Grand Prix. "It was an opportunity to write about that, and it's a subject that hasn't been as well covered."

The further back you go, the more shrouded in myth events become. Pre-war racing in particular is incredibly polarised between those drivers of whom much is known, and those who are mere names on a results sheet – names that may not even be real, since many wealthy young men at the time competed under pseudonyms to conceal their racing activities from their families. And then there are the events that have been subject to debate for decades – was the 1933 Tripoli Grand Prix *really* fixed by Nuvolari, Achille Varzi and Baconin Borzacchini? Any reference work that covers this ground does so at its peril.

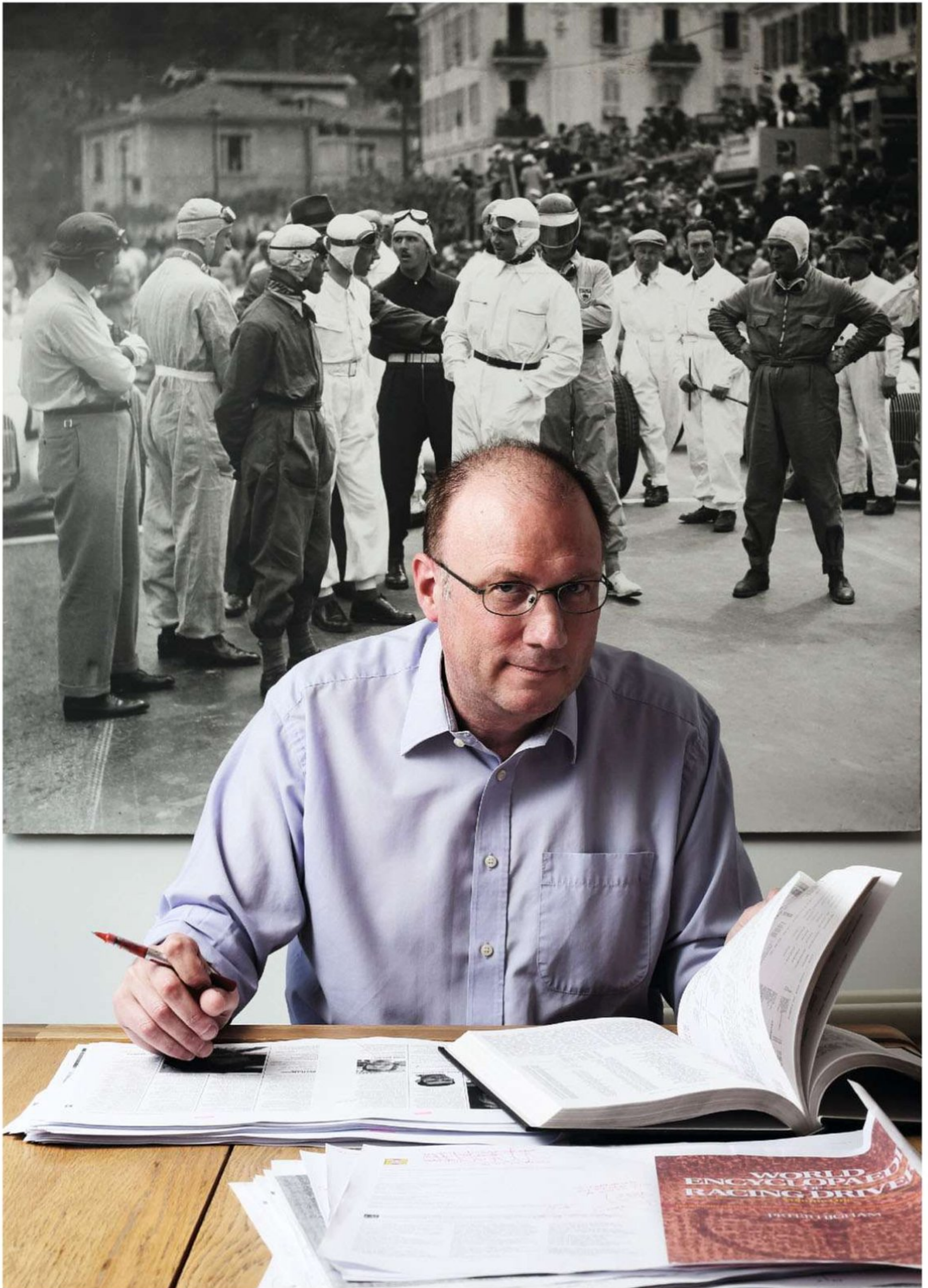
"I've written about everyone who finished in the top three of a pre-war grand prix. It spans everyone from Rudolf Caracciola, who has had many biographies written about him, to a guy called 'Carreras' who finished third in a Spanish Grand Prix – and there was absolutely no information about him except a name on a results sheet – so that was quite a challenge.

"The best bit was writing about drivers who are hardly ever written about: early American racers, Edwardian heroes, all the way to Emilio Zapico – who, I think, has one of the best racing driver names ever. Sadly he failed to qualify for the 1976 Spanish Grand Prix..."

"You'd have to describe it as a labour of love"



• Visit [www.haynes.co.uk](http://www.haynes.co.uk) or call 01963 442030 to order your copy of the encyclopaedia, which costs £175





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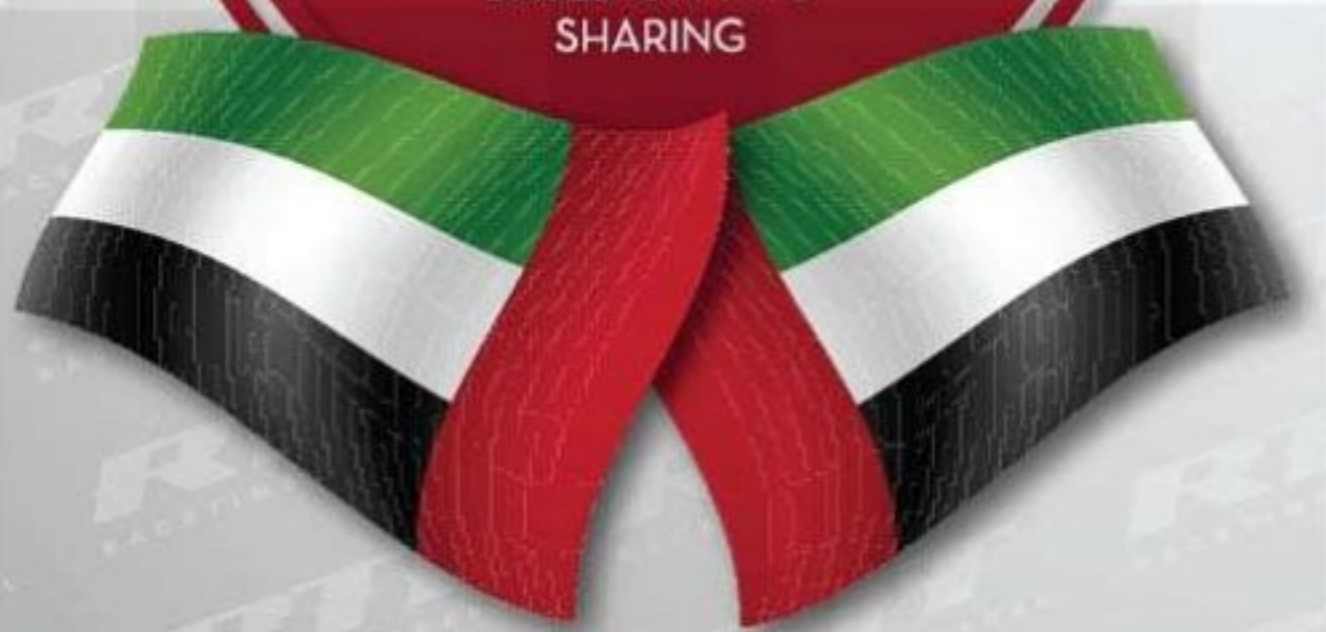
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# A Great British Weekend



**FAN  
VILLAGE  
2013**

IN ASSOCIATION WITH  
WHITTLEBURY PARK

Record-breaking conga attempts, amazing falcons, live bands, chat shows and special guests... the 2013 F1 Racing Fan Village was a more than just a campsite, it was home to 15,000 friends





# Big thank you to all campers!

Located at Whittlebury Park, within walking distance of Silverstone, the F1 Racing Fan Village was undoubtedly the best place to experience the 2013 British GP weekend, with over 15,000 campers enjoying the on-site facilities and entertainment over seven fun-packed days.

Yas Marina Circuit returned as the Fan Village's partner for the second year, and provided the Abu Dhabi Fan Zone, the focal point of the campsite's entertainment. The guys from Sky Sports F1 also popped by to host the famous Fan Village Quiz Night and attempt a world-record conga around the campsite.

Peter Windsor hosted two episodes of our F1 chat show *The Racer's Edge* in front of a live audience. And, unlike last year, the sun put in an appearance, making the F1 Racing Fan Village the place to be on a Great British Weekend!





## In full flight

The rain may have been falling as the British summer temporarily deserted us, but visitors to the F1 Racing Fan Village were invited to cast their minds to sunnier climes at the Abu Dhabi Heritage Village.

Courtesy of sponsors Yas Marina Circuit, Etihad Airways and the Abu Dhabi Tourism & Culture Authority, F1 fans could experience the culture of this fascinating emirate, with live demonstrations of the ancient desert sport of falconry. A number of henna artists were 'on hand' to demonstrate their painting skills, too.

With delicacies offered to passing visitors, including complimentary cups of Arabic coffee, there was plenty to warm the hearts of even the most windswept campers.



### FREE WI-FI

The Fan Village's partners, Yas Marina Circuit, provided free wi-fi access across the Abu Dhabi Fan Zone.



### KEEP ON TRUCKIN'

The Abu Dhabi Tourism & Culture Authority truck (above) arrived on Tuesday afternoon. It was later transformed into the Heritage Village, the focal point of the entertainment.



### CULTURE VULTURE

As well as live falconry and henna painting, the Abu Dhabi Fan Zone featured the work of Arabian calligraphy experts (above).

## Golden couple

What an amazing anniversary surprise! Michael and Emma Thompson found something extra in their Yas Camping Bag - a VIP trip to the 2013 Formula 1 Etihad Airways Abu Dhabi Grand Prix in November.

The bags were handed out to every visitor by Yas Marina Circuit staff, but only one contained the

Golden Ticket. The amazing prize included flights to Abu Dhabi, four nights in a luxury hotel and tickets for the race weekend.

It was only when they were told of their amazing prize that Michael and Emma revealed that they were celebrating their 10th wedding anniversary - and then promptly burst into tears!



# The Racer's Edge... LIVE!

There was an extra special treat for campers at the 2013 F1 Racing Fan Village, as two episodes of the online TV show *The Racer's Edge* were filmed live from Whittlebury Park's Pavillion.

Hosted by Peter Windsor, the first show on Thursday featured guest appearances from Richard Cregan, CEO of Yas Marina Circuit, Nabeel Al Zarouni of Abu Dhabi Tourism & Culture Authority and Mercedes test driver Sam Bird, along with regulars Craig Scarborough and Anthony Rowlinson. The following day, Peter was joined by veteran journalist Andrew Marriott and F1 driving coach Rob Wilson as the panel of guests shared anecdotes and paid tribute to a true British F1 hero, James Hunt.

Both shows were filmed in front of a live audience of British Grand Prix fans, and proved to be a huge hit among campers at the Village.



## Quizmasters

**Question:** What is the greatest Formula 1 quiz ever created?

**Answer:** It's the amazing Quiz Night at the F1 Racing Fan Village, obviously.

There were some great prizes on offer at the famously tricky Quiz Night this year, including a selection of stylish Christopher Ward timepieces worth around £300

each, Yas Marina Circuit silver cufflinks and filofaxes, as well as numerous bottles of champagne (not that the entrants we met required any further 'lubrication').

Congratulations to the winners, who returned to their tent richer than before. Next year, will you take on this serious trivia challenge?







Were you a winner?  
Tell us your story at  
[www.facebook.com/  
F1RacingFanVillage](http://www.facebook.com/F1RacingFanVillage)

### SCREAM FOR ME, WHITTLEBURY!

Formula 1 driving coach Rob Wilson was not just a special guest on *The Racer's Edge*. After the live show had finished, he put in another winning performance on stage with his rock band Grand Prairie.



## It's a dirty job but...

...someone's got to do it! In the lead-up to Sunday's big race, the Sky Sports F1 team paid a visit to the F1 Racing Fan Village to film a piece on the camping experience. Johnny, Crofty and the film crew braved the elements as they spoke to fans, hosted a barbeque and took up the offer of a slice of cake from some generous campers. But the hard work wasn't finished yet, as Johnny and the rest of the team accepted an invitation to join some campers making the most of their day with an impromptu party. Thankfully the Sky Sports F1 team were on hand to help out with the champagne. Who said this roving reporter job was a lark?



### LIGHTS, CAMERA...

One of the highlights from *The Racer's Edge* live shows was Mercedes test driver Sam Bird explaining the functions of an F1 steering wheel. On Friday night, the conversation turned to British driver James Hunt, whose battle with Niki Lauda for the 1976 world title is brought to life in the forthcoming movie, *Rush*.



## Crofty's VIP brain teaser

Sky Sports F1 presenter David Croft surprised people at the famous Quiz Night by announcing he had an extra prize to give away – five tickets for an exclusive Santander Paddock Tour. However, to get their hands on this amazing freebie, Crofty posed the following question: "How many Anthony Davidsons would fit head-to-toe around a lap of the Silverstone circuit?" The answer, of course, was 3,642, but the nearest guess (3,300) came from a team of quiz runners-up, who made the most of their unexpected bonus prize.

### THE TALENT...?

Sky Sports F1 channel's Johnny 'Talent Spotter' Herbert has obviously noticed something special about this young racer. Should Jenson be worried?



# Were you there?

Johnny and Crofty enjoyed the Fan Village – but what did you think of it? Send your favourite photos, stories and suggestions for next year's event to:

[www.facebook.com/F1RacingFanVillage](http://www.facebook.com/F1RacingFanVillage)



See you all again next year!



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# FINISHING STRAIGHT

Reports Previews Analysis Opinion Stats

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## Onwards and upwards

Rosberg's second win of 2013, this one at Silverstone, pulls a reinvigorated Mercedes ahead of Ferrari to second in the standings. But can they catch the Bull?

### REPORTS



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Tyres are again the talk of the town as Rosberg steers to a third win in an incident-packed race



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Championship leader Seb Vettel finally wins his home grand prix

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Low-speed corners – and plenty of them. He who starts in front, stays in front

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There's drama a-plenty as TC sits in on the 'Tyregate' proceedings at the FIA International Tribunal in Paris



#### 130 MURRAY WALKER...

...has fond memories of a "Hooray Henry who smoked, drank, womanised and took drugs far too much" – co-commentator, James Hunt



# RACE DEBRIEF

by Anthony Rowlinson

## British Grand Prix

30.06.2013 / Silverstone



# Coulda woulda shoulda

A major triumph for Mercedes was the headline story that disguised a nightmare weekend for Pirelli, with the high number of tyre failures and resultant Safety Cars turning the race upside-down

**It could have been Mark Webber's** victory, had the 2013 British Grand Prix run a lap or two longer than its allotted 52 tours.

It *would* have been Seb Vettel's victory, had he not suffered a gearbox failure on lap 41.

And it *should* have been polesitter Lewis Hamilton's victory after a scorching qualifying lap and DRS-zone-breaking early charge in front of the adoring Silverstone massive.

None of this impressive trio, however, were fêted to be first to the flag on an afternoon when Pirelli tyres would once again hog the narrative. Instead it was Nico Rosberg who emerged through the chaos of five catastrophic tyre failures to take his third career victory – his first from a position other than pole.

Behind him lay a trail of tyre-related carnage: Hamilton's left-rear blew on lap 8 after exiting Turn 5; Fernando Alonso's right-rear deflated a lap later without exploding; Felipe Massa suffered a failure almost identical to Hamilton's on lap 10; Jean-Eric Vergne's left-rear went

"like a bomb going off" on lap 15 and Sergio Pérez's left-rear failed on lap 46, prompting an incredible 180mph avoidance jink from a close-following Fernando Alonso. A nearby Romain Grosjean was less lucky, and his Lotus followed Pérez's McLaren into retirement, both cars extensively damaged by flailing or flying rubber.

The Safety Car was deployed twice and the situation appeared so grave that F1 looked to be heading for a reprise of the infamous 2005 US GP at Indianapolis, which was contested only by the six Bridgestone runners, after Michelin instructed teams their tyres were not race-fit.

Pirelli were forced into an emergency mid-race response, urging teams to raise tyre pressures to approximately 24psi – a level that could be considered extreme in the context of start-line pressures of around 15psi. Their hope was to increase tyre sidewall stability at the cost of outright performance. FIA race director Charlie Whiting conceded, post-race, that he had considered red-flagging the grand prix and,

indeed, that one further failure would have prompted him to do so.

That he didn't, allowed a 120,000-strong crowd to be treated to a thrilling seven-lap finale in the wake of Vettel's departure. Seb had looked to have this one in the bag, but when he found a box of neutrals entering Club corner, he had no choice but to park trackside, prompting the final Safety Car, which closed up the pack behind Rosberg. Most notably, this brought Webber back to within reach of a win at a track that has always treated him well. He was still separated from the silver leader by Kimi Räikkönen, Adrian Sutil and Daniel Ricciardo, but neither the VJM06 nor the STR8 are a match for an RB9, while Kimi's E21 was about to be compromised by its rubber. Räikkönen's second set of hards had been fitted on lap 29, so could no longer offer him sufficient grip to resist a win-sniffing Webber on lap 47.

As Mark stormed to an eventual second, just 0.7secs off Rosberg, Kimi would slip to fifth from


a likely podium, and while his ten points set a new record for consecutive score finishes (25, just ahead of Michael Schumacher's 24), Lotus's head of trackside operations, Alan Permane, admitted that not stopping for a final set of hards had been the wrong call: "Unlike the others around us, we had a choice to make under the final Safety Car. For Rosberg and Webber, it was obvious they should stop, but Kimi was telling us his tyres were good, so we opted to run the distance. In hindsight it was the wrong decision, but these are the choices you have to make."

Vettel's retirement was significant, then, not only for removing him from the lead. Had he parked up in a spot not deemed safety critical, the rumbling AMG Merc would never have been deployed and Rosberg would have found himself making an emergency late stop, rather than a 'free' one. How so? He'd already radioed in to report a vibration from the rear, which the team identified as a left-rear 'problem'.

Without Vettel's Safety Car-prompting retirement, it's likely Rosberg would either have suffered a failure of his own, or been forced to crawl around, elevating Räikkönen to a lead he could well have kept. Still, good and bad karma have always had their role in motorsport and if this was Rosberg's day to be charmed, certainly it was Hamilton's to be cursed. His eventual fourth was scant compensation for a win he merited, but he'll take comfort from the front-running competitiveness his team now possess.

A champagne-drenched Toto Wolff later reckoned it too early to consider Mercedes as championship challengers and insisted the Wo4's performance was still too temperature-dependent to be truly consistent. But a win on the Monaco streets and now around the sweeps augur well for a strong fight for the rest of the year. Lying second in the points table behind Red Bull (219-171), they're by no means out of touch.

Ferrari's so-so Silverstone – a 3-6 finish from a 9-11 start – dropped them behind Merc in the makes' chase and it's clear that even with Alonso's remarkable salvaging skills, more outright performance is needed to permit Fernando a true shot at the drivers' title. Team principal Stefano Domenicali was frank in his assessment of the Ferrari's pace, bemoaning poor qualifying speed and average race pace at a track where the Scuderia are traditionally strong.

Stefano's woes, though, were dwarfed by those of another Italian racing organisation, for which the 2013 British GP marked a new low. As Pirelli's F1 chief Paul Hembery walked from the team motorhome for an audience with FIA President Jean Todt soon after the race finish, he bore the weight of the world on his shoulders. On a weekend when any one of five aces might have won, there was only one loser. 

## The story of the race

**V** Hamilton makes good use of pole position to blast away at the start, leaving Vettel trailing in his wake



### SILVERSTONE



**>** Hamilton's chance of victory is lost as he becomes the first driver to suffer a tyre failure in the race



**>** Following blown tyres for Alonso and Massa, Vergne's tyre failure puts him out of the race on lap 15



**< V** The Safety Car is scrambled following the tyre failures to allow the marshals to clear up the debris



**^** Seb is all set for victory when his gearbox fails on lap 42, bringing out the Safety Car again

**>** Rosberg takes up the baton for Mercedes and claims his second win of the season, with Webber in second



MAIN PHOTO: CHRIS BIRD/LAT. ILLUSTRATION: ALAN ELDREDGE. INSETS: STEVEN TEE/LAT. ANDREW FERRARO/LAT. CHARLES COATES/LAT. JED LEICESTER/LAT. JAKOB EBREY/LAT.

# British Grand Prix stats

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



**1. HAMILTON**  
MERCEDES  
1min 29.607secs Q3



**3. VETTEL**  
RED BULL  
1min 30.211secs Q3



**5. RICCIARDO**  
TORO ROSSO  
1min 30.757secs Q3



**7. GROSJEAN**  
LOTUS  
1min 30.955secs Q3



**9. ALONSO**  
FERRARI  
1min 30.979secs Q3



**11. MASSA**  
FERRARI  
1min 31.779secs Q2



**13. PÉREZ**  
McLAREN  
1min 32.082secs Q2



**15. MALDONADO**  
WILLIAMS  
1min 32.359secs Q2



**17. GUTIÉRREZ**  
SAUBER  
1min 32.666secs Q1



**19. BIANCHI**  
MARUSSIA  
1min 34.108secs Q1



**21. DI RESTA\*\***  
FORCE INDIA  
NO TIME

## THE GRID



**2. ROSBERG**  
MERCEDES  
1min 30.059secs Q3



**4. WEBBER**  
RED BULL  
1min 30.22secs Q3



**6. SUTIL**  
FORCE INDIA  
1min 30.908secs Q3



**8. RÄIKKÖNEN**  
LOTUS  
1min 30.962secs Q3



**10. BUTTON**  
McLAREN  
1min 31.649secs Q2



**12. VERGNE**  
TORO ROSSO  
1min 31.785secs Q2



**14. HÜLKENBERG**  
SAUBER  
1min 32.211secs Q2



**16. BOTTAS**  
WILLIAMS  
1min 32.664secs Q1



**18. PIC**  
CATERHAM  
1min 33.866secs Q1



**20. CHILTON**  
MARUSSIA  
1min 35.858secs Q1



**22. VAN DER GARDE\***  
CATERHAM  
1min 35.481secs Q1

## THE RACE



### THE RESULTS (52 LAPS)

1st	Nico Rosberg Mercedes	1h32m59.456s
2nd	Mark Webber Red Bull	+0.765s
3rd	Fernando Alonso Ferrari	+7.124s
4th	Lewis Hamilton Mercedes	+7.756s
5th	Kimi Räikkönen Lotus	+11.257s
6th	Felipe Massa Ferrari	+14.573s
7th	Adrian Sutil Force India	+16.335s
8th	Daniel Ricciardo Toro Rosso	+16.543s
9th	Paul Di Resta Force India	+17.943s
10th	Nico Hülkenberg Sauber	+19.709s
11th	Pastor Maldonado Williams	+21.135s
12th	Valtteri Bottas Williams	+25.094s
13th	Jenson Button McLaren	+25.969s
14th	Esteban Gutiérrez Sauber	+26.285s
15th	Charles Pic Caterham	+31.613s
16th	Jules Bianchi Marussia	+36.097s
17th	Max Chilton Marussia	+67.660s
18th	Giedo van der Garde Caterham	+67.759s
19th	Romain Grosjean Lotus	+1 lap - damage
20th	Sergio Pérez McLaren	+6 laps - tyre/damage

### Retirements

Sebastian Vettel Red Bull	41 laps - gearbox
Jean-Éric Vergne Toro Rosso	35 laps - puncture

### THROUGH SPEED TRAP



**Fastest: Felipe Massa, 193.47mph**



**Slowest: Nico Rosberg, 182.58mph**

### TYRE COMPOUNDS USED



Medium



Hard



Intermediate



Wet

### CLIMATE

Sunny 21°C

### TRACK TEMP

32°C



### FASTEST LAP

Mark Webber, lap 52, 1min 33.401secs



### FASTEST PITSTOP

Sebastian Vettel, 24.092secs (entry to exit)

### DRIVERS' STANDINGS

1st	Sebastian Vettel Red Bull	132pts
2nd	Fernando Alonso Ferrari	111pts
3rd	Kimi Räikkönen Lotus	98pts
4th	Lewis Hamilton Mercedes	89pts
5th	Mark Webber Red Bull	87pts
6th	Nico Rosberg Mercedes	82pts
7th	Felipe Massa Ferrari	57pts
8th	Paul Di Resta Force India	36pts
9th	Romain Grosjean Lotus	26pts
10th	Jenson Button McLaren	25pts
11th	Adrian Sutil Force India	23pts
12th	Jean-Éric Vergne Toro Rosso	13pts
13th	Sergio Pérez McLaren	12pts
14th	Daniel Ricciardo Toro Rosso	11pts
15th	Nico Hülkenberg Sauber	6pts
16th	Pastor Maldonado Williams	0pts
17th	Valtteri Bottas Williams	0pts
18th	Esteban Gutiérrez Sauber	0pts
19th	Jules Bianchi Marussia	0pts
20th	Charles Pic Caterham	0pts
21st	Max Chilton Marussia	0pts
22nd	Giedo van der Garde Caterham	0pts

### CONSTRUCTORS' STANDINGS

1st	Red Bull	219pts	9th	Williams	0pts
2nd	Mercedes	171pts	10th	Marussia	0pts
3rd	Ferrari	168pts	11th	Caterham	0pts
4th	Lotus	124pts			
5th	Force India	59pts			
6th	McLaren	37pts			
7th	Toro Rosso	24pts			
8th	Sauber	6pts			



For comprehensive F1 statistics visit [www.forix.com](http://www.forix.com)

\*\*Excluded for being underweight but allowed to start \* Two five-place grid penalties for contact at Canadian GP and for replacement gearbox



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**British GP**

Photographer: Flavio Massi  
Caption: Lewis Hamilton exits the garage for first practice  
Effect: Whiteboard



**British GP**

Photographer: Atsuo Sakurai  
Caption: Nico Rosberg holds his winning trophy close  
Effect: N/A

**German GP**

Photographer: Lorenzo Bellanca  
Caption: A sun-sational scene at the Nürburgring  
Effect: Aged photo



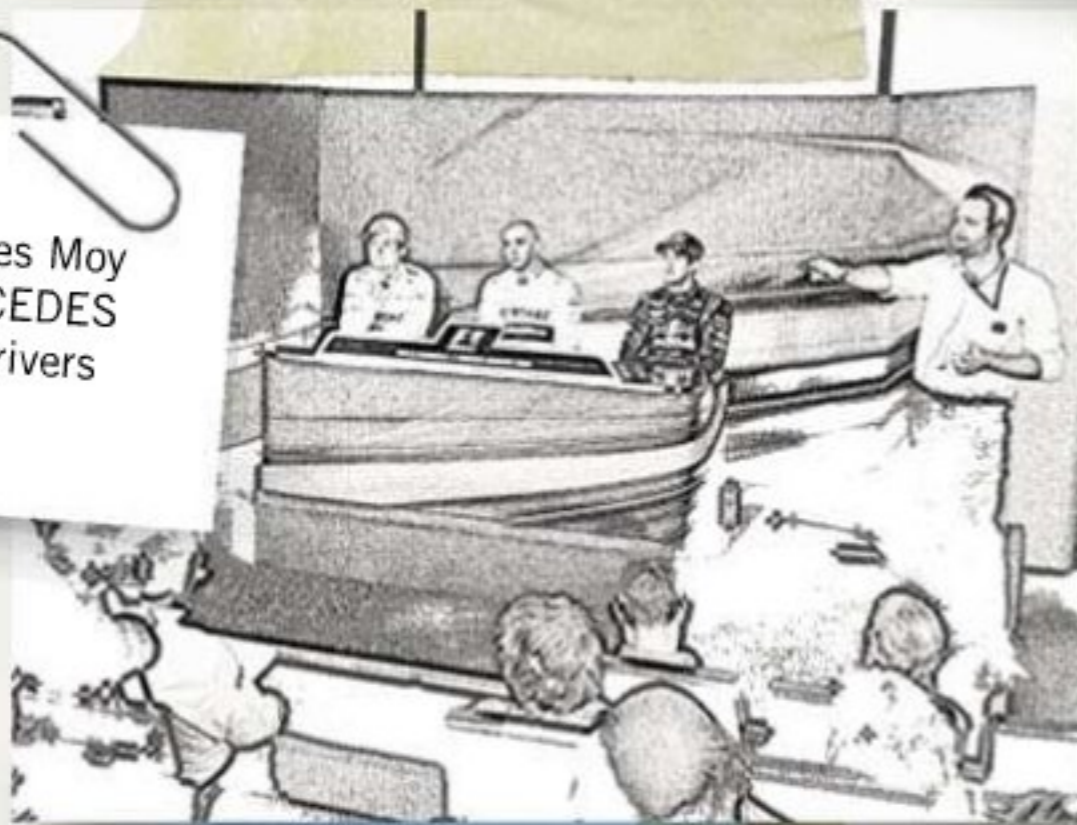
**British GP**

Photographer: Russell Batchelor  
Caption: The Red Arrows join the MERCEDES AMG PETRONAS celebrations  
Effect: Film strip / Antique



**British GP**

Photographer: James Moy  
Caption: The MERCEDES AMG PETRONAS drivers face the press  
Effect: Sketch



**German GP**

Photographer: Glenn Dunbar  
Caption: Lewis Hamilton leads the pack out on the formation lap  
Effect: N/A



**German GP**

Photographer: Jiri Krenek  
Caption: Nico Rosberg shows some fancy footwork  
Effect: N/A



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# RACE DEBRIEF

by Anthony Rowlinson

## German Grand Prix

07.07.2013 / Nürburgring



# Phew, what a scorcher!

In the German high summer, Red Bull, Merc, Lotus and Ferrari served up an on-the-limit thriller

**Close. How close?** So close that a few degrees' variation in track temperature exiled polesitter Lewis Hamilton to beyond the podium. So close that Mercedes, banned from the three-day Silverstone young driver test in the aftermath of 'Tyregate', lobbied during the Nürburgring weekend to stretch it to a fourth day that they *would* be allowed to attend, so that they might minimise any potential loss of technical insight. (Their entreaties were quashed by the FIA.) So close, indeed, that for two races in succession, barely a second covered the lead pair at flagfall.

And margins are being pushed. At the British GP it was Pirelli who rammed a limit they never thought they'd encounter. In Germany, Red Bull's pitwork wobbled in the intensity of battle on Mark Webber's first stop, and he was dispatched with a loose right rear, after its "failure to locate". The wheel and tyre sped loose down the pitlane, skittling cameraman Paul Allen and sending him to Koblenz hospital with a broken collarbone and ribs.

The error resulted in a €30,000 fine from the FIA and a sobering reality check on pitlane safety. Team principal Christian Horner was forthright, noting how shocking the incident must have been for Allen's family and raising the question of better protection for all those who work in the frenzied confines of the pitlane. Allen was lucky to escape more serious injury and the incident highlighted how desperately acute is the fight at the sharp end of the 2013 championship.

Yes, Seb Vettel took a beautifully judged and immaculately driven win (his 30th and first on German soil), but his team had to draw on every reserve of guile, pace and racecraft to edge him there. It took only a slight glitch to condemn win-hopeful Webber to a ground-out seventh, and his fate might easily have been Vettel's. On such fine margins will this year's title be decided. Victories are hard won; dominance out of the question.

Either Lotus, for example, could have triumphed here, while Alonso, in fourth, closed his race hunting down Romain Grosjean for

third, setting fastest lap as he charged. His team, like this year's other winners Lotus, Red Bull and Mercedes, left no slack: Alonso was told to park his F138 at Turn 1 immediately after crossing the line, with little more than vapour left in its tanks.

"Strategy helped today," he reflected, "because on pure performance we were not as fast as the cars ahead." Medium, medium, medium, soft was the tyre choice for Alonso – a gamble on a long first stint and a sprint finish, which brought the best result against fleetier rivals all opting to start on the soft (option) Pirellis (Kevlar-belted after the British GP debacle).

P4 constituted no more than 'making the best of it' and Ferrari have a development deficit to overcome in order to give Alonso a fair crack at the title. His ebullient German nemesis now has more than a race win in hand, at 157 points to 123. Their tussle is sure to be disputed, too, by Kimi Räikkönen. From the moment race-day track temperatures hit 43°C, Lotus, whose E21s remain so merciful to their rubber, looked to be

victory prospects. Fourth and fifth on the grid, Kimi and Grosjean were running two-three by lap 21, so delicate tactical considerations came into play. At this stage, Lotus were eyeing a two-stop race, having gone to the grid predicting three as optimal. Both drivers, however, were reporting low degradation on their primes, bringing a two-stopper into play. Lap 32 would have been the chosen moment for a second and final pit detour, leaving 28 laps to run – easily within range for a single set of primes on cars shedding fuel load by the lap, reckoned Lotus's head of track operations, Alan Permane.

Thing is, Jules Bianchi's Marussia chose to self-immolate on lap 24, bringing out the Safety Car, as his abandoned chassis rolled back down the circuit's westerly slopes then insouciantly across the track. That little twist of fate (an unlikely one, given Marussia's excellent finishing record), blew the black-and-gold cars' emerging tactical advantage and curtailed daydreams of 'Lotus' finishing one-two for the first time since the 1978 Dutch GP.

That said, they weren't out of it, for on this clear-skied, roasting Eifel afternoon, the E21 was a match on straight pace for the RB9.

Twenty laps from home, Lotus called in Grosjean for his final set of mediums. He was 1.143 seconds from leader Vettel, with Kimi in his wheeltracks and driving "every bit as well as the two world champions around him," according to team boss Eric Boullier. Fearing a Grosjean undercut, Red Bull were forced to pit Vettel a lap later, for a last set of primes.

That left Kimi swiftly, *efficiently* in the lead until lap 49 and looking as commanding as he had back in Melbourne, where Lotus had mugged the field by making one stop fewer than all their rivals. Not this time though, as the "box" command came for a new set of used softs, setting up a perfectly poised final-ten shootout.

Kimi knew the script: head down and go for it, closing a four-second gap to just 1.008secs at the flag, with second-fastest race lap en route. His cause helped by an obliging Grosjean, who pulled over on lap 54, Kimi might have won, had the race continued a lap or two longer, just as Mark Webber might have pipped Nico Rosberg a week earlier at Silverstone. But again, a bright young German prevailed – this time the triple and reigning champ.

Margins of victory and defeat aren't much finer than they were this weekend, and F1 has compelling four-way tussles in prospect across both championships. Nine races down and ten to go, it would be hard to bet against Seb for a record-equalling fourth on the trot, but with Räikkönen, Rosberg, Hamilton, Grosjean, Webber and Alonso all squabbling for a slice of victory pie, F1 2013 is way too close to call. **F1**

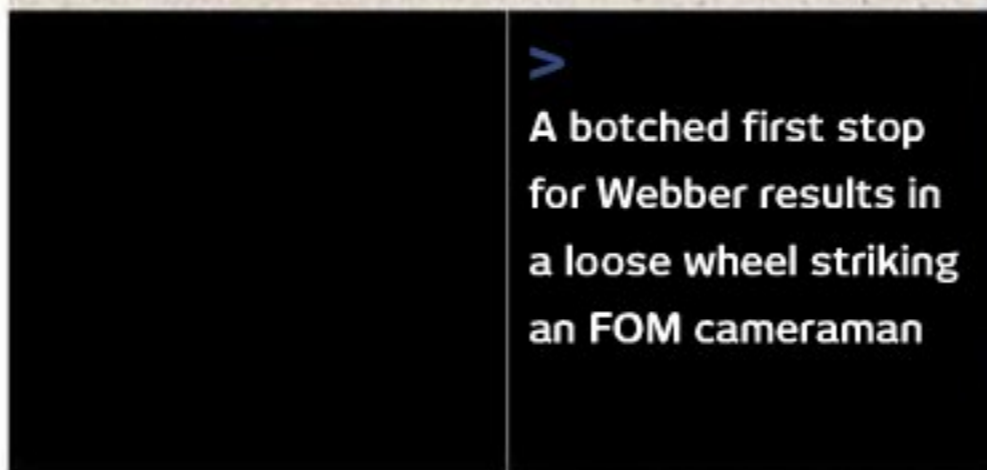
## The story of the race

▼ A superb start from Vettel means polesitter Hamilton is put on the back foot straight away

### NÜRBURGRING



► A botched first stop for Webber results in a loose wheel striking an FOM cameraman



► A fire in Bianchi's Marussia on lap 34 brings out the Safety Car. The Frenchman jumps out unharmed



◀ As the Safety Car departs, Vettel finds himself with Grosjean and Räikkönen for company



▲ A late stop for soft tyres on lap 50 for Räikkönen hands the lead back to Vettel...

► ...and Vettel comes through to win his first German GP



MAIN PHOTO: ANDREW FERRARO/LAT; ILLUSTRATION: ALAN ELDRIDGE. INSETS: STEVE ETHERINGTON/LAT; GLENN DUNBAR/LAT; PAUL GILHAM/GETTY IMAGES

# German Grand Prix stats

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



**1. HAMILTON**  
MERCEDES  
1min 29.398secs Q3



**3. WEBBER**  
RED BULL  
1min 29.608secs Q3



**5. GROSJEAN**  
LOTUS  
1min 29.959secs Q3



**7. MASSA**  
FERRARI  
1min 31.126secs Q3



**9. BUTTON**  
MCLAREN  
NO TIME IN Q3



**11. ROSBERG**  
MERCEDES  
1min 30.326secs Q2



**13. PÉREZ**  
MCLAREN  
1min 30.933secs Q2



**15. SUTIL**  
FORCE INDIA  
1min 31.010secs Q2



**17. BOTTAS**  
WILLIAMS  
1min 31.693secs Q1



**19. BIANCHI**  
MARUSSIA  
1min 33.063secs Q1



**21. CHILTON**  
MARUSSIA  
1min 34.098secs Q1

## THE GRID



**2. VETTEL**  
RED BULL  
1min 29.501secs Q3



**4. RÄIKKÖNEN**  
LOTUS  
1min 29.892secs Q3



**6. RICCIARDO**  
TORO ROSSO  
1min 30.528secs Q3



**8. ALONSO**  
FERRARI  
1min 31.209secs Q3



**10. HÜLKENBERG**  
SAUBER  
NO TIME IN Q3



**12. DI RESTA**  
FORCE INDIA  
1min 30.697secs Q2



**14. GUTIÉRREZ**  
SAUBER  
1min 31.010secs Q2



**16. VERGNE**  
TORO ROSSO  
1min 31.104secs Q2



**18. MALDONADO**  
WILLIAMS  
1min 31.707secs Q1



**20. VAN DER GARDE**  
CATERHAM  
1min 33.734secs Q1



**22. PIC\***  
CATERHAM  
1min 32.937secs Q1

## THE RACE



### THE RESULTS (60 LAPS)

1st	Sebastian Vettel	Red Bull	1h41m14.711s
2nd	Kimi Räikkönen	Lotus	+1.008s
3rd	Romain Grosjean	Lotus	+5.830s
4th	Fernando Alonso	Ferrari	+7.721s
5th	Lewis Hamilton	Mercedes	+26.927s
6th	Jenson Button	McLaren	+27.996s
7th	Mark Webber	Red Bull	+37.562s
8th	Sergio Pérez	McLaren	+38.306s
9th	Nico Rosberg	Mercedes	+46.821s
10th	Nico Hülkenberg	Sauber	+49.892s
11th	Paul Di Resta	Force India	+53.771s
12th	Daniel Ricciardo	Toro Rosso	+56.975s
13th	Adrian Sutil	Force India	+57.738s
14th	Esteban Gutiérrez	Sauber	+60.160s
15th	Pastor Maldonado	Williams	+61.929s
16th	Valtteri Bottas	Williams	+1 lap
17th	Charles Pic	Caterham	+1 lap
18th	Max Chilton	Marussia	+1 lap
19th	Giedo van der Garde	Caterham	+1 lap

### Retirements

Jean-Eric Vergne	Toro Rosso	22 laps - hydraulics
Jules Bianchi	Marussia	21 laps - engine
Felipe Massa	Ferrari	3 laps - spin

### THROUGH SPEED TRAP



**Fastest:** Nico Rosberg, 191.55mph



**Slowest:** Felipe Massa, 174.65mph

### TYRE COMPOUNDS USED



Soft Medium Intermediate Wet

### CLIMATE

Sunny 25°C

### TRACK TEMP

43°C



### FASTEST LAP

Fernando Alonso, lap 51, 1min 33.468secs



### FASTEST PITSTOP

Sebastian Vettel, 18.979secs (entry to exit)

### DRIVERS' STANDINGS

1st	Sebastian Vettel	Red Bull	157pts
2nd	Fernando Alonso	Ferrari	123pts
3rd	Kimi Räikkönen	Lotus	116pts
4th	Lewis Hamilton	Mercedes	99pts
5th	Mark Webber	Red Bull	93pts
6th	Nico Rosberg	Mercedes	84pts
7th	Felipe Massa	Ferrari	57pts
8th	Romain Grosjean	Lotus	41pts
9th	Paul Di Resta	Force India	36pts
10th	Jenson Button	McLaren	33pts
11th	Adrian Sutil	Force India	23pts
12th	Sergio Pérez	McLaren	16pts
13th	Jean-Eric Vergne	Toro Rosso	13pts
14th	Daniel Ricciardo	Toro Rosso	11pts
15th	Nico Hülkenberg	Sauber	7pts
16th	Pastor Maldonado	Williams	0pts
17th	Valtteri Bottas	Williams	0pts
18th	Esteban Gutiérrez	Sauber	0pts
19th	Jules Bianchi	Marussia	0pts
20th	Charles Pic	Caterham	0pts
21st	Max Chilton	Marussia	0pts
22nd	Giedo van der Garde	Caterham	0pts

### CONSTRUCTORS' STANDINGS

1st	Red Bull	250pts	9th	Williams	0pts
2nd	Mercedes	183pts	10th	Marussia	0pts
3rd	Ferrari	180pts	11th	Caterham	0pts
4th	Lotus	157pts			
5th	Force India	59pts			
6th	McLaren	49pts			
7th	Toro Rosso	24pts			
8th	Sauber	7pts			



For comprehensive F1 statistics visit [www.forix.com](http://www.forix.com)

\*Five-place grid penalty for replacement gearbox

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# The Hungarian GP preview



26-28 July 2013 / Hungaroring

High temperatures and multiple low-speed corners place incredible strain on drivers and tyres alike, despite this being one of the slowest laps of the year



## THE ENGINEER'S VIEW

**Xevi Pujolar,**  
Williams' chief race engineer

**It's very hard** for drivers to get to grips with the Hungaroring. The layout is so technical: one corner flows quickly into the next and there aren't many straights on which to relax. We run cars with maximum downforce here because of all the corners, which, in terms of speed, are mainly medium to low. This is the third slowest lap of the season, behind Monaco and Singapore.

One of the biggest challenges for drivers here is finding the right rhythm for all the corners. If they get the line wrong on one turn, it's hard to recover their line going into the next, which means they can quickly lose a lot of speed. Then on top of this there's the heat. We race in Hungary in the high summer, and the temperatures place an extra demand on a driver's fitness.

Over the past few years, track conditions have improved a lot. This circuit used to be notoriously bumpy and dusty when we'd first arrive on a Friday morning, but the bumps have lessened over the years.

Average speeds here are so low that you'd be forgiven for assuming that this track would be

easy on the rubber. In fact the high number of corners put a lot of energy through the tyres: it's relentless. Initially we were told we'd run on the hard and medium compounds here this year. That seemed like a conservative choice and we put it down to concerns over graining and high degradation. But in the aftermath of the recent tyre failures at Silverstone, Pirelli tyres have now reverted to their 2012 spec, which means we'll be using the softer rubber as we usually do here.

The FIA has now confirmed the DRS zones for this year. There will be a 620-metre stretch on the start/finish straight, plus a 300-metre zone coming out of Turn 1 and on the short run down to Turn 2. The single detection point is at the entry to the last corner.

### HUNGARORING STATS AND FACTS

**10.2**  
seconds

The most time spent on full throttle

**440** metres

The distance from startline to first corner

**10**  
out of  
**14**

The number of corners taken at or below 96mph

**122**  
mph

The lowest average lap speed of any permanent circuit in F1



## HUNGARIAN GP RACE DATA

**Circuit** Hungaroring  
**F1 debut** 1986  
**Length** 2.722 miles  
**Distance** 190.531 miles  
**Laps** 70  
**Direction** Clockwise  
**Lap record** 1min 19.071secs,  
 M Schumacher, 2004  
**Full throttle** 57%  
**Gear changes per lap** 51  
**Winners from pole** 12  
**Tyre compounds** Soft/medium

**TV TIMETABLE (UK TIME)**  
**Friday 26 July**  
**Practice 1** 0900-10:30  
**Practice 2** 13:00-14:30  
**Saturday 27 July**  
**Practice 3** 10:00-11:00  
**Qualifying** 13:00  
**Sunday 28 July**  
**Race** 13:00  
**Live coverage**  
 Sky Sports F1 (available in HD)

## LAST YEAR

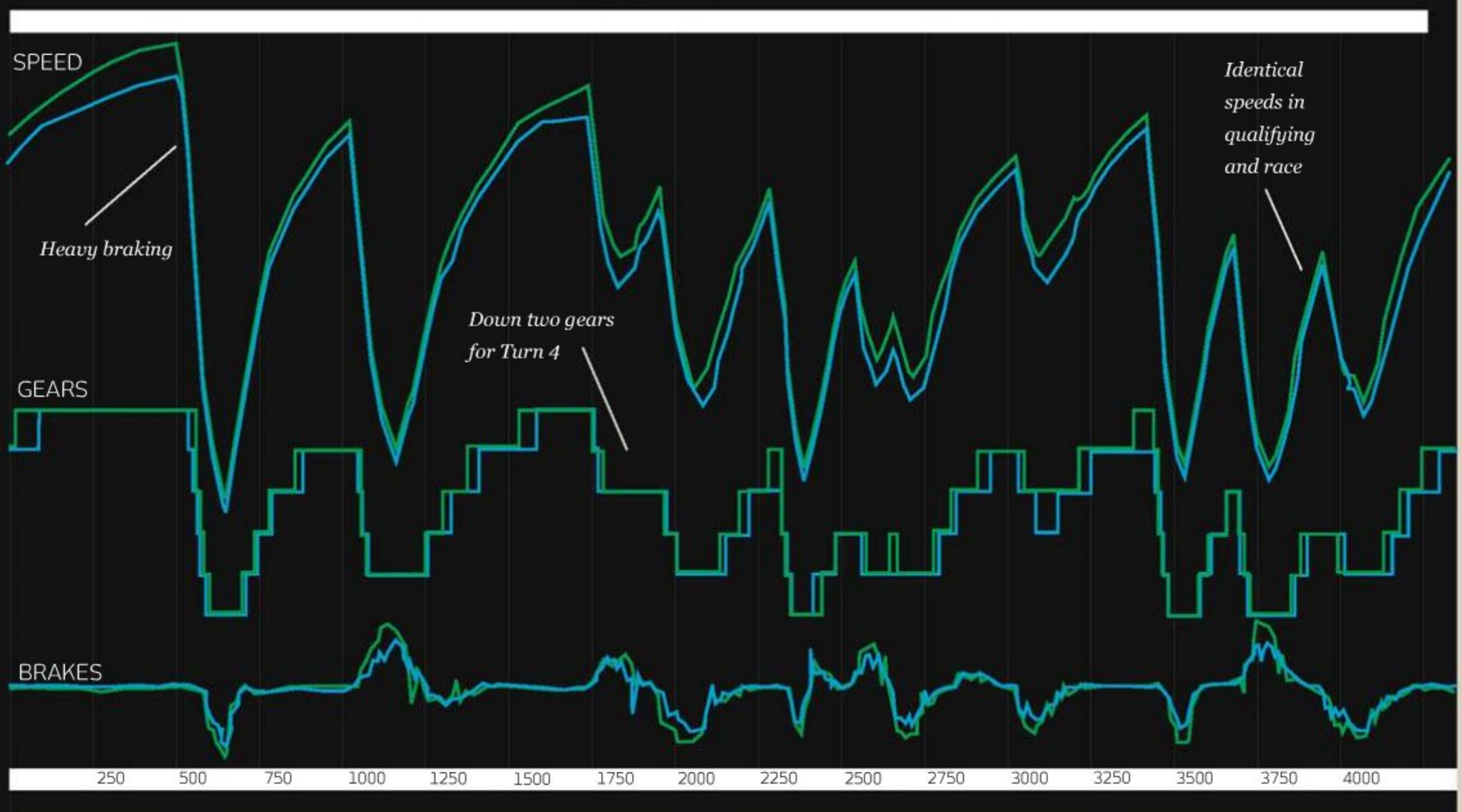
**Winner** Lewis Hamilton  
**Retirements** 2  
**Overtaking moves** 6  
**DRS overtakes** 4  
**Weather** Sunny, 30°C

## DO YOU REMEMBER...

...Damon Hill winning his first grand prix? In 1993, following engine troubles at Silverstone and a puncture at Hockenheim, the Williams racer finally took his maiden F1 victory at the Hungaroring, bowing to the crowd when he reached the podium



## HUNGARORING TELEMETRY QUALIFYING RACE



**Turn 1**  
 This is the hardest braking point on the whole lap as drivers decelerate from 186mph all the way down to 58mph for the apex of the first turn

**Turns 5 to 11**  
 Look at the steering trace to note the constant left and right turns a driver has to make for this section

ILLUSTRATION: ALAN ELDREDGE. PHOTOS: CHARLES COATES/LAT, LAT ARCHIVE



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# TOM CLARKSON

Inside the paddock from our man on the road

## Around the world in three weeks

**Montréal-Mexico City-Paris-Silverstone.** It would be hard to find more diverse locations to visit in the space of three weeks. The vibrancy of Montréal leaves you energised, the immensity of Mexico City is overwhelming, the beauty of Paris breathtaking... and could there be anywhere more fit for purpose than Silverstone on a sunny day?

All four destinations were linked by two common themes: F1 and theatre. The manner in which the Québécois got behind the Canadian GP, closing off large areas of Montréal and putting on endless amounts of street entertainment – the acts treating the weekend as an audition for *Cirque du Soleil* – was humbling. It was endless fun and cemented Montréal's position as a favourite on the F1 calendar.

Silverstone embraced the concept of off-track entertainment as well. The circuit had kids' play areas and a post-race concert, but it could still learn from Montréal. The Rolling Stones were the Canadian city's post-race offering, whereas Silverstone fans had to make do with Eddie & The Robbers! We love you EJ, but you ain't Mick – or Charlie Watts either.

Mexico City followed Montréal on my itinerary, and that provided theatre of a different kind. Its 21 million inhabitants are a pushy bunch on the whole – hence the need to have a fixer. "Why do we need a fixer," I asked upon touching down at Benito Juárez Airport. "Clearly," said the BBC's man on the ground, "you've never been to Mexico City before!"

Mexicans have eyes for two sportsmen: Manchester United's Javier Hernandez and McLaren's Sergio Pérez. We were in town to film with Sergio, who was enjoying his first trip home since January. And enjoy it he did. His laughter was infectious, and his desire to recreate such comfortable surroundings while on the road explains why he's recently employed a Mexican PR man, Eduardo, with whom he used to go to school.

Mexican pesos are starting to flow into McLaren's coffers following the arrival of Mexican telecom group Claro as sponsors and a sharp spike in road-car sales in Central America. Claro are doing their bit for the local economy as well because they employed more than 100 people to shoot a 60-second commercial with Sergio, whereas the BBC had only three people on hand to make a five-minute film about the McLaren star.

Pérez was on good form and witty with it. When his driver was negotiating the stationary rush-hour traffic with some aggressiveness, Sergio came out with the line: "I wonder what Jenson would make of his overtakes? Do you think he'd ring Martin [Whitmarsh] to complain?"

**"Word is that Hermann Tilke has been given the green light to redevelop Autodromo Hermanos Rodríguez for 2015"**



PHOTO: DPP/LAT

### The Merc defence team at the 'Tyregate' hearing

While in Mexico, we visited the Autodromo Hermanos Rodríguez. The track lies next to the airport, which has been engulfed by the city's sprawling shantytowns since F1 last raced there in 1992. These days it's a shadow of its former self. Barriers have been dismantled, tyres are used as goalposts and the only action we saw was people running or cycling.

The word on the street is that Hermann Tilke has been given the green light to redevelop the track ahead of a Mexican Grand Prix in 2015. It'll take a lot of work to bring it up to F1 standards, but a better location would be hard to find. You're within a short taxi ride of downtown, and judging by the reception Sergio received, the race will be a sell-out.

From Mexico we hotfooted it back to London, where we caught the Eurostar to Paris for the 'Tyregate' hearing of the International Tribunal. Now that really *was* theatre: the barristers went at each other hammer and tongs. First up was Mark Howard QC, representing the FIA. He spoke for 1.5 hours and was convincing on how Mercedes had been in breach of Article 22 of the sporting regulations. During a 15-minute interlude, the banter in the pressroom focused on the extent of Mercedes' woes. Next up was Paul Harris QC, for Mercedes. He'd steered Ross Brawn through the double-diffuser fiasco of 2009 and did a brilliant job, explaining how the team had sought permission to use their 2013 car from all recognised FIA sources.

The QCs on both sides were utterly logical in their arguments, but there were moments of humour. After two hours of defence, Paul Harris started to cross-examine Ross Brawn and the Tribunal's president, Edwin Glasgow QC, interjected. "How long will this take, Mr Harris? We don't want Mr Brawn being delayed for lunch." Nor you, your honour.

To think it cost about £1million is mind-blowing. One million pounds for not much more than a reprimand.

# MURRAY WALKER



UNLESS I'M VERY MUCH MISTAKEN...

**"Was I delighted when the BBC said James Hunt and I would co-commentate? No, I was not!"**

It was 1979 and firstly, I hope understandably, I saw this as the thin end of the wedge, with the immensely knowledgeable and personable James easing me out. Secondly because, as someone old enough to be his father, I wasn't at all impressed with James as a person. Rightly or wrongly I saw him as an arrogant, opinionated, rude and intolerant Hooray Henry who smoked, drank, womanised and took drugs far too much and who had let his fame go to his head.

In my defence I'd say that in 1979, I was far from alone in my opinion, but even so it wasn't the best way to start a partnership that lasted 13 memorable years until James's tragically early death at the age of 45. Yet in spite of – or maybe because of – our dramatically different attitudes, temperaments and personalities the combination worked.

I was the slightly overawed, wide-eyed enthusiast, marvelling at the magic of F1 and feeling immensely privileged to be part of it. James was the 'been there and done that' world champion who was never reluctant to voice a provocative point of view, no matter how politically inadvisable or potentially offensive. "The trouble with [Jean-Pierre] Jarier is he's a French wally – always has been and always will be," was one of James's milder pronouncements.


I knew that if a race became monotonous, all I had to do to was to be complimentary about Riccardo Patrese, whom James detested and incorrectly blamed for Ronnie Peterson's tragic crash at Monza. He would gesture for the microphone to pour verbal vitriol and bile over the unfortunate Riccardo. He wasn't too keen on Nigel Mansell or Ken Tyrrell either.

Ah yes, the single microphone – that was a frequent bone of contention. It was to stop us talking over each other but, in a situation where whoever held it knew that what he wanted to say was infinitely more relevant and entertaining than whatever the other chap wanted to say, it certainly caused some commentary-box friction but, thankfully, it doesn't seem to have been obvious to the viewers.

James undoubtedly thought I talked too much and I undoubtedly thought I didn't talk enough, but at the 1989 Belgian Grand Prix I had to do all the talking when James, who tended to languidly appear about five minutes before the race began, failed to appear at all. Apologising afterwards, he said he'd been in bed with a stomach problem although it was alleged that his between-the-sheets activity had actually involved two Belgian nurses.

With seemingly insignificant provocation James could explode with frightening rage and I vividly remember an occasion during an Australian GP when he did so because of some technical glitch that was interrupting proceedings. What with one thing and another, he wasn't the easiest bloke in the world to work with in the commentary box. But the two of us were what we were and, as the years rolled by, we learned to live with each other. The fact that our partnership lasted as long as it did speaks for itself and the public loved James for his warmth and outspokenness, his obvious authority, his voice and his raunchy reputation.

Times were hard for him in the early 1990s. Once a very wealthy man, he had lost almost all his money in failed business enterprises and as a member of a troubled insurance syndicate at Lloyd's of London. Yet he was cheerful enough when we did our commentary on the 1993 Canadian Grand Prix from the BBC's London Television Centre. Two days later came the shocking news that James had died as the result of a massive heart attack.

In the foreword I wrote for Gerald Donaldson's superb biography of James, I said: "In the ordinary lives that most of us lead we come and go without making any great impact on the world at large. Yet you wouldn't say that about James Hunt." I never spoke more truly, for he was, indeed, an unforgettable character. 



**"The public loved James for his warmth and outspokenness, his obvious authority, his voice and his raunchy reputation"**



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