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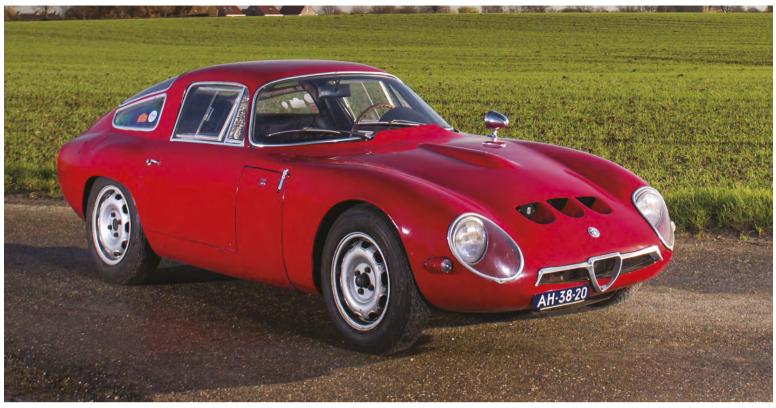
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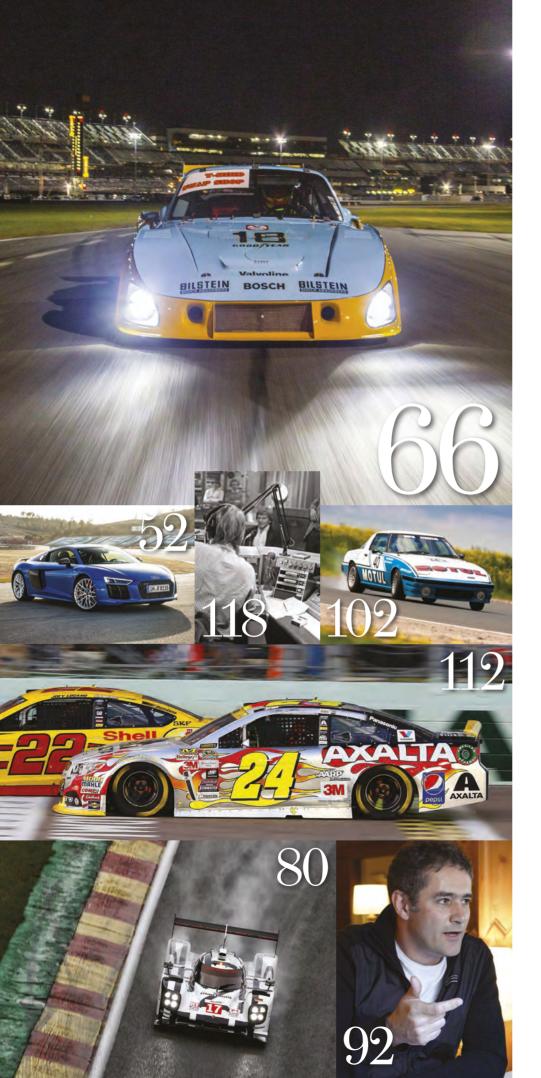
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The local motor facing facilo show with a far reach

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MATTERS OF MOMENT

www.motorsportmagazine.com/author/dsmith

AGUAR IS BACK IN MOTOR sport, just as it should be. But it's not returning to Le Mans with a new prototype or GTE, it's not joining Bentley and the rest in GT3 – and it's certainly not going anywhere near F1 again. Instead, its destination is Formula E, the all-electric single-seater series that unapologetically offers an alternative form of quiet racing to the cities of the world. The decision is a clear sign of the times.

The new team will be created in partnership with Williams Advanced Engineering, with whom Jaguar previously built its C-X75 hybrid supercar and the company behind Formula E's battery packs. It will join the championship for its third season, which begins in the autumn of 2016.

"Electric vehicles will absolutely play a role in Jaguar Land Rover's future product portfolio and Formula E will give us a unique opportunity to further our development of electrification technologies," said Nick Rogers, group engineering director for JLR. "It is my belief that over the next five years we will see more changes in the automotive world than in the last three decades. The future is about being more connected and more sustainable; electrification and lightweight technologies are becoming more important than ever as urbanisation continues to increase. Formula E has recognised and reacted to those trends and the championship's exciting and pioneering approach is the perfect fit for our brand."

Jaguar joins Renault, Audi, Citroën (through its DS brand) and Mahindra (as well as EV specialist Venturi) as a manufacturer in a formula that is not

JAGUAR



DAMIEN SMITH Editor only 'on message' but affordable too. Elsewhere in this issue, we report that Porsche has confirmed it will put its Mission E electric concept into production. Whatever you might think of Formula E, Alejandro Agag and his team are clearly on to something.

**

THERE WAS ALWAYS AN AGENDA behind the Statler and Waldorf act I wrote about in the December issue – of course there was – and in the past month the purpose of Max Mosley and Bernie Ecclestone's odd joint interview for German TV has become clear. Jean Todt is no friend to this pair, but between them and in the wake of F1's recent engine supply crisis they have energised the current FIA president into extraordinary action. Now Todt and Ecclestone, surely in uneasy alliance, are poised to attempt a power-grab from the manufacturers who control F1.

Back in the summer of 2014, we interviewed Todt in his Paris office and were somewhat frustrated by his *laissezfaire* approach to the governance of F1. "Why should the governing body be responsible for those who compete?" he said. "In a way I'm happy to co-ordinate as much as possible, have as much dialogue as possible. But if most of them don't want that... We are the legislator and regulator. If the actors are happy about the situation, it's their money."

But things have changed. A champion of F1's hybrid formula, Todt has nevertheless felt compelled – with some encouragement – to push forward a cheaper alternative power source for independent teams. When, under the auspices of the F1 Commission, the manufacturers rejected his engine proposal, the FIA World Motor Sport

Council responded with the remarkable announcement that it was empowering Todt and Ecclestone to over-rule them. Nothing *laissez-faire* about that.

The first key date is January 15, by which time the FIA has challenged the manufacturers to offer their own 'cheap' hybrid proposal in the interests of a more sustainable F1. The second key date is January 31, when Todt and Ecclestone will apparently answer any forthcoming proposition and reveal more about what they plan to do with this mandate for change.

How will the manufacturers react to these new strong-arm tactics? Sergio Marchionne has already shown in his time at the helm of Fiat and Ferrari that he's hardly the type to roll over in the face of a challenge. Will the manufacturers break their normal pattern of behaviour and agree on a coherent strategy to fully answer the challenge? Is the World Council's empowerment of Todt and Ecclestone even legal given the complicated contractual structure that binds the manufacturers into F1's governance? The next month will be fascinating, probably volatile and potentially crucial to the future of Grand Prix racing.

"I'D LIKE HIM TO JOIN ME IN Jersey for a week so I can put him straight," said president Derek Warwick as he concluded his stinging criticism of Britain's first back-to-back F1 world champion at the British Racing Drivers' Club awards lunch in early December. The response was a resounding round of applause. Somewhere in the United States, Lewis Hamilton's diamondstudded ears were burning.

•

The 30-year-old had attended the FIA prize giving in Paris the previous Friday to receive his world title trophy, but **D**



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MATTERS OF MOMENT

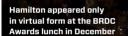
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unlike last year didn't hang around in Europe for the Autosport Awards or the following BRDC function to receive the plaudits of 'his own'. To be fair, he did have a date to keep with Barack Obama - but it's been clear for a while now that Hamilton feels little affinity for the racing community within which he grew up and has no urge to give something back to the sport that led him to such a privileged life. What a shame.

But is it entirely surprising? He will be more than aware that among the wider public he remains a divisive figure

than most as Hamilton's technical director at Mercedes. As we've reported before, Lowe is full of admiration for the champ as both a man and a driver - although admittedly even his patience has been tested of late. Hamilton is hardly faultless in how he is perceived.

Back in his Williams days, Lowe used to write software for the team's famously successful active suspension systems, describing the process as "like tying the ends of spaghetti together". Being an engineer, he derived huge satisfaction from such detailed work,



- but also how in motor racing circles he is largely FOR MUKE DE INST unpopular. While the brilliance of his performances on track continues to be acknowledged, there always seems to be a 'but' - and his increasingly expressive fashion sense has become a regular point of ridicule, as it was at the BRDC. Why would he want to be among people who apparently won't accept that his tastes don't fit the template? We complain when racing drivers appear to be smothered by PR and restricted by corporate straitjackets - but when one steps out and dares to be his own man, he's mocked. Why?

Paddy Lowe has a better perspective

even if shutting off the grey matter at the end of long days could be almost impossible. Now, as the man responsible

AND THE REAL PROPERTY OF

EE PAGE 64

for running more sophisticated racing cars, he finds the switch-off button much more easily. Why? Because a large part of his responsibility is dealing with the irritating puzzle that is the relationship between Hamilton and team-mate Nico Rosberg. Much less logical than electronic spaghetti!

At the BRDC awards, Paddy admitted his team at times struggled to derive as much joy as it should have done from its 2015 success. As Toto Wolff's recent public warning suggested, the drivers need their heads knocking together.



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EDITORIAL Telephone 020 7349 8484 Fax 020 7349 8494 E-mail editorial@motorsportmagazine.co.uk Editor-in-Chief Nigel Roebuck Editor Damien Smith Deputy Editor Gordon Cruickshank Features Editor Simon Arron Grand Prix Editor Mark Hughes Art Editor Damon Cogman Online Editor Ed Foster Digital Designer Zamir Walimohamed Online Features Editor Alex Harmer Picture Editor Jeff Bloxham Senior Contributing Writers Andrew Frankel, Rob Widdows US Editor Gordon Kirby Section Conversion Carlos Special Contributors Adam Cooper, Paul Fearnley, Richard Heseltine, Paul Lawrence, Doug Nye,

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SUBSCRIPTIONS

UK & Overseas subscriptions +44 (0) 20 7349 8484 US subscriptions (Toll Free) +1 866 808 5828 Motor Sport Magazine Limited, 18-20 Rosemont Road, Londor NW3 6NE. UK. Motor Sport subscriptions: 18-20 Rosemont NW3 6KE, UK. Motor Sport subscriptions: 18-20 Rosemont Road, London, NW3 6KE, UK. Subscription rates (12 Issues): UK £49.99; USA \$65; rest of world £64. Postage is included. Motor Sport (ISSN Nr. 0027-201). UEPS No: 201-661) is published monthly by Motor Sport Magazine GBR and distributed in the USA by Asendia USA, 178 5 Middlesex Ave, Monroe NJ 08831. Periodicals postage and New Brunswick, NJ and additional Periodicals postage paid New Brunswick, NJ and additional mailing affices, PDSTMASTER: send address changes to Motor Sport, 701C Ashland Ave, Folcroft PA 19032. UK and rest of world address changes should be sent to 18-20 Rosemont Road, London, NW3 GNE, UK, or by e-mail to subscriptions? motorsportmagazine.co.uk. Subscription aneurities: subscriptions@motorsportmagazine.co.uk. Subscription orders: www.motorsportmagazine.co.uk. Subscription orders. Blue Fin Building, 110 Southwark Streat, London SE1 OSU. Colour origination: All Points Media. Printing: Precision Colour Printing, Telford, Shropshire, UK.

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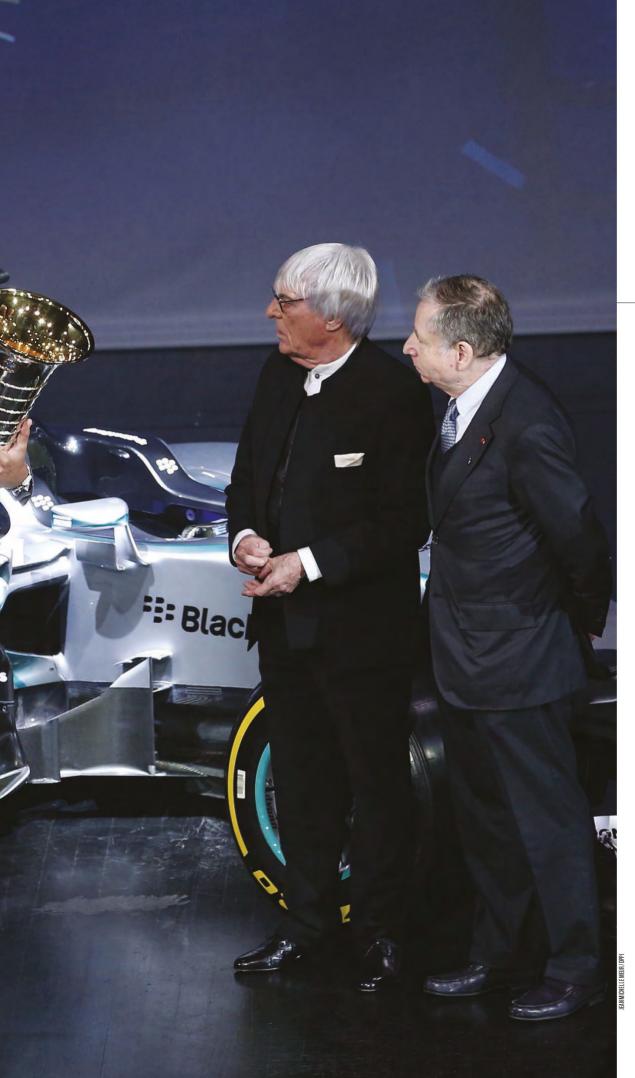


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THE MOTOR SPORT MONTH IN PICTURES

DECEMBER 4, 2015

FIA Prize Giving

PARIS, FRANCE

Lewis Hamilton receives his trophy for winning the 2015 Formula 1 World Championship at the governing body's awards night, as FIA president Jean Todt and Bernie Ecclestone look on. His team boss Toto Wolff (left) picked up the Constructors' trophy for Mercedes. Inset: Others to collect awards included World Endurance Champions (from left to right) Brendon Hartley, Mark Webber and Timo Bernhard.





SEPANG, MALAYSIA, DECEMBER 12

Audi Sport might have been vanquished in the World Endurance Championship, but its customer racing division ended the season on a high with a 1-2-3 for the new R8 LMS in the Sepang 12 Hours. Veteran Stéphane Ortelli was among the winning trio of drivers in his last race for Audi.

E LAS VEGAS, USA, DECEMBER 3

New Sprint Cup champion Kyle Busch enjoys a moment in the spotlight as he guides his Toyota Camry along the famous Strip during NASCAR's suitably unsubtle end-of-season 'Victory Lap' celebrations.



LONDON, ENGLAND, DECEMBER 7 The British Racing Drivers' Club held its annual awards lunch at the Grand Connaught Rooms (above). Those in attendance included proud father Jonathan Palmer, who stands between new Renault Formula 1 driver Jolyon (left) and younger son Will, the 2015 McLaren *Autosport* BRDC award winner.



SUNCITY GROU

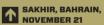
MACAU, CHINA, NOVEMBER 22 Felix Rosenqvist presses on to become only the second two-time winner of the Macau Grand Prix since it became a race for Formula 3 in 1983. The Swede, who also won the illustrious street race in 2014, follows in the wheel tracks of Audi DTM racer Edoardo Mortara.

百老祖

双倍版图 无儿体验

现已盛势含慕

THE MOTOR SPORT MONTH IN PICTURES



TOYOTA

ISO

Alex Wurz closes his racing career with a third place podium finish at the World Endurance Championship season finale. The twotime Le Mans winner and former Grand Prix driver for Benetton, McLaren and Williams will remain active in various roles within motor racing, including as a consultant for Toyota.

GERMANY, DECEMBER 12

Shars & Cars

Mercedes-Benz Bank

TRONAS

1....

UBFS invest

Mercedes-Benz celebrated its motor racing successes with its now-traditional 'Stars & Cars' event at its eponymous arena in Stuttgart. The marque's Formula 1 World Champion Lewis Hamilton and estranged team-mate Nico Rosberg were in attendance along with stars of DTM, F3 and GT.

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REFLECTIONS

>> MARTIN BRUNDLE'S VIEW OF THE 2015 FORMULA 1 SEASON

<u>MigelRoebuck</u>

Mercedes-Benz



NEVER SAY DYE

Mercedes ran an all-blonde line-up at Monza after Lewis Hamilton opted for a radical hairstyle change. By the season's end, he had other, more pressing concerns on his mind...

MAGES LAT

PETF

REFLECTIONS with Sigel Roebuck

N OCTOBER 29 I VISITED THE Portsmouth HQ of Ben Ainslie Racing to see Martin Whitmarsh, and fresh in everyone's mind was the US Grand Prix, run just four days earlier.

There Lewis Hamilton had clinched his third world championship, but the race had been not without controversy. Through the last two seasons of Mercedes domination, the conflict between Hamilton and Nico Rosberg has invariably been settled by the first corner – whomever got there first usually went

on to control the race, and more often than not that was Lewis.

At the Circuit of the Americas, though, the pair of them arrived more or less together, with Rosberg – starting from pole – slightly ahead, but on the outside. There was space enough for them readily to go through the corner side by side, too, but – as the cockpit footage confirmed –

Hamilton decided against using much steering lock, and at the exit of the turn his team-mate was left without any track.

It was a move of which Ayrton Senna, in his constant struggles with Alain Prost, might have been proud, and Lewis's subsequent remarks on the subject were also an echo of his idol.

"You've got to be fierce, you've got to be strong, you've got to be hard. You can't be nice out there, you can't be, 'Hey, here's some space _' It's 'Hey I'm taking it I'

space...' It's, 'Hey, I'm taking it, I'm in business, I'm not here to make friends...'"

To be hard but fair is a fine line in motor racing, and many a time Prost would say that essentially Senna had put him in a position where, "Either I back off, or we both crash. Two McLarens out on the spot – how stupid that would have been..." Invariably, therefore, Alain did back off, and many a time – as at Austin – Rosberg has done the same. Whitmarsh suggested that it was time for Nico

to change his approach. "He's been upset recently, with some justification, and I think he should have held his ground and taken Lewis off a time or two – even if it had cost him the race, and upset Mercedes, it would have been worth it to get across to Lewis, 'Never, *ever*, do that to me again..."

In the subsequent races it didn't come to that, but clearly the events in Texas left their mark on Rosberg. The fastest man in the place that weekend, he passed Hamilton on the track – something we have rarely seen – then twice had his lead wiped out by the safety car, but each time kept his composure and looked set for victory – until a costly mistake in the late laps handed victory to Hamilton. Amid the celebration of Lewis's title, Nico was a picture of dejection.

He responded the right way, though, winning conclusively in Mexico and Brazil, and if Hamilton looked a little off his game in those two races, most expected him to be back on it in Abu Dhabi, where logically he would wish to end the season as top dog once more. "That was certainly what I thought would happen there," said Martin Brundle. "I was sure we'd see normal service resumed, with Lewis saying, 'Right, OK, I'd better get on with this' – but when push came to shove, he couldn't do it, could he? To me the late part of the season was just bizarre..."

It was, not surprisingly, the first topic of conversation when, just a couple of days after Abu Dhabi, Brundle and I met for our annual pre-Christmas lunch in Knightsbridge. Had Lewis lost something – or had Nico found it?

"I was thinking about it on the flight home," said Martin, "and mostly I think Nico has gained a bit of confidence. Without any doubt Austin made a big difference: there was the first-corner incident, the cap-throwing thing in the podium room, Lewis's cocky comments at the press conference... Nico blew it that day – not the championship, because that was gone, but the race, and he knew it."

In terms of the world championship Rosberg's season indeed came together too late, but it concluded impressively, with six poles on the trot and three victories. Had his car not failed, he would probably have

> won at Sochi, certainly – without the mistake – would have done so in Austin, and he then marched off with the last three races.

"Yes," said Brundle, "and, as well as that, if you take away Nico's dodgy starts in a couple of places, and add in that Lewis's only car failure came in Singapore where Mercedes was having an off weekend, anyway... Pull that lot together, and the circumstances could have changed quite dramatically – for every extra

point Nico earned, you've got to double it, because Lewis would have lost them.

"In Brazil I said to Nico, 'How have you got your head back together?' and he said, 'Oh, I've done this, I've done that...' What, in three days? 'Yes...'

"Nico's always saying, 'I've always been here, I haven't changed...', but actually I think he's missing a psychological trick by not saying, 'I've changed a few things, I've aligned everything

- and I'm on it...' I think that would hit Lewis even harder than having his arse handed to him on a plate, like in the last three races.

"As I said, I expected Lewis to be right back on it in Abu Dhabi, but it didn't happen. I thought Nico's qualifying lap there was quite exceptional – in fact, Anthony Davidson said to me, 'I reckon that could be the best qualifying lap I've ever analysed at the Skypad.' I raved about it – and predictably got a lot of abuse for it..."

And what of Whitmarsh's suggestion that Rosberg needed to stand up for himself a little more, be more assertive against Hamilton's muscular moves?

"I can only relate it to the experiences I had with Senna and Schumacher," said Brundle. "First, you did have to stand up, because they were bullies, and psychologically they wanted to dominate you – that's why they were winners – and second, I can completely relate to 'Well, I've got nothing to lose now...' In my experience, your natural skills flow much better in those circumstances – in any sport,





a massive percentage of it is in the head, isn't it?

"Hamilton and Rosberg are more complex than 99 per cent of sports people, because they were mates when they were kids – I remember them bouncing around together in the paddock. So there's all that sub-story to go with the head-to-head that's going on at present – they

can't just forget all that. "In Brazil Lewis came out with that comment: 'My job is done fo

that comment: 'My job is done for this year.' Then he came out with, 'I was rubbish because I'd partied for a week, I'd been drinking, and I hadn't slept enough...'

"Damon [Hill] has been on about this all year, and he took a bit of flak because the more he talked about Lewis's lifestyle not being good the more he kept winning races! But I'm beginning to think Damon was right. To me, a lot of Lewis's life now looks like an act, but as I've said before, where are his reference points? He's never had a real life, has he? Clearly, with his new American management, things have changed a lot.

"Remember Monza last year, when Rosberg was under pressure from Hamilton – right after the coming-together at Spa, where he was booed on the podium, and then got a big dressing-down from Mercedes. What did he do? Outbraked himself at the first chicane – twice! Austin this year was another one where he made an error under pressure, and I think this is what he has addressed – I think he's found a way of doing that. I don't think you could ever question his speed, but I always think

of Nico as the privileged young man and Lewis as the streetfighter – and when it comes to it, one is hungrier than the other.

"Lewis is a *supremely* fast Grand Prix driver, and at Mercedes he's got not only demonstrably the best car, but also a team prepared to cut him a lot of slack in the way he lives. We know he doesn't go to the factory, doesn't do the simulator and so on. One of the senior team members told me, 'Lewis believes he's three-tenths quicker than Nico – and if he isn't, he automatically wants to know what's wrong with the car...'

"Back in his McLaren days, Ron Dennis – in his way – tried to control him, didn't he? I remember being with him in the motorhome at Magny-Cours one year, when Lewis came in. He had a slight 'Afro' haircut – and, in front of us, Ron ripped him to shreds. I saw in Lewis's face how embarrassed and angry he was, so now when Ron says, 'He wouldn't be behaving like that if he was still here,' he's rather missing the point – that's *why* he's not still there!

"I'll admit that the thing that disappoints me about Lewis is... I know all about, 'Show me a good loser, and I'll show you a loser,' but I wish he wasn't so churlish when he loses. OK, you don't expect him to enjoy being beaten, but there's a better way of handling it than the way he does it.

A clean-cut Hamilton fitting the Ron Dennis template during his McLaren days

"RON TRIED TO CONTROL HIM, DIDN'T HE? THAT'S WHY HE'S NOT STILL THERE"

"When they pull up at the end of a race, for example, he never goes over to Nico to shake hands.

"There were the two of them, with Kimi, in the podium room at Abu Dhabi, and they never said a word to each other! You think, 'What is the *matter* with these people? This is the pinnacle of the sport, the end

> of a long, hard, season, they're still breathing, they're all squillionaires – and where are the smiles?'

"From a media perspective, if I was in Bernie Ecclestone's shoes, I'd want my world champion to be out there over the winter, picking up awards, on the red carpet, on the front cover of glossy magazines... When he was world champion, Jenson went to all the functions and so on – and I think that's an obligation, actually. We've got three months without any Formula 1, and I'd want him to be out there, selling it – mostly because it does nothing to sell itself..."

Some have begun to compare the battle between Hamilton and Rosberg with the legendary feud between Senna and Prost, but

anyone with memories of those days finds that risible.

"No, that was a different thing altogether – that was all-out war, wasn't it? I'll admit I conveniently ignore the dark side of Senna because I was so overwhelmed by his natural gift in a racing car. There was a man prepared to do *anything*...

"As far as Hamilton is concerned, if – after the last few races in 2015 – he's not asking himself a few questions, he should

be. It'll amaze me if he's not right back on it at the start of next season, but then I expected him to be like that at the final race this year. I think it's going to be very interesting to see what he does this winter to put things right, because next season, with an on-form Rosberg, consistently delivering his full potential, and a fast Ferrari, with Vettel at the wheel... he's got his hands full, hasn't he?"

*

AT LUNCH 12 MONTHS AGO BRUNDLE – LIKE MOST IN THE business – admitted to being mystified by the season Sebastian Vettel had just been through. After winning four world championships on the trot, Seb's familiar grin was rarely in evidence and he missed no opportunity to denigrate the new 'hybrid' Formula 1.

True, Renault's power unit was no match for Mercedes, but that wasn't the whole story, for Vettel's new Red Bull team-mate Daniel Ricciardo was consistently the quicker of the two, and won three Grands Prix. Was it conceivable that Seb, after all, was a one-trick pony, brilliant at working with Adrian Newey's unequalled blown diffuser, less at ease with reduced levels of grip?

Brundle didn't want to believe that, but at the same time was baffled by Vettel's underwhelming season. "Perhaps," he said then, "Seb **D**

REFLECTIONS

Nigel Roebuck

was just a man of a specific time – with a specific car. The tools he had – notably the blown floor – suited his style to a tee, but people in the team say he's still trying to drive as if he were in a 'blown-floor car' and all he does is damage his tyres.

"The thing is," Martin went on, "can he turn it around with Ferrari? If he can't, I would say he is the bloke I have most misinterpreted in all these years – I mean, I know what I saw him do for four years! I don't think the best is yet to come from him, but I do believe there's a great racing driver in there, who will resurface..."

Brundle was on the mark. In his new life Vettel thrived, swiftly – predictably – asserting himself as the team's number one. James Allison's first Ferrari was vastly superior to its predecessor, and in Maranello there was also a massive step up in horsepower. Sebastian won three Grands Prix in 2015, and won them well.

"A year ago I thought I'd satisfied myself that the new F1 – without all the tools that Vettel made so much of - just didn't suit him, but this season he's demonstrated that wasn't the case. Look at Abu Dhabi - he's got so much self-confidence that he pulls over, lets Räikkönen through, and then comes on the radio, and says, 'I'm assuming that was in the game plan...' Obviously nobody had dared to ask him to let Kimi by, but he did it, anyway. What maturity and confidence, compared with the Hamilton/Rosberg situation, which is all emotional and churlish.

"Ferrari's return to competitiveness

was one of the big stories of the season, but as for Kimi... I know he did a good job at Abu Dhabi, but it surprised me that Ferrari took him back two years ago, and *astonished* me that they decided to keep him on next year. I'm afraid I think that's a wasted seat, just as it was last year, when Alonso blew him away.

"Mind you, Räikkönen is the perfect team-mate for Vettel – Seb certainly doesn't want another Ricciardo in there! He wants somebody fast enough to be useful, just like Schumacher had with Barrichello, plus Kimi's still a big name, so he gets credit when he beats him – and he knows he can beat him, all day, every day.

"How exciting would it be if it were contractually feasible to have Max Verstappen alongside him next year? And can you imagine if Alonso were still at Ferrari with Vettel? Unbeatable..."

From every point of view, the timing of Sebastian's move to Ferrari was inspired, for Red Bull had a poor season and Ricciardo never looked like adding to his tally of victories.



"I think Danny lost a bit of focus in 2015," Brundle said. "What I really like about him is that he can drive a car that slides – and it doesn't matter whether it's at the front or the back, he can carry speed, and I enjoy watching him out on track.

"Having said that, he's not been as exuberant this year, and I think he might have been a bit like Vettel in 2014, and got caught up in the negativity of it all: if you drive out of the pitlane, and you think your car or your engine is hopeless...

"Daniil Kvyat came under massive pressure because he wasn't doing a good enough job – I really can't imagine the sort of aggro he was getting from Helmut Marko – but I think he pulled it round as the season progressed. If you think about Red Bull's four drivers... if you could replicate them through the 22 cars next year, it wouldn't be a shabby show, would it?"

No argument there. Toro Rosso, with rookies Verstappen and Sainz, had an excellent season, and if 17-year-old Max unsurprisingly got most of the attention and kudos, Carlos, too, made a considerable impact, not least by outqualifying his team-mate 10-9.

"I think Sainz has done an extraordinary job, and I like his approach and attitude. He's a charming lad, as well. There was actually very little between them, but in a brutal head-to-head I'd put my money on Verstappen, albeit not by much. It's a bit like Lewis and Nico. "When I interviewed Max in Abu

Dhabi he absolutely blew me away. He had no idea of the questions that were coming, but there was never an, 'Errr...' or a glance to the sky. If ever a kid knew who he was, and where he was heading, it was him. Now whether that's a good thing or a bad thing, I don't know. There is a certain... overconfidence there, let's say.

"As Max was answering the questions – bang, bang, bang – without any hesitation, I realised that that's also how he drives, isn't it? Think back to the press conference in Canada, where he was questioned about the shunt with Massa at Monaco: did he know that was coming up? He wasn't on the defensive – far from it, he came right back at Felipe. Now is that impressive – or robotic? I don't know.

"As for Red Bull, and their problem with engine supply in 2016, I think they played a supremely bad hand – and to be fair, from conversations I've had with them, they know that. Through their years of success, as far as they were concerned it was always Red Bull who won, and Renault who lost – and that arrogance has smacked them right in the face. They've gone full circle – ended up with pretty much the same engine, and tens of millions less to spend. I have no sympathy for them at all – and neither, more importantly, do the fans."

*

IN MOTOGP THEY HAVE LONG REFERRED TO THE SPECIAL riders as 'The Aliens', and in recent years the only change has been the replacement, alongside Valentino Rossi, Jorge Lorenzo and Dani Pedrosa, of the retiring Casey Stoner by Marc Márquez. In Formula 1 'The Aliens' have long been regarded as Hamilton, Vettel and Alonso,

but a year ago Brundle said he suspected that the next to add to their number might be Valtteri Bottas, at the time thought very likely to replace Räikkönen at Ferrari. In the event, that didn't come to be, and Martin's opinion of Bottas is perhaps not what it was.

"I'm still very much a fan of his, but I think he's got to give more. I like the way he's always there, every weekend, and he's very consistent, but he seems to me to be Mr Percentage – I just don't think he's very dynamic. At Silverstone, for example, both Williams

drivers made a fantastic start and led into Copse, but then two or three corners later Valtteri just left the door open, and Lewis was past him. I think he certainly needs to step up a gear, but when I said that to him, he said, 'Well, when it's worth it...'

"Massa had a good season, didn't he? He impresses me – he's still got the passion, and he's the kind of guy who, when this particular adventure is over, will say, 'I think I'll do Le Mans...' Felipe's a very smart little guy, and very easy to underestimate.

"Williams had a very good year – third in the constructors' championship, with a relatively small budget – but I've

heard Pat Symonds say to Bottas, 'We need to score 20 points a weekend', and I think that's how they go racing at the moment, rather than, 'Let's go and win this...'

"Probably, because of the money situation, that's how it has to be. Look at what happened in Brazil, where Massa lost his points because of the pre-heated tyre temperatures supposedly being too high. Williams people told me they were absolutely in the right, but they just couldn't afford to fight it.

"As well as that, next year's world championship entry fee is based on the number of points you score from this season, so if they'd got the points back it would have cost them another 80 grand on top of the 150 grand it would have cost to fight it – therefore it was better to look as though they'd cheated! Doesn't that tell you everything you need to know about the whole bloody business at the moment?" *

SECOND ONLY, IN THE TEDIUM STAKES, TO RED BULL'S constant bitching about sundry manufacturers' unwillingness to supply them with engines for 2016 was the endless debate about Renault's future in F1 – would they take over hapless Lotus, and move back into Enstone, or simply take their leave of the sport?

The affair rambled on and on, with chairman Carlos Ghosn – not a fan of Formula 1 – insistent that the deal would go through only if CVC could be persuaded to take a rather more open-handed attitude towards Renault. Shortly before the last race a company press release was

> prepared, announcing the company's withdrawal, but over the Abu Dhabi weekend an accommodation was finally reached.

The word a while ago was that Renault's hope had been to keep Romain Grosjean, and to bring in Kevin Magnussen as his team-mate. That, as Brundle said, would have been 'a hell of a team', but by late September the Frenchman had lost patience with the uncertainty of the situation, and signed for Gene Haas's new outfit, and soon Lotus – for all they knew perhaps

continuing to struggle along in their own name – had committed to Pastor Maldonado and Jolyon Palmer, both of whom brought sponsorship. When that was announced Renault was a little surprised.

After a season as reserve driver, Magnussen was in the meantime dropped by McLaren. "It's not five minutes," said Brundle, "since Ron Dennis was in Denmark with Kevin, saying he was the greatest thing, but now he's saying he didn't fulfil his objectives – well, how could he, when he wasn't in the bloody car? What a waste of talent..."

We went on to Force India, agreeing that the team, given its financial constraints, did an extraordinarily good job in 2015. "I must say I always thought Sergio Pérez was a bit lazy," said Brundle, "but I tell you what, in this era of F1 he gets the job done.

"It's difficult to know what to say about Hülkenberg. I've always been a fan of his, but whenever there's a good result in the offing he seems to trip over somebody – just goes diving in, and I think, 'If you've got that kind of mindset...'

"Nico's never had a podium finish, because when it's there he keeps having shunts. Remember when he could – and perhaps should – have won at Interlagos a few years ago, he tripped over Lewis, trying to take the lead. He had the measure of him, and should have waited for the right moment, but instead he made a move that was never on.

"Having said all that, Nico knows how to hustle a car, and I like that. He knows how to carry speed through a corner, that boy – it's the



"WILLIAMS HAD A VERY GOOD YEAR -VERY GOOD YEAR -THIRD WITH RELATIVELY SMALL BLIDGE

REFLECTIONS with Nigel Roebuck

sort of speed that Alonso carries. Sometimes, when you're watching out on the track, you stand back, thinking, 'That'll never stick to the road...' Usually it's Fernando who makes you do that."

*

IN OUR CONVERSATION A YEAR AGO THE BIG TOPIC WAS the return, against all expectations, of Alonso to McLaren. "What I can't wait to see," Brundle said at the time, "is the body language between Fernando and Ron – it's going to be fascinating, isn't it? What happens when they get their first podium, win their first race – if they do? Is it going to be a polite handshake, is it going to be a hug...?" Nineteen races later we are still none the wiser, for at no stage in 2015

did a McLaren-Honda come remotely close to a podium finish, far less a win. By season's end Alonso and Button had scored 27 points between them, and in the constructors' championship McLaren headed only Manor Marussia. If pre-season testing had suggested a difficult season, none – including the team's two world champions – could have predicted such a catastrophe.

"Let's be honest," said Brundle, "we all thought a McLaren-Honda would be at least moderately competitive, and moving forward – not ninth in the world championship!

Nobody on earth could have foreseen that."

Honda's power unit was not only gutless but also chronically unreliable, and to the dismay of McLaren people its progress through the season was apparently negligible.

It didn't help that the Japanese company's return to F1 was constrained by the wretched 'token' system, which limits the number of changes that may be made during a season, but Brundle saw that as no excuse. "Andy Cowell of Mercedes – who seems to know his business pretty well – said to me, 'With 25 tokens, we can start again...' So if Honda actually knows *what* to do, they should be able to do it this winter. To be honest, I think Ron made a terrible mistake in not allowing Red Bull to have the engine, because it would have speeded up the process of getting it right.

"For a pair of drivers like Alonso and Button, I can't imagine what this season must have been like, but I'm sure it was easier for Jenson than for Fernando. At the end of 2014 it looked as though he was out of the team, and then he was back in again, so to some extent he had nothing to lose, whereas Fernando had the double-edged sword of having a hopeless car – and of Ferrari coming on song just after he left.

"The Honda was so bad that I think, down the straights, both the drivers were scared, quite honestly, because the power would suddenly evaporate – and everyone around them was suddenly closing at a hell of a rate..."

When I talked to Whitmarsh about the McLaren-Honda situation, he said he was surprised, given Alonso's famously Latin temperament, that – apart from losing his rag on the radio in Montréal and Suzuka – he had more or less kept a lid on his frustrations this year.

"Yes, I agree," said Brundle, "but on the other hand I think it's Fernando's own fault that he's in this situation – I don't mean with the engine being so bad, because that's nothing to do with him, but leaving Ferrari with McLaren as his only alternative. You reap what you sow...

"When something goes wrong for Vettel – like in Q1 at Abu Dhabi, where Ferrari screwed up – he gets out of the car, plays the team game, says the right things – and then closes the door and rips them to shreds! That's smart, but with Alonso you're never quite sure what he's going to do – if I were a team boss, and I employed him, I'd be scared!

"At the Brazilian Grand Prix, for example, he knew exactly what effect the deckchair incident would have, just as in Japan where he said the Honda felt like a GP2 engine..."

> This seemed like a fair moment to point out that, in his admittedly subtler fashion, Button was if anything even more cutting in a post-race interview at Suzuka: "Today it was like being a samurai – but without sword or shield..."

"Yes, I suppose that's true," Martin laughed. "I can't imagine the frustrations they must have felt, but I still think Fernando would have been better doing none of that stuff, and instead getting a number of people by the throat behind closed doors, and saying, 'F****** sort this out!'

"Alonso is a fantastic racing

driver – I'm reminded of it every time I go and watch on track, and I can't argue with what he's achieved: for those five years Ferrari would have been nowhere without him, and he constantly outperformed the car. I could do that in sports cars – but I couldn't remotely approach it in F1. There are not many people who can win Grands Prix by outperforming the car – Michael, Ayrton, Alain, Fernando and that's it.

"Once the helmet's on, and he's in the car, Fernando is simply extraordinary – there's no other word – but I keep coming back to the baggage he brings with him. I guess all I'm saying is that he played some cards at Renault, Ferrari and McLaren that were not smart, and I think he's compromised himself with the people around him. By and large he has kept a lid on it this year, yes, but in Abu Dhabi his great pal Mark Webber said to me, 'Mate, at the moment Ferdy's like an unexploded bomb...'"

All right, I said, but I still think that if Alonso had been in a Ferrari this year, he would have frightened Mercedes like no one else.

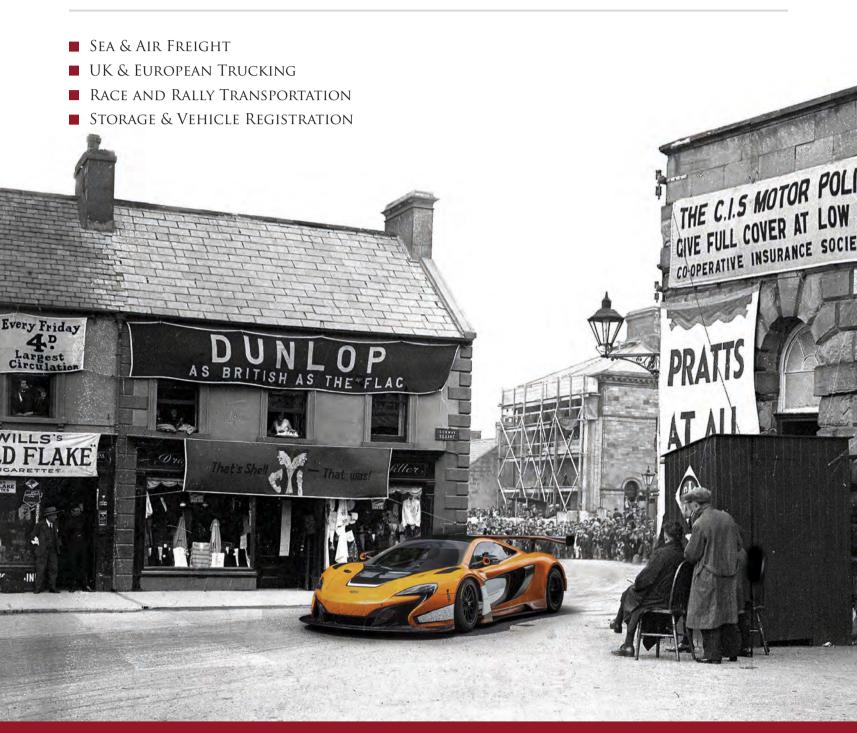
"I can't disagree with that," said Brundle, "and I'm sure, whatever he says, that must haunt him. It probably helped a bit that he and Jenson were getting a fat cheque at the end of every month, but – I'll say it again – I really don't know how they've coped with this year.

"These are difficult times for McLaren, aren't they? I remember when I was there, in '94, they had 14 sponsors who weren't even on the car: they were laying off the ones who conflicted to Tyrrell and Jordan – they had money coming out of their ears. For their sake – and for the sake of Formula 1 – let's hope things turn around in 2016: we can't afford to have drivers like Alonso and Button running around near the back..."





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THE WAY WE WERE

The 2016 campaign marks the 10th anniversary of Fernando Alonso's second – and most recent – world title. He achieved it with Renault, a team now making a full-time return to F1. The Spaniard might have had a tough time with McLaren-Honda last season, but our GP editor still rated his input very highly... TEC

F1 FRONTLINE with Mark Hughes

ENAULT HAS COMPLETED the repurchase of the Enstone team that it sold at the end of 2009. Thankfully this guarantees the survival of a team that has been around in various guises since entering Formula 1 as Toleman in 1981. Wearing Benetton, Renault and Lotus badges, it won four world titles and a whole heap of races. But had Renault not completed on the

deal – which at the time of the F1 Commission meeting between Brazil and Abu Dhabi looked like a real possibility, the press release of its withdrawal averted only late in the day – it would probably have been curtains for the team.

Renault has committed to a nine-year programme and agreed to invest more than \in 800 million. In addition, it receives about \in 100 million in 'historic' bonus payments. That may sound like big money, but is actually only a lower mid-grid level of spend – not much more than a quarter of Ferrari's budget. This is a low-key return as a constructor, one that might not even be as competitive as the almost bankrupt Lotus team in 2015, given that the E23 model was powered by Mercedes – something obviously now out of the question.

As it shed talented, experienced people over the years, it is remarkable just how long the team was able to maintain momentum - even after Renault's pull-out when it had already looked like a team on the decline. The glory days of 2005-06, heavily based around a Michelin-led technical concept, seemed long gone into the control tyre era as even the return of Fernando Alonso made little impact. Renault was already wavering about continuing even before the Singapore 2008 controversy blew up a year later: indeed, part of the background to what unfolded that weekend was Renault having informed Flavio Briatore that it might pull the plug if it failed to win a race before the end of the season. The enforced departure of Briatore and Pat Symonds in the aftermath seemed likely to spiral the team yet more quickly into oblivion. Regardless of whether Briatore's management skills could be replaced, the loss of Symonds' calm analytical brain - and subsequently that of former technical director Bob Bell - made it seem like this was the beginning of the end.

But the amazing thing about Enstone was how many layers of talent lay within. It was like an onion; peel off one and there was another beneath. Internal promotions put James Allison in technical charge in 2010, supported by Naoki Tokunaga. Chief of aerodynamics Dirk de Beer (supported by Mike Elliot) and chief designer Tim Densham (supported by Martin Tolliday) remained on board under the new ownership. Together they built a car that allowed Robert Kubica – an inspired choice as Alonso's replacement – to be an occasional contender. But into 2011 Densham retired and Tokunaga was recruited by Renault Sport. Yet another layer of talent had left as Tolliday took up Densham's role.

Allison's decision to pursue a forward-facing exhaust solution that showed promise in the wind tunnel backfired in



STRAIGHT LOCKS After protracted talks, Renault has finally committed to a full F1 return



Read more from Mark about Formula 1 @ THE MOTOR SPORT WEBSITE 2011 as the initially reasonable R31 (now officially a Lotus) slid down to mid-grid. Compounding things was the loss pre-season of Kubica as he suffered his life-threatening rallying accident. This was all surely too much even for Enstone, especially as cashflow problems were straining the loyalty of staff. But Allison emerged during this time as an inspirational technical leader, keeping a core of gifted engineers focused.

It paid back spectacularly in 2012 and '13 with the respective E20 and E21 models. These cars, with Kimi Räikkönen aboard, returned the team to winning ways and one wondered just what Kubica might have achieved in them. In the second half of 2013 Romain Grosjean was the only guy who could regularly threaten the otherwise dominant Red Bull of Sebastian Vettel. But still people left. Even as Grosjean was setting the tracks alight Allison, feeling badly compromised by payment delays to people who'd given their all, accepted an offer to join Ferrari, taking de Beer with him. Elliot had already left for Mercedes (where he'd be instrumental in the aero concept of the W05 and W06). Räikkönen quit before the '13 season ended on account of non-payment.

Finally, it was too much. Enstone stalwart Nick Chester took over from Allison, but admitted that there had simply been too much contracting and not enough restructuring to keep the technical impetus into the new formula. Rescued at the 11th hour, the team is now on a recruitment drive and Bob Bell's return is believed to be imminent. He knows all about the solidity of the foundations he will have to build upon.





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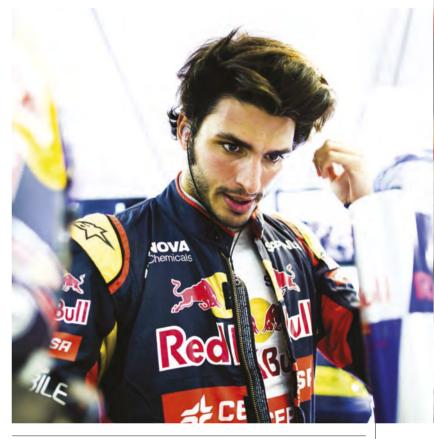


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F1 FRONTLINE with Mark Hughes





CARLOS SAINZ

Carlos only made it onto the F1 grid because Sebastian Vettel had gone to Ferrari, creating a cascade of opportunities within the Toro Rosso/ Red Bull family, but once there he immediately caught the eye. While the outside world focused on his 17-year-old team-mate, Sainz demanded attention too by frequently out-performing Max Verstappen. Looking only where direct comparison wasn't made impossible by engine failures etc, in the first half-season he was a genuine 6-3 up against Max in qualifying (4-3 down in the second half). He would typically attack the circuit from the off on Friday, finding the limits by going over them, though only rarely leaving the track. Come qualifying, he would put the pieces together in a very composed way. Inevitably, as with Verstappen, there were some quiet races between the peaks and overall Verstappen's season showed a steeper progress curve. But partly this was down to poor luck with technical problems on Sainz's side of the garage. Perhaps his most impressive feat was turning up at Suzuka for the first time and going fastest in Friday morning practice. Prior to a qualifying problem, he looked set to cause a major stir. Trying to learn Sochi in a hurry after the opening sessions had been rendered useless, he crashed heavily and watched qualifying from a hospital bed. He was then declared fit to race, started at the back and had worked his way up to seventh when his brakes gave out. Occasionally wild in his eagerness not to underperform, he's definitely made of the right stuff.



"IT'S NORMAL FOR HIM TO HAVE THE CAR UNDER YAW BEFORE THE APEX"

9 VALTTERI <mark>B O T T A S</mark>

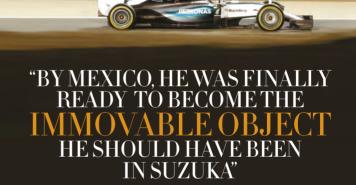
As the Ferrari spotlight shone on Valtteri early mid-season, he suffered a poor run of form. That might turn out to have been the critical revolving door moment that comes to define his F1 career. His pace was hurt more than he revealed by the torn back muscles he incurred during qualifying in Melbourne and it took until the second half of the season before he was back to his best. His biggest strength remains an ability to soak up pressure as if it's not there - see his defence from Vettel in Bahrain. He's an incredibly difficult guy to pass. He's unflamboyant in or out of the car and easy to overlook, but once he was fully fit he was invariably around at the end, squeezing the maximum result out of the sometimes difficult Williams. His best chance for a break-out result came at the British Grand Prix and, though there was an element of unclear instruction from the team, he must take some of the responsibility too. Asking if he could pass team-mate Massa for the lead, as he felt he was being held up, he asked for clarification at the very moment the best opportunity to pass was presenting itself. He would never see that opportunity for the rest of the season. Yellow flags on his final Q3 run in Austria spoilt his grid position there, left him behind cars that he'd have to fight past in the race. It gave him an extremely busy Sunday but he was irrepressible in overcoming the obstacles: while team-mate Massa was catching the eye as he fought with Vettel, Bottas' drive in adversity was arguably even more impressive.

B MAX VERSTAPPEN

The 17-year-old rookie (he turned 18 at Suzuka) rubbished pre-season nay-sayers' claims that he was too young for F1 – as he was always going to. His special talent has been obvious throughout his career and he's been impeccably coached. His peak performances justified the hype: the amazing passes in Shanghai, Spa, Interlagos, second-fastest on Thursday morning at Monaco, his first ever time around there, the beautifully composed drives into fourth places in Austria and Austin. It would be easy to let all that colour the impression of his full season, though. In the first half-season there were several anonymous races (Bahrain or Silverstone) and he was comprehensively outqualified by team-mate Carlos Sainz during this time. He was having difficulty gauging how aggressive to be with the tyres over one lap, when a degree of abuse is necessary. This was all just part of the learning process after only one year of car racing. His second half-season was more consistently excellent. The way he can get rotation on the car so early into slow corners – already pointing at the apex with no lock applied, ready for him to get hard and early on the power, minimising the time those front tyres are scrubbing across the Tarmac - buys him tenths and is also partly behind those demon moves from so far back. It's normal for him to have the car under yaw before the apex, a trait he can use to scrub off excess speed when passing, without needing to overwork the brakes and lock up. That facet of his talent is gold dust.







7 JENSON **BUTTON**

There were many - Ron Dennis among them - who assumed Alonso vs Button would not be a contest. They were so obviously glaringly wrong at the time and Jenson duly proved as much. Button was only retained into 2015 because of corporate politics behind the scenes. Dennis' preference was for Kevin Magnussen and the Danish investors that might have come with him that would have aided Ron's boardroom fight. Instead, he was 'saddled' with Button who proceeded to shade Alonso in qualifying over the season (albeit with relatively few opportunities of direct comparison). Some of his Saturday afternoon laps in the hopelessly underpowered car were quite special - not least that at Spa, which he reckoned was the equal of his pole lap there in 2012 and which was 0.5sec faster than Alonso. He reckoned this was the first Pirelli-shod McLaren he'd ever driven with the handling traits he likes, and there were relatively few of those races of the previous years where an unstable rear took him out of the equation. In fact only Singapore could be classed as such this year. He was unlucky with the timing of a yellow flag right at the end of Q2 in Monaco - otherwise he'd have got into Q3, which would have been the only time all season a McLaren had scaled such giddy heights. His Sundays didn't have the same gung-ho aggression of Alonso's - he wasn't driving around the outside of faster cars on cold tyres in the opening moments - but there were several races where the pair were locked in battle until one or the other of them was forced to retire. It would be fascinating to see this match-up take place in a properly competitive McLaren-Honda in 2016.

6 NICO ROSBERG

Rosberg's strength of character shone through again, placed as he was in that most psychologically demoralising position of having a fantastic car but a faster driver on the other side of the garage. There was nowhere to hide as Hamilton hit upon his sensational form up to Singapore. Only when Lewis couldn't quite nail the sweet spot - Spain, Austria - did Nico have the beating of him. Often the differences in the races were negligible, but that means little in this Pirelli era when very few races can be run flat out anyway. Consistently losing out to Hamilton in qualifying meant he was always at a strategic disadvantage in races. Yet despite this constant pummelling, when new Pirelli constraints forced a set-up change that represented an opportunity, he was there immediately. He applied himself intensely to understanding the car's new traits, determined to get something positive from the season. Once the car was reconfigured post-Singapore, he was literally never off pole position. Hamilton beat him a couple of times in these races - but had to resort to strong-arm tactics to do so and Rosberg was far too accommodating. By Mexico, he was finally ready to become the immovable object he should have been in Suzuka and, particularly, Austin. The fact this stuff doesn't come naturally is a manifestation of his nature - a reasonable man in a sometimes unreasonable sport. In any case, that test of wheel-to-wheel resolve never arose post-Austin as Hamilton wasn't ever close enough to try any 50/50 moves. In the reset car, running at the front, Rosberg was fantastic and that success fed on itself to raise his confidence in a virtuous spiral.



5 ROMAIN GROSJEAN

There's a significant gap between the supreme and the rest, but Grosjean again heads this second group. His qualifying domination over a very quick team-mate was just one manifestation of a freaky ability to put what he's learned together over one lap. For much of the season he would miss the first 1.5 hours of running as his car was handled by Jolyon Palmer, but still he would invariably shade Maldonado when the moment came. In a financially beleaguered team his ability to stick the Lotus in Q3, from where the expectation of points was realistic, was vital. He might just be the best qualifier of all. But he put some great races together too, none more so than his unlikely podium at Spa. He was pressuring Vettel when the Ferrari's rear tyre exploded, but what's generally forgotten is that Seb was only ahead through strategy. Prior to the stops, Grosjean was running third and at 20 laps, just short of half-distance, before a virtual safety car triggered strategic divergence, he was just 15sec behind Rosberg's Mercedes. He'd been on average 0.7sec slower than Rosberg's Merc - in a Lotus. There were lapses - his scrape with Will Stevens in Canada was silly - but that applies to every driver in this list and he remains one of the most courageous overtakers. He got the maximum from a difficult situation at a time when it would have been easy to be disillusioned. At 29 his career should now be in full flower, taking its momentum from that stunning second half of 2013. Yet he remains positive. He's opted for a new team with close Ferrari associations and refuses to give up on the dream of GP wins. He's not yet fallen between the cracks, but this might be his final leap.

4 | Fernando ALONSO

Well, there wasn't really much for Fernando to get his teeth into with the McLaren-Honda, the scope for his undimmed ferocious race pace and attack rendered irrelevant by a slow car that rarely held together for more than a few laps. Although it's difficult to be definitive about his qualifying pace because there were only seven occasions out of the 19 events in which Alonso and Button could be directly compared, he was 5-2 behind. The only times he genuinely outqualified Button on merit in a car of the same specification came at Silverstone and Singapore. But as soon as the gantry lights went out, he came alive, invariably fantastic in the first few corners (Abu Dhabi excepted), pushing himself into places that threatened to get him prosecuted for trespassing. Invariably, the Honda's diabolically bad energy recovery would then leave him a sitting duck on the straights and within a few laps he'd be right back where he started. But his raging against those circumstances was always one of the weekend's highlights. He said all the right things when out of the car – how this is the only place available that gives him a (long-term) shot at another title, that he knows it will come good etc - but in the car, over the radio, is when we've seen the frustration of a competitive animal. On the one hand he says he was below his best in 2015, on the other Button says he's saying that for a reason and that he's actually a bigger handful as a team-mate than Hamilton was. He remains a supreme racing driver, never the absolute fastest on peak one-lap pace, but probably close to unbeatable over a sequence of them when in a car no worse than anyone else's. \square





3 DANIEL RICCIARDO

Renault fell even further behind in 2015 and for the first half-season the Red Bull RB11 wasn't even particularly good aerodynamically. Or at least not in a way the drivers could access. So the multiple race-winning Ricciardo of 2014 was never in a position to take up where he'd left off in that coming-of-age year. It led to some frustration, culminating in a terrible weekend in Montréal where he finished more than 20sec behind his team-mate. But even during the doldrums period there were reminders of his level. So afflicted by engine problems were the Red Bulls early in the season that it was only occasionally possible to make a comparison between the drivers. But, aside from Montréal where Kvyat qualified a few thousandths faster, whenever they both had clean runs Ricciardo comfortably eclipsed his team-mate in qualifying - by as much as 0.4sec in Sepang. Montréal triggered a rethink in both his approach and the car's set-up: when that combined with aero upgrades from Silverstone onwards, he was back. He was quite thrilling in Budapest, throwing caution to the wind and staking everything on an against-the-odds victory. On faster tyres than everyone in the final stages and running third, if he could have scrabbled past Rosberg, the race-leading Ferrari of Vettel would have been a much easier scalp, on account of its lower top-end speed. Rosberg wasn't prepared to be humiliated, Ricciardo had committed - and they clashed. Were it not for that he'd likely have 'stolen' Vettel's win. His Merc-scaring pace through Spa's middle sector was amazing to behold and at Singapore, despite the power deficit, he was the only guy able to live with Vettel's Ferrari and was even able to pressure it until a safety car got Seb off the hook. And still that uncanny feel for the tyres. He's got it all.

2 LEWIS HAMILTON

Had the season finished at Singapore, Hamilton would have been number one by a big margin. Up to that point he had taken the formidable Mercedes W06, using it as sledgehammer or scalpel as required, to lay waste to the opposition. That opposition was essentially team-mate Nico Rosberg - and Hamilton destroyed him. He'd resolved through the previous winter to change his approach to qualifying, to work on nailing that first Q3 run, ensuring that on its own would be good enough for pole. He didn't always manage to do this, but in striving for it he was invariably out of Rosberg's each - the tone to their season being set at Melbourne where in tricky, changeable conditions Nico couldn't get within 0.6sec of him. In the early wet laps of Q3 in Malaysia, Hamilton's remarkable ability to find the grip and commit instantly put him 1.2sec clear of the field. These were demonstrations of that phenomenal natural gift with which he's been blessed, but in the more routine demands - where everyone has a chance to catch up and it's no longer just about improvisation - that speed advantage over Rosberg narrowed but was still invariably enough to ensure him pole and the race strategy advantage that bought. And that was the formula for the seven wins from the first 12 races that essentially secured him the title. He remained a high-maintenance driver for his race engineer, constantly questioning, competitive paranoia never far away, but he was delivering magnificently. But then came Pirelli's tyre pressure/camber changes - and the radically different set-up it imposed on the Mercedes. Coming at a time when his title was a mere formality, he did not invest as much of his attention into understanding the car's new requirements as did Rosberg. And just like that, the tables were turned.



KASPEI

HUBLOT

GTO

antander

ERRARI

ST. CORIA

HUBL

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V-Power

Seb's first season for the Scuderia was brilliant, three beautifully judged victories and an inspirational, motivational force within a resurgent team. In Sepang and Budapest he was presented with unusual opportunities and jumped upon them with flawless ferocity, while Singapore was a red re-run of his best Red Bull glory days a dominant pole, sprinting away from the pack at a breathtaking rate, then monitoring his options from there. There were only three opportunities for non-Mercedes victories all year - the W06's tyre usage in Sepang and Singapore, Hamilton's errors in Budapest - and Vettel nailed each one of them. He was re-invigorated after his difficult Ricciardodominated final Red Bull season and was a perfect fit in the role of leader that is a requirement at Maranello that many have been unable to fulfil. The lead Ferrari driver needs to command respect from his performances on track, to generate the support without histrionics while retaining that soft human touch on the surface. It demands emotional and mental intelligence as well as raw talent – and he fits the bill to perfection. He's been fortunate to join the team at a time of a new and productive technical impetus, but just as on track he's taken that opportunity and built upon it. His way with the team immediately made him - and not the incumbent Kimi Räikkönen - its natural focus and his advantage over Kimi built as the season went on. His scrappy races in Bahrain and Mexico were the only blemishes upon his seasonal performance and in the immediate aftermath he was his usual candid, self-critical but light, self. He was otherwise a relentless provider of performance and inspiration, sprinkled with occasional moments of brilliance - his driving and choices when the rain came down at Silverstone that conjured an unlikely podium, for SPERSK example, or his fantastic Singapore pole lap. This was the performance of a fully formed, mature and very great driver. 🖸

F1 FRONTLINE



GRAND PRIX NOTEBOOK



Rd 19 YAS MARINA, NOVEMBER 29 2015

1 NICO ROSBERG	Mercedes WO6	1hr 38min 30.175sec
2 LEWIS HAMILTON	Mercedes WO6	1hr 38min 38.446sec
3 KIMI RÄIKKÖNEN	Ferrari SF15-T	1hr 38min 49.605sec

FASTEST LAP LEWIS HAMILTON Mercedes WO6 1min 44.517sec RACE DISTANCE 55 laps, 189.739 miles

POLE POSITION NICO ROSBERG Mercedes WO6 1min 40.237sec

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definitive race reports

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digital GP Report or

online @ www.motorsport

magazine.com



NO TITLE DECIDER TENSION IN THE DESERT THIS TIME around, the big prizes long concluded. But a third consecutive victory for Nico Rosberg from his sixth consecutive pole completed a remarkable turnaround in form for the title runner-up. In the seasonal comparison between the two Mercedes drivers there was a very definite reset post-Singapore. In that race, it will be recalled, the Mercs were bizarrely uncompetitive, with a net pace swing of more than two seconds. The clues as to why Rosberg had set six consecutive poles since, and Lewis Hamilton's dominance had evaporated, lies within what happened at Singapore. And the root of that goes back to the tyre blow-outs at Spa for Rosberg and Sebastian Vettel. The origin of Rosberg's lateseason dominance goes back to his left-rear Pirelli exploding that Friday afternoon in Belgium, just short of Blanchimont corner.

When Pirelli upped the minimum pressures in response to the Spa failures, it impacted fundamentally upon the Mercedes W06's set-up – something that was not realised at the unconventional all-out speed demands of Monza but only in the aftermath of the following Singapore. "We were running the car totally wrong for the new tyre pressures," says the team's technical director Paddy Lowe. "The tyres were not in the right temperature window because we didn't have the set-up where it needed to be. In terms of ride height, toes, cambers, aero balance – almost everything!"

Between Singapore and Suzuka the W06's sweet spot had to be found all over again in response to the new challenges posed by the revised tyre pressures. Even if the componentry remained just as it had been, the car was quite different in its feel and characteristics from Japan onwards as its baseline set-up had been so radically altered. This was to do with weight transference and getting front tyres that had effectively been made less grippy to load up quickly enough. This all came at a time when Hamilton's third title was little more than a formality after a season in which he had totally dominated Rosberg and it would be accurate to say that Hamilton paid significantly less attention to understanding the newly configured car than the more motivated Rosberg – who put in the hours on the simulator and in discussion with the engineering staff. It would also probably be fair to say that the new traits of the car – a less aggressively grippy front end, primarily – had less effect on Rosberg's natural driving style than Hamilton's.

In the 13 races up to and including Singapore Hamilton had outqualified Rosberg 12 times. Even on the one occasion he'd failed to do so, his tyres for the final Q3 run had been left in their blankets too long. In the six races since Singapore, Rosberg was the faster qualifier every time. It really was quite black and white – and the timing meant the trend just fed on itself. While Hamilton was partying and attending promotional events as the new world champion post-Austin, Rosberg continued to fine-hone his understanding of the car.

Coming in to the Abu Dhabi weekend Hamilton had resolved to do something. The quick direction changes required through the tight twists of the final sector of the Yas Marina circuit had always been his personal territory through the years. But in a car with a front end he felt wasn't going to be responsive enough for

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"WHILE HAMILTON WAS PARTYING, ROSBERG CONTINUED TO FINE-HONE HIS UNDERSTANDING OF THE CAR"

ALL IMAGES LAT



him to use that advantage, he made what he felt would be a crucial change, substituting the new heave spring that sits transversely across the front of the Merc's suspension for an older-spec unit.

The heave spring controls the stiffness of the car when both sides are compressed together under braking. But Hamilton suspected the new heave spring was actually working too well in this. He wanted a bit more weight transfer onto the front, so the tyre was more squished as he turned in still on the brakes, getting the car to rotate quicker. He likes his cars to be stiff across the front, often to the extent that his inner front wheel waves in the air into a slow corner. Having the outer wheel briefly taking 100 per cent of the front cornering load theoretically gives less total grip through the corner but it can also give better initial response on turn-in. The tyre loads up more quickly and does not have the counter-effect of the unfavourable camber of the inside wheel working against that response. This effect will have been dulled when Pirelli reduced the permitted maximum camber at the same time as it increased the pressures. So Hamilton wanted to mitigate against those dulled responses by having the tyre more squished even before he began turning. Hence the less powerful heave spring.

It sort of worked for him, but not consistently so. The car would occasionally ground out at the front, causing a front tyre to lock – particularly at the end of the back straight into the tight Turn 11, the beginning of sector three. The solution to having the weight transfer he wanted without the grounding out would have been to have increased the front ride height – but that would impose an aerodynamic penalty, especially through the fast turns of the first two sectors. Caught in a set-up cul-de-sac, he nonetheless stuck with it, trying to avoid overusing the brakes in the critical places. But in the end, it backfired on him – he was slower than Rosberg in qualifying by more than threeand-a-half tenths and most of that loss was in the final sector. "It was all about experimenting with the set-up," he explained afterwards. "I tried to claw something back – but it ended up hurting me more."

The effect of the car's post-Singapore traits are less significant to Hamilton in the race than in qualifying, as the tyre wear is forever changing the balance anyway, allowing Hamilton's improvisation to keep him in play. But the super-soft quickly grained its fronts on everyone's car here – and more so on Hamilton's than Rosberg's. So once Nico had won the start, he was able to build a useful lead before the first stops. Onto the more durable prime tyre though, Hamilton was faster – and ate steadily into the earlier deficit he'd incurred. Rosberg pushed harder in response – and damaged his front tyres. This gave the Mercedes strategists a dilemma, for the ideal strategies of the two drivers were now different. Rosberg needed to be rid of this set of tyres sooner than Hamilton, but not so soon that he left himself too many laps to do in the final stint. Meantime, Hamilton was eating into his lead and was almost into the DRS zone by the time Rosberg was called in.

Hamilton was left out there for a further 10 laps, the idea being that he'd come out for the final stint on tyres that would be that much newer than Rosberg's and therefore almost 1sec quicker. He gained for a while but just didn't quite have the pace to make it work. He finished 8sec down – and not all that far clear of the Ferrari of Kimi Räikkönen who, for once, had enjoyed a clean, straightforward weekend. It was team-mate Vettel's turn to be in the wars, failing to make it out of Q1 after a pitwall blunder. He came through to finish fourth.

"I don't think any of this set-up change stuff will be relevant next year," said a Mercedes man. "The new car will be totally different." "Next year can come tomorrow for me," said the winner, in what

sounded suspiciously like fighting talk.



The sight: a small, fast dark grey dot – dayglostriped – streaks through the sunlight. Whooshing through the shadows of the towering grandstands, it bursts out into the light again, now big in the frame. It might be the slowest car down the back straight but the McLaren-Honda is still reaching 190mph before Fernando Alonso

 count them – downshifts.
 A strong crosswind becomes a headwind as he points the car aggressively into Turn 11 – and it responds. So far, so good, it looks like a competitively fast F1 car.

is hard on the brakes, his right

index finger demanding five

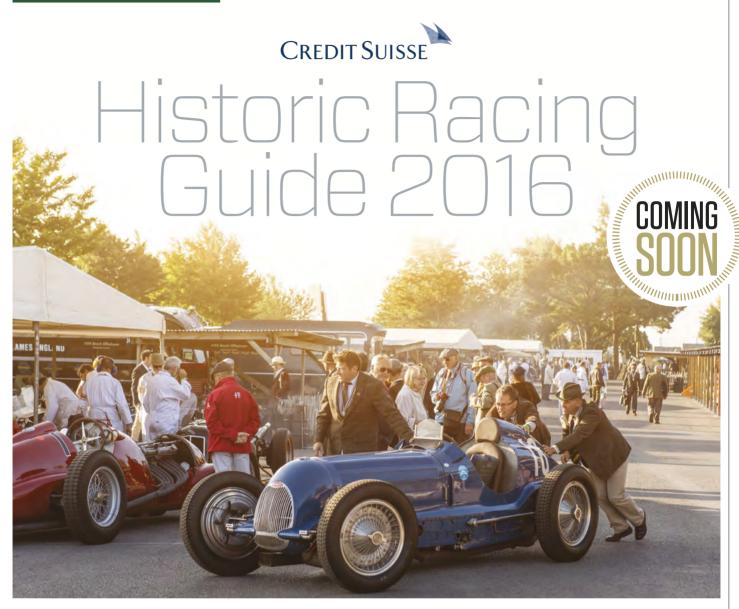
The sound: then he stands on the gas and that awful popping part-throttle Honda noise lets the whole thing down, the car stuttering its way through there as the turbo fails to generate enough energy to properly feed both the Mgu-H and engine.

The smell: burning rubber as Lewis Hamilton locks an inner front into that turn, his brake-by-wire unable to cope with the extreme demands he's just made of it and he runs harmlessly across the turquoise run-off. There's an intriguing story behind this lock-up and the many others he will make here this weekend.

Up at the exit of the Turn 12-13 chicane intense sunlight is bleaching out the colours, so that it's just impressionist streaks as the cars arc into there, over the crest and on the power, revs flailing, the driver's hands and right foot busy.

Nico Hülkenberg is desperately trying to keep the momentum he's carried in there, fighting the car all the way through the exit, impressively acrobatic. Sergio Pérez's curve through there is much more consistent, inert. And in that comparison is defined the contrasting patterns of those two Force India drivers in qualifying and race, for Sergio is minimising the loads on front tyres that are particularly shortwearing here.





Don't miss our special preview picking out the forthcoming highlights of another packed season, in the April issue of *Motor Sport*



Including: Grand Prix de Monaco Historique, Pebble Beach and Goodwood Revival

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MOTORCYCLES

www.motorsportmagazine.com/author/mat-oxley/



testing for Honda's WSB team

MAT OXLEY LAST OF THE AMERICANS

ON NOVEMBER 8 NICKY HAYDEN RODE HIS 216th and final MotoGP race. Next season he moves across to World Superbikes, motorcycle racing's version of tin-tops.

Hayden's departure from MotoGP is significant because for the first time in several decades there won't be a single American on the grid. Since the late 1970s American riders have played a huge role in Grand Prix racing, with 'King' Kenny Roberts, Freddie Spencer, Eddie Lawson, Wayne Rainey, Kevin Schwantz, Kenny Roberts Junior and Hayden winning 15 premier-class titles over 29 years.

The element that unites these riders is their dirt-track background. From King Kenny's day until fairly recently, GP bikes had more power than grip, so they had to be ridden sideways. That's why US (and Australian) dirt-track riders dominated for so long, utilising the throttle skills hard-wired into their brains by years of making the best of low-grip conditions.

In recent years the development of tyres and rider-aid electronics have made those skills largely obsolete. It's no coincidence that Hayden won his title in the early days of MotoGP electronics, before the men with laptops really took over. "Electronics have been a huge change," says Hayden, who came to MotoGP in 2003. "Not just from year to year - they get more advanced every season. At first you changed the mapping for third gear and that was for the whole track, now it's

sector by sector, corner by corner, braking zone, acceleration zone, you name it ... "

Hayden's MotoGP statistics don't make the best reading: 216 races and three wins. But all that matters is that two of those wins contributed to him winning the 2006 title. That year Hayden rode a Honda RC213V, one of the greatest race bikes of all time.

"That V5 was incredible, it really was. It fitted me very well: a lot of torque, a lot of power and not too many electronics, so it was quite sideways. I felt comfortable on that bike with the throttle right there, because you could control everything and ride around any problems; it was a real fun bike."

Immediately after Hayden's title win MotoGP switched from 990cc engines to 800s, which were all revs and electronics. It became more difficult for riders to make the difference and sideways was no longer the way forward. He struggled for two years on Honda's below-par V4 and for five years on Ducati's scary Desmosedici.

"The Ducati gave you no warning," he says. "You'd be feeling good, thinking, 'Wow, I can go faster' and then you were down with no warning. The window on set-up was tight; if you missed it the bike was really bad."

Throughout those dark days Hayden remained a proper Southern gent, always polite and decent. The frustration was always there, however, and would sometimes bubble



"Obviously I wish I could've had some more race wins, but I got what I wanted, I got a star on my back and that I get to keep. That one sticks, that one don't come off!"

up during his media debriefs: lips quivering. eyes welling with tears. "Racing means a lot to me," he says. "It isn't just a hobby."

When Rossi joined Ducati in 2011 the pair became team-mates again – they had been together at Repsol Honda in Hayden's rookie year – and the Italian's megastar status began to have an effect, although too late to get either of them to the front.

"Valentino's lack of results on the bike made Ducati understand they needed to make some changes. Once they hired Gigi Dall'Igna [the ex-Aprilia engineer who arrived at the end of 2013], they started to turn things around."

Hayden won the 2006 MotoGP title at the final race, coming from behind on points to overhaul Rossi, then with Yamaha. It was a day he will cherish forever. Hayden elbowed his way past Rossi, who later crashed trying to keep up. Few expected that to happen.

"I was behind on points, so nobody gave me a chance. I still have a chuckle when I see the photos - we were on the podium and when all the smoke-bombs went off they were yellow [Rossi's colour]; that was quite a good feeling. It still gives me tingles but I don't get too caught up thinking about the past.

"Obviously I wish I could've had some more race wins, but I got what I wanted, I got a star on my back and that I get to keep. That one sticks, that one don't come off!"

There is little sign of a resurgence of American talent in MotoGP. The last American to cross the pond was 2013 US Superbike champ Josh Herrin. He entered the following year's Moto2 series, but lost his ride having failed to score a point in the first 12 races.

Now Hayden moves in the opposite direction. Riding a factory-backed Honda his aim is to become the fifth former GP rider to win the World Superbike title, following in the wheel tracks of Raymond Roche, John Kocinski, Max Biaggi and Carlos Checa.

•••

THE US IS WORKING HARD TO GET BACK into the MotoGP fray. The country's problem in recent years has been disastrous management of its national racing series. Last year the championship was reacquired by the country's sanctioning body, the AMA (American Motorcyclist Association), and is now managed and promoted by the Krave Group, fronted by three-time 500cc world champion Wayne Rainey. However, it could be a long road before the series produces the kind of talent needed to compete in MotoGP. "They lost their way and it's going to take a long time to get back," says Rainey's former mentor Kenny Roberts. "You don't invent a new world champion overnight; it takes time and money."

HALL OF FAME

www.motorsportmagazine.com/halloffame



THE FORMULA 1 Nominees

Mike Hawthorn
Sir Patrick Head
Nigel Mansell
Gordon Murray
Jochen Rindt
Bernd Rosemeyer
Gilles Villeneuve
Sid Watkins

THE SPORTS CAR Nominees

Woolf Barnato	Allan McNish
Derek Bell	Henri Pescarolo
Vic Elford	Brian Redman
Olivier Gendebien	Pedro Rodriguez
Reinhold Joest	Jean Rondeau
Klaus Ludwig	John Wyer

The doors are open to the 2016 *Motor Sport* Hall of Fame – and it's up to you to decide which great figures from the past and present pass through them to join our exclusive club for racing heroes

For the first time, we are asking readers to determine who should join the 29 current members of our Hall of Fame, which was founded in 2010. At a ceremony later this year (date and venue to be announced) there will be five awards representing Formula 1, sports car racing, motorcycling, rallying and US motor sport. Voting began with Formula 1 and *Motor Sport's* podcast team followed up with sports car and rally stars before moving on to motorcycle racers. An American-themed podcast will follow shortly. In the meantime, you can log on to our website to decide which of the adjacent names should enter the Hall of Fame alongside past inductees such as Ayrton Senna, Ross Brawn, Giacomo Agostini, John Surtees, Enzo Ferrari and Jim Clark.

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THE RALLY Nominees

Markku Alén
Richard Burns
Andrew Cowan
Seppo Harjanne
Juha Kankkunen
David Lapworth

Sébastien Loeb
Hannu Mikkola
Robert Reid
Carlos Sainz
Henri Toivonen
Jean-Luc Thérier

THE MOTORCYCLE Nominees

Valentino Rossi	Eddie Lawson
Mike Hailwood	Barry Sheene
Wayne Rainey	Kevin Schwantz
Mick Doohan	Geoff Duke
Kenny Roberts	Freddie Spencer
Joey Dunlop	Casey Stoner

INTERNATIONAL RACING

www.motorsportmagazine.com/race

PORSCHE BUILT AN ALL-NEW CAR for last season and came away with all the big prizes in the World Endurance Championship. For the coming season, it is rivals Audi and Toyota who are starting with the clean sheet of paper and the reigning champion is updating its LMP1 prototype. The question is whether the performance advantage enjoyed by the second-generation Porsche 919 Hybrid is going to be reduced or completely overturned in the same way that the Toyota TS040 Hybrid went from championship winner to also-ran over the course of last winter.

Audi and Toyota will gain by regulation for 2016 in the same way as Porsche did last season. It moved up from the six megajoule hybrid sub-class to the 8MJ division with the introduction of the second car to carry the 919 Hybrid monicker. The manufacturers now trying to dethrone Porsche are each making a 2MJ jump, Audi from four to six and Toyota from six to eight.

Porsche LMP1 technical director Alex Hitzinger knows that the fight is going to intensify over the nine races set to make up this year's WEC. "Both will make a performance step because moving up by 2MJ is a second a lap at the Le Mans 24 Hours," he says.

REFINEMENT FROM PORSCHE

Hitzinger is confident that Porsche will make a significant step. "We know there are big gains to be made with our package," he explains. "We have a reliable car now and can really concentrate on performance development over the winter."

A significant upgrade, a step on the way to the 2016-spec 919, was already testing little more than three weeks after the end of the season. Porsche put 6000km on a car incorporating the 2016 engine and hybrid systems, as well as new front suspension, at the Motorland Aragon circuit in northern Spain in early December.

Porsche knows how much it can gain ahead of the start of the new campaign in April. But Hitzinger says he cannot be confident because "you never know what the others are going to achieve".

AUDI'S RADICAL CONTENDER

First to reveal its 2016 contender was Audi, which showed the seventh car to carry the R18 type number just one week after the Bahrain season finale.

The quest to catch Porsche

All-new Audis and Toyotas to chase WEC titles in 2016 | BY GARY WATKINS

But then it didn't have a choice. It had scheduled a test at Sebring – the traditional proving ground for all Audi prototypes – in early December and the Florida airfield circuit allows for no privacy. No component has been carried over from the 2015 Audi to its successor. Or at least Christopher Reinke, head of LMP at Audi Sport, says he can't think of one.

There is clearly some radical aero thinking employed in the new car, witness the raised nose. But the most



significant step is the move up in megajoule class. "One thing is for sure is that we needed to do that to be back in the game," Reinke says. "It is very important because it puts another weapon in our hands."

The move from 4MJ to 6MJ is doubly significant for Audi. The jump should equate its turbodiesel P1 with the 8MJ petrol-powered cars from Porsche and Toyota under the Equivalence of Technology that underpins the rules introduced at the start of 2014.

Audi has abandoned the flywheel energy-storage system of previous R18 hybrids in favour of a lithium-ion battery pack, but it has yet to explain the secrets of the latest car's recovery systems. The truth is that there probably aren't any: the Audi almost certainly retains the single, front-axle KERS system of its predecessor. The reasons why it abandoned the turbo-driven secondary system of the 2014 R18 before the start of the season still stand and the heavier weight of a diesel powerplant militates against the use of rear KERS.

TOYOTA'S TURBO PLAN

The realisation that it was nowhere – as early as round two, at Spa in 2015 – forced Toyota to bring forward its plans to develop a new engine. Originally set to appear in 2017, the new unit will come on stream at the same time as the Japanese team switches to batteries from the super-capacitor storage system it has employed since 2012.



www.motorsportmagazine.com/author/gordon_kirby

The exact specification of the engine has yet to be revealed. Toyota Motorsport talks openly about it being a turbo, but officially the Japanese manufacturer will only say what it is not – a 3.7-litre normally aspirated V8, which happens to be the 2014-15 configuration of its petrol powerplant. It can be taken as read, however, that it is a small-capacity turbo unit with the same V4 architecture used by Porsche.

The switch to a turbocharged engine doesn't mean Toyota will be changing its hybrid concept. It will continue with a twin KERS set-up retrieving from the front and rear axles rather than using the exhaust gases from the engine, à la Porsche, for its secondary system. TMG technical boss Pascal Vasselon argues that Toyota's simulations suggest that this remains the most efficient route.

The concept of the 2016 challenger was set in stone before a new rule was introduced. Power from hybrid systems will be limited to 300kW at Le Mans next year and, almost certainly, at all WEC circuits the season after. Toyota argues that its concept is unfairly penalised because it deploys retrieved power at two axles rather than the one of its competitors.

The late decision to bring forward development of the new engine has given Toyota a tight schedule with, says Vasselon, "no room for delays". But he insists that the marque remains on schedule and will give the new TS050 a shakedown some time in the new year. That will put Toyota behind its competitors, but then it has always run its new car after its rivals.

THE INFLUENCE OF COST CUTS

New measures aimed to reduce costs could have an influence on the championship battle in the WEC, though Hitzinger suggests that their effect will be initially minimal. A limit on the number of aerodynamic configurations that can be used over a season will be set at three for 2016 and two from 2017. This will go hand in hand with limitations on the time each manufacturer can spend in the wind tunnel. A maximum of 1200 hours this year will be reduced to 800 in 2017.

The idea of the new measures is to prevent the aerodynamic space race that raged between Porsche and Audi over the course of 2015. That battle remains in full swing for the moment.

- OBITUARIES -

Peter Westbury

hillclimb champion has died at the age of 77. As well as being successful in speed events. Westbury was a prolific single-seater racer and scored several notable F3 and F2 victories. He contested the 1969 German GP at the wheel of his F2 Brabham BT30 and later tried to qualify a BBM P153 for the 1970 US GP, although he failed to make the cut. Away from his on-track exploits, Westbury produced sports-racers under the Felday banner and also ran cars for other drivers, one of the first being a young Derek Bell.

Maurice Charles

This former sports car and Formula 2 racer drove C- and D-type Jaguars during the 1950s and early '60s before later switching to a Ford GT40 Although he focused on UK domestic events, he contested the Le Mans 24 Hours on several occasions. the last of them in 1962 when he shared an E-type with John Coundley.



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GORDON KIRBY

BUSCH BOUNCES BACK TO TAKE TITLE

WHATEVER YOU MAY THINK OF NASCAR's 'Chase for the Cup' play-off system, it produced an excellent title duel at the Homestead-Miami Speedway Sprint Cup finale in November. Defending NASCAR champion Kevin Harvick chased Kyle Busch all the way to the chequered flag, but couldn't get close enough to challenge. Busch, 30, took his first Sprint Cup championship in his 11 th year in NASCAR's premier series.

Touted for many years as one of NASCAR's most talented drivers Busch, known as 'Rowdy', has won more than 150 NASCAR races over the past decade in the Sprint Cup and its support categories. But Kyle had never finished better than fourth in the premier series and prior to Homestead had never won a 'Chase for the Cup' round.

But Busch quickly emerged as the man to beat at Homestead, eventually leading more laps than anyone else and pulling away from the final restart to beat Harvick by four seconds. His success was remarkable because he missed 11 races at the beginning of the year after crashing at Daytona in February, breaking a leg and foot. Back in the cockpit by May, Kyle was immediately competitive and went on to win five races and lead 736 laps as he took Joe Gibbs Racing's fourth championship and first in 10 years.

Gibbs' four-car team is the factory Toyota operation and this is Toyota's first Sprint Cup title, so it was particularly gratifying for the team and TRD (Toyota Racing Development) in California, where the engines are built. Gibbs' Toyotas won more races than anyone in 2015, taking 14 of the 36 Sprint Cup races.

Runner-up Harvick was the man to beat all year and would have won the championship for the second straight season if any kind of conventional scoring system was in use. Harvick has established himself as the lead driver at Stewart/Haas Racing. He took three wins, 13 second places and also led 2,294 laps, almost twice as many as anyone else and 157 more than the record he set in 2014.

In total Chevrolets won 15 races in 2015, one more than Toyota, making the US firm the champion manufacturer. Fords won seven races, all with Penske.

Meanwhile, the crowds at many races and NASCAR's TV ratings continue to glide steadily downhill to record low levels. Ratings and crowds at most races have been in decline for seven or eight years and show no sign of bottoming out. TV ratings on NBC Sports were down 15 per cent from 2014 on ESPN and the ratings declined for all 19 Sprint Cup races broadcast on cable last year.

One of NASCAR's bigger problems is that it has too many races – too many long, 500-mile races in particular. Yet this aspect is also impossible to change because none of the 23 tracks that stage the 36 Sprint Cup races has any interest in cutting back. Crowds may be down, but Sprint Cup race weekends continue to be the biggest event and most important source of revenue by far for every track.

Another element in the declining interest in NASCAR was the arrival, starting in 2007, of the 'Car of Tomorrow' and 'Generation 6' spec cars. Despite each brand of the Gen 6 car receiving individual nose treatments, the spec car has made the cars more identical than ever, reducing a key historical draw for many NASCAR fans.

Yet NASCAR remains by far America's largest, most successful form of motor racing, light years ahead of IndyCar and IMSA sports car racing. The Sprint Cup series may be a weakened animal, but it will continue as the big dog of American racing for many years.



6 CALENDAR ENOW U

POWER RETURNS TO GRAND PRIX RACING

Marking 50 years since Formula 1 doubled its engine size to three litres in 1966, the *Motor Sport* 2016 calendar celebrates a new dawn for Grand Prix racing: the late '60s. Featuring 12 stylish, carefully selected black and white images, the calendar reflects a golden age of

Formula 1 when tyres grew, wings sprouted and extra power helped steer motor racing towards the modern age. The calendar's large size means each black and white photo, plucked from LAT Photographic's extensive archive, is ideal for framing at the end of each month.



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HOP

REVIEWS

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Porsche Sounds

Dieter Landenberger

As the title suggests, there's a novelty factor to this latest addition to the bulging Porsche shelf: a CD of engine sounds to accompany a book that has official factory blessing.

The hardback features creative design entirely in keeping with Porsche's reputation for stylish marketing and makes the most of a lovely collection of images drawn from the company archive. The text, in parallel German and English, isn't quite as gripping and reads a little like information boards at a museum. Given that the author is the director of the historical archives at Porsche AG, perhaps that's intentional. The narrative is also hard to follow at times, when spreads on the cars featured audibly on the CD interrupt the flow mid-stream – a design clunk when so much else clicks.

The engine noises are fun, particularly for the early road cars and the famous racers. But by the time you get to Cayennes and Panamera Turbos the novelty has worn off somewhat. A memory stick rather than a CD might have been a little more '2016', too. **DS** *Published by earBooks ISBN:* 978-3-943573-19-0, £34.99

MotoGP Season Review

MotoGP's 2015 season will undoubtedly go down as one of its best – and one of its most acrimonious. Any year-end review would need to be especially balanced, fair and detached while still putting across the unique passion that drives it. Luckily Ryder has made a habit of putting out one of the best review books in motor sport, ably aided by Neil Spalding, Peter Clifford and our own MotoGP man Mat Oxley.

If you've read any of Ryder's books from seasons past, you'll know what you're getting here: expert analysis, level-headed criticism and stunning photography from Andrew Northcott. Even with such a scintillating fight between Lorenzo and Rossi, equal space is given to each rider and team all the way down the grid. Sometimes when there are rivalries heating up it's easy to overlook just how hard those at the back are working – here their triumphs, failures and broken bones are given the space they deserve. As usual, Moto2 and 3 also get their own wrap-ups.

All in all, a worthy memento of one of the great championship battles. Here's hoping there'll be another season like this to look back on at the end of 2016. **ACH** *Published by Evro ISBN:* 978-1-910505-09-0, £35



Jaguar D-type The autobiography of XKD504

Philip Porter & Chas Parker

Now that we've seen two of the Porter Great Cars series, the sheer comprehensiveness of this volume is less eye-opening. Focusing again on one single vehicle, the much-raced XKD504, this work adds to its life history much archive material such as invoices, correspondence and pages from the little blue book which went with each D-type, while a modern gallery backs up generous period photo coverage.

Of course the car has to be placed in context, and on top of those devoted to general development of the D and summaries of its every race, many of the 320 pages are given to even minor characters in and around the car's story. Race reports are quoted at length, adverts both illustrated and quoted and even past auction catalogue entries for the car find their way in. Short of quoting every spectator at every race, it doesn't seem possible that there is any information left unsaid here, and we may have reached the point of overload. The book looks great, with Porter's usual quality reproduction throughout, but perhaps something this size ought to be two more manageable volumes, one on Ds and one on 504.

Still, there are gems inside, like the photo of lifting the crumpled car with a fork-lift, and I smiled at John Pearson's comment: it's "a sort-of Spitfire that didn't fly. It even had a fin!" **GC** *Published by Porter Press ISBN:* 978-1-907085-25-3, £60

Gilles Villeneuve

His untold life from Berthierville to Zolder Károly Méhes

As one of the all-time legends of F1, you'd assume the Gilles Villeneuve story had been told pretty exhaustively by now. That's true of the broad career outline of this most mercurial high-wire act of a racer. But Hungarian F1 journalist Károly Méhes – who as a teenager was besotted by the Villeneuve legend as it unfolded in front of him – has managed to add something extra.

He's done this by a series of 44 interviews with various people associated with the story, and each forms a chapter. It's a simple format and relies heavily on the quality of the interviews – and this is where Méhes has played a blinder. His intense fascination with the subject matter has led him to dig deep in locating and getting co-operation from many key figures, and the super-detailed knowledge of the obsessed teenage fan has enabled him to get into the nitty-gritty, from which quite a lot of new and interesting angles emerge; contemporary Ferrari team manager Marco Piccinini is particularly enlightening, for example, as someone in the Pironi corner of the whole Imola controversy.

Chris Amon, Bobby Rahal, Alastair Caldwell, John Hogan, Piccinini, Mauro Forghieri, Antonio Tomaini, Ferrari mechanic Sergio Vezzali, Carlos Reutemann, Jody Scheckter, Patrick Tambay, René Arnoux, Mario Andretti, Emerson Fittipaldi, Alan Jones, Nigel Mansell, John Watson, Derek Warwick, Andrea de Cesaris, Marc Surer, Jochen Mass, Jacques Villeneuve (the son), Bernie Ecclestone, Jackie Stewart, Giancarlo Minardi, Frank Dernie, Pierre Dupasquier, Ferrari aide Brenda Vernor and a wide selection of contemporary journalists and photographers each give their own take on the man. A glaring omission is our own Nigel Roebuck, a close fried of Villeneuve's, but it's still a pretty comprehensive list and with some great anecdotes, views, counter-views and reflections.

It was done on a budget and is a fairly low-key production, but if you've an interest in Villeneuve it should be in your library. It adds to the story rather than simply exploiting it. **MPH** *Published by VerArtis Nonprofit Kft ISBN: 978-96-312071-7-0, £25*

Official 2015 ACO Le Mans Annual

Jean-Marc Teissedre, Alain Bienvenu & Christian Moity

This is now almost as much a tradition as, well, the race it reflects. It's formulaic in the extreme, but there's little purpose in changing something that works so well.

For the most part it is photographic, but material is drawn from a wide range of top-class sources and captures the event's distinctive atmosphere far better than mere words could manage. A pictorial essay on the '25th hour' – the event's immediate aftermath – is a nice touch, but then this is a tome in which detailed coverage commences at scrutineering rather than 3pm on Saturday.

There are detailed captions to steer the whole thing along and appendices include technical analyses, features on key elements of the weekend (including a Nico Hülkenberg interview) and a comprehensive set of statistics covering every element of the 2015 event.

A worthwhile record of a race apart. SA Published by Editions Etai ISBN: 979-10-283-0080-7. £45

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Williams tops show bill

Eight F1 cars to celebrate Damon Hill's 1996 title | BY PAUL LAWRENCE

ONE OF THE BIGGEST DISPLAYS OF Williams F1 cars will be the focal point of this year's Autosport International at the Birmingham NEC (January 14-17). A collection of eight cars spanning the 37-year story of the team will celebrate the 20th anniversary of Damon Hill's world championship title, and his FW18 will have star billing. Hill will attend to be interviewed on the show's main stage, while current Williams star Felipe Massa and the team's chief technical officer Pat Symonds will also be present.

Other headline exhibits will be Williams Grand Prix Engineering's first F1 car, the 1978 FW06-Cosworth, Nigel Mansell's title-winning FW14B and the 2015 Williams Martini Racing FW37. To cap the display, the team's motorhome will also be constructed next to the stage. This will be the first time it has been set up away from a race track.

Claire Williams, deputy team principal, said: "We get such great support from the fans and can't wait to be able to give something back at Autosport International. We've got some incredible features lined up, and it is a great opportunity to get close to some of our most famous racing cars."

Another key display titled 'When we

were kings' will feature famous cars and bikes from the sport's history. Motorcycling will be celebrated by a range of 500cc GP machines and a visit from 1987 champion Wayne Gardner. Leading cars will include a Richard Lloyd Racing Porsche 956 Group C car, March 717 and McLaren M8C/D Can-Am cars and an ex-Ronnie Peterson Lotus 72 Grand Prix car.

Motorbike ace and TV presenter Guy Martin is also scheduled to attend and will perform in the live action arena.

HSCC hits 50

THE HISTORIC SPORTS CAR CLUB will launch its 50th anniversary season with a special display at Autosport International. This includes the Jaguar D-type in which Neil Corner won the club's inaugural race.

The formation of the HSCC stemmed from a May 1966 race at Castle Combe for sports-racing cars of the 1950s, initially named the Griffiths Formula.

The ASI display will also include cars from across the club's 50 years of racing.

The 2016 HSCC season will open with a two-day celebration meeting at Castle Combe (April 16/17).



d'élégance for competition cars will be a feature of a new motoring and motor sport event at Clavdon House in Buckinghamshire on Saturday September 3. Static displays of race, rally and classic cars will be staged at 'Cars in the Clavdons' and the organisers hope to develop the event to include live action in the future.

Can-Am set for hat-trick

BRITISH FANS WILL GET THREE chances to see Can-Am cars racing in 2016 following the announcement that Masters Historic Racing will run races for the mighty sports-racing cars at Brands Hatch (May 28/29) and Donington Park (July 2/3).

As the 50th anniversary of the creation of the Can-Am category is celebrated, the extra two events will provide a warm-up for the star race at the Silverstone Classic at the end of July.

Historic racer Andy Newall is aiming to take part in his McLaren M8F. "These cars are fabulous to drive; they reward the driver and make a great sound," said Newall. "Fans will be treated to some very spectacular racing."



Tin-top theme for Classic

THE 2016 SILVERSTONE CLASSIC will feature a 'Tin Top Sunday' on July 31, the final day of the world's biggest classic racing festival. Multiple touring car grids will be part of the programme with regulars such as the Super Touring Trophy and U2TC grids being joined by a race for over 2-litre pre-1966 cars and a new 1970s and 1980s grid, when cars such as Ford Capris and Rover Vitesses will compete in a two-driver race. Experienced promoter Duncan Wiltshire will organise the new event.

Revival in Brabham tribute

THE LIFE OF SIR JACK BRABHAM will be one of the key celebrations at the Goodwood Revival (September 9-11). The Revival will mark the 50th anniversary of the Australian becoming the only driver to win the world championship in a car bearing his own name.

Brabham, who died in 2014, had one of the last races of a career spanning more than 50 years during the 2004 Revival. Single-seaters, saloons and sports cars



from his career as a driver, team owner and constructor will join on-track demonstrations over the weekend.

The main theme for the Goodwood Festival of Speed (June 24-26) will be 'Full throttle, the endless pursuit of power'. The event will also celebrate the 100th running of the Indianapolis 500, the 50th anniversary of the first Can-Am season and the 40th anniversary of James Hunt's 1976 world championship victory.

Town festival planned

THE BROMYARD SPEED FESTIVAL is a new event planned for the centre of the Herefordshire town on Sunday April 3.

Race, rally and classic cars will be split into 10 groups of up to 12 cars to be led around a circuit behind a safety car. The circuit will be live from 10am to 4.30pm, and access will be free for spectators. The Festival will celebrate the town's motoring heritage and its place in the early story of the Morgan Motor Co.

Killarney cancelled

TORRENTIAL RAIN FROM STORM Desmond forced the cancellation of the Killarney Historic Rally in early December, after record levels of rainfall left the special stages in south-west Ireland flooded.

The organisers worked hard to try and run a shortened rally, but some parts of the route, including sections of the famous Molls Gap stage, were under several feet of water. The event had attracted its best-ever historic field and crews were at the Killarney start when the event was called off on the morning of the rally.

It is hoped to reschedule the event for early in 2016.

The Frenchbased Peter Auto organisation has set a five-event 2016 calendar for its historic race series. Group C, Classic Endurance Racing, Heritage Touring Cup, Sixties Endurance and Trofeo Nastro Rosso will race at Jarama (April), Spa (May), Dijon (June) and Paul **Ricard and Imola in** October. Group C will also have a guest slot at the Silverstone

Classic in July.

The three-vear series of races in the Formula Junior Diamond Jubilee World Tour will start in South Africa in late January and will build across races in Europe, North America. Australia and New Zealand before culminating at the Silverstone Classic in the summer of 2018. Early in December, 17 cars from the UK and three from Denmark were shipped to South Africa for the opening races at Zwartkops.

There was an error in our story last month about new cars at the Donington Grand Prix Collection. Instead of the Lotus 80 Formula 1 car as reported, the car on show will be an ex-Mario Andretti Lotus 79 in 1979 Martini racing livery. HERITAGE F1 LTD Ferrari F1 exhaust sculpture made from genuine 2010 race parts. Mounted on a slab of Italian Granite, £3500 www.heritage-f1.com

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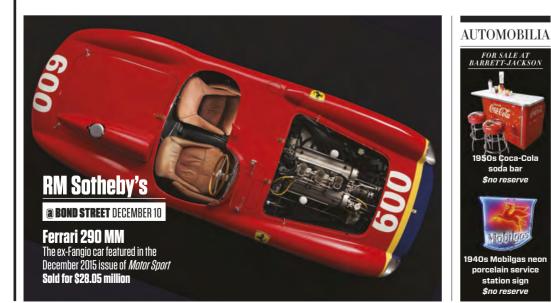
STAR LOT @ BONHAMS

1953 FIAT 8V ELABORATA Scottsdale, January 28

This beautiful and rare two-seater sports car (only five Zagato-bodied examples were built) was owned and raced with distinction by Anna Maria Peduzzi, one of Europe's most accomplished female drivers. Peduzzi had been successful throughout the pre-war and immediate post-war era, and scored second place in this 8V at the 1954 Coppa Internazionale Delle Dame at Como. Estimate: \$2 million

UNDER THE HAMM

Classic and racing auctions from around the world | BY ALEX HARMER



Barrett-Jackson

a scottsdale January 23-31



1959 Chevrolet Corvette 'Purple People Eater'. Won the 1959 SCCA National Championship (Jim Jeffords)

1971 Dodge Challenger

Drag racer built by Herb McCandless and driven by Dave Boertman. Several built-in tricks to beat the scrutineers

1985 Lola T900

Converted to electric power by Tommy Brawner. Undefeated in competition - multiple winner of Phoenix 'Electric 500'. First electric car to lap Indianapolis and holder of Indianapolis electric lap record: 106.897mph

1964 Turbosonic

One-off, three-wheeled turbine dragster. Restored in 2013



1957 Chevrolet NASCAR Driven in period by Jack Smith, winner of four races in the 'Black Widow' in 1957

1963 Pontiac Catalina NASCAR

'Swiss Cheese' - frame drilled for lightness. The last car built under the Super Duty programme

RM Sotheby's

SALE AT T. IACKSON

1950s Coca-Cola

soda bar

\$no reserve

Mobilg

porcelain service

station sign \$no reserve

a scottsdale January 28-29

1956 Jaguar D-type

One of only six long-nose versions. Driven by Desmond Titterington. Subsequently owned, but not raced, by Ecurie Ecosse, Restored to original spec Estimate available upon request





1978 RMW M1 Listed on the M1 Registry as BMW's press car. Rare full-leather interior Estimate: \$400.000-500.000



One of 28 sold in USA. Recent restoration Estimate: \$275,000-325.000



1972 Lamborghini Miura P400 SV One of the first single-sump Miura SVs only 21 delivered to America Estimate: \$2-2.5 million



Gooding & Company

a scottsdale January 29-30





1952 Allard J2X Powered by a Cadillac V8 Estimate: \$475.000-550.000

1929 Ford 22 Jr Tony Nancy roadster Estimate: \$140.000-180.000

1934 Aston Martin 1.5-litre Sports Coachwork by Bertelli

Estimate: \$450.000-500.000

1956 Chevrolet Corvette SR1 tribute Estimate: \$125.000-175.000



1961 Kurtis-Kraft midget Estimate: \$50.000-70.000



1957 Fiat 600 Mirafiori

Estimate: \$150.000-200.000

AUCTION CALENDAR

JANUARY

16 COYS Birmingham, UK **16** COYS Maastricht, Netherlands 23-31 BARRETT-JACKSON Scottsdale, USA

27-31 RUSSO AND STEELE Scottsdale, USA 28 BONHAMS Scottsdale, USA **28-29** RM SOTHEBY'S

Phoenix, USA 29/30 GOODING & COMPANY Scottsdale, USA

FEBRUARY

3 RM SOTHEBY'S Paris, France **4** BONHAMS Paris, France **5**ARTCURIAL Paris, France

13 COYS London, UK 22 SHANNONS Melbourne, Australia 23 BARONS Esher, UK **27** SILVERSTONE AUCTIONS

MARCH

Coventry, UK

3 DVC4 Dorchester, UK 8 COYS London, UK **10** BONHAMS Amelia Island, USA 11 GOODING & COMPANY Amelia Island, USA **12** RM SOTHEBY'S Amelia Island, USA 12 HISTORICS AT BROOKLANDS Weybridge, UK **14** SHANNONS Svdnev, Australia **19** BONHAMS

Goodwood, UK **19** CCA Leamington Spa, UK



DREAM GARAGE

MASERATI TIPO 61 'BIRDCAGE'

FACTFILE

YEAR 1990s

ENGINE

4-cyl, 2.9 litres, 250bhp

TRANSMISSION

need trans

SUSPENSION

front: wishbones, rear: de Dion axle

TOP SPEED 175mph

PRICE £450.000

five-

THERE WASN'T MUCH INNOVATION going on under the skin of most gorgeous Italian sports-racers in the 1950s wonderful curves, fabulous engines, but bolted to a chassis which often amounted to little more than a couple of drainpipes with crossbars. Then in 1959, over at Maserati, designer Giulio Alfieri simply

leap-frogged the various tube-frame experiments of the time, extending Touring's superleggera thin-tube body framing ideas into a complete chassis. Suddenly instead of a simple platform with a body on top he had created a rigid three-dimensional structure both strong and light – the golden targets of racing car design. Perhaps 'birdcage' wasn't originally meant as a

compliment, but it suits the Tipo 60 and 61's maze of fine tubing - 200 elements - perfectly. With disc brakes, independent front, de Dion rear suspension and five-speed transaxle they were quick and agile, twice winning the Nürburgring 1000Kms with 'Lucky' Casner's Camoradi team and taking two SCCA titles.

Though Alfieri went on to try putting the motor out back, it's the delicate little front-engined four-cylinders we know best. Like this one, built in that part of Italy called Sussex... Roy Kent of the Old Racing Car Co reckons that the best replicas, with FIA approval and thus

race-eligible, are an expanding thing. "Approval for replicas was controversial at first, but they're becoming more acceptable. And with the soaring values of the real thing they keep grids full!"

This one was crafted in the 1990s for the late Rodney Smith by Crosthwaite & Gardiner, and as they restore the originals

> you can't get better than that. A tool-room copy of a T61, it boasts a 2.9-litre engine and has been racing regularly. "It's been kept in race-prepared condition by a leading marque specialist", says Roy. "A new owner could iump in and participate in many of the prestige European meetings such as Classic Le Mans or the Legends Stirling Moss series."

As long as everyone is transparent about the origins, Kent's view is that replicas are a good thing. "Whether it's owners of real cars choosing to race clones, or people who just can't afford the real thing, they're out there from a genuine desire to compete," he says. "And in a way the market is proving the point. When I decided to specialise in tool-room replicas they were worth half of the real thing. Now it's about a tenth!"

With HTP papers up to 2025, by which time it will be middle-aged itself, this pretty little car should, if it handles like the originals, prove a delight to race.

FEBRUARY 2016

ROAD CARS

www.motorsportmagazine.com/author/andrew-frankel



Porsche on a Mission

Fast-charging concept to hit showrooms | BY ANDREW FRANKEL

PORSCHE HAS ANNOUNCED THAT it will put into production the Mission E concept car, shown at the Frankfurt motor show in September, before the end of the decade. For the entire motor industry and those who consume its product, this is a stunning development. Although Tesla has bravely blazed the trail for full-sized, high quality, all-electric saloons, this is the first time a major brand owned by one of the world's largest car companies has committed to making such a car.

Unlike most manufacturers, Porsche's record of turning its concept cars into reality is exceptional, not just in the percentage that actually make it from showground to showroom, but also how relatively undiluted they are from the original. Indeed Porsche's most recent concept-turned-road car was the Porsche 918, which didn't merely match every claim made for the concept but actually beat them all. So there is cause to be excited when Porsche says the concept Mission E has 600hp, will reach 62mph from rest in less than 3.5sec, do 300 miles between charges and, vitally, can be charged from nothing to 80 per cent in just 15 minutes. In truth the performance and range are merely competitive with what Tesla already has on sale, but the charging time is potentially transformative. As is the Mission E's likely sphere of



influence. While it should cost about £100,000 and therefore be a niche product in itself, Porsche has been given €1 billion to spend on the project, and there is no way it would be allowed to spend that much on an electrical architecture of no value to any other company in the group. This means that not only will Bentley be able to use the technology (after Porsche has had a period of exclusivity with it) but far more importantly so will Audi and Volkswagen.

Looking farther afield, it seems inherently unlikely that the likes of BMW and Mercedes-Benz will be able to ignore a development such as the Mission E, and they must surely be evaluating introducing their own all-electric luxury cars. As BMW proved when it unveiled its Rolls-Rovce Phantom Electric concept, electricity is an exceptionally suitable source of power for such cars, not just because it is almost silent, but for its ability to deploy maximum thrust instantaneously and from a standstill. That project was canned because BMW was unable to reduce charging times to anything approaching an appropriate level. But that was almost five years ago and the technology has proceeded apace. If Porsche really can add 250 miles of electric range in the time it takes to have a coffee, our all-electric future may be closer than any of us has hitherto thought.

Return of the four-pot

PORSCHE HAS ALSO ANNOUNCED the return of four-cylinder engines to its cheapest cars. As of next year, the new Boxster and Cayman will lose their traditional flat-six motors, for a new turbocharged flat-four design.

Of course there is no shortage of four-pot Porsches for the company to wheel out to show the move is consistent with its heritage. Indeed, road-going four-cylinder Porsches of one form or another (356, 912, 924, 944 and 968) have been in the sales brochures for 40 of the 67 years that Porsches have been on sale. In racing, four-cylinder Porsches have won Le Mans, the Targa Florio and the Sebring 12 Hours and last year provided Porsche with its most recent sports car world championship. The four-cylinder 718 was also without question the most versatile Porsche ever, scoring Porsche's first podium at Le Mans and its first victory in Formula 2 before becoming its most consistently successful F1 car, coming second three times in the 1961 world championship and missing outright victory at the French GP by 0.1sec. With this in mind, the new cars will now be known as the 718 Boxster and 718 Cayman.

The move away from six cylinders and the introduction of turbochargers is motivated by the need to drive down emissions and improve consumption. While it is hard to imagine a fourcylinder turbocharged Porsche possessing the throttle response, rev range or sound of a normally aspirated flat six, Porsche will be hoping that in the customer's mind that will be more than offset by cheaper running costs and much improved mid-range torque.

Porsche will also reposition the Boxster and Cayman relative to each other. Until now and uniquely among its competitor set, it is the convertible Boxster that has sold for less than the coupé Cayman. From now on it is the Cayman that will provide the entry level to Porsche's sports car range, and the Boxster for which a premium will be charged.

It is not yet clear whether Porsche has dispensed with six-cylinder engines for these cars altogether. It seems likely that the next-generation Cayman GT4 will follow the lead of its big brother, the 911 GT3, and retain normally aspirated powerplants while the standard cars upon which they are based swap over to turbos. For the Cayman to manage this, a six-cylinder motor is most likely.

BMW to star in Detroit

THE DETROIT MOTOR SHOW throws open its doors to the public on January 11 and, while it is perhaps no longer considered a 'tier one' show such as those in Geneva, Paris, Frankfurt, Shanghai and Beijing, there will still be a broad selection of important new products present.

The most interesting new car in Detroit for readers of *Motor Sport* will likely be the new BMW M2, the 1-series based coupé packing a 365bhp punch from its 3-litre turbo motor. That's similar power to the Audi RS3 and 10bhp down on that offered by the Mercedes-AMG A45, but BMW offers six cylinders to Audi's five and Merc's



four, a choice of manual or automatic transmissions and rear-wheel drive compared to its all-wheel-drive opponents. Prices begin at £44,070.

Probably the most important cars globally will be all-new Mercedes-Benz E-class and Volvo S90 luxury saloons. Mercedes has been teasing the E-class for some time and has released shots of an interior that looks very little less luxurious than that of its flagship S-class. Meanwhile, the attractive shape of the \$90 that will be a direct rival for the E-class has already been revealed in full. It sits on the same platform architecture used by the extant Volvo XC90 reviewed elsewhere in this issue. and like the XC90 will also feature a range of 2-litre, four-cylinder diesel and petrol engines with a range of power outputs from 221bhp for the standard diesel offering up to 401bhp for a supercharged, turbocharged, plug-in petrol-electric hybrid.

Porsche has chosen Detroit for the public debut of the new 911 Turbo version of the second generation 991 model series. Unlike the Carrera and Carrera S models, which are also turbocharged but feature brand-new engines, the Turbo uses a revised version of the unit from the previous 911 Turbo. In Turbo S guise it develops 572bhp, some 20bhp more than the car it replaces and good enough to catapult it from rest to 62mph in 2.9sec, making it the fastest-accelerating 911 of all time and, among Porsches, beaten only by the 918 hypercar.

Major British brands – including Jaguar Land Rover, Aston Martin, Bentley and McLaren – have sadly opted out of Detroit.

McLaren ends P1 run

McLAREN HAS ANNOUNCED IT has completed the production run of its P1 hypercar. Just 375 examples of the plug-in hybrid two-seater were sold, though the P1 GTR track-only version will continue until spring. Ferrari is building 499 examples of its rival LaFerrari and Porsche 918 of its 918s.

Retailing for £866,000 when new, P1



Volkswagen UK sales plunged by 20 per cent in November compared to last year, despite a rise in the market as a whole. The evidence of one month in one country is too slender to confirm that VW is finally being punished by the customer for the emissions scandal. but industry monitors will be watching its fortunes and those of sister brands such as Seat, Skoda and Audi with much interest.

second-hand prices have risen consistently since the car's introduction. Just two were for sale in the UK at the time of writing with quoted prices of $\pounds 1.75m$ and $\pounds 2m$. The only Porsche 918 with a price is available for $\pounds 1.4$ million. All LaFerraris are currently POA.

Meanwhile, in a move predicted on these pages, McLaren is to make a further 500 of its highly regarded lightweight 675LT supercars in open form, called the 675LT Spider. Featuring multiple weight-saving measures, the Spider, above, is 100kg lighter than the 650S Spider it's based on and just 40kg more than the coupé. The 0-62mph time is unchanged at 2.9sec, while top speed has been trimmed slightly to 203mph. The 675LT Spider is available for

order now at £285,450.

ROAD TESTS

www.motorsportmagazine.com/author/andrew-frankel

AUDI R8

It's more refined than the original, but also a touch less involving | BY ANDREW FRANKEL

HERE ARE FEW CAR launches I remember more clearly than that of the original Audi R8, and not just because a Nevada state trooper let me off the possibly custodial sentence to which I was entitled because the car I was driving was "just so

damn cool". I shared with a similarly seasoned old stager and we just kept looking at each other, our expressions saying all without the need to resort to anything as structured and limiting as words: "This is an Audi, right?"

That was eight years ago and now there is an entirely new R8 to drive, and much of the philosophy has remained: it's still almost entirely aluminium, still has four-wheel drive, still places a normally aspirated multi-cylinder motor behind its driver. What's changed most is our perspective. Back then the original R8 had little trouble standing out from a long and less than noble line of unimpressive high-performance Audis. There were exceptions – I guess the original Quattro being by far the biggest and best – but nothing to suggest there was any real desire within Ingolstadt to add genuine driver involvement to its long list of brand strengths. By contrast, the early days of this R8 will be spent fighting to put fresh air between itself and the monumentally capable and likeable car it is trying to replace.

And that is Audi's fault. It is a very clever company and knows its customer better than anyone, but I still think the fact this R8 resembles so closely its predecessor is a missed opportunity that may be interpreted as laziness, a lack of imagination, complacency or some combination of the three. To me it is not like a Porsche 911, which simply could not carry the badge if it did not look a certain way: an R8 has a lot less than a decade of heritage to support, which means so long as it is a mid-engined two-seat supercar, an R8 can look any

Audi R8 V10 Plus FACTFILE £134,500 ENGINE 5.2 litres, 10 cylinders, normally aspirated

POWER 601bhp@8250rpm TORQUE 413lb ft@6500rpm TRANSMISSION seven-speed double clutch, four-wheel drive WEIGHT 1555kg POWER TO WEIGHT 386bhp per tonne O-62MPH 3.2sec TOP SPEED 205mph

ECONOMY 23.0mpg CO₂ 287g/km way it chooses. And Audi chose for it to look slightly smoother but slightly less distinctive than before, but really very little different.

The bigger change is that you can no longer buy an R8 with an eight-cylinder engine or, indeed, a manual gearbox. And of course there will be those of us who merely drive these cars and wail about V8s handling better than V10s, while gnashing our teeth that we're no longer trusted to change gears by ourselves. But the owners – the people who actually spend their money to buy these cars – voted with their feet long ago. An eight-cylinder manual R8 is a lovely idea, and one that almost nobody would buy.

So we're left with the full 10 and, in the case of the 'Plus' specification car I drove, 601bhp. Does that sound as surreal to you as it does to me? To me one of the delights of any R8, including this one, is its accessibility and ease of use, yet here is one you'd be delighted to use as your daily driver, and it has the power of an LMP2 prototype.

Nor is it shy about saying so. If you want to see a mass migration of local avian wildlife, thumbing the R8's starter button on a cold, crisp morning will do it almost as well as a 12-bore. It really does blast into life before, a few seconds later, settling down to a more muted but still purposeful rumble. The cabin is not beautiful but is very nicely finished and as ergonomically sound as you might expect. Were it not for the fact that it dumped a cup of rainwater on my right leg as I swung the door to get in, I might have thought it close to perfect.

The R8 is a wonderfully easy car to drive slowly, which is crucial because in truth that's what most of them will spend their time doing.

Although it shares its engine, transmission and much of its structure with the Lamborghini Huracán, there is something soothing and reassuringly normal about the R8, something its sibling lacks, something that makes you comfortable about just loafing along in the traffic and not feeling guilty that you're making inadequate use of the



far more about holding it back than egging it on.

Indeed it is quicker and more capable than the old V10 R8 ever was and Audi should be praised for taking what were already fairly lofty standards and pushing them onto a new level. Will owners therefore be disappointed to learn their new R8 is nevertheless somehow less involving than the old, that so much feel has gone out of the steering and that, particularly in bad weather where you might expect the

Spot the difference. New R8 retains many of its forebear's styling cues and strengths, but a little of its original raw edge has been diluted

resources put at your disposal.

But do not doubt them when you do. All the praise in the world to Audi for sticking with a normally aspirated engine, because however hard you try with turbos, you simply cannot mimic that shrieking, relentless crescendo of sound and the sheer sense of occasion as you watch the needle sweep past 8000rpm accompanied by the kind of music that, as a small boy, made you fall in love with cars in the first place. This is a massively fast car, sufficiently so that driving it quickly and safely is



all-wheel-drive R8 to excel relative to rear-drive supercars, it no longer inspires the confidence it once did? Some might, but I think many more will neither notice nor care.

It will be interesting to see over time how this second-generation R8 comes to be perceived. It has gained a great deal in raw pace and will slip into your lifestyle even more easily than before. But it has lost a little charm and I don't just mean because of the deletion of the V8 engine and the manual gearbox. Were this a Ferrari, that would be a disaster. But an Audi? I suspect that, as ever, the company has done its sums well and the car will succeed. And if posterity judges it to be one of the less lovable of what will presumably be many R8 generations, that is not a problem that need bother Audi now.

Besides, I expect that much like Porsche builds most 911s for people who only really like the image of 911 ownership, and just a few GT3s for those who genuinely want the experience too, Audi will go the same way. Faster though it is, this more sanitised, less entertaining R8 creates more conceptual space than ever before for a genuine, hard-core driver's version to push Audi's brand further still and put bedrock under the still shaky foundations of the firm's reputation as a proper sports car manufacturer. Who knows, they might even re-introduce a manual gearbox. And don't laugh: Jaguar has done it with the F-type and Porsche is about to do it with the GT3R we will see in March. Until then, however, this R8 is a much more accomplished but slightly less lovable car than the last. Call it two steps forward and one step back: progress, in other words. D

ROAD TESTS

www.motorsportmagazine.com/author/andrew-frankel

VOLVO XC90 T8 A 2-litre four-pot with greater poke than a V8

OU CAN IMAGINE A MEETING of marketing folk. Volvo has a new flagship for which it is charging commensurate money as it goes into battle against the best in the world. Now and as ever the critical market is the United States. The last XC90 you offered them had a thundering 4.4-litre V8 under the bonnet. Now you have a 2-litre four. How on earth do you spin the fact it has less than half the engine of the car it's replacing?

Simple: tell the world it has two engines, in fact call it the XC90 'Twin Engine'. That ought to do it.

We will see about that in a minute, but in the meantime Volvo does actually have a point of sorts. The 2-litre four only sounds puny until you realise that it's supercharged, turbocharged and puts out 314bhp before you factor in the hybrid electric drive (hence the other engine) that takes the figure up past 400bhp, far more than the old V8 could have dreamt of producing.

Installed in the attractive XC90 body, you will barely believe how fast a powertrain based on a 2-litre four can make a massively heavy (2343kg) car go. Performance is strong from idle and, even though there's not quite that effortless low-down surge you find in cars like the Range Rover Sport V8 diesel, few will find the ultimate performance anything less than exhilarating, especially for a car like this. All it cannot do is sound the part: there's no growl, snarl, rumble or bark here. It sounds like a car powered by a rather small four-cylinder petrol engine, because that's what it is.

It does puncture somewhat the aura of sophistication this car otherwise creates. Given the price, positioning and competitor set, we increasingly expect limousine levels of powertrain refinement from such cars. While the XC90 does well, it cannot escape entirely the consequences of Volvo's decision never to build another car with more than four cylinders or a capacity of greater than two litres.

FACTFILE £60.455

ECU,433 ENGINE 2.0 litres, 4 cylinders, turbo and supercharged POWER 401bhp@5700 rpm TORQUE 424lb ft@2200 rpm TRANSMISSION eight-speed automatic, four-wheel drive WEIGHT 92404c

POWER TO WEIGHT 171bhp per tonne 0-62MPH 5.5sec

TOP SPEED 143mph ECONOMY 134mpg CO₂ 49g/km Otherwise, the XC90 is as previously reported. Conspicuously attractive inside and out, technologically state of the art, spacious, airy and accommodating, it exists close to the top of its class. Were its ergonomics easier to fathom and its handling just a little more engaging it would have a great chance of dislodging the Range Rover Sport from its current undisputed position as the best seven-seat SUV.

In the UK the Twin Engine XC90 will likely remain a minority interest despite the clear tax advantages conveyed by its ludicrously implausible CO_2 figure. And anyone who buys one believing a car this heavy and powerful really can return more 130mpg in normal driving, as claimed, will discover somewhat rudely that the estimate is not only out, but by approximately 100mpg.

Even so I like the Twin Engine XC90, but then again I like the XC90. It's an impressive plug-in hybrid in a field where such beasts are rare, but unless you really can

make the numbers stack

up in your favour, I suspect that – unlike in the US – most British buyers will be better served by the excellent diesel versions.



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Not quite an S-class. but a step in the right direction

HEN IT COMES TO THIS business, I dislike not having important information at my disposal. My job is to answer questions about cars, but there is one I've been asking ever since I started doing this job. Why in all that time has Mercedes never made a C-class quite as convincing as a BMW 3-series, and equally why has BMW never built a 7-series that was preferable to the S-class? This is not rhetorical posturing: I genuinely don't know.

This is the fourth generation of 7-series I've encountered on a professional basis and obviously the most advanced yet, using carbon-fibre reinforcement and myriad other clever technologies to carve a whacking 120kg from the last car's kerb weight. It has a huge information and navigation screen you can operate by the usual iDrive wheel, touching or even just by waggling a finger in its general direction. My test car even came with an iPad-like tablet between the rear seats from which the entertainment can be controlled and the internet browsed. I couldn't keep my children away from it.

Visually I think it lacks a certain sense of occasion inside and out, which matters as little to me as it will matter much to those minded to buy such a car. Beyond their functional purpose these

cars are statements and I fear the one the 7-series makes is insufficiently distinct.

Otherwise I was truly surprised by the progress BMW has made, not because I thought it not capable, but because it's never shown the inclination in the past. The ride quality, easily the biggest failing of every Seven I've driven, is superb. S-class good? My guess is not quite, but close enough that I'd need the two side by side to be sure. It's beautifully quiet



FACTFILE £64.530 ENGINE 3.0 litres, 6 cylinders, turbodiese

YCI5 OJN

POWER G1bhp@4000rpm TORQUE 457lb ft@2000rpn TRANSMISSION eight-speed automatic. rear-wheel drive WEIGHT

POWER TO WEIGHT

ECONOMY 60.1mpg

too and because the driving position is so good, the seat so comfortable and the music system so clear, it does a worldclass job of creating an environment of your own, far removed from the chaos of the real world. And to me that's what luxury cars are about.

What they are not about is barrelling through bends on their door handles and I'm actually glad to report this new Seven is not quite as engaging to drive as the last: the 3-litre powertrain is undoubtedly class-leading, but BMW has finally seen fit to trade a little on-the-limit poise nobody's going to notice for a considerable upgrade in ride quality that everyone will appreciate.

It seems that finally BMW has concluded it's more important for the 7-series to be a proper flagship luxury saloon, even if that means a slight compromise to BMW's dynamic brand values, and it's a decision I applaud. Yes, I think the S-class can still claim class leadership, but only because it has a greater sense of occasion thanks to the more truly luxurious look and feel to its cabin. But just as the C-class is now absolutely the next best thing to a 3-series, so the 7-series has moved within swiping distance of the S-class. If you know how good an S-class is, you'll not need me to tell you that is an impressive and significant achievement.

MINI CLUBMAN COOPÉR Its forebear had three doors; the new one has six...

HE LAST MINI CLUBMAN was a fairly silly car, and I liked it more than I should have done. The idea of having only one rear door and placing it on the wrong side of the car, so it forced you either to park on the other side of the road or discharge your children directly

into the traffic, was absurd. But it made me think of the gratifyingly fallible men and women who signed it off – and that made the car more human to me. To make sure the new Clubman could

never blunder that way again, Mini has decided to chuck all the doors it could at it: six in total. That's two down each side and two at the back in the style of the original Mini Countryman. The first Clubman, you will remember, was not an estate at all, but a 1970s facelift designed to push the Mini brand upmarket.

Indeed the whole car is more sensible in size and general deportment than the old Clubman. With external dimensions similar to those of a Golf, this Mini may still claim to be quirky but, in reality and despite all those doors, it is the most mainstream Mini ever produced. And there is nothing wrong with that, so long as the car still delivers on Mini's unwritten promise to keep the driver entertained at all times.

Happily the Cooper S honours its obligations if not quite to the full, then at



FACTFILE £24,455

ENGINE 2.0 litres, 4 cylinders, petrol turbo POWER 189bhp@5000rpm TORQUE 221lb ft@1250 rpm TRANSMISSION

eight-speed automatic front-wheel drive

WEIGHT 1465kg POWER TO WEIGHT

129bhp per tonne O-62MPH 7.1sec TOP SPEED 142mph ECONOMY 48.7mpg CO₂ 134g/km least to general all-round satisfaction. Don't expect typical Mini-style rollerskate handling, however: the Clubman is too large, too heavy and too long in the wheelbase for that. What it will do, however, is get you down a difficult road far faster than its 189bhp output and almost tonne and a half weight might suggest. Performance is reasonable for the money, but the chassis is one of rare composure that will allow you to maintain pace in tricky conditions long after drivers of theoretically faster but actually less reassuring cars have backed off. The BMW influence is clear.

Inside you'll find an all-new cabin, albeit one that retains Mini's unique look and individual design language. It won't win any packaging awards, but it's a comfortable enough place for four adults to cover a decent distance. In fact there's little to dislike here. I'd have preferred better ride comfort, but only if it didn't come with even more sensible handling. That leaves slightly disappointing refinement from the 2-litre turbo engine as my most serious gripe. And yes, those back doors are a gimmick and no, it's no kind of estate car at all, but I don't really think anyone expects a Mini to be a load swallower. Its abilities in this area, as so many others, are broadly comparable to those of a Golf.

Watch all four of our road test cars in action

THE MOTOR S

So on balance I welcome the new Clubman. It's probably the most po-faced Mini to date because even in Cooper S trim it's more of a giggle than a riot to drive, but it would prove easy and effective transport while allowing its owner to stand out somewhat from the crowd. In other words, for Mini at least, mission accomplished.

FEBRUARY 2016

Passing fad

I have been watching motor sport for many years and recent comments regarding F1 drivers calling pit engineers for strategy advice brought to mind a different technique used in the past.

The following driver used to lap more quickly than the one in front, in order to catch and pass him; it was called *racing*. It was used quite successfully, but I assume it has gone out of fashion with the increasing technical, strategic and management aspects of modern F1. *HA Newlyn, Leicester*

All over down under

I have followed Formula 1 since 1955, when I studied the progress of Moss and Fangio. I had watched almost every race since Australian TV coverage began in, I believe, the 1980s. You could describe me as a fan.

But I didn't tune in to the final two races of 2015 and I might even stop reading the excellent race analyses of the races in your magazine, which I usually devour from cover to cover.

The commentators talk about DRS, KERS, option and prime tyres, pitstop strategy and undercutting. It's boring for even dyed-in-the-wool enthusiasts; who knows what the average viewer would make of it? I have not recently heard the word 'racing', however, and is that not what stirs our soul? I don't want to watch a driver pass another because his pit crew has managed to change tyres in 2.6sec. I want to watch a bare-knuckle street fight, in the manner of Villeneuve vs Arnoux at Dijon in 1979.

Historic racing is growing because competitors actually *race* – a factor that also explains MotoGP's popularity. Unless F1 urgently reforms, there must be serious concerns about its long-term viability. *Alan Smart, St Lucia, Australia*

Youthful encounter

Simon Arron's tale of the ex-Ferranti Mercedes 300SL Gullwing (January 2016) brought back memories. My father was a Derbyshire-based vet and one of his clients was a certain Mr Ferranti. I went with my dad one evening to the Ferranti farm in Gawsworth (I think) and he'd just taken delivery of the very car featured in Simon's John Young profile. Already car-barmy at the age of seven, I suppose I must have pleaded with my father to persuade Ferranti to let me sit inside. He did more than that, taking me for a short drive around the country lanes in his newly acquired plaything.

The fastest car I'd been in previously must have been my father's Standard Vanguard, so the 300SL was like something from outer space. I've driven much faster cars since, but have always remembered that night. Amazing to see that actual car again! John Williams, Mallorca, Spain

What's up, Doc?

John Young was not wide of the mark with his assertion that "You had to be somebody of Stirling Moss's calibre to race a Mercedes 300SL Gullwing properly." Older readers will remember 'Doc' Shepherd for giant-killing saloon car drives in an Austin A40. Doc also owned a 300SL, which he drove occasionally in road-going sports car events.

Unfortunately he was not confident about his Merc's handling, so asked Archie Scott Brown to do a few laps of Snetterton to show how the car should be driven. With his lightning reflexes and great car control Archie was not remotely bothered by swing-axle oversteer and put in a number of impressive laps.

Our correspondent John Williams saw this Gullwing when it was new – and cadged a ride in it, too Doc did benefit from the masterclass and improved his times, but could not get anywhere near those set by Archie. As a consequence his race appearances in the vehicle were few and far between. *John Hindle, Penshurst, Kent*

Blades' runners

Damien Smith's recent Dario Franchitti article brought back memories of karting at Felton – I think local racer Johnny Blades owned the land.

I was competition secretary for a couple of meetings and the Franchitti and di Resta families were frequent competitors. I also recall seeing David Coulthard aged eight, Allan McNish at perhaps the same age, David Leslie in the 210 Villiers class (a nice lad), Mike Wilson (who went on to be karting world champion) and Nigel Mansell turning up and blowing everyone else in the 210 Villiers class into the weeds.

It was a good little club – nice on a sunny day, wild at any other time – and my wife served in the canteen. *Harry Rylance, Cleadon, Sunderland*

Curse of Frankenheimer

On page 100 of your January issue, I am sure the car pictured is not "Lorenzo Bandini's Ferrari" nor even a Ferrari at all. It is a modified Formula Junior car disguised as a Ferrari for John Frankenheimer's film *Grand Prix*, **D**







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which was shot during the 1966 Formula 1 season. There are several giveaways, but the most obvious are the twin banks of six air intakes on the engine - thus pretending to be a V12.

Bandini drove the Tasman Ferrari Dino 2.4-litre V6 at Spa that year (to third place). The nose section of his car had a quite different look to the car in your photo, though it did bear the racing number 7.

Aidan Haile, Northallerton, North Yorkshire

Yes, we've had a few letters on this. It wasn't captioned in the book as a Frankenheimer car, but we should have spotted it. Apologies - ed

Costas' loss

One of the few joys of returning from Spain's warmth to the cold of Guernsey is catching up with copies of Motor Sport that have accumulated in my absence. I was particularly happy to see the various photographs in October's You Were There from Le Mans in 1989, mv first visit.

I was hoping for a Bell/Stuck victory and remember so well listening to the trials and tribulations of their car overheating during the late evening.

My friend Costas Los was due to drive the Alpha Porsche in 1990, but a certain Tiff Needell nabbed the seat so Costas' best result remained third in C2 rather than third in C1.

For 1989 Costas was with Messrs Roe and Redman in Aston Martin number 18, bearing a black armband in memory of Victor Gauntlett. When returning to the track on Sunday morning I didn't so much see the Aston as hear it - what a noise.

Great memories. Thank you for rekindling them. John Pickles, St Peters, Guernsey

Follow the bear

With regard to Perry Robb's letter in the January 2016 edition, I wholeheartedly agree with his comments regarding Björn Waldegård. I knew Björn well having navigated for him on a number of historic rallies. He explained to me that Björn meant bear in Swedish. Never was there a truer name for such an amazing man, but he was more like a big lovable teddy than a grizzly - except when on a special stage, when his claws would sometimes show. He was a gentle



Björn Waldegård (left) didn't need four-wheel drive to match current cars in a historic 911

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(Further letters may appear in our digita edition only. Please include your full name and address

giant of a man in all respects, one who is sorely missed.

Perry was a bit inaccurate regarding my comments about the 1000 Lakes Rally, but hit the nail on the head in his overall conclusion regarding Björn's incredible driving ability and character. This was best illustrated when we competed on the Rally of the Lakes in Killarney, Ireland in my standard 1965 Porsche 911 with road tyres. Biörn had never driven my car before and had never been to Ireland. Despite this, at the end of the first day we were 25th overall against more than 120 modern cars with four-wheel drive and sticky rubber. In their wisdom the organisers arbitrarily added 30min to all the historic cars' times, because they felt that many of the 'modern' drivers might be embarrassed.

Great rally drivers are a different breed to us mere mortals. They do things with cars that most people can't even begin to understand. Dr Beatty Crawford, Hillsborough, N Ireland

Green parity

If the current hybrid power units used in F1 were introduced to keep it relevant to modern motoring, then I'd really like

a frame of reference with which to compare this technology. I can't help being a little sceptical about whether it is really as 'green' as it's made out to be.

If hybrids were raced against non-hybrids, that would help to sell the concept to me and many others, which would surely be good for the manufacturers - if they won.

People often complain about the complexity of the hybrid power units. but my biggest gripe is the complexity of the rules.

My solution to the cost problem would be to stipulate that the same engine configuration be used for the whole season, but it can be anything you want in terms of cylinder layout, capacity, induction and regenerative systems. The only rule with regard to the regenerative side is that they start each session discharged of stored energy. Beyond that teams could use electrical systems, flywheels, springs, compressed air and so on, and there should be no cap on how frequently regenerated energy can be used.

Doing something like this would allow a cheap solution to compete alongside a more expensive solution, but to make it fairer the minimum weight limit should be removed from the regulations – after all, since the cars are crash-tested, there is no need for it from a safety point of view. Now, we could have a really light and simple car competing against a heavier more complicated car, all competing equally since they are governed by the 100kg of fuel allowed. Imagine all the configurations possible, the latitude available for designers to innovate, the looks, the sounds and differing performance characteristics.

Finally, it would allow people like me to see how fast you can cover 200 miles with 100kg of fuel. If the hybrids ended up fastest, it might just sway me towards buying one.

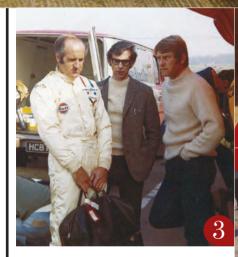
I'm not saying any of this out of a desire to improve 'the show', as I don't consider motor racing to be such, but I just like to see fast cars raced hard. Andrew Hollom, Beachley, Chepstow, Gwent

To the point

Unfortunately I now find that the politics of Formula 1 more interesting than the racing - enough said! David Jenkins, Cowfold, West Sussex

YOU WERE THERE

www.motorsportmagazine.com/forum





KONU

HARRY RYLANCE

Motor Sport has a stash of potential You Were There shots, so it can take time for them to filter through to the printed page. But not usually this long... Harry Rylance first contacted us in 2009 with some photos he took in the 1970s. We hope they were worth the wait 1 Jackie Stewart at the 1971 International Trophy, Silverstone, where he won the first heat but crashed out of the second 2 Open collar, big shades, bigger smile... JYS in his pomp 3 Denny Hulme and McLaren's Tyler Alexander in thoughtful paddock pose 4 Tony Dean's McLaren M8 in the Croft paddock 5 Wilson Fittipaldi's Brabham BT34 gets a helpful push, 1972 British GP 6 Chris Amon's Matra MS120D at the same meeting 7 Dave Walker's Lotus 72, 1972 Race of Champions 8 Pedro Rodriguez signs an autograph, Oulton Park, April 1971



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UME&MERCIER

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BULGARI OCTO

MONO-RETROGRADE in either steel or 18K pink gold features an in-house automatic movement and an alligator leather strap, from £11,300.

KEEPING AN EYE ON THE TIME: NEW RELEASES IN THE WATCH WORLD

by Richard Holt

BULGARI

The only word that Elizabeth Taylor knew in Italian, Richard Burton liked to claim, was "Bulgari". Taylor's enthusiastic patronage helped establish the jeweller as one of the most glamorous names to come from a country where stylish brands spring up like dandelions. With its headquarters a Vespa's splutter from the Spanish Steps, Bulgari is proudly Roman, playing on many themes from the city's history. This is particularly evident in its watchmaking. The company got serious about watches in the 1970s, first with the Bulgari Roma and then the Bulgari-Bulgari collection, watches characterised by cases in the style of a Roman coin with classical script engraved around the bezel. These watches continue to be a Bulgari signature today.

In 2012 Bulgari launched a new collection called Octo. These came with a case inspired by the octagonal motifs carved into the walls of the Basilica of Maxentius, one of the later additions to the Roman Forum in the fourth century AD.

The Octo, in all its poly-faceted glory, has also become a mainstay of the firm's ever-growing watch canon. It particularly hit home in 2014, when the ultra-thin Octo Finissimo Tourbillon

was one of the most talked about watches of the Baselworld watch fair, the annual exhibition that makes the Geneva Motor Show look like a village fête.

There are now two new additions to the Octo range, the Mono-Rétrograde (pictured) and the Bi-Rétrograde. Each features a retrograde minute hand, which goes from 0-60 across the top of the dial like a rev counter before flicking back to zero in an instant as the hour-indicator jumps forward by one digit. The Bi-Rétrograde also features a retrograde date indicator at the bottom.

Whilst Bulgari's heart is in Rome, its watch production takes place in the Swiss Jura. Because while nobody out-styles the Italians, if you want watchmakers, you go to Switzerland. This is a practical approach that the company founder would have understood. When Sotirios Voulgaris opened his jewellery shop in Via Sistina in the late 19th century, the Greek émigré realised that his surname probably needed Romanising if it was to become an emblem of Latin chic. So Voulgaris became Bulgari, and a new Italian word entered the lexicon. www.bulgari.com

BAUME & MERCIER

With a history that can be traced back to a small watch shop in the Swiss mountains opened by the Baume brothers in 1830, Baume & Mercier prides itself on producing fine, beautifully finished watches at relatively accessible prices. The newly unveiled Clifton Chronograph Complete Calendar is powered by a Valjoux automatic movement and features day, date, month and day-night indicators, a moonphase disc at six o'clock and a chronograph with blued-steel hands to count seconds, minutes and hours. This is a lot of Swiss watch for a relatively reasonable £3250. www.baume-et-mercier.co.uk



TAG HEUER

There have been mutterings of disquiet about a Silicon Valley-led assault on the Swiss watch industry for a while now. While most people know that our love of beautiful, ticking clockwork is not about to be 'swiped left' out of our lives, a lot of people in the industry are keeping all bases covered. Tag Heuer has decided to work with Silicon Valley rather than against it and, in collaboration with Intel and Google, has produced its first smart watch. The Connected is an attempt to put a smart watch within the design codes of a proper watch. It has a 46mm titanium case and real bezel, while a screen assimilates an analogue watch face that is interchangeable between a chronograph, a three-hand and a GMT dial. As well as those standard watch functions. it links up with your phone and does all the health tracking, messaging managing and so on that the Android Wear operating system offers. So it is a fully functional smartwatch, but one that is proud of its analogue heritage. Tag Heuer Connected: £1100 www.tagheuer.co.uk



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Retrospective Porsche 935

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It is 40 years since Porsche's 935 – the road-going 911's ultimate racing evolution – made its competition debut. We spoke to some of those who helped forge its enduring reputation writer SIMON ARRON





ROM CONCEPTION its road-car roots were obvious, a familiar sculpture cloaked with bolt-on extras typical of many 1970s racing cars. But it didn't remain that way for long. Notionally derived from the standard 911, Porsche's 935 soon became a sleeker, more dramatic

alternative – linchpin of the company's World Championship for Makes challenge.

It was a winner in its first season, 1976, and scored its final major victory in 1984, at Sebring. Between times it notched up countless outright and class wins, a couple of world titles, a raft of IMSA honours and one outright Le Mans success. We spoke to a number of prominent drivers about 935 memories and their thoughts are gathered on the following pages. First, though, we approached the car's architect Norbert Singer.

"The 935 is perhaps a little bit forgotten in Porsche's sports car racing history," Singer says. "It was important for us because it was competing in the World Championship of Makes, so it was really representing the name of Porsche. "The Group 5 regulations of the time created a nice playground for an engineer because of the freedom allowed. If you looked at the rules, they suggested you had to have a car that looked like the road version with wider fenders and tyres. We started very conservatively for 1976. But if you really read the regulations closely, you could do a lot more. That's what we did step by step and is how we ended up with the 'Moby Dick' car in 1978.

"We knew these 'special production' rules were coming, which is why we developed the 911 Carrera RS Turbo in 1974 and ran it in the prototype class that season. The new class was delayed until 1976, so we stopped racing at the end of the year and concentrated on development of the first 935.

"We won the championship in the first season, but it was a big battle with BMW. There was a clarification in the rules and we were told that the spoiler from the road car had to be fitted to the racer. Our intercooler was mounted on top of the engine and we had to go from an air-air to an air-water intercooler, and develop it in just a few weeks. That gave us some problems in the middle of the season, which meant we had to win at Watkins Glen to have a chance of the championship in the last race at Dijon.

"Perhaps my favourite memory was the development of the small-capacity 'baby' 935 for the German DRM championship. We were competing in the over 2-litre capacity class and,

MARTINI

Shell

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more often than not in 1977, we were racing alone. Ford and BMW were racing in the under 2-litre class and they started saying in the German newspapers that Porsche should come and join them, because that was where the real racing was going on.

"Dr Ernst Fuhrmann, our boss at Porsche, made the decision that we should do a small 1.4-litre turbo that would put us in the 2-litre class and the press department suggested that we should do the Norisring event. The engine didn't rev very well because we didn't have time to do the mapping properly, but the car was light. The limit was 735kg and we were down at 715, but because we didn't want our competitors to know that we ballasted it by pouring molten lead into the longitudinal support frames. It's still like that in the museum today.

"Norisring was a disaster, but a few weeks later at Hockenheim Jacky Ickx dominated the class and finished second overall. It was a race of nearly 45 minutes and we were nearly 60sec ahead of the second-placed BMW. So Dr Fuhrmann came up and said, 'Now we have shown them, we stop'."

That was a domestic success, but the bottom line is that Singer had taken what was essentially a 12-year-old road car and overseen its conversion into a world-beater.

lckx in the 'baby' 935 at Hockenheim, where he took a comfortable class win in the car's second - and final - race

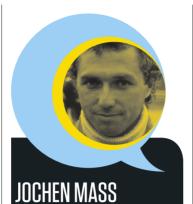
AX MORITZ

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Serial race winner in Porsche 935s, still active today

"I had one of my most intense Daytona experiences in a Porsche 935. It's not too stressful a circuit - the banking is demanding, but it's not like doing a night shift at Le Mans. I did Le Mans Classic with AC/DC's Brian Johnson last year and it was hilarious: he had never been to Le Mans, never raced a Porsche and certainly hadn't driven one in the rain - and on top of that it was dark. He went out, took a terribly long time to come back and then returned to the pits swearing about everything, very funny.

"Daytona is a little more accommodating for people with less experience, but still a challenge. In 1977 I crashed a 935 at about 350kph, when a rightrear tyre blew on the banking, which was pretty exciting. I spun and the car then came down to the apron, which broke the oil cooler. The right door flew off while I was spinning, too, because the car was flexing. I pitted and the team quickly changed the radiator. There was a bit of bodywork damage at the rear, because of the exploding tvre, but it wasn't too bad.

"I drove at night without the door and slowly recovered lost time. The circuit wasn't as brightly lit as it is now, though. Back then there was just one great big lamp at the right-hander after the dog-leg. It was pretty strong and gave you some sort of vision.

"When I came around on one lap, though, I was completely on my own and sensed something black shoot past me on the right. It gave me such a start and I thought, 'Damn, what was that?' It turned out to be my own shadow ...

"The team eventually found a replacement door and called me in. I continued and by early morning Jacky Ickx and I were back up to second. I took over for another stint and found the tyres were vibrating quite badly, so I pitted again for a fresh set... which turned out to be staggered, with the left rear taller than the right. That meant the car had a tendency to turn right, which was not so hot on the banking. I had to steer left all the time and by the second lap I was feeling so frustrated that I was contemplating coming back in. Then the front right blew and I went off at 350-odd kph once again.

"As I was sliding along the wall I saw some small light bulbs and thought, 'Great, on top of everything else I'm going to be electrocuted.' Lots of stupid little things go through your mind at times like that. It marked the end of our race."



BRIAN REDMAN Versatile legend who continues to compete at the age of 78

"I raced 935s guite a lot from 1978-1980, for Dick Barbour. They weren't particularly easy to drive, but the balance was OK once you got them on the limit. They were incredible devices based more or less on a production car. In 1978 I was doing one of my first races for Dick and he told me never to touch the boost, to leave it at 1.2 bar. I couldn't understand why I was always qualifying seventh or eighth, so went up to Rolf Stommelen and asked if he touched the boost in qualifying. He stared at me and said, 'Brian, I turn it as far as it will go...'

In 1980 we had a new Kremer 935 K3 for Le Mans. It was

delivered straight to Le Mans for Dick, John Fitzpatrick and I. John put it on pole, but then they changed the rules and said pole would be based on the average time for all three drivers. That put us second. It was a wet, miserable race, but we were leading when the car lapsed onto five cylinders. We eventually finished fifth overall and won the IMSA class, but at about six in the morning I handed over to Dick. I was cold and wet. but staved in the pits for a lap to check everything was OK. Dick came straight back in and I could see his hand waving through the mist, so dashed around to see what he wanted. He said, 'Brian, you guys are paid to drive in conditions like this. Get back in.'

"John and I won the Mosport Six Hours in one of Dick's cars, so I did quite a lot in them. In 1981 my main programme was supposed to be the Lola GTP car, but that wasn't ready until March so in the meantime I drove a 935 with Bobby Rahal and Bob Garretson at Daytona. I qualified 16th and Bobby rushed up, saying, 'Brian, let me have a go, I can get it higher than that.' I replied. 'Bobby, leave it.' During the night I saw him and asked how we were doing. When he said we were leading, I started to remind him that he wasn't supposed to be passing people but he cut in to tell me he hadn't!

"In June 1977 I had a Can-Am accident at Mosport Park, when I broke my neck, shoulder and ribs, split my breastbone and stopped breathing. The ambulance then blew a tyre on the way to hospital and I was declared dead. By autumn I was walking again and started to run a little bit and rang Jo Hoppen, head of VW-Porsche-Audi motor sport in America, to see whether he could find me a car for Sebring. I needed to find out whether I could still drive - and indeed whether I still wanted to. I was after a second-tier drive - but something decent. He put me in the second Dick Barbour 935 with Charles Mendez, a local SCCA racer, and Bob Garretson. On the surface we looked a pretty hopeless team, but we won. We had no trouble and just kept plugging around and around."



Shared Daytona-winning 935 with Redman & Garretson in '81

"Our 935 was a twin turbo whereas earlier cars were singles. I'd previously driven a single-turbo 935 at Mid-Ohio and the throttle lag was pretty bad. The twin got rid of that problem and Davtona was a perfect circuit for the car in many ways, because the 935 went like a bat out of hell on the straights. That year was very competitive, with Danny Ongais and the Interscope team. They had two cars, the Whittington brothers had two, Gianpiero Moretti was there with the Momo car and there were about 15 935s in all. I'd just come back from Europe, where I'd been trying to prove my credentials in F3 and F2, and was sharing with the great Brian Redman and Bob Garretson, both good friends. I wanted to qualify, of course, but they wouldn't let me. I was unhappy about that and Brian qualified 16th - last of the 935s. Then I wanted to start the race, but they wouldn't let me do that, either. They were trying everything they could to dampen my enthusiasm. Before the start Brian told me we'd be setting a conservative pace, taking things easy, making sure we got through to the morning and then worry about where we were. The 935s ahead all took off like scalded cats and one by one started blowing up. At about midnight I got out of the car, handed over to Bob and wandered back to try to sleep in the rental car – we didn't have motorhomes at that time. As I was walking along Brian was coming from the other direction and asked how we were doing. I said, 'We're leading.' He started yelling at me,

'I told you not to race...' I replied, 'I haven't passed anybody – they all fell out.' That was pretty much the case. We won by eight or nine laps. We lost an exhaust header at about 3am, but the mechanics changed it in about 14 minutes, which was an amazing performance given that it was red hot. That apart we had a troublefree run and it was the biggest victory of my career to that point. I've loved going back to Daytona ever since."

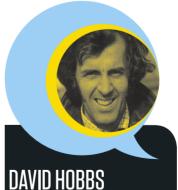


Comprehensive CV includes 935 wins at Mid-Ohio and Riverside

"Every time I see a 935 I look at it in awe - it was just so wild. Of all the cars I raced I felt it was the one that could beat me if I didn't get hold of it, so every time I got in it I'd talk to it, you know, 'Right, it's you or me, one of us has to win this battle.' I knew what it could do if I let it. The 935 was the only car I ever talked to like that, you just had to grab it by that big gearlever and take charge. At a corner like, say, Becketts at Silverstone, you'd turn in on full boost and it would understeer in and then you'd get massive oversteer on the way out, so it was really important to get the lines right. It was a shatteringly powerful car, I mean you had 750 horsepower in what was basically a 911, so it was fairly crude, and the 911 never handled that well. I'm still in awe of the car and I will always remember winning the Lumbermans 500 at Mid-Ohio with Rolf Stommelen. It was a dream drive and Rolf was the best 935 racer ever.

"You're seeing some of the cars out again now and I would love to do a historic race in one."





Relative 935 latecomer who scored a clutch of IMSA victories

"It was an extremely effective weapon, the 935, and the most powerful car I'd ever raced at the time – tons of torque, very exciting to drive. I thought it might be a handful. I was never a fan of the 911, the weight distribution never seemed right to me, but the 935 really surprised me because it didn't have any big vices. It had tons of grunt, yes, but it handled really well, no big oversteer dramas, and very sturdy.

"Looking back I'd put it in my top five cars I raced over the years. John Fitzpatrick and I won a lot of IMSA races in the 935, we always had a great crew and ours always seemed to be the best prepared, had the best tweaks.

"We raced the 'whale tail' car at Le Mans and touched about 225mph on the Mulsanne. I thought we might beat the new 956, but none of them broke so we were fourth behind three of them and easily won our class. So yeah, that 935 was a very pleasant surprise. It wasn't a great-looking car, you felt you were stuck up in the air a bit, but it was extremely effective." **Retrospective Porsche** 935

Federation

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Dick Barbour

SACHS turbo BOSCH

SA

Brian R

JLP-3 masks its road-car roots very effectively. Above, John Fitzpatrick heads for a shared IMSA class win at Le Mans in 1980



JÜRGEN BARTH

Racer, rally driver, associated with Porsche for many years

AT

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"One year I remember finishing the Monte Carlo Rally and then driving straight from there to Frankfurt, flying to Orlando and then heading to Daytona to practice and race a 935. It's a challenge going from snowy rally roads, with speeds of 60-100kph, to the Daytona banking at 300-plus in a 935. It took about five laps to adjust and go flat out.

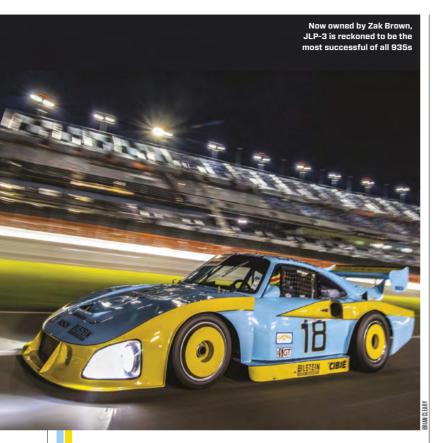
"The previous 934 was even harder to drive, because it was pretty much a standard road car, with 650bhp and 14-inch wheels."

RICHARD DEAN Sharing 935 JLP-3 in historic events, with owner Zak Brown

"I've done quite a bit of testing in one of the LMP3 Ligiers we'll be running next year and it's as though it was all built around you. The paddle shifts are perfectly positioned, the view is perfect, everything works as it should... and then you get into the 935.

"It's completely the opposite, a road car they've turned into a massively powerful racer. It tries to fight you all the time, but I love it. Trying to imagine how they drove it for 24 hours in period, though... It was a different world."

BUSTEIN



SIX OF THE BEST

Porsche 935s that created a few headlines



CHASSIS 935/77-005 Martini car taken to several world championship victories in 1977. Ickx/Mass won at Silverstone, the Nürburgring, Watkins Glen and Brands Hatch.



CHASSIS ODO ODO23 Sachs-backed car that won the IMSA class at Le Mans in 1980... and that year's IMSA title, with John Fitzpatrick.



CHASSIS 009 00015 The only 935 to win Le Mans outright, courtesy of Klaus Ludwig and Bill/Don Whittington in 1979. Also won that season's Watkins Glen 6 Hours.



CHASSIS 930 890 0018 Brumos car in which Peter Gregg scored nine wins en route to dominating the IMSA series in 1978.



935/2 'BABY' Built for the 2.0 class of Germany's DRM series, to underline Porsche's versatility. It dominated its second race – at Hockenheim, in Jacky Ickx's hands – and didn't race again.



JLP-4 Successor to the car featured in our photographs and most radical of the John Paul specials. Featured full ground-effect venturi.



"I probably did more miles in 935s than anybody, with the possible exception of Bob Wollek. It was an absolutely great car and a massive step up from the 934, with an extra 150bhp or so and huge wheels. Initially the works cars had twin turbos while privateers had only singles, which weren't as nice to drive - a real all or nothing job with massive turbo lag. The twin turbos improved things massively and by the time I last raced one, in 1983, they were absolutely lovely, with hardly any lag at all.

"When I ran my own team I bought one of Kremer's tube-frame K4s and reckon that was probably the quickest of all 935s. We could get about 900bhp out of it at 1.7 bar in the sprint races – and also ran it like that in one or two longer events.

"The 1982 Brands Hatch 1000Kms sticks in my mind, because Porsche and Lancia were fighting hard over the world championship and we turned up with our IMSA-spec 935. It absolutely bucketed down and track conditions were awful, but we won our class in third overall and beat some of the Group C cars.

"I scooped the IMSA title for Dick Barbour in 1980 and won lots of races, including Sebring. I was sharing with Dick and it was no secret that he wasn't quite as quick as the leading guys. I ended up driving for about nine of the 12 hours and we won by a lap, but I was absolutely knackered.

"It was a sensational car to drive at the 'Ring, which has to be everybody's favourite circuit and is certainly mine. It would get airborne in one direction, then land and take off in the other. It was a real handful, but very rewarding. I won the 1000Kms with a 935 in 1979, but the following year they added a special class so that Reinhold Joest could run his old Porsche 908. That finished first on the road, but we were second and won the world championship event. As far as I'm concerned, I won the race twice on the trot."



World Sportscar Championship race winner who loved the 935

"I took to the 935 like a duck to water because I've always loved cars with lots of horsepower. The first I drove was a Kremer K3, at Brands in 1981. It was a handful. but I relished all that power. The throttle controlled the whole car. If you got it right you could get on the throttle and slide it out of the corners with a bit of opposite lock, and I just loved that. At Daytona it was so fast, approaching 200mph. and you didn't have power steering so you had to hang on around the banking. You chose the line and then you were committed - it seemed insane at first but you got used to it. Looking back, we were pretty brave, I mean the car was a bit crude with the fuel tank at the front - vou didn't want to hit anything. It was very hot in the 935, the heat was unbelievable, and very noisy, so you needed your ear plugs. When I shared with Edgar Dören he broke one of the windows to get some cooling. I race a Porsche GT3 these days and it's better than the 935, but it just doesn't have all that power..."

Additional reporting by Rob Widdows and Gary Watkins

KEY OUTRIGHT VICTORIES

Le Mans, Sebring, Riverside, Daytona, Monza - and that's just scratching the surface

1976

Mugello 6 Hours	Jacky Ickx/Jochen Mass
Vallelunga 6 Hours	Jacky lckx/Jochen Mass
Watkins Glen 6 Hours	Rolf Stommelen/Manfred Schurti
Dijon 6 Hours	Jacky Ickx/Jochen Mass

1977

Mugello 6 Hours	Rolf Stommelen/Manfred Schurti
Silverstone 6 Hours	Jacky Ickx/Jochen Mass
Nürburgring 1000Kms	Tim Schenken/Rolf Stommelen/Toine Hezemans
Watkins Glen 6 Hours	Jacky Ickx/Jochen Mass
Brands Hatch 6 Hours	Jacky Ickx/Jochen Mass
Hockenheim 6 Hours	Bob Wollek/John Fitzpatrick

1978

Daytona 24 Hours	Rolf Stommelen/Toine Hezemans/Peter Gregg
Sebring 12 Hours	Brian Redman/Bob Garretson/Charles Mendez
Silverstone 6 Hours	Jacky Ickx/Jochen Mass
Nürburgring 1000Kms	Klaus Ludwig/Hans Heyer/Toine Hezemans
Misano 6 Hours	Bob Wollek/Henri Pescarolo
Watkins Glen 6 Hours	John Fitzpatrick/Toine Hezemans/Peter Gregg
Vallelunga 6 Hours	Bob Wollek/Henri Pescarolo

1979

Daytona 24 Hours Sebring 12 Hours Mugello 6 Hours **Riverside 6 Hours** Silverstone 6 Hours Le Mans 24 Hours Watkins Glen 6 Hours Klaus Ludwig/Don Whittington/Bill Whittington

Danny Ongais/Hurley Haywood/Ted Field Bob Akin/Rob McFarlin/Roy Woods John Fitzpatrick/Bob Wollek/Manfred Schurti Don Whittington/Bill Whittington John Fitzpatrick/Hans Heyer/Bob Wollek Nürburgring 1000Kms John Fitzpatrick/Bob Wollek/Manfred Schurti Klaus Ludwig/Don Whittington/Bill Whittington

1980

Daytona 24 Hours	Reinhold Joest/Rolf Stommelen/Volkert Merl
Sebring 12 Hours	John Fitzpatrick/Dick Barbour
Riverside 5 Hours	John Fitzpatrick/Dick Barbour
Mosport 6 Hours	John Fitzpatrick/Brian Redman
Road America 500	John Paul/John Paul Jr
Dijon 1000Kms	Jürgen Barth/Henri Pescarolo

1981

Daytona 24 Hours	Bobby Rahal/Brian Redman/Bob Garretson
Sebring 12 Hours	Hurley Haywood/Al Holbert/Bruce Leven
Riverside 6 Hours	John Fitzpatrick/Jim Busby
Monza 1000Kms	Edgar Dören/Jürgen Lässig/Gerhard Holup
Silverstone 6 Hours	Walter Röhrl//Harald Grohs/Dieter Schornstein
Mosport 6 Hours	Rolf Stommelen/Harald Grohs

1982

Daytona 24 Hours	Rolf Stommelen/John Paul/John Paul Jr
Sebring 12 Hours	John Paul/John Paul Jr
Charlotte 500	John Paul/John Paul Jr
Mosport 6 Hours	John Paul/John Paul Jr
Road America 500	John Fitzpatrick/David Hobbs
Mid-Ohio 6 Hours	John Fitzpatrick/David Hobbs

1983

Daytona 24 Hours	Bob Wollek/AJ Foyt/Preston Henn/Claude Ballot-Lena
Riverside 6 Hours	John Fitzpatrick/David Hobbs/Derek Bell

1984

Sebring 12 Hours Hans Heyer/Stefan Johanssson/Mauricio DeNarvaez

2

SW.F

The Ludwig/ Whittington/ Whittington 935 takes the chequered flag to secure outright victory at Le Mans in 1979



There's only one UNITED

...but it is active in many domains, from karting to historic Formula 1 via LMP3. And it has all happened in a relatively short space of time writer SIMON ARRON | photographer BRIAN CLEARY

BILSTEIN

managing director Richard Dean is talking about Porsche 935 JLP-3, photographic pivot of our adjacent feature and part of a growing historic collection belonging to American businessman Zak Brown, United's co-owner. The car ran only briefly – and relatively gently, following a very recent rebuild – in November's Classic 24 at Daytona, but that mattered not. Even standing

VERY TIME WE PUSHED

it from the garage, it felt like we were Davtona royalty.

People kept asking whether

or not it was the real thing.

They seemed to absolutely

love it ... " United Autosports'

still, it was a headline attraction. "There are several things I love about this car," Brown says. "It was absolutely dominant in its day, the most successful 935 of all time, and won Daytona and Sebring in the same year. I've always loved 935s, but I'm very particular about the cars I now collect. Just look at the names on it. Rolf Stommelen was one of the finest sports car drivers of all time, John Paul Jr was an unbelievable racer and this was at the height of the IMSA championship's success in the late 1970s and early 1980s. It ticked all the boxes.

"I'd been looking for a good 935 for about three years. In a short space of time I missed two over not that much money. They came on the market and both times I wanted to haggle, but they were selling really quickly and by the time I was ready to throw in the white flag, and pay the asking price, they'd gone. They were that hot. When the chance arose to buy this one, given its pedigree, I committed within about 10 minutes. It needed quite a bit of engine work, though, probably because it was too original!"

This first weekend, then, was very much a test session, but in 2016 Brown hopes to run the car at major events, including Silverstone Classic, Laguna Seca and, obviously, Daytona. It's not quite the kind of programme he and Dean envisaged when they formed United late in 2009, setting up a base near Leeds to run Audi R8s in the following season's FIA GT3 championship.

"Richard and I met through racing, have been good mates for a long time and wanted to do something together," Brown says. "He had experience of running teams, but I knew nothing about it other than the fact it involved cool cars and would be expensive. That's where my knowledge as an entrant falls down. The GT3 series was at the time the best of its kind in the world, very popular, and having stopped racing in 2000 I wanted to get back into it. There are plenty of great teams out there, but everybody has their particular style so Richard and I decided to do our own thing."

Since then United has recorded podium finishes in FIA GT3 events, won both the European Supercar Challenge and UK GT Cup, come within a whisker of lifting the 2013 British GT title (drivers Matt Bell and Mark Patterson finished 1.5 points behind Aston Martin rival Andrew Howard), secured top-three finishes in the Gulf 12 Hours and Macau GT Cup, a class podium in the Spa 24 Hours and won the championship for teams in the 2014 Ginetta GT4 Supercup. Not to mention a season in the British Touring Car Championship, or its historic commitments, or karting...

"That started with Zak's son, Max," Dean says. "He'd been going to some indoor tracks and there was a natural progression."

Brown: "I didn't encourage it. We have car stuff all over the house, but..."

Carlite GOOD YEAR

BBS

TOUSH & RECITE

BILSTEIN

Dean: "We should have seen it coming. Max had done the indoor thing, then suddenly he gets a Honda Cadet. Zak and I were watching him at Buckmore Park, thinking, 'This is great but it's absolutely freezing.' So we decided to buy a kart each to keep warm. The theory was that Max could follow our lines, but then we started to test more frequently and now we've got a kart truck and are doing about 50 days a year – Rotax Seniors for us, while Max recently competed in his first MiniMax race at Rye House.

"IT ALL EXPANDED A BIT BY ACCIDENT,

really. I certainly never envisaged it turning out the way it has – I'm not sure we ever had a plan of any kind. Initially we were just going to run a couple of cars in the FIA GT3 series, but in five short years we've got involved in a whole load of contemporary racing as well as some historic stuff."

Aforementioned 935 apart, Brown's portfolio includes a selection of recent F1 cars, an ex-Alan Jones Williams FW07B, a 1977 NASCAR Chevy Monza, karts formerly raced by Ayrton Senna and Mika Häkkinen, a sprinkling of race the cars that are eligible for existing series – and the FW07, 962, Mustang and 935 fall into that. I want everything to be used, not just to sit around looking pretty."

Dean adds: "The historic thing really started about three years ago, when Zak bought an ex-John Watson McLaren M28, the restoration of which was overseen by Gary Anderson – who worked on the car in period. Zak had always wanted to own an F1 car and a Marlboro McLaren seemed a good place to start. When the rebuild was complete, Zak was in the States so I shook it down at Silverstone and we then shipped the car to Canada for an event at Mont Tremblant. We sent a couple of guys to look after it and that was that – we were running a historic car and had a really good time."

What are the biggest differences when it comes to preparing ancient and modern?

"A lot of the contemporary stuff is very strictly homologated," Dean says, "and that dictates how you go about things. With historics it's completely the opposite. You need a car that is exactly as it was in period, but for which you can't buy spares. You have to be a from Zak's collection and we're starting to pick up clients who want us to provide the same service. We're looking after a McLaren M26, a couple of Porsches, a Chevron B34... It's keeping us busy and we hope things will grow."

THE TEAM HAS NO FIRM GT PLANS FOR 2016 at the time of writing, but will branch out into the new European Le Mans Series for LMP3 cars, with a couple of Ligier chassis. "There's a new generation of GT3 cars," Dean says. "They're fantastic and the racing is great, but as technology ramps up so does the cost. We've done some amazing events – Bathurst, Spa and so on – and our Audi has served us well, but it's now a little long in the tooth and there's a new model out. I'm not sure we could justify investing in two of those."

Future plans, then, remain fluid. "I absolutely love what I do and still get the same buzz coming into a paddock as I did when I was racing in Formula Ford," says Dean, whose own career peaked with some strong drives in the FIA F3000 Championship (he scored points on his series debut, in a Colin Bennett-run



United started out with a GT programme, but has since diversified. Clockwise from bottom left: McLaren in 2013; maiden campaign in 2010; Ginetta GT4s in 2014; Audi in British GT, 2014; Glynn Geddie's BTCC Toyota, also 2014



Indycars, a 1985 Roush Protofab IMSA Ford Mustang, an ex-Dyson Racing Porsche 962, a Senna Lotus 98T and an ex-Mario Andretti Lola T332 F5000 car from 1974.

"You have to follow all the correct procedures," Brown says, "and some cars don't get used all that often. The newer cars are pretty good because you can't really make a driver error with all the electronics, but you can in a 1980s car. The Senna Lotus-Renault is only ever one missed shift away from a catastrophic problem. That weighs on your mind and you don't push it too hard. There's nowhere to race some of the more modern stuff, though, so you just do a few demo laps and at that stage your neck falls off. The cars we race properly are easier to maintain. There are enough Porsche 962s around, for instance, that you can usually find what you need pretty quickly. I'm keen to bit more resourceful, because you can't just look in the Audi Sport catalogue and dial up a part number. The rules aren't as tight, either, so you've a little bit more freedom in one aspect but have to be quite creative when it comes to technical hurdles. Fortunately there are still vast numbers of small garages with one guy and a lathe. They've been in the industry for decades and there are still people around who worked on some of these cars first time around.

"At Laguna Seca last August we were in the paddock with Zak's F5000 Lola, which has been prepared as it was in the day, down to every last sticker. Back then it was quite popular for teams to put the chief mechanic's name on the car. We did that and an elderly guy walked up to us, pointed to the sticker and said, 'That's me.' He'd run the Lola for Mario Andretti.

"The historic business has sort of evolved

Reynard funded by little more than goodwill and fresh air). "Modern and historic events are different, but I don't think I have a preference. When I was younger I wanted to get to F1, but didn't expect it to happen. I suppose I really just wanted to make my living from racing and I'm doing that. I'm 51 now – so the F1 dream is probably slipping away! – but Zak and I are constantly at circuits, either for business or because we're actually competing. We first met about 25 years ago, when I was doing F3000, and I don't think either of us has changed since. We still love being at racetracks.

"We look after some amazing cars, thanks to Zak, and when people walk through the door the first thing they usually say is, 'How did this lot end up in Leeds?' But we have a good workshop and a strong crew – that's all we need to succeed. Plus the rent's cheap."





"I STILL GET THE SAME BUZZ COMING INTO A PADDOCK AS I DID WHEN I WAS RACING IN FORMULA FORD"



DAYTONA 24 HOURS

From sands to stands this town has a rich past, and this year one prime race hits its half-century writer PETER HIGHAM



AYTONA BEACH WAS ALREADY famous for speed record attempts and a stock car race when the new Daytona International Speedway was opened in 1959. Bluebird topped 330mph here in 1925, and races were held on the sands after WWII.

With increasing traffic and development making beach racing difficult, NASCAR founder Bill France drew up plans for a new permanent racing facility. With a 2.5-mile tri-oval and infield road course, sports car racing was a feature from the very beginning.

A 12-hour race opened the 1964 and 1965 Championship of Makes; for the following season it was doubled in duration. Since 1966, the Daytona 24 Hours has traditionally been the first major US event of the year, except 1972 when the oil crisis reduced it to six hours and 1974 when it was cancelled. A WSC round until 1981, it has since been part of the IMSA, Grand-Am and now United Sports Car series.

Ford won the first 24-hour race in 1966, as well as Sebring and Le Mans that year. As with the French classic, Porsche is the most successful marque here, with 18 victories since Vic Elford, Jochen Neerpasch, Jo Siffert, Rolf Stommelen and Hans Herrmann shared the winning 907 in 1968. The most successful drivers are Hurley Haywood and Scott Pruett at five wins apiece.

Chip Ganassi Racing has been the most successful team in the past decade scoring six victories with its regular drivers augmented by visiting NASCAR and IndyCar stars such as Juan Pablo Montoya, Dario Franchitti, Dan Wheldon and Scott Dixon.



'Data Trace' was born from *Motor Sport*'s online Database, which includes results from around the world, from the mainstream to the obscure. There are full results for the sport's main championships, while the history of others is detailed with race winners and champions – a feature that will expand in time. Add to those 7000 driver profiles (and counting), 750 circuit histories and a compare/contrast function for all F1 drivers...

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prepare : maintain : race



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PORSCHE'S HIGH ENERGY

HOPAR

Mobil

Sports car racing's most successful marque turned the dial to full power for its sophomore year back at the highest level. In this era of mega-hybrid boost, the result was emphatic: a clean sweep at Le Mans and in the World Endurance Championship – plus three rival manufacturers gasping in its wake writer GARY WATKINS

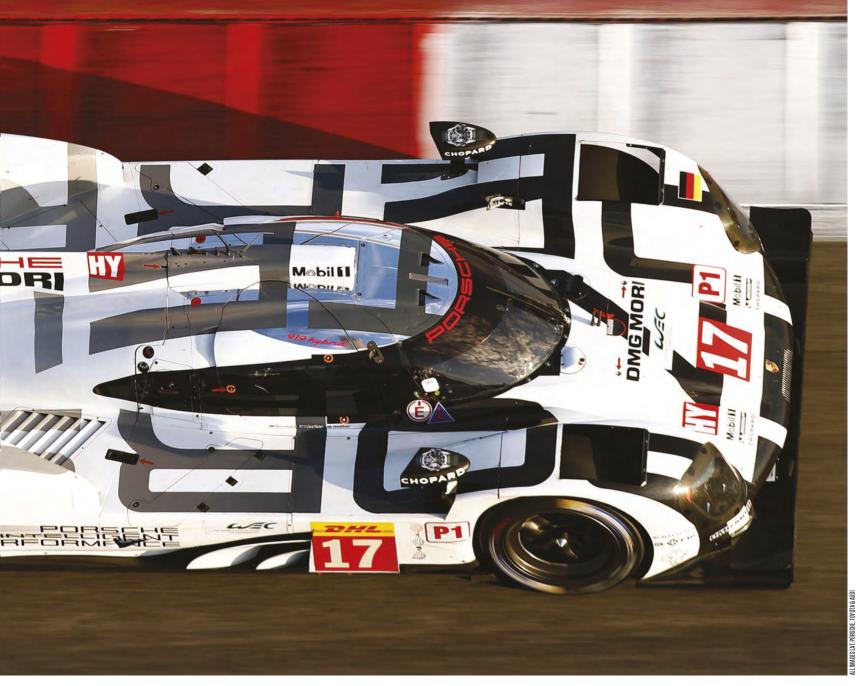
> HERE'S A PARALLEL NARRATIVE TO FORMULA 1 IN the story of the 2015 World Endurance Championship. Four manufacturers vying for top honours, with one emerging as a dominant victor; its closest rival showing the means to win on merit when circumstances allow; a former champion vanquished and relegated to the status of bit-part player; and a returning giant from the East enduring a painful and public failure. But there the parallel between Mercedes, Ferrari, Renault and

Honda in F1 and Porsche, Audi, Toyota and Nissan in the WEC stops dead. As Grand Prix racing flounders in self-doubt over its

hybrid future, sports car racing continues to embrace it – and thrive. This was a classic season of endurance racing in the top prototype division – in spite of Porsche's edge in performance – with no quarter given between world-class drivers who were always racing hard, be it for six hours or 24.

The quartet of manufacturers addressed the challenge of the WEC with entirely different solutions in 2015 - a freedom denied those who chose the path of F1. The story of each weaves a narrative compelling in its detail and leaves us intrigued as we await the next chapter. \Box

WORKS OUT



PORSCHE Mission accomplished

IN THE SILVERSTONE

It took a couple of races

but Porsche proved

to get into its stride.

dominant after Le M

Mark Webber

Brendon Hartley

opener Porsche gave Audi false hope that it might be able to scoop some or all of the end-of-season silverware in the World Endurance Championship. Audi was pretty much dominant, at least after a mid-race ding-dong between the two VW brands, but its rival was racing with one hand tied behind its back.

Whereas Audi arrived at Silverstone with a high-downforce package for its latest R18 e-tron quattro, Porsche raced an all-new 919 Hybrid with interim aerodynamics closer to the specification it would take to Le Mans in June than would be optimal for the fast sweeps of the home of the British Grand Prix. Priority number one, said the Stuttgart marque's LMP1 technical director Alex Hitzinger, was to win Le Mans, and it was happy to sacrifice Silverstone in pursuit of that goal.

"It was purely down to avoiding any compromise on the aero kit for Le Mans; the absolute priority in 2015 was to win Le Mans," he said. "If you do high-downforce development at the beginning of the year, it takes away from Le Mans aero development."

Porsche and Audi were evenly matched in round two, at Spa, and Stuttgart triumphed over Ingolstadt to record its historic 17th Le Mans victory in June. But there was a theory that Audi would be back at the front when the WEC resumed after its long summer break at the Nürburgring in late August. That theory was blown out of the water by a new high-downforce version of the 919 Hybrid that over the remaining five races gave Porsche an advantage bigger than it enjoyed at Le Mans.

Hitzinger had even made a prediction of sorts that Porsche could win the remaining rounds when the team gathered at its Weissach HQ the week after its Le Mans victory.

"I knew what aero performance we would have for the second half of the season," he recalls, "and I said there was no reason why we could not win every remaining race."

There was, in fact, every reason why the Porsche should win every time out. The move into the 8MJ hybrid sub-class maintained its advantage in terms of grunt out of the corners – and now it had more than matched the key weapon in Audi's armoury, downforce. The R18 was nowhere at the 'Ring or Austin, the two venues that were expected to favour it.

And Porsche did need to win all the races such was the consistent finishing of the best of the Audis. It was decided after a late problem for the no18 Porsche in Austin that the full focus of its bid for the drivers' title would be put behind Mark Webber, Timo Bernhard and Brendon Hartley. Four wins in a row put them into the championship lead, but they snuck home by only five points after hitting throttle problems on the way to fifth in the finale. **D** Y

OU RETURNED TO sports cars after about 15 years away. Did it

take long to cast aside Formula 1's self-possessed ways and embrace the endurance racing ethic once again? "It did, because the whole thing was such a cultural shift. About two weeks after my final F1 race in Brazil. I flew to Portimão for a test and had to recalibrate. It was partly the silly stuff, like having to push a button and start the car myself - things I hadn't done for years. And we were testing at night. too. I soon got into it, though. All racing drivers have egos, but when you're a bit older I think you are able to look at things in a more balanced way and I soon found myself thinking about what Timo and Brendon might want from the car. The three of us gelled very quickly. It might not have reflected in our results at first, but there was a very nice chemistry between us. There's no way an F1 mentality would work in the WEC - and that doesn't just extend to the drivers. At Red Bull we'd be throwing fresh parts on the car every two weeks, but here the lead times have to be much longer – you can't introduce something without it first having been properly endurance tested, or you're never going to win Le Mans. I have to say that I've been very lucky, though. F1 was absolutely sensational for a time while I was there, with some exceptional drivers, and I switched while sports car racing was going through a purple patch."

Did you feel more on top of things in 2015 than you were during the previous season?

"It's more that I was happier with the car. I think I perhaps asked for too much from the chassis in 2014, but by the end of the season things were starting to come together – we were running away from the rest in Interlagos before we had a technical hitch and then I had my accident [he struck the wall on the uphill approach to the pit straight]. This year we've made massive improvements and the car has become much more driveable."

Did you expect success to come quite so quickly?

"No! Even in the first quarter of 2015 we still weren't fully reliable – we saw that at Silverstone and Spa. We didn't have a particularly smooth build-up to Le Mans, either – there were flashes of speed, but they're worth very little. You

A CHAMPION'S VIEW

In his second WEC season, Mark Webber shared the world title with Porsche team-mates Brendon Hartley and Timo Bernhard. Here's his take on 2015



have to be bulletproof, especially when you're racing against Audi, a team that simply doesn't roll over. We had all the bits we wanted on the car at Le Mans – and to have two of the three run pretty much faultlessly for 48 hours... That was an amazing feeling, one of the best second places of my life. After that, we were able to bolt on a lot more performance."

How much do you think sports car racing has evolved since last you competed?

"If you look at the Le Mans entry from 1999, it was fantastically strong with Mercedes, BMW, Nissan, Audi, Toyota and so on, plus a very high calibre of drivers. Perhaps the depth isn't quite at that level right now, but it's still incredibly strong and feels much better organised than it used to. I think its credibility is high in engineering terms, too. Back then the technology was fairly basic at all levels of the sport, but in the WEC we now have a clean sheet of paper: the cars are every bit as quick as they look and the races are absolutely flat out, Le Mans included.

"Despite that, at the end-of-season WEC party there was a fantastic atmosphere between all teams and competitors. The camaraderie and respect were absolute: it's a bit how I imagine Formula 1 must have been in the 1970s. After our car had broken at Le Mans in 2014, Timo and I went to the Audi motorhome to offer our congratulations and everybody applauded us as we walked in. That was a nice touch."

Have any aspects of the modern WEC particularly surprised you?

"Le Mans hasn't really changed, has it? It's still a race with an edge – and very little run-off area in parts. It's not Bahrain or Abu Dhabi... And then there are all those backmarkers. Everybody tries to leave, or create, space for everybody else, but there are 150-odd drivers out there and they aren't all going to be exceptional. It's an old-school challenge, but I enjoy it."

One assumes you haven't felt the slightest tinge of regret since making your Porsche announcement ahead of the 2013 British Grand Prix...

"Not at all, although I think my dad misses being in the F1 environment! Perhaps I felt it a bit when I walked into the Melbourne paddock in 2014, because I always enjoyed racing there and it remains one of the few F1 circuits where I never finished on the podium. But you have to be aware when your stint in F1 is coming to an end and I think I timed my exit perfectly."

Are there many similarities between a current WEC car and a Red Bull RB9?

"The downforce is very evident, particularly through the quicker stuff, and I'd say the braking is pretty close. It's nice to be competing on so many tracks I know from F1, too, because it gives me some reference points. I'm also enjoying racing on Michelins – I don't know any driver who doesn't. I'm back to doing stints of 20 or 30 laps within a tenth of each other – like F1 used to be, rather than having a two-second swing."

Has the suffix Mark Webber, world champion yet sunk in?

"I'm very proud to have done it, but see it very much as a shared honour with Brendon, Timo and Porsche."

Does it compensate the disappointment you felt at the end of 2010, when the F1 title slipped away? "I think it helps – I didn't pick a great year to try to win the title, did I. against

year to try to win the title, did , against drivers as accomplished as Sebastian, Fernando and Lewis? But the fact remains that I took an F1 title fight to the final race of the season and not many drivers get to do that."

You've won nine Grands Prix – including Monaco twice – and now you've added the WEC title to your CV. What's left on the shopping list? "Le Mans, I guess. I've won one WEC title and it would be lovely to do it again, with a Le Mans victory as part of that, but if it doesn't happen I'm not going to pound around Le Mans for 10 years in a bid to add it to my trophy cabinet. In 2015 three rookies won it for Porsche, but a guy like Bob Wollek started the race 30 times and never quite managed it. The stars have to align."

Mark Webber was talking to Simon Arron

Season review WEC 2015

Audi made gains at Fuji, but Porsche maintained its edge during the second half of the year

AUDI Extreme tenacity just wasn't quite

NO STONE WAS LEFT

unturned as Audi made a bid to win back the WEC drivers' and manufacturers' titles it had lost to Toyota in 2014. The latest car to be called the R18 e-tron quattro was built around its predecessor's monocoque, but apart from that it was pretty much all new. That included the front crash structure, which allowed for a massive aero update. The R18 also underwent an upgrade in the hybrid stakes, moving up one division from 2 to 4MJ while retaining its single, front-axle kinetic retrieval system.

The initial high-downforce version of the 2015 R18 that won at Silverstone was replaced by what was described as a low-drag car for Spa. Audi didn't like it being called low-downforce and its speed through sector two in Belgium, which includes the ultra-quick Pouhon double-left, suggested there was sound reasoning to its objections.

This was the car that Audi would race at Le Mans and intended to use for the remainder of the season once the series resumed at the Nürburgring. That plan had to be abandoned after the best of the R18s finished more than a lap down in Germany. Audi reacted and came up with an aerodynamic upgrade for Fuji in October, as well as a new refuelling system that allowed it to wipe out the advantage Porsche had gained in the pits from Le Mans on.

The new package allowed it to close the

deficit to the Porsche, though it was evident that a gap did indeed remain when track conditions improved at the wet-dry Fuji and Shanghai races. Porsche even had enough in hand at Fuji to invoke team orders and allow Bernhard to overhaul team-mate Neel Jani's 30sec lead in the closing stages.

The R18 was back in the mix at the Bahrain finale and it looked, for a while at least, as though André Lotterer, Benoît Tréluver and Marcel Fässler might steal the championship from under Porsche's nose. But a trio that finished on the podium every time out in 2015 still needed to win the race to have a realistic chance of that. When the temperatures dropped as the race moved into the hours of darkness, the 919 shared by Jani, Romain Dumas and Marc Lieb moved clear to make it six wins in a row for Porsche. And their victory was enough to allow delayed team-mates Webber, Bernhard and Hartley to add the title for drivers to the manufacturers' crown Porsche had sealed with a race to go in Shanghai.

It was a thrilling climax to a championship that looked to be slipping through Audi's grasp as early as the Nürburgring. That it managed to keep the title battle open deep into the final race said a lot about the marque's tenacity and ability to react. An incredible finishing record for Lotterer & co had something to do with it, too. 0

H WOW! THAT'S MY reaction to the new Audi R18 I'll be driving

in the 2016 FIA World Endurance Championship, which obviously includes the team's bid for a 14th Le Mans 24 Hours victory. The R18 was publicly unveiled at the Audi Sport Finale and it looks so aggressive, especially at the front, but in the end it's about what it does on track. I drove it for the first time at Sebring in December and let's just say I cannot wait until the opening race at Silverstone in April. We have moved away from our flywheel system to a battery package and into the 6MJ class.

I'm delighted that I'll be driving alongside Loïc [Duval] and Lucas [di Grassi] for a second consecutive year. That continuity is hugely important and I think everyone within the team could see the progress we made throughout the year. So now it's up to the three of us to continue the momentum into 2016.

Audi and sister brand Porsche have agreed to compete at Le Mans with only two cars, so I feel very sorry for my erstwhile team-mates Filipe Albuquerque, Marco Bonanomi and René Rast, who did an incredible iob in 2015. It just goes to show how quickly things in motor sport can change often due to things completely beyond a driver's control. I remember in 2008 when the financial crisis hit. I was at the Essen Motor Show, where Audi's racing boss Dr Wolfgang Ullrich informed us all that he could not guarantee any of us drives at that time even though we were under contract for the following season. Fortunately, despite a significant reduction in the programme, a solution was found. A few months later Peugeot announced it was pulling out of the WEC, with many drivers and team personnel already en route to Sebring for a test. This can be a very tough business and it's important to relish every moment.

I'd like to congratulate Porsche for clinching both WEC titles in 2015. Heading into the final Bahrain race, anybody who thought it was merely a formality was quickly reminded of one of the key aspects of all motor sport – reliability. It certainly kept things interesting, but in the end I'm glad it wasn't the deciding factor in the championship. It's always best that championships are won and lost on the track.

For our no8 car, Bahrain really

A RIVAL'S VIEW

In his final monthly column for *Motor Sport*, Audi racer Oliver Jarvis reflects on his first season as a full-time member of Audi's prestigious WEC team

summed up the entire 2015 season. We led the race for the majority of the opening three hours, but suffered a mechanical problem that forced us into the pits for a lengthy repair. We had the pace to win the race - it was so disappointing. It would have been close with Porsche no18, but we had a very good car and our strategy proved very effective as tyre degradation was so high. To come away without so much as a podium was tough to accept, but luck really hasn't been on our side this year. Our car suffered a number of little niggles throughout the campaign, but when you face tough competition you have no option but to push everything to its absolute limit and in some cases this can cause setbacks.

Leaving Bahrain there was naturally a sense of disappointment within Audi. We don't like not winning. That's not arrogance, it's just the passion and desire that has resulted in the team being so successful over the years. The final result shouldn't take anything away from what an incredible job Audi did in 2015, and maybe even more importantly what a fantastic year it's been for sports car racing and the WEC. My team-mates André Lotterer, Benoit Tréluyer and Marcel Fässler won the first two races and remained in title contention until the season's final couple of hours.

ORIS

quattro

O. Jar

For me personally, Silverstone 2015 will go down as one of the most exciting races I've ever watched and really set the tone for the whole campaign. The early wins were crucial, not just for the championship but also as a reward and confirmation of the incredible amount of hard work that Audi had put in during the previous winter. It was only really at the Nürburgring, when Porsche made a big step forward with its aerodynamics, that the difference in hybrid power started to play a crucial role. From a pure EoT [Equivalency of Technology] point of

view, we shouldn't have even been in the fight with our 4MJ diesel engine as on paper

we were a second slower than Porsche. The fact we were often much closer is testament to what a good car we had, but in the end we were not able to overcome the hybrid deficit. In many

respects the biggest positive to be taken away from the Bahrain race was the fact that we had once again managed to close the gap to Porsche and were capable of fighting for victory. We continued to develop and push the limits of our design to the very last race and the progress we had made was evident for all to see. I think the most surprising aspect of the vear was last vear's champion Toyota playing no part in the title fight.

It must have been quite a shock to them to see the progress both Audi and Porsche had made, but I fully expect them to come back strongly in 2016.

It definitely wasn't the year I'd anticipated when I joined Audi's full WEC line-up. That's not to say I'm disappointed with my performances, it's just that the results haven't been what we had expected.

I was surprised by the difference between preparing only for Le Mans and mounting a full-season assault. While Le Mans is still the biggest and most important motor race in the world, it's a completely different experience to that of tackling the balance of the WEC season. The biggest difference for me was arriving at tracks I didn't know and - with three drivers sharing - there is sometimes very little seat time in which to learn. Due to tyre restrictions, it can happen that you end up learning the track on old rubber. It's important to get a feel for the circuit and build up sufficient self-belief so that you'll immediately be on the pace when you venture out on new or fresh tyres.

The WEC is a tough championship, but I really enjoyed the challenge and feel I made huge progress as the season progressed.

After its successfu 2014, Toyota was lef to fight for crumbs as a result of its main adversaries' progress

TOYOTA A step forward, but

A step forward, but nowhere near far enough

TOYOTA MADE A GIANT step forward with an updated version of the TS040 Hybrid that had scooped both championships in 2014. Normally a team would be pleased to pitch up at the first race following a title-winning season and improve its best race lap from 12 months before by more than two seconds. Not Toyota in 2015.

The team was well and truly leap-frogged in the face of a new car from Porsche and a massive upgrade from Audi. There was some cause for hope at the Silverstone series opener, with third place for Anthony Davidson, Sébastien Buemi and Kazuki Nakajima, but after a disastrous showing at Spa the writing was on the wall. The Japanese manufacturer would announce in Le Mans week that it was bringing forward plans to introduce a new engine to replace its 3.7-litre normally aspirated petrol V8 from 2017 to 2016.

Toyota lost out to its rivals under acceleration. It hadn't been able to make the jump from the 6MJ to the 8MJ class like fellow petrol-powered contender Porsche, while Audi's move into the 4MJ division with the latest R18 e-tron quattro turbodiesel effectively put it on a par with the Japanese car under the Equivalence of Technology regulations. That the Audi outgunned it brought the need for a new conventional powerplant into sharp focus.

The drivers of the two TS040s ended up being bit players in the WEC. Only once did one of the cars outqualify another factory LMP1 entry, first time out at Silverstone, and only when Porsches or Audis hit problems were they ever likely to finish higher than fifth and sixth. That's exactly where the two Toyotas finished in three of the final five races.

With its rivals running extra cars at Le Mans, it could finish no better than sixth. Alex Wurz, Stéphane Sarrazin and Mike Conway had a trouble-free run, yet were still eight laps behind after 24 hours. The qualifying deficit to Porsche's record-breaking pole time had been more than six seconds.

There was the odd high over the second half of the season: Nakajima's opening stint in the rain on home ground in Fuji briefly gave Porsche and Audi something to think about, while Toyota finally bagged its second piece of silverware of 2015 in Bahrain. Wurz brought the curtain down on his racing career with a third position with regular team-mates Sarrazin and Conway on a day that one Porsche, one Audi and its own sister car were delayed for various reasons.

There were some developments for the TS040 over the second half of the campaign, but Toyota Motorsport technical boss Pascal Vasselon had admitted before the end of the season that the primary focus was to prepare for 2016 and the arrival of the new TS050.

NISSAN'S RETURN TO the pinnacle of sports car racing stretched to one race at Le Mans, at least for the time being. The radical front-engined and front-wheel-drive GT-R LM NISMO was withdrawn from the first two rounds of the WEC after chassis revisions were required because the car failed its crash test. And when it did finally make its debut, it raced

And when it did finally make its debut, it raced without the much-vaunted Torotrak mechanical energy-retrieval system that was conceived to put the car in the 8MJ class.

Short on grunt out of the corners, as well as test miles, the GT-R LM was woefully off the pace and only just delivered on Nissan motor sport boss Darren Cox's promise that it would outqualify the best of the LMP2 contenders. Not only was the car 20sec off the pace, it was unreliable. Despite a conservative approach from the US-based Nissan Motorsports squad, it managed to make the finish with only one of

NISSAI

Innovative approach proves largely fruitless

its three entries, Michael Krumm, Harry Tincknell and Alex Buncombe ending up unclassified after spending almost one third of the race in the pits. There was evidence to suggest great chunks of time could be gained should

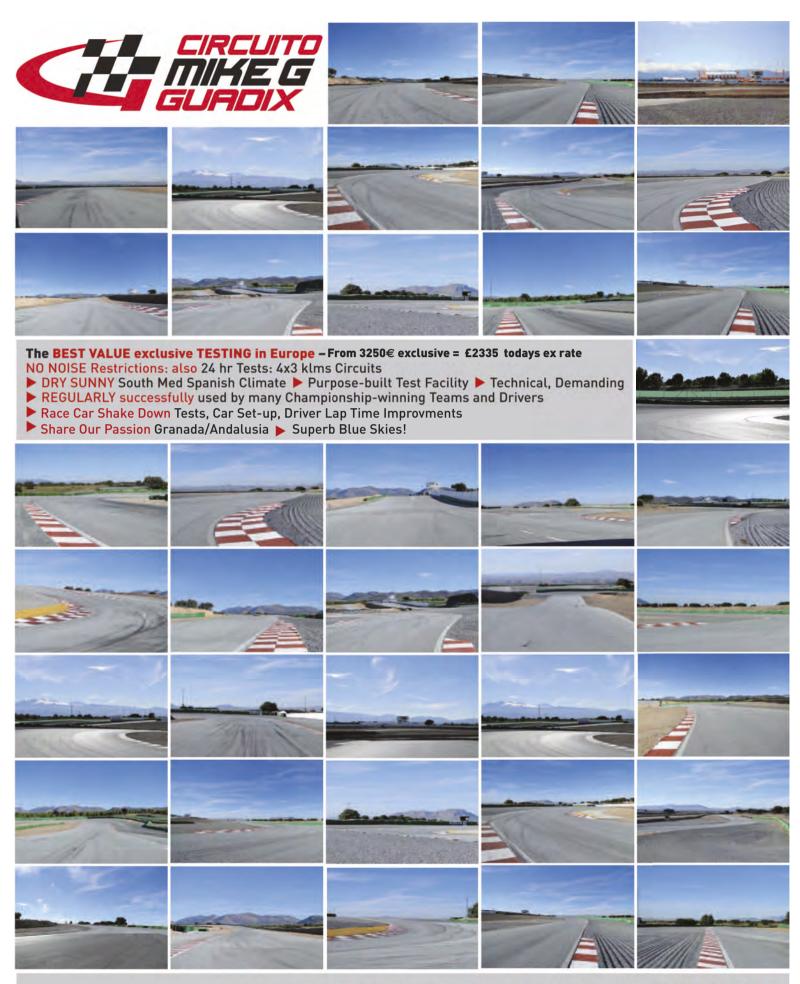
Nissan be able to restore the original concept of the car, which called for energy retrieved at the front wheels to be deployed through the skinny rears. The system never made it off the bench in its original format, so through early testing the car both retrieved and deployed via the front axle and was homologated in the 2MJ class. With less braking provided by the hybrid system, Nissan was forced to move to larger diameter front wheels to incorporate bigger conventional brakes, while concerns over the suspension meant the drivers were instructed to stay off the kerbs at Le Mans.

Nissan stepped back from the WEC after a post-Le Mans test and then withdrew from the

remainder of the season after a second test in Austin in September. By this stage work had already began on development of a revised hybrid system with a new and so-farundisclosed partner, which is understood to have resulted in significant changes to the concept, though not the architecture of the car, and is likely to involve rear-axle retrieval.

The withdrawal was accompanied by the announcement of a new boss for the GT-R LM programme. Mike Carcamo, a former trackside support engineer in CART and IndyCar, moved over from Nissan Mexico and was given the team principal role to allow design chief Ben Bowlby to focus on matters technical.

That news was, in turn, followed by the departure of Cox, the architect of the GT-R LM programme and Nissan's experimental Le Mans racers before it. Nissan is still officially going to be racing in the WEC in 2016, but the decision to return will surely not be set in stone until the revised car hits the test track.



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CONTACT: Clive Greenhalgh 0034 660329070 clive@guadixcircuit.com www.circuitoguadix.com

NEEL JANI

Was Jani the fastest driver in a Porsche LMP1 car? His employers certainly thought that he was quickest in the no 18 919 Hybrid he again shared with Romain Dumas and Marc Lieb. When Porsche realised that it would need to bring team orders into play to win the title with Webber and his co-drivers, it left the Swiss driver on the sidelines during the two-driver aggregate qualifying sessions. There's a point for pole position in the WEC and the drivers of the no17 car needed every one they could get if they were going to catch the Audi trio at the top of the championship table. Jani, it should be pointed out, had qualified his 919 at all but one of the first five race prior to Porsche's strategic call on team orders. Those races included Le Mans – which retains a traditional qualifying format – and an amazing 3min 16.887sec pole lap. Jani's season was about much more than one headline-grabbing lap of Le Mans, though. He was undoubtedly Porsche's most consistent performer over the season.

• SÉBASTIEN BUEMI/ ANTHONY DAVIDSON/ KAZUKI NAKAJIMA

Toyota's lead trio might just have been the best driver combination in the 2015 World Endurance Championship. That's despite never remotely looking like winning a race aboard their TSO40 Hybrid. They were certainly the most consistent combination in an LMP1 car over the course of the season, which given that none of them are slouches backs up the first statement. Just look at their lap times from Le Mans. The average time across the 50 best laps set by each of them was within two and a half tenths. And that's on a circuit measuring 8.47 miles that takes more than three minutes to complete! That has to bode well for next year and the arrival of the all-new turbocharged Toyota TS050.

MG MORI

Jobil M

PORSCHE 919 HYBRID

Porer

The name was the same, but the championship-winning 919 was a new car. The concept was unchanged from the 2014 original, but every facet of a machine that had got better and better through Porsche's comeback season was subject to a refresh. Even the engine changed capacity. Porsche LMP1 boss Alex Hitzinger pointed out the new design group assembled for the marque's return to top-line sports car racing couldn't be expected to get it right at the first attempt. What emerged from that process was a car less prone to understeer, a car that looked after its tyres at least as well as the opposition and a car that uniquely ran in the highest hybrid sub-class. That meant the championships were Porsche's to lose, and the in-house factory team and its drivers were more than good enough to deliver on that potential.

MOTORSPORT



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ANDRÉ LOTTERER

It was business as usual for the best sports car driver of his generation. Lotterer performed at the same ultra-high level race in, race out as we have come to expect over the years and had a big part to play in keeping Audi in the championship hunt for so long. And, as usual, he came away from Le Mans with fastest race lap. It was the third season in a row and the fourth time in five years that he had lapped its 8.47 miles quicker than anyone else.

SAM BIRD

The 28-year-old got his big break in sports cars with the OAK-run G-Drive squad and made the most of it. It wasn't just that he won the LMP2 title, it was the manner of the triumph that suggested Bird has a big future in endurance racing. He never had an off-day and never made a mistake. Sometimes it seemed like he was trying to win the title singlehanded, such were the inconsistencies of team-mates Roman Rusinov and Julien Canal.



Season review WEC 2015

NICK TANDY

Tandy would make this list on his Le Mans-winning exploits with Porsche alone, but the Brit also had the chance to showcase his talents in the WEC on a regular basis during a part-season in LMP2 with Chinese entrant KCMG. This extra-curricular activity provided an indication of Porsche's long-term plans for Tandy, given that his main programme was racing the 911 RSR GT Le Mans car in the United SportsCar Championship in 2015. The Le Mans winner only triumphed once aboard the KCMG ORECA-Nissan 05 he shared with Richard Bradley and Matt Howson, but he might have ended up with more class victories to go with a string of starring performances and fastest laps. He surely proved beyond doubt that he will be a worthy member of the LMP1 squad if and when he is promoted from the GT ranks. You could argue that he'd done that at Le Mans, and in the course of just one stint. His quadruple stint during the night aboard the victorious 919 Hybrid was amazing. The man himself even describes it as "a magical time". It felt like he could do anything in the car, he reckoned. And it showed on the stopwatch.

PHILIPPE DUMAS BRUNO CORBE

There were many reasons why OAK Racing/ G-Drive prevailed over KCMG in the LMP2 title fight. One of them was the combined brains of team manager Dumas and engineer Corbe on the pitwall. A speculative pitstop strategy in Austin, a race their lead Ligier JSP2 was going to lose all things being equal, allowed Bird, Rusinov and Canal to score an important victory at a time when it looked as though momentum was turning in KCMG's direction. The G-Drive trio sealed the championship in style in Bahrain with a fourth class win of the season courtesy of an adventurous tyre strategy that left KCMG reeling.



GIANMARIA BRUNI

Ferrari factory driver Bruni proved time and again in 2015 that is he is the world's best GT driver, even if he wasn't able to hang onto the WEC crown. Two poor results as a result of technical problems left Bruni, Toni Vilander and AF Corse with too much to do over the remaining three rounds. Their title aspirations weren't aided by arch-rival Porsche's upturn in form courtesy of intensive post-Le Mans tyre development. Bruni's efforts weren't in vain, however. There was interest from Ford ahead of its WEC entry, but more significantly Porsche came knocking on his door with a big-money offer. Suffice to say the Italian is now remunerated to a level his talents deserve.

MARK WEBBER & BRENDON HARTLEY

The two newcomers to Porsche in 2014 made giant steps forward in their second season alongside established hand Timo Bernhard. Webber came alive as a sports car driver with the arrival of the high-downforce 919 Hybrid at the Nürburgring in August and put in some starring performances before the end of the season. He had, by his own admission, struggled with the understeering original version that was anathema to what he'd grown accustomed to over a dozen seasons in Formula 1. Hartley, meanwhile, was able to eradicate the mistakes that had marred his game in 2014 and early '15. That immediately made him one of the championship's best drivers, given his blinding speed. Both were worthy world champions.





AUDI SPORT

The faces in the Audi garage after the Nürburgring said it all after the trouncing at the hands of Porsche. It was bad enough that it was the first race of the reborn WEC in Germany but, worse still, a crushing defeat by more than a lap came with the realisation that the advantage that the R18 e-tron quattro had enjoyed at Silverstone had disappeared. Now Porsche and the latest high-downforce version of the 919 had the upper hand on the F1 venues that made up the second half of the season. The writing appeared to be on the wall for Audi's championship hopes. Yet its promise to keep on fighting wasn't empty, even though back home it was flat out developing a radical 2016 LMP1 contender. It solved an overheating problem that afflicted its cars at the 'Ring, came with an updated aero package for Fuji and took the battle down to the wire. The German manufacturer came ever so close to stealing the drivers' title with Lotterer, Tréluyer and Fässler, but made a fight of it and should be applauded for that.



Richard Bradley

As Porsche stole the 2015 Le Mans headlines, two Brits shared LMP2 victory. Sam Smith spoke to one

ICK TANDY'S EXCEPTIONAL performance at Le Mans rightly took most of the headlines in the UK media – but there was another British ace celebrating a hard-earned win at La Sarthe, achieving a personal career zenith and pinning his name firmly on the endurance world map. cap LW horn Ginzapare raised Pichard

As far as careers go, UK-born, Singapore-raised Richard Bradley's is as unconventional as it has been meteoric. On paper his route looks straightforward enough, with success in karts, Formula BMW and F3. But then came a self-

acknowledged "too much, too soon" leap to Japan's Super Formula, before the recent diversification into sports cars.

For many, Bradley's ascent to Le Mans winner this year came from nowhere. Yet the 24-year-old has been competing in LMP machinery for the past three seasons, most of the time paired with fellow Brit Matt Howson at the Hong Kong-based KCMG team, with whom Bradley raced in Super Formula back in 2013.

"Le Mans this year was magical and the result took a while to process," says Bradley. "But it was also the result of a lot of bloody hard work. We only received the car (a brand-new ORECA 05 LMP2) in March, so we had plenty

to do. Although Stéphane Sarrazin shook it down, Matt [Howson] did the initial aero and performance work."

The graft paid off handsomely in June, when Bradley took a fine pole position and then along with team-mates Howson and Toyota refugee Nicolas Lapierre claimed a dominant win, leading all bar 10 of the 358 laps completed in LMP2.

"It was a Le Mans you dare only dream about. The only problem we had was when Nico and I went up escape roads briefly on Sunday morning, because of oil," says Bradley. "Apart from that we were in control, which is satisfying when you know you're up against the best in the world at the greatest race of all. Setting pole and sharing the victory will remain memories I'll savour for the rest of my life."

There is something of a latter-day Eddie Irvine in Richard Bradley, not only in that he made it big in the Far East, but in his often candidly irreverent take on the world. The Irvine comparison fits, too, in both his combative style and also his life away from the track, where he is a shrewd entrepreneur with interests in a variety of businesses and projects.

Bradley's career has certainly been different, entirely suiting his pleasantly quirky and effervescent personality, but it's not

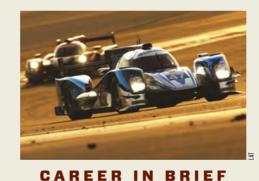
been without controversy this year. At Fuji in October, a fraught and wild battle with both of title rival G-Drive Racing's Ligiers ended with Bradley in the barriers and a whole soap opera of recriminations, ultimately resulting in him receiving a suspended ban.

"For me it was all a massive pain," he says, "because at the end of the day I just want to race. I can't be bothered with all the politics and bullshit. After Fuji I was upset because it was actually one of my best races. I pulled off some mega moves and was one of the quickest on the track – but nobody remembers that now. The incidents are history, but I've had a high level of support and sympathy from a lot of people in the paddock

and in the press. There was a lot going on off the track around that race, and in time I guess it will all come out."

Many were left perplexed when Bradley was omitted from the post-season LMP1 rookie test, formed to give young talents a chance to gain experience up the FIA/ACO ladder.

"Of course it was disappointing not to get a chance," he says, "but I am young enough to be patient and earn an opportunity in the future. It is my goal ultimately to be able to win Le Mans in both LMP1 and LMP2. Now, that would be something, wouldn't it?"



Born: 17/8/91, Greenwich, England

2002-9 Karting 2010 Formula BMW Pacific, Eurasia

- champion 2011 All-Japan F3 Ch'ship, Team TOM'S,

5th. Macau GP, 9th 2012 All-Japan F3 Ch'ship, Team

TOM'S, 4th 2013 Japanese Super Formula, KCMG,

21st; WEC LMP2 debut with KCMG at Fuji 2014 WEC

LMP2, 3rd 2015 WEC LMP2, 2nd; Le Mans class win



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{ LUNCH WITH } KARL WENDLINGER

Such were his injuries that doctors considered any form of recovery unlikely, yet four months later he was racing again. It's quite some story...

writer SIMON TAYLOR | photographer JAMES MITCHELL



ORMULA 1 DRIVERS HAVE to be extraordinarily fit: and a by-product of their fitness is that, if they have a serious accident, they are likely to recover much more quickly than ordinary mortals. And if one of them is unfortunate enough to

have an accident that seems almost certain to result in death, and against all medical expectations manages to survive, that too can be because of a very high level of fitness.

Karl Wendlinger's racing career has lasted for nearly 30 years, and has included wins in sports car classics, championship titles in F3 and GTs, and 17 seasons of endurance racing and DTM. But Formula 1 will always remember him because of his dreadful accident in practice for the 1994 Monaco Grand Prix. It left him in a coma for almost three weeks, and it was a further 10 days before he realised he was in a hospital. Specialists said his brain injuries were so severe that he would never again be able to live a normal life, and might not progress beyond a vegetative state.

Yet miraculously, just four months after his

accident, he was back in an F1 car. His team, Sauber, kept his seat open for him, and in March the following year he was on the grid for the opening Grand Prix of the season in Brazil.

But he admits now that he returned too early. His brain could no longer operate at the same pitch of intense concentration as it had done before his crash. After four races Sauber stood him down until the last two Grands Prix of the year. In the second of those, in Australia, he crashed in practice, injuring his neck. He bravely qualified the team's spare car, but a few laps into the race he was in such severe pain that he had to stop. That was when he finally accepted that his Formula 1 career was over.

But his motor racing career certainly wasn't. The following June he finished third in the Le Mans 24 Hours for Porsche, and he went on to become a busy professional racer in the FIA GT Championship. His current Mercedes-Benz contract has brought him races in the gullwing AMG SLS and historic outings in classics from the Mercedes museum. This is the man who, 21 years ago, was lying in a coma and not expected to live.

I meet Karl in the charming little Austrian $\mathbf{\Sigma}$

town of Kufstein, encircled by the mountains and lush fields of the Tyrol. It's where he was born 47 years ago, and where he still lives. At 6ft 2in he is tall for a racing driver, wiry and clearly still extremely fit. We eat at the local hotel, the Alpenrose, where they know him well and serve us an excellent meal. But he is abstemious, taking only a small Wiener Schnitzel and three glasses of water.



HIS GRANDFATHER RAN A SMALL garage business in Kufstein, and in the 1960s did some hillclimbs with a little Steyr Puch. His father raced too, graduating from a Fiat to an Abarth 1000. "As a small boy I would go with him. There were no proper tracks in Austria then, but there were races on disused wartime airfields like Zeltweg, Innsbruck and Langenlebarn. I loved the atmosphere, I loved watching the cars, it became my world. By the time I was 10 my father had given me a stopwatch and I was his lap-timer.

"In 1980 he was racing an Alfa Sud. One day a young guy walked into our garage and said he wanted to start racing, and could my father help him find an Alfa Sud? He was from a village about eight miles away, and his name was Gerhard Berger. My dad found a second-hand Sud, and the two of them decided to share costs. They bought an old truck, which took both cars on the back, and the three of us travelled to the races, had barbecues in the paddock, slept in a tent. Gerhard was 20 then, I was 11, and he became like an older brother to me.

"When I got to 14 - the minimum age then for karting in Austria - my father bought me an old second-hand kart, and we went over the border to Munich for my first race. I said to my father. 'Don't you think we should do a little bit of practice first?' He said, 'Why practice? I never had any practice.' So I did that first race, and I was hopeless. Very slow. The second race was better, the third race I got on the podium, the fourth I won, the fifth I crashed. So I was learning the lessons. The next year we followed the rounds of the South Germany Kart Championship, and I won that. But I had no ambition to be a racing driver. I could not see that far. I expected to spend my working life in the family garage.

"I carried on karting until I was 18. Now I was an apprentice car mechanic at another garage, and my dad bought a second-hand Formula Ford car, a Van Diemen. Gerhard was now in Formula 1 with Ferrari, and very famous in Austria, and he found us a couple of local sponsors to help us afford it. He did not need to help me, but he did. I owe Gerhard a lot.

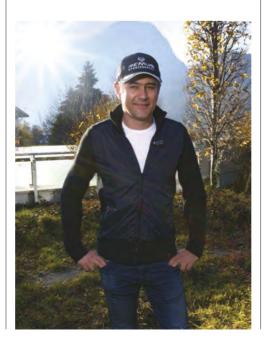
"But I was not very successful in my first FF year. I was quite fast, but I made too many mistakes. I won the Austrian FF Championship,



KARL WENDLINGER CAREER IN BRIEF Born: 20/12/1968, Kufstein, Austria 1983 Began karting 1986-87 Formula Ford 1600, won '87 Austrian title 1988 Austrian F3 champion 1989 German F3 champion 1990-91 FIA F3000 1990-92 World Sports Car Championship 1991 GP debut, Japan 1992 F1, March 1993-95 F1, Sauber (missed part of '94 due to serious Monaco accident) 1996-97 Touring cars 1998-99 FIA GTs, champion in '99 2001 V8 Stars 2002-03 DTM 2004-09 FIA GTs

but there wasn't much opposition. However, I had some good races in Germany, some pole positions, but I was usually too stupid to get to the finish. If I had been smarter it would have been cheaper for my father.

"Now he could not afford to help me any more, but again Gerhard came to my rescue. He talked to Helmut Marko [the former BRM F1 driver turned manager, who had run Berger in F3 a few seasons earlier]. "Gerhard told Marko to take a look at a young guy from the Tyrol who was going quite well in Formula



Ford. He came to watch me at the Salzburgring, and luckily I took pole position. Marko said, 'OK, maybe this Wendlinger is not so bad.'

"So for 1988 a Formula 3 programme was put together. Helmut got a Ralt chassis and Gerhard, through his Ferrari connections, fixed up free Alfa Romeo engines built by Novamotor. But in the German F3 championship everybody had Reynards and Dallaras, and the engine to have was the Spiess VW. The first two Alfa engines I had were really underpowered. For my first race, which was at Zolder, I was slow. It was because my engine was so weak, but Helmut Marko said to me, 'Wendlinger, one thing is certain, you are slow.'

So first race, Zolder, bad. Second race Hockenheim, bad. Third race Nürburgring, and the engine blew up in practice. That was good, because the spare engine turned out to be a bit stronger, and we were fifth on the grid. Marko said: 'That was lucky for you. Another bad qualifying, and we would have stopped.' After that things went better, and I won the Austrian F3 championship.

"For 1989 we concentrated on the German series. The opposition was strong, and it was a good fight all year, and in the end I took the championship by one point, with Michael Schumacher and Heinz-Harald Frentzen tying for second place. The race I remember was my home round at the Österreichring. It was raining heavily, a 32-car field, and I was on the front row with Schumacher. But going to the grid my gearbox jammed, and I had to start from the pitlane. On the first lap I passed 17 cars, and by the end I had passed 14 more to finish fourth. Michael won, Heinz-Harald was second, but my fastest lap was almost a second quicker than all of them.

"Marko, who was now my manager, was also running me in an AMG Mercedes in the German Touring Car Championship, the DTM. Most of the rounds were at the same meetings as my F3 races, so I was jumping straight from a light single-seater to a big saloon with 300 horsepower and 1000 kilos more weight. Sometimes I didn't even have time to change my overalls. And usually on the first lap in the Mercedes I'd leave my braking too late... but it was good training to be versatile in how you drive a racing car.



"IN AUGUST THAT YEAR I WAS summoned by Mercedes: 'Herr Jochen Neerpasch, our Sport Director, wants to speak to you.' I was not allowed to tell anybody. I went to the Mercedes headquarters in Untertürkheim, I was told to wait in the car park, and then Neerpasch came out with his assistant Dieter Glemser, and we went across the road to a small café where we could talk

1 Peter Sauber with Mercedes juniors Michael Schumacher, Wendlinger and Heinz-Harald Frentzen in 1990 2 After making his Formula 1 race debut with Leyton House at Suzuka in 1991, Wendlinger spent a full year with the team -rebranded as March - in '92

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S With ORECA Viper cohorts Beretta and Dupuy after 2000 Daytona triumph 4 Same combo scored class win at that year's Le Mans 🗉 Routine stop for the winning Schumacher/Wendlinger Merc C291, Autopolis 1991 Sharing FIA GT Aston with Ryan Sharp, 2007 7 Works Porsche drive netted third at Le Mans, 1998 & Goodwood

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in private. He told me, 'Mercedes is thinking of creating a junior team of talented young drivers, first to do testing only, and then maybe to drive in our Sauber team in Group C.' There was no talk of any other drivers, and no indication that Mercedes' long-term plan was to move with Sauber into Formula 1.

"Some weeks later I was told to get myself to Zurich Airport, where there would be a private plane waiting to take me to a test in a Sauber Group C car at Paul Ricard. I get to Zurich, find the private plane – and when I step aboard I find Michael Schumacher and Heinz-Harald Frentzen. My Formula 3 adversaries. That was the first time I knew we were all together the Mercedes junior team.

"When we got to the track the test was a bit intimidating for me: 730bhp and 900 kilos after point is 100 metres, you come off the throttle at 120 metres, let the car approach the corner on a trailing throttle, then hit the brakes at 90 metres.

"For 1991 my permanent partner was Schumacher, and we did the whole season together in the Sauber C11. That car had power, grip, downforce, everything you need. Michael and I had a good relationship, which you must have when you are team-mates in the same car, but of course you are still rivals. The first guy you get judged against is your team-mate. Michael was totally competitive, totally motivated, always very well prepared. Sometimes I was on his level, sometimes I wasn't. We won the final round at Autopolis, we were second at Silverstone, but at Le Mans all the Saubers had problems and we were the only one to finish, in fifth place."

"I WASN'T A GUY WHO SHOWED EMOTION, NOT THEN. LOOKING BACK I REALISE MY HEAD WAS STILL COMPLETELY CONFUSED"

F3's 160bhp and 550 kilos. I'd never met Peter Sauber before. He said, 'Just try the car, don't use more than 5000rpm, just find a rhythm. Don't worry, we won't even time you.' But of course they did, there is always timing. But they didn't tell us anything. They sent us out in the same car, one hour each, and then the same again, and the same the next day, to compare us.

"In F3 I'd never been friendly with Michael and Heinz-Harald, just said 'hello' to them as we passed in the paddock. That was what I was like in those days. I was shy, I didn't want to get to know people. But at the hotel that night we became friends, we played pool, we went out for a pizza. On the track, of course, we were still rivals, like racing drivers always are.

"So for 1990 we were all in the Sauber Group C team. I was 21 then, a boy from a small town in Austria, just three seasons on from Formula Ford. I did four races as team-mate to Jochen Mass, and our first race was Suzuka. I'd never been out of Europe before, and I was quite nervous. But it went well, and we finished second. And then we won Spa. Jochen was so good, treated me like his equal even after his long career, like an easy-going friend. In the evening over dinner he told stories about his motor racing life going back 20 years.

"All the time I was learning lessons about endurance racing: like the importance of using your fuel intelligently, to keep a safety margin to your next pitstop, without harming your lap times too much. For example, if the braking All this time Karl had kept his single-seater career going with a Marko-run Formula 3000 campaign. "The F3000 Reynard and the Sauber C11 were not that dissimilar: the Reynard had more grip and downforce, the Sauber had more power and more weight. Also, I was still having some DTM Mercedes drives.

"Everyone now knew that Mercedes intended to go Formula 1, and Harvey Postlethwaite and Mike Gascoyne had joined Sauber from Tyrrell to work on the new car. It would be powered by Ilmor [the British racing engine firm which was ultimately bought by Mercedes] but at the end of 1991 Peter Sauber called the whole team together and said he had bad news. 'I have just heard from Stuttgart that the Mercedes-Benz board have decided not to approve the plan to move into Formula 1. But I will try to keep everything together and carry on'." In fact Mercedes continued to support Sauber in a lower-key way, and the first Sauber F1 car, the C12, appeared for the 1993 season.

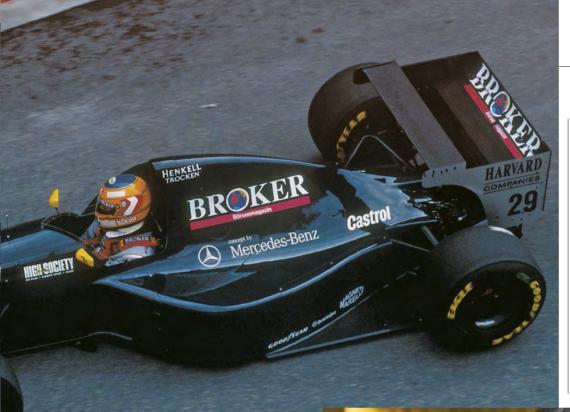
Karl had already, with assistance from Mercedes, made his F1 debut with two outings for Leyton House in 1991. For 1992 Mercedes offered some financial help if he could get a drive with an Ilmor-powered team. "That meant either Tyrrell or March. So I went with Helmut to England to see Ken Tyrrell. Ken said, 'Sure, you can drive for my team. You must bring \$3.5 million, and none of your sponsors' logos will be allowed on the car. And only one logo on your overalls, in a colour approved by us.' Helmut turned to me



and said in German, 'I think we'll leave now'."

So Karl went for his first full F1 season to the impoverished March team, which had emerged from the ashes of Leyton House following the arrest on fraud charges of its owner, Akira Akagi. "There was no money, and how they kept the team alive I don't know." His best performance was a praiseworthy fourth in Canada, although with typical honesty he points out that a lot of the top runners retired that day. "Better was Kyalami, the first race of the season. I qualified seventh just behind Schumacher's Benetton, and at breakfast in the hotel before the race Ken Tyrrell, who had hired Olivier Grouillard instead, came over to me and said, 'If you want to drive for me in the future, let's talk again.' But in the race Martin Brundle's Benetton clipped my radiator on the first lap, and I went out with overheating."

The new F1 Sauber was ready for the 1993 season, with JJ Lehto as the other driver. The rain-soaked European GP at Donington was memorable. "I qualified fifth, right behind Ayrton Senna's McLaren, and into the first corner I was third behind Alain Prost and Damon Hill in the Williams-Renaults, with Senna and Schumacher behind me. It was pouring wet and slippery, and of course we were all on cold tyres and full tanks. In the Craner Curves Senna came storming past me round the outside, bwwah, and past both Williamses into the lead. Then a couple of corners later Michael Andretti in the other McLaren drove into the back of me, punted me off. That was that."



my mind. Although I didn't know what had happened to Ayrton, I was affected by it somehow. I was relieved when the race was over.

"As I brought my car into parc fermé there was an Austrian journalist telling me there had been a very bad accident in the pits, and a Sauber mechanic was injured. [In fact a Minardi lost a wheel, and three Ferrari mechanics and one Lotus mechanic were slightly hurt.] I went into our pit and Peter Sauber was leaning against a pile of tyres, and he was crying. I said, 'What's happened?' He said, 'Ayrton Senna is dead.' And now everything hit me. I sat down on the floor. My best friend from Austria had come to the race with me, and he said, 'Two people killed in two days, you must stop this. Go home, stop racing.' I said, 'No, I don't stop, I continue.'

"For me things went on as normal. I did a two-day test at Ricard on the Tuesday and

Monaco 1994: Wendlinger's Sauber C13, shortly before his life-threatening accident

In an up and down year Karl finished in the points four times, with a strong fourth at Monza. So to 1994, with Frentzen joining Sauber as his team-mate. In the opening round in Brazil Karl was running fourth in the closing stages until a misfire dropped him to sixth. And then came Imola.



"FIRST, RUBENS BARRICHELLO HAD that giant accident on Friday, which shocked everybody. But he was back in the paddock on Saturday, with just a bandaged arm and a swollen nose. Everybody said, 'You see, Formula 1 is so safe now.' Then on Saturday final qualifying had started, I was in my car ready to go out and saw Roland Ratzenberger's accident on the screen. It looked bad, but we all hoped, of course. Then around 5pm the Sauber team manager, Carmen Ziegler, came to me and said, 'Ratzenberger is dead.'

"Although Roland was Austrian I did not know him very well. He was a bit older than me, so we did not race together in FF or F3, but I had chatted to him of course. It was the first death in Formula 1 since Elio de Angelis in 1986, and before that Gilles Villeneuve and Ricardo Paletti in 1982. As the news went around you could feel a strange atmosphere in the paddock. But inside I did not allow myself to let into my brain the fact that he had died. I had to stay focused for the race the next day.



"Then Sunday. On lap seven there were yellow flags at Tamburello, and as we flashed by I glimpsed a Williams in the barrier. As we came around we were stopped at the start line. I asked my race engineer, Tim Wright, what had happened. He said, 'It's Ayrton, but he seems to be OK.' I don't know if he just said that to keep me relaxed and quiet. We waited, the helicopter came, the helicopter flew away, and they said, 'OK, go to your cars, the race will continue now.'

"I got up to fourth place and was catching Mika Häkkinen's McLaren. Normally I would have pushed everything to try to get by him, but today I didn't seem to have the mental energy. All the things that had happened, the race stopping and starting, everything in the back of Wednesday. Heinz-Harald, who was close to Roland after they raced together in Japan, missed the test and went home. I went to Austria for Roland's funeral, and then back to my flat in Monte Carlo, to get ready for the Monaco Grand Prix. With all that had happened, it never occurred to me to stop racing. Some people said, 'Wendlinger is cold, he shows no emotion.' I wasn't a guy who showed emotion, not then. But looking back I realise that my head was still completely confused, my thoughts were jumping around.

"The last thing I can remember of that week was doing 45 minutes of jogging on the Wednesday with Heinz-Harald and our fitness coach, and watching a football match on TV before going to bed. After that, nothing. Of course I have read all the reports and seen the footage since, and put it all together in my mind.

"My crash was in the final moments of Thursday morning's session, at the chicane after the tunnel. According to Sauber's telemetry I braked 13 metres later than I had on my previous quick lap - but that is no surprise to me, because I had just put on fresh tyres, and I would expect to do that. There is an escape road, so if you brake too late to take the corner you can just go straight on. But the Sauber was not that good over the bumps, the car would jump around a lot under braking, and it was bumpy there. Anyway, the car went sideways, and hit the Armco barrier side on. My helmet hit the barrier. The sideways impact was measured at 110mph. We had no HANS device then, or even a simple head support, so I don't know why it didn't break my neck.'

After the Imola tragedies there was already a worldwide furore about what the uninformed saw as criminal disregard for safety in Formula 1, with the tabloids calling for motor racing to be banned. The Wendlinger accident 11 days

"THE IMPACT WAS 110MPH. I DON'T KNOW WHY IT DIDN'T BREAK MY NECK"

later, which most assumed would shortly be announced as a third fatality, further stoked the scandal-shouting headlines.

"Initially I was taken to the Princess Grace Hospital at Monaco, and then to the Saint Roche Hospital in Nice where they had a specialist in head injuries, Dr Grimaud. He was really the man who saved my life. They kept me in a coma for almost three weeks. I'm told that after 19 days I opened my eyes, but I don't remember any of that. My girlfriend Sophie, now my wife, was there with my parents and they tried to talk to me, but although my eyes were open they said they were the eyes of a dead man, not seeing anything.

"One of the medical team always came into my room to check on me before he went home each evening, and three days after I had first opened my eyes he heard me say, 'I am Karl, I am 25 years old, I am from Kufstein.' At once he called my girlfriend and parents, who were staying in my apartment. Whenever the phone rang they always thought it was the worst



news, but he told them I had said a few words. They came straight in to see me, but I was lying there silent, with the same dead eyes. But two days later I suddenly said, 'I am Karl, I am 12 years old.' Sophie thought then, 'It is not just a matter of whether they will save his life, because they don't know what he will be like when this is all over.'

"Eventually they decided to move me to a hospital in Innsbruck. Gerhard lent his plane for the Innsbruck professor to fly to Nice and confer with Dr Grimaud. After I had been at Innsbruck for 10 more days I gradually began to surface and become capable of connected thought. I remember opening my eyes, looking around, and I saw a guy in a bed next to me. I thought, 'Looks like I am in a hospital.'

"Then I moved my foot, and cried out with pain, because I had also hurt my knee very badly in the crash. But they had not worried about that too much while they concentrated on my brain. The next time Sophie came in I said, 'My knee hurts. Have I been in an accident?' The doctors told her to explain what had happened to me gently, step by step. They told her, 'Within one year if he can live his life alone, without constant care, it will be a miracle.'

"Slowly I began to understand things more. One of the problems with a head injury is short-term memory. When they brought me a newspaper I only read the sports pages, and half an hour later I'd read them again, because I did not remember what I had read. I didn't want to eat anything, and when they weighed me I was nine and a half stone. I told them their weighing scales must be broken, because my normal weight was more than 12 stone.

"On July 30 they let me leave hospital. I stayed with my parents for a few days, and then I went to Willi Dungl, the Austrian physiotherapist and fitness trainer who'd prepared Niki Lauda for his comeback. Dungl was a wonderful man [he died in 2002]. We started exercises and preparation, and at the end of August I drove a Porsche Cup car on the Salzburgring. To start with I was very slow – although it felt quick to me – but by the end of the day I was doing competitive times. But a Porsche is not a single-seater.

"At the end of September Peter Sauber summoned me to an F1 test at Barcelona, which is a very bumpy track. After a few laps my neck and my head, my brain inside, were hurting so much I had to stop. I told Peter, 'I cannot do this.' He said, 'Well, in that case I do not know if I can offer you a contract for 1995.' Peter is a hard man, but he had commitments, to his company, to his sponsors. My specialist at the hospital in Innsbruck said, 'Listen, we released you from hospital because we thought you were ready to live a normal life. But to be under pressure to perform as a Formula 1 driver, that is not a normal life.'

"At the beginning of December there was \square





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another test at Barcelona, and Heinz-Harald set a target time to measure me against. Pedro Lamy was also testing for them. I found I could only do two flying laps, and by then there was so much pain I could not see clearly any more. The race engineers tried to get me to stay out for longer – I would be faster when the tyres were warm – but I could not do it. But my times were close to Heinz-Harald's, and quicker than Lamy's, so that confirmed that I still had some speed, and I got my Sauber contract. Then I went back to Willi Dungl to do more work on my neck, and when I did my next F1 test in February I had almost no pain.

"I did a lot of training and my body fitness came back quite quickly, and I did the first four Grands Prix of 1995. In qualifying I was not too bad, and I finished the race in Barcelona. But my concentration had gone. I no longer had the ability to get into the cockpit and focus 100 per cent on what I was about to do. Imola was the worst: as I passed the pits I was thinking about my flat in Monaco, I was thinking about the dog I had when I was a child, I was thinking about everything except motor racing.

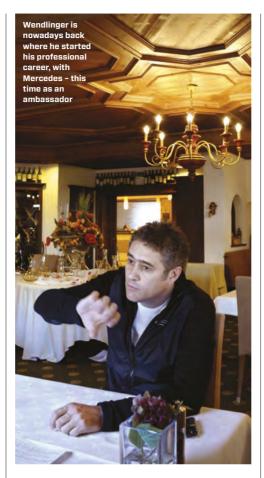
"After the fourth race, Spain, Peter Sauber called me into the motorhome and said: 'I gave you a chance, but the results are not good. We are going to replace you [with Jean-Christophe Boullion] so you can continue your recovery, and we will see what we should do later on.' In early October I did a test at Mugello, and I was 0.25sec slower than Heinz-Harald had been. So Sauber told me, 'You can do the last two races, in Japan and Australia.'

"In Suzuka I finished 10th, Heinz-Harald was eighth. But in Adelaide, in the first practice, I crashed. I hit the wall. It was a heavy impact, and I had to take the spare for qualifying. I qualified OK, but the neck and head pain had come back, and that night I couldn't sleep because of it. Sauber said I had to take the start, because otherwise they would have trouble from Bernie [Ecclestone], and if I wanted to stop after a few laps I must not come into the pits, because that would look too obvious. I must stop out on the circuit. So after six laps I pulled off and parked. I knew that was the end of Formula 1 for me.

"In fact 25 minutes before the race, as I was getting ready to get in the car, Peter Sauber had chosen that moment to come and tell me my contract would not be renewed for 1996. He was right, of course: just maybe his timing was not perfect. But we still have a good friendship. He was very good to me, he gave me a lot of opportunity to come back.



"I NEVER THOUGHT I WAS FINISHED with motor racing. Even before I left Australia I called Marko and said, 'What can we do now?'



And opportunities came up. In 1996 I was in a works Porsche at Le Mans. I didn't think I was driving well enough yet, but I finished third with Yannick Dalmas and Scott Goodyear. And I did the German STW (supertourenwagen) series in a 2-litre Audi. After F1, with 750 horsepower and 500 kilos, I had 300 horsepower and 1000 kilos, and at first I did not find it easy to drive a slow car fast."

In 1998, now feeling fully recovered, Karl joined the French ORECA team, which under Hugues de Chaunac ran the works Dodge Vipers in endurance racing. Now he had found a good place. He was with ORECA for three seasons, winning the FIA GT Championship with Olivier Beretta, winning his class at Le Mans, and in 2000 winning the Daytona 24 Hours outright after all the fast sports-racers hit trouble. "I ended up doing more than 12 hours of the race, because our third driver, Dominique Dupuy, wasn't too experienced, and poor Olivier had caught chickenpox from his son. He could last one hour in the car, and then he was exhausted for three hours.

"The real trouble with the Viper was the incredible heat. The closed cockpit, that big V10 engine almost in there with you, the exhausts wrapped around you, the hot air pouring over your face and body was almost unendurable. You needed to be really fit to have the stamina to deal with that, otherwise the heat killed you. At Le Mans in 2000 the outside temperature was 35 degrees, and after two hours in the car I had lost so much water and weight I had terrible cramps, I could not get out of my overalls. We did a lot of ALMS rounds in America and they were usually three hours, so if you were the number one driver you did the start, had an hour's rest, then did the last hour. At Sebring we wore cool suits. You have a pump and a box of ice and, as it melts, cold water is pumped through tubes running all over your body.

"The Viper was big and powerful, not high-tech at all, but it handled well, and it had massive torque. At Le Mans you could save the gearbox by never using first or second: even on Mulsanne Corner you could chug around in third gear."

In 2001 Chrysler ran a Dallara-built LMP1 car at Le Mans and Karl, with Beretta and Pedro Lamy, finished fourth. There was another spell in DTM with an Audi for the Abt team, and thereafter he concentrated on GTs. Over the following eight seasons he had a lot of success in an extraordinary variety of machines: Ferrari 550 Maranello, Maserati MC12, Aston Martin DBR9, Ford Saleen, Nissan GTR, Lamborghini. "In the Aston and the Saleen my co-driver was Ryan Sharp. He was good, consistent, didn't make mistakes. We had some good wins together, including the Tourist Trophy at Silverstone two years running." And in 2012 he started a new relationship with Mercedes-Benz.



"I HAVE RACED THE GULLWING AMG SLS, but now my main role is as an ambassador for the company. I do demonstrations, driver training, classic events like the Mille Miglia and Goodwood, where I demonstrated the W125 Grand Prix car. The power was unbelievable – 600bhp from a supercharged 5.6-litre straight-eight in 1937 – but with its skinny tyres the handling, grip, braking was like nothing. And the throttle pedal is in the middle, so you have to remember to press the correct pedal. It was quite an experience."

It has been 33 years since Karl started out with his second-hand kart, and 21 years since the accident at Monaco sent his life in a different direction. Does he feel disappointed by how his racing career turned out? "Not at all. Maybe I could have gone further in F1. But my life has happened as it happened, and I have no problem with this. I never look back, never regret anything. I have a full life, I am still busy. I am lucky."

Lucky to have survived that awful accident. Lucky to have confounded doctors by coming back to live, not just a normal life, but the life of a professional racing driver. Lucky indeed.



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In 1981 Mazda beat heavyweight opposition to become the first Japanese manufacturer to win the Spa 24 Hours. *Motor Sport* was offered a chance to try its victorious RX-7 *Tom Walkinshaw* Pierre Dieudonne

writer ANDREW FRANKEL photographer DREW GIBSON



HERE ARE MANY things for which Le Mans 1991 might have been remembered: the fact the entry list included cars that were never intended to race or the fact that the car on pole qualified slower than the car in 11th place, which itself

was almost 40 seconds per lap quicker than the car that qualified 10th. It should be notable for the fact that the Mercedes-Benz C11 that came fifth was piloted by one Michael Schumacher or that it is marked the most recent victory to date by a car shod with Dunlop rubber or, until

2015, the most recent win by a car featuring a serving Formula 1 driver. But no; one fact has overwhelmed all the others. We remember Le Mans 1991 as the first – and to date only – time the race has been won by a Japanese car manufacturer.

It was indeed a fine performance by Mazda and its 787B, but perhaps not quite as against the odds as history now holds: not only did the driver line-up comprise one former and two current F1 stars, the rotary-engined Mazdas had an 830kg weight limit compared to 1000kg for all the others in its class – an enormous advantage when you

consider its four-rotor engines now produced 700bhp. And they had Jacky Ickx as an official team consultant, plus a minute entry of 38 cars of which just a dozen made it to the end...

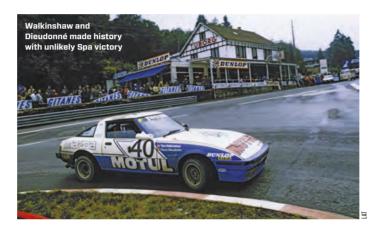
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BUT 10 YEARS PREVIOUSLY THERE WAS another 24-hour race, also won by Mazda, its first internationally recognised twice-aroundthe-clock victory. And here one David really did beat a whole field of Goliaths.

Back in 1981 the Spa-Francorchamps 24 Hours was to touring cars what Le Mans remains to sports cars: the ultimate international challenge. That's one reason why 65 cars tried to qualify for just 55 grid slots over the weekend of July 26-27. There were three classes for engines below 1600cc, 2500cc and above. Of those that made the grade, 33 were from the top class including seven Chevy Camaros with vast V8 motors, 15 3-litre Ford Capris and nine BMW 530is, all with 3-litre, six-cylinder engines. And no wonder: even in its then still new and severely abbreviated layout, Spa was then what it is now: a power circuit.

Ranged against such might stood three Mazda RX-7s with tiny twin-rotor Wankel engines, rated at 2.3 litres but actually displacing half that capacity, placing them in the sub-2.5-litre category with considerable space to spare. One was for Win Percy and Peter Lovett (who retired), one finished fifth in the hands of Marc Duez, Jeff Allam and Chuck Nicholson and then there's the car seen on these pages. Driven by Tom Walkinshaw and Pierre Dieudonné, it won not just its class but the entire event. Outright.

Seeing it at Blyton Park today, it barely seems credible that a car apparently so standard could even compete on a grid chock-full of more powerful American and European machinery. It looks like a second-hand road car bought out of the back of a magazine, stripped and painted for racing by a team of amateur enthusiasts. It does not look like the best effort of a team likely to win Le Mans just seven years later



with a handy device called a Jaguar XJR-9LM. The story of the race is fascinating. No one

The story of the race is fascinating. No one outside the team expected the little Mazda to figure, not even when it qualified in second place next to the pole-sitting Camaro courtesy of one of *those* laps by Tom and some very special Dunlop rubber. Walkinshaw had after all entered a team into the same race the year before, one with none other than Derek Bell in the line-up, and they still wound up only 21st and 22nd overall, which seemed about right given their paucity of power.

For a team-mate Tom chose local hero Dieudonné, who already had two Spa 24 Hours victories under his belt, and nobody else, despite most teams and conventional thinking pointing to three-strong crews as the way to go. "You and I are going to drive together," he told Dieudonné. "I want only two drivers per car as it gives us better control over wear as time passes. Our car will be the hare and we'll go flat out: I'm not interested in holding something in reserve just to see the finish."

Nor had the team or cars exactly sat still since their modest achievement the year before. Mazda sent over the latest versions of its 12A rotary engine and homologated new parts to replace those identified as weak links after the post-race analysis from 1980. For his part Walkinshaw equipped the cars with air-jacks to speed up the pitstops. Race day dawned under leaden skies – a big bonus in theory for the lightweight Mazda, but the team threw it away by sending the car out on intermediates just before a characteristic Spa deluge, sending the car tumbling down the leader board. But when the track started to dry, Tom sent Dieudonné out on slicks long before anyone else, a gamble promulgated on the basis that by this stage they were so far down the order there was little left to lose.

It worked. The RX-7 performed almost faultlessly. A slight graunch when selecting third gear and an electrical failure causing the lights to fail on Dieudonné were the only issues to trouble an otherwise undisturbed night, during

which the Belgian did a straight four-hour stint.

By dawn the Mazda was second, driving around a circuit littered with the bodies of dead cars. The bad news? They were nearly two laps down on the leading BMW 530i driven by, among others, Jean-Claude Andruet. When Walkinshaw came in to hand over his instructions were unambiguous: "Go flat out – 9000rpm – and push like crazy. It's our only chance of breaking that bloody BMW..." So he did and by 9.00am to general astonishment all round, the Mazda led for the first time since the opening lap.

But BMW was not done yet and for hour after hour the lead see-sawed between the two according to who'd pitted most recently. At the penultimate stop, Walkinshaw rejoined just one minute behind and pegged the BMW's lead. BMW responded by putting Andruet in for the final stint and with instructions to give it his all.

With both cars effectively doing qualifying laps after 22 hours of racing, it was always possible and perhaps likely that at least one of them would wilt under the pressure. And it was the BMW that broke a rocker arm and passed the remaining 90 minutes on five cylinders, just clinging on to second place at the flag.

That win brought so many firsts: it was Mazda's maiden success in an international 24-hour race and the first time – in a history that dated back to 1924 – that the Spa 24 Hours had been won by a Japanese car or, for that matter, one powered by a rotary engine. It was Tom Walkinshaw's first 24-hour victory and TWR's too. Though little known today, it was a race of immense significance.



THE CAR HERE IS BELIEVED TO BE THE race winner. Neither I nor its owner Kevin Doyle can categorically state that it is, but it was bought from TWR as such and Doyle says that Paul Davis – who ran the car at Spa – has looked at it and verified its identity. It has the **D**





"IT'S EASY TO DRIVE BECAUSE IT'S PRETTY VICELESS, BUT I'D WANT TO TRY IT ON SLICKS BEFORE I HAD A TRUE IMPRESSION

special front spoiler fitted for Spa to allow low-level Cibie lights to be mounted because popping up the standard headlights reputedly knocked 5mph off its top speed. It has the rear disc brakes that were allowed only at Spa because in other touring car events the standard drums had to be retained. It has beefed-up driveshafts and a propshaft with a nonstandard centre bearing, a sand-cast bellhousing and gearbox casing and, rather naughtily, cleverly concealed adjustable top mounts for the front suspension struts.

Perhaps most telling of all, there is a bank of fuses between the seats for things like lights, wipers and fuel pump, and during testing that was always being knocked by drivers' elbows. So someone was told to go to a DIY store and buy enough material to create raised rails either side of the fuses. And they're still there today.

Happily for me, Doyle is not one of those owners prepared to let me have only a brief, sanitised taste of his car. I can have as many laps and revs as I like. So far as can be determined, the car is today as it was when it ran at Spa. Doyle could fit the later 13B engine and gain an instant power hike, but aware of the car's importance he wants it preserved in exactly original condition, which probably means about 225bhp. With standard steel body



panels, though, there's still a tonne or more of Mazda for it to haul about.

If anything's going to remind you that it was 34 years ago that this car put Mazda on the map, it's the interior. There are some race dials that are rather hard to read, but everything from the door cards to the wind-up windows are as they'd be on a road car. There's a TWR steering wheel and a supplementary rev-counter of the kind you usually find in big old American muscle cars, but that's about it.

The RX-7's rotary engine made it unique among its peers, of course. Because there are no pistons shuttling up and down cylinder bores, it sounds completely different from any other motor. It doesn't have the ear-shredding shriek of the four-rotor 787B that won Le Mans because this is still essentially a road car engine, but its voice – like the growl of a small dog playing on a continuous loop – is never less than interesting.

The gearbox is standard, too, so a slightly sharp clutch aside, getting in and driving away is no more difficult than in the street-spec RX-7 Mazda has brought to Blyton for comparison.

It feels slow at first. The steering is quite heavy, the brakes a little dead and heel-and-toe downshifts hard to arrange due to pedal position. It angles nicely into Blyton's curves but feels restless near the limit on treaded Dunlop race rubber. And had the owner only been happy for me to drive it quite gently, that's pretty much all I'd be able to tell you about it.

But increase the effort level and it becomes another car altogether. The engine needs revs, in the same way that a Cosworth DFV without modern electronics needs revs. Below 6000rpm it's really quite slothful, but row it along between there and 8500rpm and it suddenly starts to make sense. The growl becomes a howl as the engine starts to voice its enthusiasm, encouraging you in turn to push the rest of the car similarly hard. At which point the chassis wakes up too and shows the car's true balance, adopting a slightly tail-out stance at any opportunity. It responds to a technique that allows it to carry speed and use power at high revs to compensate lack of mid-range torque.

IN ONE REGARD IT'S AN EASY CAR TO drive because it's pretty viceless, but I'd want to try it on slicks before claiming I had a true impression of what Messrs Dieudonné and Walkinshaw had in their hands at Spa. In another sense, however, it might prove quite tiring over 24 hours, particularly when the brief is to go flat out. Its limited power band means you have to be very precise with it all the time to keep it percolating. If you're at all casual with your gear choice or change-up points, you'd find yourself languishing at merely middling revs, going nowhere fast and watching your lap time disappear at a rate you'd never suffer in a six-cylinder BMW or Capri, let alone a Camaro with a small-block in its nose.

Which to me makes its achievement so many years ago all the more remarkable. It must have been hard work indeed to keep the RX-7 on the boil hour after hour, all through the day and night. But the rewards were worth it, for it kept both Walkinshaw and Mazda on course for far more famous 24-hour victories in France, albeit not at the same time. TWR got there in 1988 with Jaguar, Mazda had to wait until 1991. How ironic to consider, then, the final forgotten fact about the 1991 Le Mans: Mazda won the race, but in second, third and fourth places came Jaguar XJR-12LMs belonging to Tom Walkinshaw Racing.

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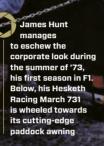


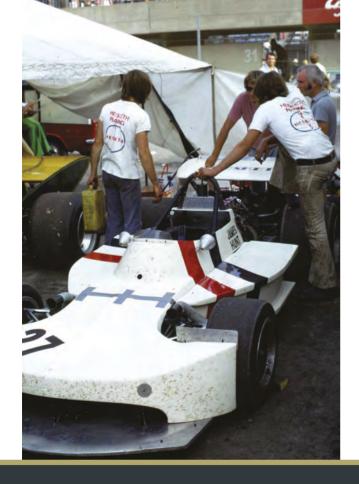


A world away from motorhomes, personal trainers, press attachés and sanitised media briefings. From the top, Howden Ganley and Mike Hailwood; Reine Wisell listens attentively to Rikky von Opel; Carlos Reutemann in customarily contemplative pose









PRIVATE PRIVATE VIEW A 'YOU WERE THERE' SPECIAL

From the days when a couple of enthusiasts could get truly close to F1's hub... and then gratefully be accepted as part of a team



OMEBODY URGENTLY NEEDS TO INVENT affordable time travel – and here's why. Reader John Aston submitted this charming portfolio of shots taken by friends Nigel MacKrill and Stewart Dickinson, who in 1973 undertook a mid-summer Formula 1 tour while serving with the RAF in Germany. Their day job was to maintain Buccaneers, Phantoms and Pembrokes during the Cold War, but while attending the French, German, Austrian,

Dutch and Italian Grands Prix they managed to secure part-time jobs as general dogsbodies for the factory March team. Their duties including cleaning the wheels of Jean-Pierre Jarier's 731...

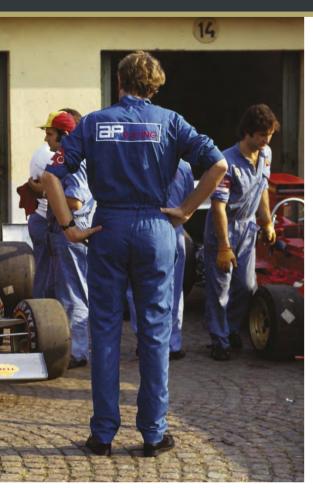
In Austria, rivals accused the UOP-backed works Shadow team of using illegal fuel. Its response? It allowed rivals to run on the same stuff, as a result of which there were later many part-empty fuel drums scattered around the paddock. Stewart and Nigel used a couple to top up their Vauxhall Cresta ahead of the journey home.

They recall that James Hunt and Howden Ganley always had time for a chat and that McLaren appeared rather aloof (if less so than Ferrari), while Niki Lauda seemed very approachable.

The enterprising duo came home with various souvenirs and gave Jean-Pierre Jarier's Monza pit pass to their mate John – a welcome fragment from a bygone age and one he cherishes still.

Private View John Aston









No privacy screens, no army of mechanics shrouding the rear diffuser... Ferrari, Tyrrell and Lotus in al fresco mode (above and top). Long lenses were rare in 1973: Chris Amon really was this close









Scenes from a road trip, left. Top: you needed no more than a stout tent and a Vauxhall Cresta to make the most of a GP 40-odd years ago. Above and right: relishing and touring the Nordschleife





THE RALL Californian Jeff Gordon

Californian Jeff Gordon blazed a trail for the modern NASCAR star in his multi-coloured Chevrolets during the 1990s. As he hangs up his helmet, we reflect on the landmark career of a modern American hero writer GORDON KIRBY



N NOVEMBER 22 at Homestead-Miami Speedway Jeff Gordon stepped out of a race car for the last time. Now beginning a new career as a commentator for Fox Sports' NASCAR TV shows, he can reflect on a truly

remarkable career and a legacy as an urbane, thoroughly modern man who redefined the image of NASCAR.

Gordon's success in NASCAR through the 1990s reshaped the traditional view of American stock car racing as a place where older, more experienced drivers from The South ruled the roost. Over four years from 1995-98 Californian Gordon won three championships and established a new order as he defeated traditional stars such as Dale Earnhardt, Mark Martin, Rusty Wallace and Dale Jarrett.

Gordon's rapid emergence as the new face of NASCAR created a revolution, providing younger drivers from other forms of racing across the United States with the opportunity to break through. Gordon came to be defined as the bridge linking the likes of Richard Petty, David Pearson, Cale Yarborough, Bobby Allison and Earnhardt to today's stars such as Jimmie Johnson, Kevin Harvick, Kyle Busch, Joey Logano and Brad Keselowski.

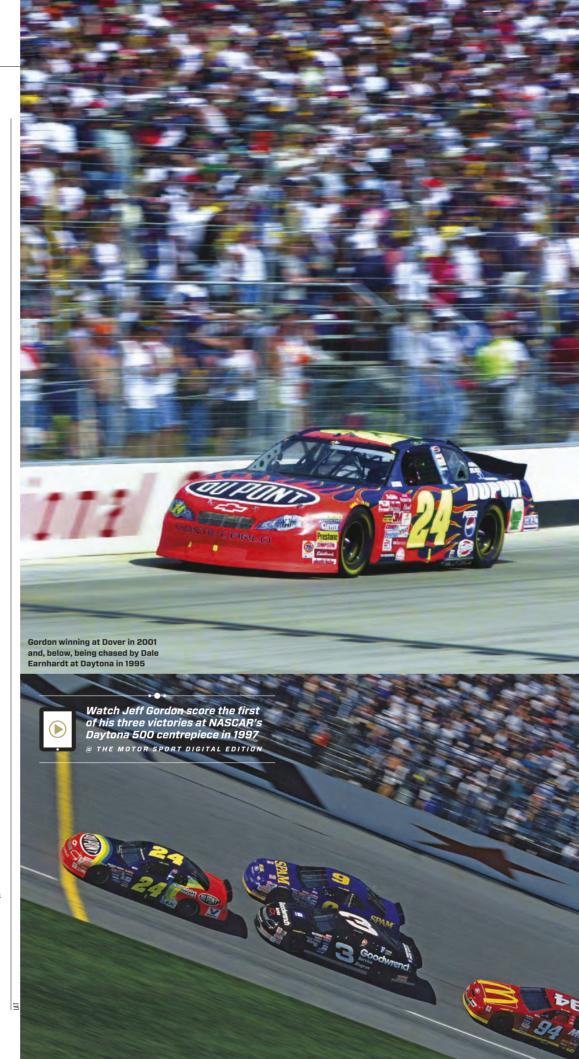
Born in Vallejo, California, Jeff started racing quarter midgets when he was five. In his first year he won 35 races. Two years later it was 51. Moving to karts aged 11 he won all 25 of the races he started.

In 1986, when he was 15, Gordon began racing sprint cars, winning three races. The next year he earned a USAC licence, at 16 the youngest driver ever to do so at the time. Gordon's family then decided to move to Indiana, the heartland of American midget and sprint car racing. In 1990 Jeff won the first of two successive USAC midget and Silver Crown championships.

At a CART race in 1990 Jeff had "A key moment. I heard from CART team owners that they weren't looking to guys who were racing on dirt track ovals to make it in Indycars.

"They told me they were looking for road-racers coming primarily from outside the United States, because that's where the most talent was for that type of car. They needed someone with more experience at the wheel of a rear-engined car on road courses, and I didn't disagree with them on that."

After he was spurned by CART's team owners Gordon moved to NASCAR, making his stock car debut in 1990 at the North Carolina Motor Speedway, but crashing early in the race. A year on he was racing full-time in the seconddivision Busch series, driving Fords for Bill



Davis's team. He was rookie of the year in '91 and in '92 took 11 poles and won three races.

*

SIGNED UP BY RICK HENDRICK, Gordon made his top-line NASCAR debut in the 1992 season-closing race at Atlanta, classified 31st after a crash. It was also the last race of Richard Petty's long career, a serendipitous over-lapping of two of NASCAR's greatest drivers from distinctly different eras.

The following year Gordon began competing full-time in what was then the Winston Cup series, opening the season with a win at People started looking at NASCAR as more than a south-eastern sport. They saw how exciting it was and NASCAR was also racing more and more all around the country. New tracks were being built, and the fan base was growing. So it was good timing for me. I feel like I played my role but I'm not the key. I just happened to arrive at the right moment."

Gordon looks back with pride on his rivalry with Dale Earnhardt, who's gone down in history as NASCAR's all-time classic driver. "It was one of the best things that happened to me," Jeff says. "I went wheel to wheel with Dale and beat him and nobody else was doing



"DALE KNEW HOW TO RATTLE YOUR CAGE. IF HE COULDN'T BEAT YOU ON THE TRACK, HE'D BEAT YOU MENTALLY SOMEHOW"

Daytona, taking his first Cup pole at Charlotte and scoring another rookie award.

Gordon's first championship came in '95 after seven wins, and over the next three years he really made his mark, winning no fewer than 33 races and adding two more championships to his record. As the sport boomed Jeff Gordon became the modern face of NASCAR.

"I've always maintained that I came along at a good time," Jeff says. "NASCAR was really starting to take off and I was fortunate to align myself with some good people who put me in good race cars. I had a lot to learn to run a bigger, heavier car and drive it for a long period of time. Pitstops were also new to me. I had never even driven a racing car that had a clutch in it!

"It was something fresh and new and different. And it had been a long time since someone with my background in midgets, sprint cars and dirt tracks was given a chance in NASCAR by a big team like Rick Hendrick's.

"But I came along at a great time where there was a change in motor sports in America.

that at the time. It sent a message to Rick and everyone else.

"That was huge because Dale was not just a great competitor on the track, but he was 'The Intimidator'. He knew how to rattle your cage. If he couldn't beat you on the track, he would beat you mentally some way, somehow. To survive that mentally was huge for me, but I think it was also good for the sport."

*

JEFF WENT ON TO WIN A FOURTH NASCAR championship with Hendrick's multi-car Chevrolet team in 2001. Last year, at 43, he won four races and with 92 Sprint Cup wins over 23 seasons he's ranked third on NASCAR's all-time winners list behind only Richard Petty and David Pearson. In 2015, he went to the Homestead finale with a title shot, but took sixth place in the race and wound up third in the standings.

After Jeff won his fourth championship in 2001 Rick Hendrick offered him an ownership

interest in the team. A year or two later Gordon watched a young rookie named Jimmie Johnson test at Darlington and was so impressed he quickly convinced Hendrick to hire him.

These days Jeff co-owns six-time champion Johnson's car and holds an equity stake in his own operation. Hendrick also runs cars for Dale Earnhardt Jr and Kasey Kahne, employing more than 500 people at the giant Hendrick Motorsports operation in North Carolina.

Jeff, his wife Ingrid Vandebosch and their two young children live primarily in Charlotte but have spent plenty of time in Manhattan over the past 10 years, recently moving from a \$30 million apartment on Central Park's Upper West side to a less expensive but cosier location in Madison Square Park.

At Indianapolis in 2002 Gordon traded his NASCAR Chevrolet for a few laps in Juan Pablo Montoya's Formula 1 Williams-BMW. "It was the most incredible experience I ever had," Jeff says. "The physical side of those cars is much more demanding. You have to be in incredible physical shape because the car has so much grip it's capable of doing more than the body can handle.

"An F1 chassis is the ultimate, and that one did everything you want a car to do. It stopped and turned better than I could imagine, it had more grip than I could ever imagine and accelerated better than I could have imagined. So in a lot of ways it was one of the easier cars I've driven. But to go fast, to compete on that level, how hard you would have to push yourself and your car to find that last second or two... it would be very challenging. But it was an awesome experience, one I'll never forget.

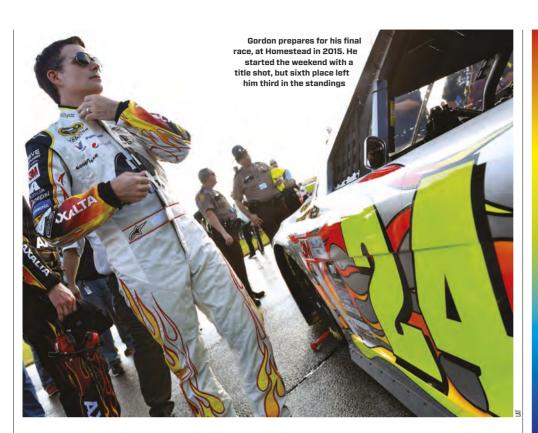
"But I still say that of all the cars I've driven over the years a non-wing sprint car would be number one. A stock car would be number two and I would put the F1 car from a difficulty standpoint further down the list. But on a fun level the F1 car is at the top by a mile.

"I wish F1 had been on my radar sooner. I believe that in order to truly be successful in F1 you have to have a lot more than just talent. You have to grow up in an environment that suits that style of driving, those style of tracks and cars."

Gordon tips his cap to Alex Rossi's efforts to break into F1. "Alex has made the commitment to pursue racing rear-engined cars in Europe and it's good to see him get a chance. It's the first time in a long while we've had an American who's taken that path. He's been over there making his way through the stepping stones to F1 and when you hear he has a bit of an English accent you know he's been over there for quite a while. I commend him for making the commitment to live and work over there."

When asked by young racers about the best path to a career in NASCAR, Gordon offers similar but opposite advice. "I see young kids and their parents ask me all the time. I tell **D**

Interview Jeff Gordon



them you've got to race on ovals. It doesn't matter what type of car it is, but if you want to excel at the NASCAR Sprint Cup level in this type of big, heavy car, you have to learn everything you possibly can about oval racing."

Like most sanctioning bodies NASCAR gets criticised for its officiating; Gordon believes it has to be more judgmental in some of its calls. "Everyone's under a microscope now, so the communication has to be seamless," he says. "Everyone is open to criticism because there's so much flow of information that you just can't hide any more. We've seen a lot of talk this year about restarts, and NASCAR is trying to address those issues. Sometimes they're a little slow to react, but they're going to make those tough calls."

IN CLOSING, AS GORDON LOOKS AHEAD to his new TV career, I ask what he thinks NASCAR should focus on to maintain and develop its market. "We've got to embrace the sport," he says. "NASCAR is still a phenomenal sport with a huge following all around the country. The product out on the track is fantastic.

"I'm excited about the new low-downforce package, which is going to get us the type of racing I really loved coming up through the ranks. The cars used to be less affected by the aerodynamics, but today aero plays a huge role. With low downforce I think you're going to see a lot more passing and some very exciting racing.

"Then you take things like double-file

restarts and the chance to unlap yourself. I think they've implemented some good things over recent years aimed at making racing more exciting and interesting for the fans.

"There are some rude words I won't be able to use at the mike when I'm trying to express a point. I'm going to have to remove those words from my brain, try to be able to verbalise what's in my mind, make sure I'm connecting to the fans, do it in a professional way and have fun. I've just got to express myself in the best way I can, but I'm sure the toughest thing is going to filling up the time during rain delays!

"I think there are lots of interesting things for me to talk about in the coming years. I love the new points format and 'The Chase' and I'm really looking forward to calling Daytona.

"Sometimes we focus too much on the negatives instead of the positives, but I have nothing but positive things to say about what the drivers and teams are doing. I've seen it from that side for more than 20 years and now I'm getting the chance to talk about the sport from a perspective that the fan can relate you. I can't wait."

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RACING BY NUMBERS

Jen Gordon's career statistics

Jeff won four NASCAR championships, in 1995, '97, '98 and '01.

He's ranked fourth in terms of titles won, behind seven-time NASCAR champions Richard Petty and Dale Earnhardt and six-time champion Jimmie Johnson.

He's ranked third behind Petty and David Pearson in all-time wins with 92. Petty and Pearson won 200 and 105 races respectively. Bobby Allison and Darrell Waltrip (both with 84 wins), Cale Yarborough (83) and Earnhardt (76) are ranked fourth through seventh in all-time wins. Johnson is ranked eighth with 75 victories.

Gordon won the Daytona 500 three times, in 1997, '98 and '05, and the Brickyard 400 at Indianapolis five times, in 1994, '97, '01, '04 and '14.

■ Jeff's 80 poles are more than any active NASCAR driver has achieved. He's third on the all-time list behind Richard Petty (123) and David Pearson (113). Gordon recorded at least one pole in 23 consecutive seasons, a NASCAR record.

He is also NASCAR's active 'iron man' leader with an unbroken record of 797 consecutive starts since his first Cup race at Atlanta in November 1992.

■ Jeff has won more prize money than any other driver in NASCAR history. In 2009, after 17 years on the circuit, he became the first NASCAR driver to reach \$100 million in career earnings. By the end of 2015, his 23rd year in the Sprint Cup series, he had won more than \$150 million.

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Widdows and friends: guests include Derek Bell, future team owner Robert Synge, Marcus Pye (in glasses) and (with fashionably huge collar) N Roebuck. Rob's collaborator Mike Lawrence is far right at the top of this page

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HERE'S NO MISTAKING the presenter's voice because it hasn't changed a bit. But when he invites listeners to phone in "on Portsmouth 27755", the shortage of digits is an instant reminder that this wasn't recorded yesterday. It sounds like one of our *Motor*

Sport podcasts, but actually it's a timewarp, spooling us back from the digital era to good old-fashioned audio tape, nearly 40 years ago – when the world was a very different place.

Since June 2009, when we began our increasingly popular series of online podcasts, anchorman Rob Widdows has established himself as the 'voice' of *Motor Sport*. But for those who go back far enough and lived within range of south-coast radio waves, Rob's warm tone will trigger other memories: of Thursday nights in the late 1970s and interviews with motor racing's most colourful personalities. And then there are the select few who will recall evenings sitting in stationary cars, parked up in lay-bys somewhere on a road in Hampshire...

It's not like it sounds. As far as we know.

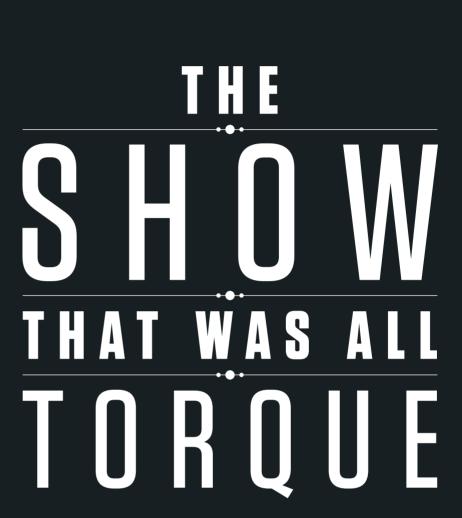
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RADIO VICTORY'S TRACK TORQUE shows pre-date not only mass media interest in motor racing, but mass media itself. They offered a rare and beguiling oasis for fans thirsty for coverage of the world's greatest sport as Rob and his friend Mike Lawrence lured an impressive cast to the navy town to chat live on air about racing's matters of the moment.

Happily, Rob kept some – but sadly not all – of the tapes, and now thanks to the skills of our podcast producer Alan Hyde those shows have been brought back to life, transferred from analogue to digital downloads. A clutch are available via our website – for a small fee – with more to follow. So how did Widdows end up coaxing the likes of Frank Williams, Ron Dennis and more to late-night local radio? He picks up the story over a pie and a pint.

"I'd been working in America for Channel 13, the public broadcasting service, and decided to come home. But I didn't have a job. At the same time one of the first independent radio stations in Britain had opened in Portsmouth: Radio Victory. I thought that was something I could do, maybe get some freelance work as a reporter. After a year they asked me to be the head of news. I knew it would be seven days a week, 25 hours a day, so I said 'I'll do it, but I want you to give me my own programme about motor racing as part of the deal.' They agreed."

This was the end of 1976, in the afterglow of James Hunt vs Niki Lauda. But still, it must have taken some selling? Apparently not. "The broadcasting authority at the time had given the stations a diktat that said there had to be a



A humble local radio station in Portsmouth was the unlikely source of star-studded motor racing chatter nearly 40 years ago. Now those shows, known as Track Torque, are ready to reach the global audience they deserve writer DAMIEN SMITH

certain amount of speech programming among the pop music," Widdows says. "So this was quite good for the station because it got an hour out of me, every Thursday night.

"I knew I could do it because within a few miles of where I lived were John Watson, Derek Bell, Mike Earle, David Purley, Derek Warwick, a lot of small teams and of course the Goodwood and Thruxton circuits."

But with the demands of his day job, Rob soon realised he needed some help. "One evening there was a knock at my door and it was a guy canvassing for the Liberal Party. For some reason I asked him in and we discovered we were both into motor racing. This was Mike Lawrence, an English teacher at a local school."

Future *Motor Sport* staffer Mike began to help Rob round up guests. "Our first major coup was getting Ron Dennis, who drove down to Portsmouth on a Thursday night," says Rob. "We bought him a pint in the Museum Gardens, the pub next door. I didn't know him, but had met him and Neil Trundle at Thruxton when they were doing F2. I think I asked about three questions in the hour – he holds the Track Torque record for the longest ever answer... mates. I remember one night we asked them to come in together, which was potentially dangerous. They were very late and we were already on air when they arrived. They'd driven from Birdham, where Purley lived, and he'd insisted on shooting rabbits from the tailgate of his Range Rover while Derek drove...

"The programme didn't go without a hitch either. Purley had a good-looking girlfriend called Gail, whom he later married. During a news bulletin he decided he would raise her jersey above her head, as Mike was reading the news live. To give Mike credit, he hardly faltered."

It was the response to competitions to win merchandise donated by the likes of Ken Tyrrell and Williams that gave Rob and Mike an inkling that they were on to something. "It was always 'answers on a postcard', and we started to receive hundreds. Then we discovered that people were driving into our broadcasting area and parking in lay-bys just to listen in!

"It's important to remember that in those days there was no motor racing on the radio, apart from short bulletins from an F1 race. There was very little on television and

"I ASKED RON DENNIS ABOUT THREE QUESTIONS. HE HOLDS THE TRACK TORQUE RECORD FOR THE LONGEST ANSWER"

"That was the beginning of a relationship with Ron that was very helpful to us. He really understood the value of marketing and publicity, even on a local radio station. It was worth his while to do it."

*

SOON OTHERS WERE HEADING SOUTH. "I rang Frank Williams, so he drove down to Portsmouth on a Thursday night," says Rob. "We were sitting in the Museum Gardens keeping our eyes peeled for his Jaguar. But it got nearer the programme, and still no Frank. It came to the time when we had to put down our pints, go next door and do the show. And there was Frank, in reception and on the phone. He'd convinced the duty engineer to let him in by banging on the door, and he was speaking to Carlos Reutemann, perhaps the beginnings of a deal for a drive..." Saved wily Williams the princely cost of a call to Argentina, that night.

"Early on, we relied on local contacts," Rob admits. "At the time Derek Bell was right at the top of his career, and David Purley had the Lec F1 car in our first full year of broadcasting, so we did a lot with him. He and Bell were good obviously no internet. So it became hugely important for fans, and we started to syndicate it around other radio stations in Britain."

The roll-call over four years and 202 shows is staggering: along with those already mentioned, add Nelson Piquet, Colin Chapman, Alexander Hesketh, Stirling Moss, Riccardo Paletti, Teo Fabi – "we always took the Italian drivers to a pizza restaurant round the corner" – Alain Prost, Mario Andretti, our own Denis Jenkinson... and even Roger Penske and AJ Foyt.

Admittedly, not all the interviews were recorded live in Portsmouth. "We started going to races which of course involved [dealing with] Mr Ecclestone," says Rob. "One evening I got a phone call from Mr Ecclestone out of the blue. He asked me why I'd applied for accreditation to the British GP at Silverstone, and I began to explain why. But he said 'Yeah, I know what you do. I'm just checking.' And that was it. We got our accreditation.

"In '77 Watson had joined Brabham-Alfa, with Niki Lauda as his team-mate, and we were invited to go to the Monaco Grand Prix. This trip was noticeable for two things: one, Gordon Murray gave us one of the best interviews we ever did. Two, Mr Lauda tried to steal my new wife, who'd come with me. At breakfast Niki did his very best to persuade her that she should spend the rest of the day with him and not me, because I was working and he had a day off between the two practice days..."

*

THE 1981 BRITISH GRAND PRIX WAS another landmark for Track Torque, thanks to Watson's victory for McLaren. "Ron had agreed to have us spend the whole weekend with the team – I can't imagine it happening now – and of course Wattie won. After the race Ron was keen to talk to me about this great victory for the new carbon-fibre MP4/1 and I expected to get a triumphant interview. But what he really wanted to talk about was Andrea de Cesaris crashing the other car!

"Many years later, I went to the Brazilian GP at Interlagos and I was walking through that wonderful paddock. I saw Ron and I heard him say to the people he was with, 'Look at that, here comes racing on a shoestring.' He always referred to us like that – because we never had a budget or got paid. But we were at the right place at the right time, when a lot of teams were realising how important the media was, whether it be radio, magazines, telly – because sponsors were asking for more exposure."

So why did Track Torque fall silent in '81? "Because I got offered a job as an ITV reporter," says Rob. But the shadow of the show stretched further for its founder.

"I suppose the real legacy for me is that I can still talk to people now because of that programme," he says. "I can still phone people up because of the number of times we met during those days.

"Radio – and now podcasting – is a very personal situation," adds Rob. "In television, cameras immediately introduce an element that unsettles almost everybody, whoever they are, because they become conscious of how they look, how they are dressed. None of that applies to radio, and the intimacy gives you a better result. It becomes less of an interview and more of a conversation."

For the past six years, the *Motor Sport* podcasts have kept the spirit of Track Torque alive. But now the shows themselves are back, ready to gain the global audience Rob could only have dreamed about in 1981 – and you don't even have to find an empty Hampshire lay-by to hear them.

Track Torque is available to download via our website. Each show is priced at £1.99. Go to **shop.motorsportmagazine.com** and click on 'audio archive' in the left-hand panel. There are currently four available: a two-part interview with Stirling Moss, another with Lord Hesketh and a conversation recorded in 1979 with our own Denis Jenkinson. More will follow in 2016.

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ON THE ROAD WITH SIMON ARRON

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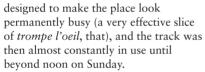
Daytona Speedway, November 11-15: added to the calendar in 2014, an evolving event is already a classic in both name and nature

HE QUESTION WAS politely received, but couldn't be answered. Not then, at least. It was January 2014, I was attending my first Rolex 24 at Daytona and my attention had already been mildly diverted by news of a fresh historic fixture at the circuit, 10 months hence. Lola T70s restored to the celebrated banking? Who wouldn't want to watch that? The event was definitely happening, I was told, but nobody present knew a great deal about it. But happen it did. The first Classic 24 at Daytona - actually 24 separate

42-minute races for six different car groups, each of which raced four times – attracted about 135 entries and organiser HSR (Historic Sportscar Racing) clearly did something right, for second time around that had swelled to 190. That I should be present to watch was among my finest privileges of 2015.

Most things in America tend to be crafted on a bigger scale (pizzas and road cars, to name but two): the same applies to its race meetings, but not in a disproportionate way. Testing for the Classic 24 began on Wednesday, in a vast, empty stadium in which multicoloured plastic seats are cleverly **D**

SIMON ARRON



The main event was by no means the sole focus. In addition to the Classic 24, there were several races for various HSR historic classes and these threw up some unlikely combinations. Wall-to-wall Porsche 911s were a given, of course, but it's not every day that you see a 1980s Sports 2000 Tiga tracking a fairly recent NASCAR Sprint Cup racer, or a Chevron B36 defending against the same: it was equal parts colour, noise (no decibel restrictions here) and bewilderment (but in a good way).

Given that this was but chapter two, the potential for evolution is enormous – particularly if more Europeans start to commit. There were already quite a few, mind, and front-running Brit Olly Bryant was active in several cars – including a '65 Mustang that he guided to victory in the eight-lap American Challenge, opening race of the weekend.

And then there was the final round of the 2015 Trans-Am Championship, a series I'd never previously seen in the metal and which instantly became one of my favourite inventions. The cars (mostly Camaros, Mustangs, Corvettes and Dodge Challengers, although there were several overseas interlopers including a Jaguar XK) look the part, sound even better and appear to run out of tyres and brakes after a handful of laps, which adds a frisson of spectacle. A 70-car entry didn't hurt, either.

In 2011 Amy Ruman became the first female racer to win a Trans-Am race: here she judged things perfectly to take her Corvette to an eighth victory of the Top, Olly Bryant was active in several cars – including this leading Ford Mustang. Above, Amy Ruman heads for the Trans-Am crown. Above right, Brian Redman shared BMW CSL no51 with Scott Hughes and Joe Foster campaign and make history as the first woman to take the title.

Competition in the main event varied from group to group, many of which featured heritage Davtona names: Jochen Mass, Jürgen Barth, Gijs van Lennep and Bobby Rahal, to cite but four. Indy 500 winner Danny Sullivan had to withdraw at the last moment, but former GP driver Jean-Marc Gounon shared an 8.3-litre Greenwood Corvette with his son, Porsche racer Jules, and was quite happy to let the 20-year-old do much of the graft. "Why not?" Jean-Marc said. "He's much quicker than me nowadays ... " Elsewhere, Brian Redman and Dieter Quester raced BMWs of different vintages - Redman in an ex-Quester 3.5 CSL from 1972, the Austrian in a 2009 Alpina B6 - at the respective ages of 78 and 76.

No outright winner is declared, in order not to detract from the achievements of those in each group, but unofficially Doug Smith/Butch Leitzinger (2005 Audi R8) and



US-domiciled Scot David Porter (2007 Pescarolo) completed the greatest distance, 87 laps apiece in the most closely contested division. They were only a whisker apart going into the final race, but Smith/Leitzinger eventually prevailed by 42sec.

And if such cars sound a little bit too fresh for a 'historic' event, they were by no means the newest. The Classic is open to almost anything from 1966, when first the circuit hosted a 24-hour race, and the entry included several very recent 911s and a current-model Lamborghini Huracán finished in a particularly violent shade of green.

Other group winners were Gray Gregory/Randy Buck (Chevron B16), Robert Blain/Ron Maydon (March 75S),



Christian Zugel/Mark Patterson (Porsche 962), Dean Baker (Riley & Scott) and Robert Spence/Scott Jachthuber (Porsche 911).

But this is about more than just cars and competition. The whole setting is sumptuous. It's a chance to watch pelicans defy the laws of physics as they track the coastline, to explain to the catering staff that poached eggs on toast means exactly that (ie you don't want a mountain of potatoes on the side), to see snowy egrets dive into the surf to catch fresh breakfast, to admire a bald eagle on the wing and to savour the growing anticipation as you head along International Speedway Boulevard while the sound of vee-somethings becomes ever less distant. And then you peel left through the gates, proceed through a tunnel and find yourself on an infield access road, running almost shoulder to shoulder with a Ford GT40 on the adjacent banking.

If the weekend ended right there, you'd return home happy.



FAWKES LIFTS TRUCKS

HERE'S MORE THAN AN HOUR BEFORE practice begins, yet already the public car parks are looking quite full. At a British clubbie. Seven weeks before Christmas. The area usually reserved for officials and media? Limited-access only, because it's doubling up as a run-off area for the adjacent monster truck demonstration...

Grass-roots race meetings sometimes attract fewer spectators than they do competitors, yet others develop a cult following that does little but snowball. This is one such.

For some seasons now, Brands Hatch has hosted the final round of the British Truck Racing Association Championship and topped it off with fireworks display, funfair and other family-friendly peripherals. The public seems to like this, so much so that it was quite difficult to find a viewing point to the outside



of Paddock Hill Bend when lorries were first let loose on day two. I doubt I'd seen the area quite so congested since the 1986 British Grand Prix.

The customary support categories (Legends, Pickups) were also on the bill, along with Intermarque silhouette racers (basically short-oval hot rods tailored for circuits) on the first day and the marvellously diverse *Motorsport News* Saloon Car Championship (including Ford Escorts, upper- and lower-case Minis, a Boss Mustang, a Toyota Starlet and a Citroën BX) on the second. In many ways it was like the Brands Hatch winter clubbies of 30 years ago, with huge grids... but, this time, a commensurate audience.

For all its smoky spectacle (not necessarily one for the purist, I concede), truck racing is prone to long delays, simply because that much kinetic energy can do a lot of damage when unharnessed. I'm told the gravel traps at Paddock had been made deeper for the weekend, to prevent strays running most of the way to the M20, but there were still a few time-consuming collisions. One involved Division One truck title rivals Stuart Oliver and Matt Summerfield, the latter of whom eventually prevailed, while a colossal diesel spill triggered a one-hour clean-up – not ideal when there's so little spare daylight.

That led to races being shortened and, in one instance, cancelled, but the place was still absolutely rammed when fireworks of a different kind commenced.



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GORDON CRUICKSHANK

One wheel in the past: searching out what's new in the old car world

www.motorsportmagazine.com/author/gordon-cruickshank



OFF THE SHELF RACERS

Visiting a high street shop where Formula 1 meets music and art

OU HAVE TO ADMIT IT'S the Dalek that catches the eye. No matter that Legends in Time, in a quiet Sunningdale street, is crammed with racing items from visors to a full-size car, Dr Who's arch enemy still fires a frisson at passers-by. We're not passing by, though. We're inside with Peter Ratcliffe, proprietor of this racing treasure chest, who has been buying and selling gems from racing's history for 27 years. "In fact I did my first deal aged six in the school playground," he laughs. Going to as

many races as he could and racing his own E-type and MGBs it was inevitable he'd become acquainted with racing's characters, and collecting souvenirs soon turned to trading. In 1989 the Legends operation began, commissioning racing art prints by Alan Stammers – examples are around the showroom, signed by racing's great names – but memorabilia quickly started to fill his shelves.

"I helped Damon Hill with sponsorship when he started, and Johnny Herbert, and I sold helmets for Michael Schumacher," Peter says.

Nowadays his links with racing names mean he gets first call on many things.

GORDON CRUICKSHANK

On a shelf he shows me Stirling Moss's passport, one of his helmets, the dainty leather shoes he wore while winning the TT. "I'm the only guy Stirling lets things go to," he says. "But the helmet's not for sale." Like many who trade in their passion Peter is happy when things sell on, and equally content while they stay on display, though some things, like that helmet, aren't going anywhere.

There are race suits – Derek Bell's from

Le Mans 1985, Senna's first Williams set, the visor through which Michael Schumacher saw his first GP chequered flag, a white-barred Graham Hill helmet, the gold helmet from Donald Campbell's Australian record runs. On a fat slick from an Andretti Lola lies a battered JPS Lotus pitboard – "you can see the red of the Gold Leaf colours underneath," Peter

points out. "Chapman didn't waste money!" Large-scale models of road and race cars repose in perspex cubes. Steering wheels, framed photos, race meeting posters and a replica DBR1 nose hang on walls, trophies and volumes of *Motor Sport* fill the shelves, and there's a jukebox in the window. "Steve McQueen's," explains Peter, "with his records inside, labelled by him." Peter can also offer you McQueen paperwork and even the actor's credit card.

From the smallest item to the largest: what seems to be a Ferrari F1 show car, perched on stands centre-stage. But Peter says if you dig back through several liveries he reckons it began life as a 1991 Williams FW14 show chassis. It's now being returned to its original Canon 'Red 5' Mansell livery, and research continues. No mistaking the slender form alongside, though – a 1958 Ducati 125 race bike, fairing removed to show its delicate insides. Not the firm's normal fare, just something that caught the boss's eye, like the film and music items he also collars at sales.

Naturally much trading happens online or via Peter's contact book, so wit



online or via Peter's online or via Peter's contact book, so with such a specialised shop you might not expect people to drop in, especially when you have to ring the bell. But it happens: while we're talking a customer comes in to ask about something he saw Peter talk about on TV – he appears on Channel 4's *Four Rooms* programme – and then seeks advice on selling an unusual car.

"Never know what's going to happen," Peter says as the chap leaves. "Dustin Hoffman walked in one day!"

A historic racer himself, Peter has competed at several Goodwood Revivals, so buying a turbocharged 1980s Formula 1 car wasn't such a mad idea. "I saw a small ad in Hemmings for a Lotus," he tells me, "and when I went to look it turned out to be a Senna 98T that Harley Cluxton was selling, complete with engine!" You will have seen him driving that up the hill at the Festival of Speed, though it has now moved on. Nearly everything that comes his way is stock-in-trade, after all, and there will always be new temptations to investigate.

Dalek stands sentinel over varied racing collectibles assembled by Peter Ratcliffe, above





COMMON Interests

GC's shortest trip means the smallest expenses claim of the season

NE OF MY END-OF-SEASON markers is an annual get-together of Wimbledon classic car owners at the golf club in the middle of the common. It's my shortest trip to a meet - barely a mile, but it kicked me into firing up the Mk2 Jaguar. As I'd shamefully neglected it for a while it was slow to start, unlike its usual first-crank eagerness, and it was only later I remembered the autochoke is now manual and I forgot to use it. Mea culpa, old girl. But all that cranking showed that getting a trickle charger was the right decision - the battery stayed full of urge. It's topped up by a tiny thing from CTEK which rests on the wing, and the best bit is its quick-plug connection which avoids the whole business of croc-clips and shorting risks, especially on a positive-earth

car. Why didn't I do this before? It was cheering to see so many classics threading through the village – more than I saw on Drive It Day – and I have to say that a Speed Six Bentley bellowing down the road makes all other cars seem paltry. A spread of Triumphs included 1800 roadster, Dolomite Sprint and Paul Lemmer's newly restored Vitesse convertible. Paul's brother Mark, who runs Barwell Motorsport, brought his Porsche RSR (which was finding the cold morning a strain), while Robert Holmes kept going home

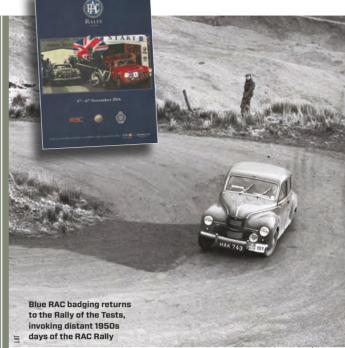


and bringing more cars, including a Volvo PV544 and a lovely 1950s Sunbeam Alpine. Organiser Tony Covill had his 'Old Faithful' Silver Shadow rally car – he swears by its sturdiness and comfort on long continental events – and a Bentley Azure, tying in with that Speed Six, a 3-litre with jockey mascot instead of a winged B, and Nigel Bachelor's often-raced 4½.

At lunch I sat with Richard Wills, who had brought a lovely little Lancia Aprilia but is better known in historic racing piloting a Type 35 Bugatti or Lola Mk 1. He tells me the little V4 Lancia is a relaxing alternative to his BMW 507 and Ferrari Lusso. Veteran navigator Willy Cave attended too, the guest of lan Crammond who runs the popular Three Castles rally. Talking with lan about how the recession had affected the historic sport, his view is that the top-end events – the serious stage rallies – are shrinking while tours and social runs are growing. This was just before we heard that the Roger Albert Clark rally had been cancelled for lack of entries, but in Scotland the Colin McRae Forest Rally has also been dropped, partly due to the strain of complying with the new safety requirements following the fatal events on the 2014 Jim Clark Rally. No one can argue against that, but as the McRae organisers sadly summed up, "The fun has gone out of it."

We had enjoyed ourselves though, as carbs were tickled, starters coughed and feeble vintage lights lit for the ride home in the dark, the first test for some new LED instrument bulbs I've fitted. I'm wary of modern fittings that don't look right for a classic car, but these bulbs (from Better Car Lighting) fit the original holders and come in a warm white that looks right for an old car, so you'd never know – except that at last I can see the oil pressure without using the map light. Might get some of their headlamp bulbs too, but I've no plans to fit reversing sensors or remote locking. Does you good to put a bit of effort into driving sometimes.





HOLDING OUT FOR A NAME CHANGE

recreation of those duffel-coat days



HE ROGER ALBERT CLARK RALLY MAY be resting but the RAC is back. HERO's Rally of the Tests, recreating the pre-1960s navigation and manoeuvring ethos of what became Britain's premier

event, is being rebranded for 2016 with the traditional blue badge of the motoring organisation. Since the breakdown company was demerged from the Club there's been no competition connection, but its new owners want to revive that. Hence my going to the RAC (the Clubhouse) where spokesmen for the RAC (the recovery outfit) told us about the RAC (the rally, but not the 'R.A.C. with full stops' rally...) It's been a muddling time, what with the 'actual RAC' now being labelled Wales Rally GB, but logic seems to be returning.

Using the existing successful formula of tests and regularity the demanding event starts from Bournemouth on November 3 2016 and ends three days later in Chester. Where possible the route includes venues used in period, plus easy-access sections for public viewing.

"We want to make this Britain's flagship historic event," HERO's Tomas de Vargas Machuca tells me. Only pre-1962 cars gain awards (including a week on a luxury yacht!), but you can tempt the Clerk of the Course with later vehicles if they're interesting.

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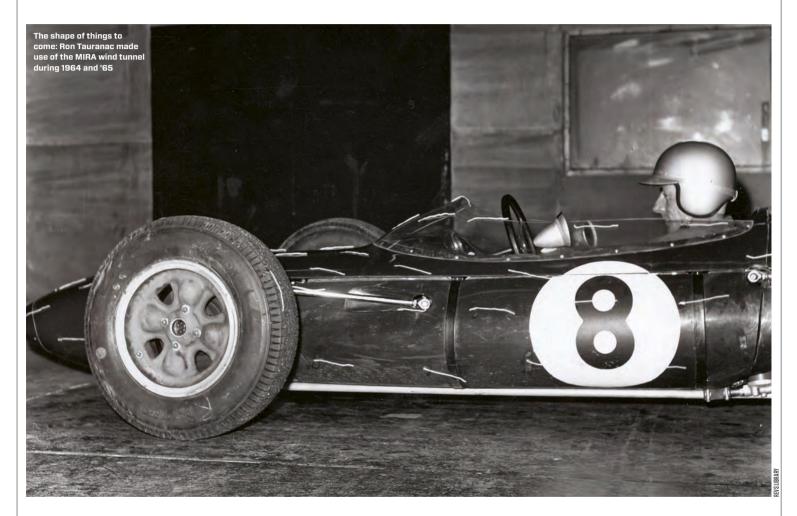
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FROM THE ARCHIVES WITH

DOUG NYE

Our eminent historian dips into the past to uncover the fascinating, quirky and curious



FEATS ON FEATS ON THE GROUND How primitive testing morphed into serious downforce

ACK IN THE 1960s PRETTY much the height of Formula 1 sophistication had been Ron Tauranac and Brabham putting their 1½-litre F1 car in the full-size MIRA wind tunnel at former RAF Lindley, Warwickshire – for tuft tests of airflow around it. Ron donned a crash helmet, and slipped into the cockpit. Tuft photography did the rest. The shape proved quite clean. Maybe the fuel-injection air intake

benefited – but that is as far as it went. The downforce effect of underwing surfaces was even then being explored by a handful of inquisitive – and now largely forgotten – pioneers, not least Giotto Bizzarrini in Italy and (where strutted wings are concerned) by Indycar constructor Jerry Eisert in the US. American researcher Shawn Buckley was retained briefly by Colin Chapman in 1969 to explore 'wingless' downforce generation. Coincidentally, at BRM in Bourne, chief engineer Tony Rudd had detailed the young Peter Wright to do the same.

By 1976-77 Peter had rejoined Tony Rudd – then at Lotus – and Colin Chapman had plumb forgotten about Shawn Buckley's findings, proven **D**

DOUG NYE

on a Citroën DS rigged with a shaped underfloor but without any skirts to prevent aerodynamic in-fill diminishing the effect.

Peter recalls how pioneers John Stollery and WK Burns had proved the efficacy of a moving belt within a wind tunnel to mimic the reality of a car operating in ground contact. Fackrell and Harvey followed on with a moving ground belt in their Imperial College wind tunnel.

Peter Wright and Team Lotus designer Ralph Bellamy were then dispatched to Imperial "working with a quarter-scale model to define what would become the

In succeeding years the norm for wind-tunnel racing car development progressed from quarter-scale (25 per cent) models to more accurately read 40 or 50 per cent models. At low windtunnel airspeed and small scale, laminar flow across the model's surface extends farther back than on the real car. If the ratio of inertia forces to viscous forces is too low, the small model's downforcegenerating surfaces will stall. The crucial ratio is represented by the 'Reynolds number'. Testing at too low a Reynolds number risks misleading tunnel results so the ambition has been to work at a Reynolds number as close to the full-size

The Benetton wind tunnel of the late 1990s (pictured with the Formula 1 team's chief designer Nick Wirth inside) generated big numbers, but had a tendency to leak



difficult to get consistent load readings and then realised that the more we modified our model's sidepod sections the more inconsistent it seemed to get. We could see the sidepods sagging and rebounding, and then 'Eureka!' – when they sagged the gap between their undersurface and the moving ground closed-up and the loadings spiked. When they rebounded the effect was lost. And so we identified the significance of 'the gap'. I spent the rest of the year hanging out of the back of a Minivan driven by Eddie Dennis around the Hethel test track, reading loadings on a downforce test section."

car's as they can achieve. Plainly larger-scale models and higher-speed wind tunnel airflows were required.

In 1998 Benetton F1 tried a short cut, launching its new 50 per cent-scale tunnel at Enstone. Its builders claimed that its moving belt and fan were designed for 2.50kph – 155mph – requiring 10,000hp and a refrigeration plant to maintain constant tunnel temperature, outstripping available electrical supply. Running at 215kph – 134mph – should have represented a Reynolds number equalling one-third that of the full-size F1 car at its maximum 350kph – 218mph. But the tunnel designers had gone a stage further, since it could be pressurised to 1 bar, doubling the density of the air within and thereby doubling the Reynolds number to 0.6 that of the actual car.

This seems to have proved a step too far, since the tunnel's entire steel structure emerged as a massive 700-ton pressure vessel. Its multiple welds reputedly leaked, so that pressurising it adequately could take the best part of an hour. When F1 test teams feel cheated by only 24 hours per day and seven days per week, this was a significant time waster.

That Benetton tunnel cost a claimed \$20 million, and as recently as 2012 Mercedes-Benz approved £2 million to update its unpressurised tunnel from 50 to 60 per cent model size.

It's all a far cry from the embryonic Williams GP Engineering team buying what had been Peter Wright's Specialised Mouldings wind tunnel and re-erecting it at Didcot. One of their staff perfecting it then had been young Ross Brawn. He recalls how when they put the first ground-effect car model of what would become the Williams FW07 into the newly installed tunnel, their download measuring device - like a chemist's-shop weighing machine with sliding counterweights on a pivot bar - just recorded no load at all. "We tried repeatedly to make some sense out of it, and then thought 'Hang on a minute - maybe the measurement range needs resetting' - so we slid the weights along to a higher range and tried again. It was no better. No reading. But then we tried again choosing what to us was an unbelievably high range - and Bingo! There were our readings. That was our Eureka moment. We suddenly realised just how massive ground-effect download could be and how effective Lotus had been in covering it up all year, leaking rumours of trick diffs and other such stuff to put us all off the scent."

In the Noughties, Peter Wright saw Jim Hall with his Chaparral 'Fan Car' at the Goodwood Festival of Speed: "I suggested that between us we had wrecked motor sport. He grinned and just about agreed..."

LATERAL THINKING

The VW Group scandal simply reflects a firm with traditional racing guile

HERE ARE PLAINLY MANY MORE headlines to come in the VW emissions scandal. Observing its progress from the touchline I can't escape the feeling that a racer was initially involved. Bending a regulation, or weaving an arguably permissible route around one, is deeply embedded into any real racer's DNA.

Consider the 1981 ban on F1 cars' sliding skirts. It heralded the fleeting age of so-called 'clearance cars' by demanding a 6cm clearance between an F1 car's lowest suspended part and the road surface. FIA luminaries had been reassuring teams that skirts would still be allowed, but apart from the 1981 South African GP (deprived of world championship status) the 6cm clearance rule applied. Gordon Murray of Brabham said at the time: "We had discussed such a rule and rejected it as unenforceable. Now we had a month to build clearance cars before Long Beach" so he and colleague David North "took the rules and read them closely again..."

They were confident every team would fit soft springs and allow aerodynamic loads to force their cars closer to the track, whereupon fixed-skirt ground-effect sections would begin "to suck", exerting their download, overcoming the lack of sliding skirts to provide consistent sealing against ambient-air in-fill.

No part of the car would be closer than 6cm to the ground except wheels and tyres "when measured". Certainly "no part would systematically or permanently touch the ground" as had the old sliding skirts (as prohibited by the new ruling). Even had sliding skirts been retained, if the car hit a bump or more so a kerb then the skirt would surely leave the road surface for a moment, which would alone constitute "not permanently touching the ground" – clearly demonstrating the new rule's semantic limitation.

So it was simply unenforceable. It said nothing about measuring the car's clearance at speed. As Gordon said: "If you set a Ford Escort at 6cm clearance when stationary and then drive it on the road, it's going to squat and at some time it'll clear only 5.99cm, so did that mean we had to set cars at 7cm static, so they would go no closer than 6cm at speed? That's not what the rule said. It was stupid. We told them it would be unpoliceable but we built a system that complied with it to





Top, Nelson Piquet heads for victory in the 1981 Argentine Grand Prix - despite imperfections with the innovative suspension system overseen by Gordon Murray, above the letter – confident everyone else would be doing the same thing."

Murray and North selected a soft air spring that stored the energy by driving down a hydraulic piston – piped to cylinders on each suspension corner – compressing air in a central reservoir. By carefully choosing orifice sizes, fluid could be bled back to the cylinders, pumping the suspension back up. So the car would in effect be blown down by download as it gained speed. Fluid would be forced out of the cylinders, load the piston, and compress air in that central reservoir. "Then if we got the bleed rate right, the car would stay down through slow corners without springing up suddenly as download diminished. Once the car slowed on its way back in, the compressed air would force back the reservoir piston, fluid would bleed back into the cylinders on each suspension corner and the car would rise."

And there's the key – compliance could only be verified *at the moment of measurement*. The clearance cars of 1981 complied. At Long Beach, to Brabham's astonishment, they found their cars were the only ones so equipped. But using plastic hydraulic lines to save weight was a mistake. They blew off or melted. Fluid leaked and the car sank, so Nelson Piquet ran finally with conventional suspension.

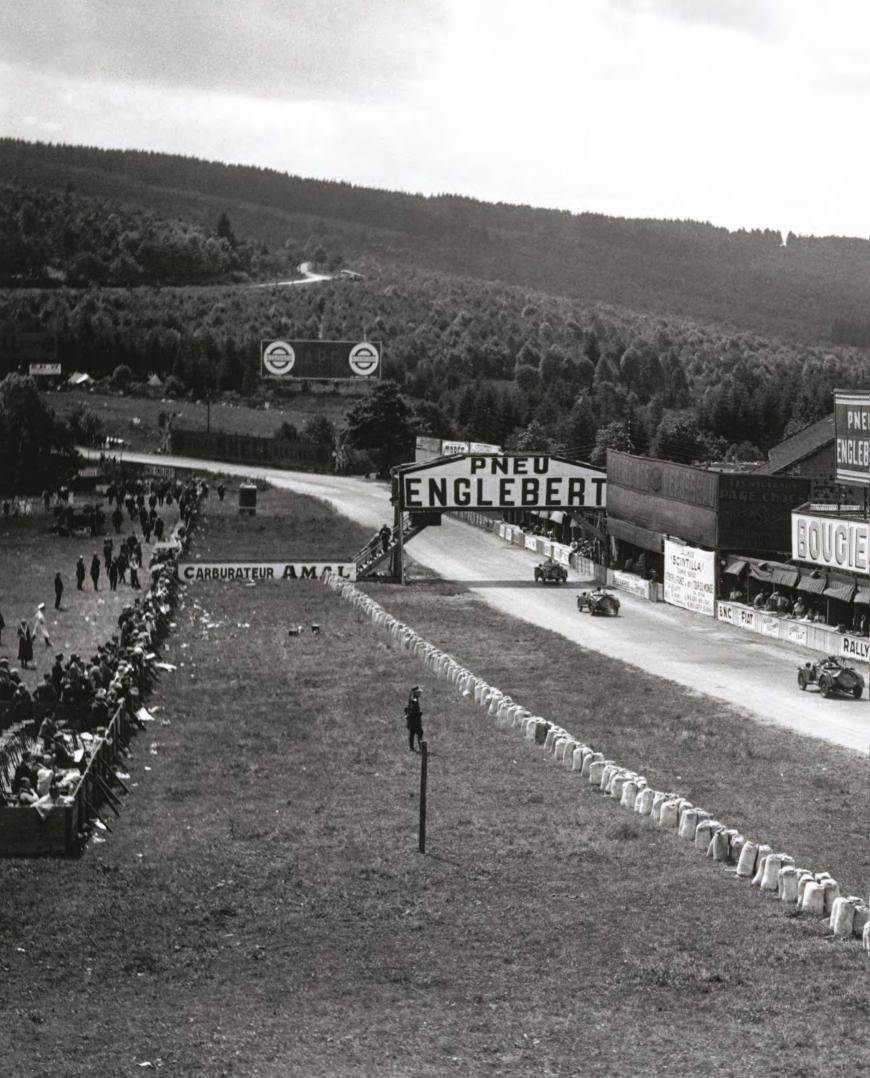
In Brazil problems persisted, but Nelson qualified on pole. The team's fixed skirts attracted attention, made from a material that could not survive extended ground contact. Williams and other rivals protested to establish what was considered legal and what was not. They objected to the skirts' floppiness, which enabled them to suck in and run on an air-bleed bearing that kept them effectively airborne, barely above the road surface. This movement was considered to contravene the requirement "to remain immobile in relation to the sprung part of the car". Gordon argued "Everything moves to some degree. How rigid is rigid? How do you define it?"

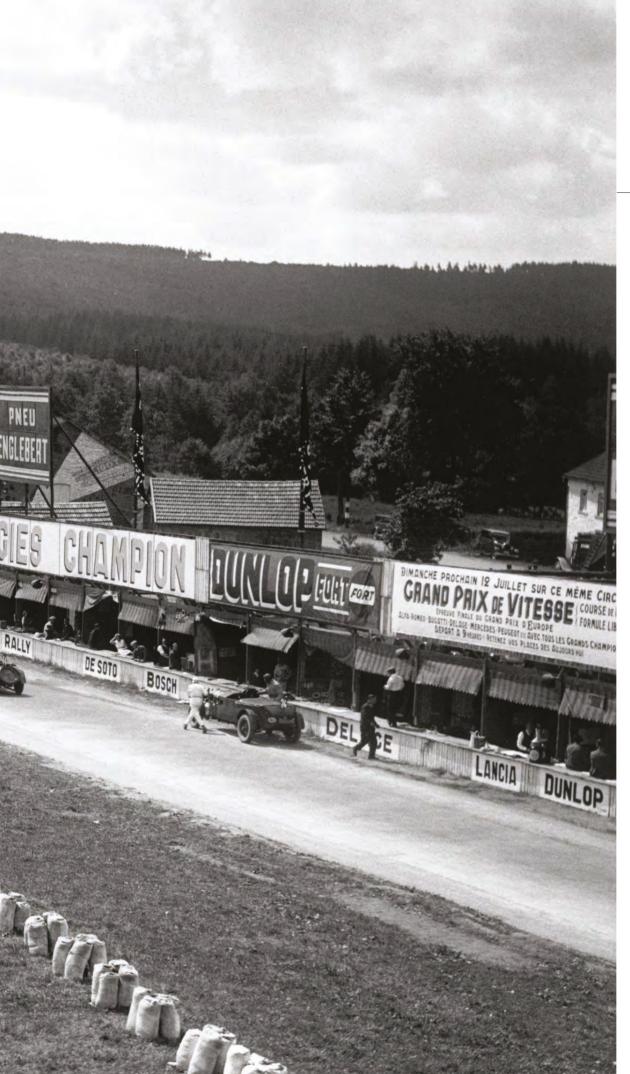
So for the Argentine GP everyone ran some kind of skirt system. But Brabham's lowering devices remained troublesome. A Mark II system used in Buenos Aires would not stay down out of slow corners – but Nelson gained so much time round the quick bits that it compensated and he won.

For Imola a Mark III system proved reliable until the last 10 race laps, when Nelson rocketed past the pits "like a power boat with the car's nose jammed up and its tail still down". He still won.

A FISA meeting then issued one of its famous 'clarifications', specifying uniform skirts, maximum 6cm deep and 6mm thick. It was plain that lowering systems, though ethically illegal, could not be policed. Brabham's system needed no switches but at Monaco they put a switch on one car and kept the defensible system on the other. Gordon: "I wanted to put a big notice on the switch saying 'suspension height correction switch' but Bernie wouldn't let me..."

The cars had gone from some 6.5 inches total wheel movement to 1.5 inches, half of that provided by tyre flexure. What had been brought about allegedly by the drivers' plea to ban skirts to provide slower, safer cars had resulted in the cars battering themselves and their drivers apart. The law of unintended consequences had struck again – but where a legal requirement can only be measured by a one-time test, a racer will always find a way around it. Competitive forces mean they can't help themselves. Transfer that mentality into major industry and it's asking for trouble.





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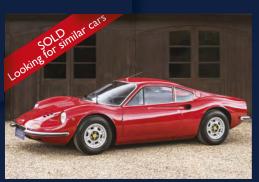


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1981 Renault 5 Turbo 1 Group 4 Price: £125,000 | Mileage: N/A

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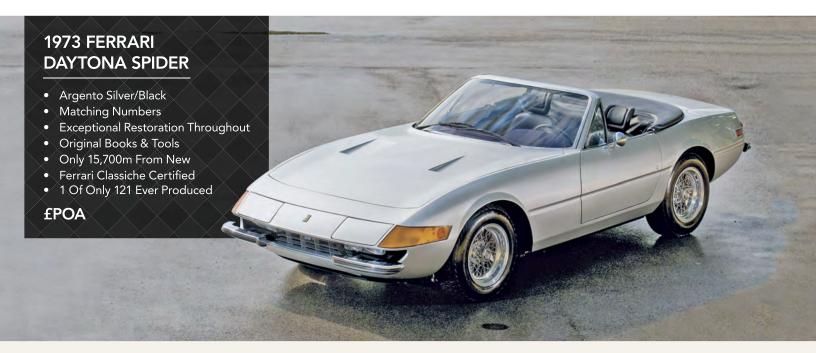
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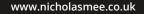
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Ferrari 275 to 'Speciale' Spec



Lotus XI S2 (choice of 2)



Healey 100S FIA HTP



Aston Martin DB2/4 MK3



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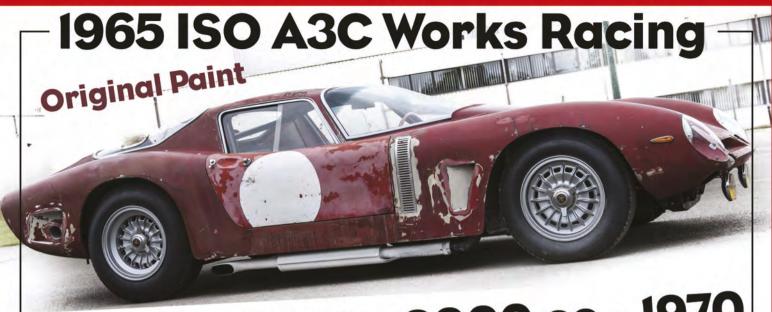


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Lotus 78 F1 with Ford Cosworth DFV

The iconic Lotus 78 was driven by Mario Andretti, Gunnar Nilsson and Ronnie Peterson during the 1977 and 1978 seasons.

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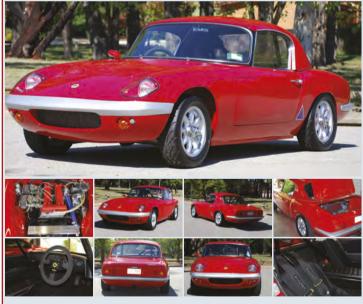
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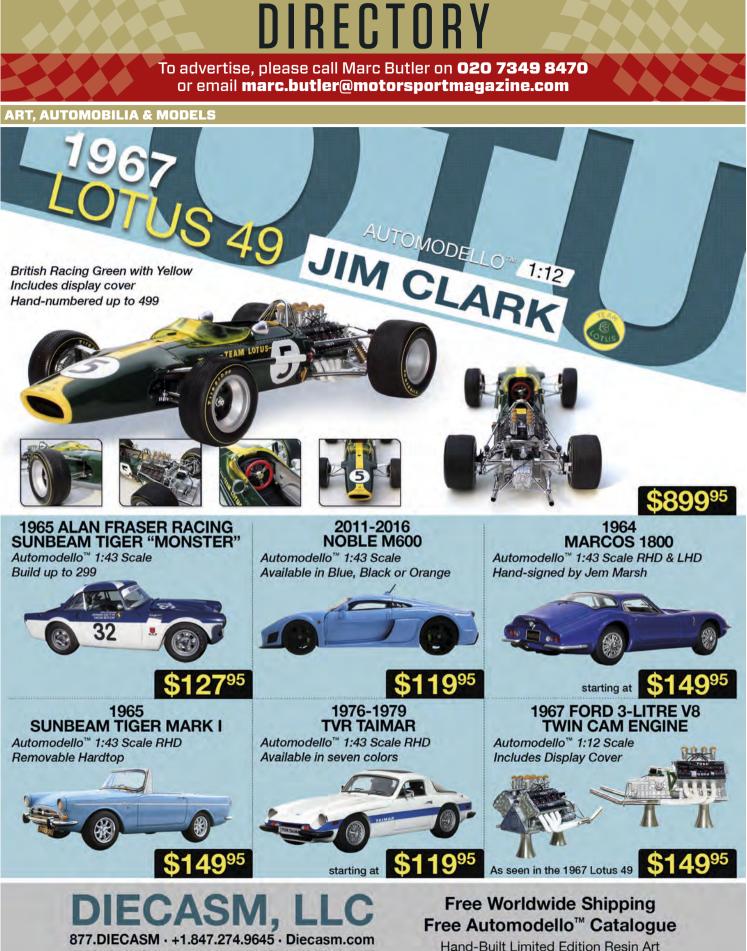
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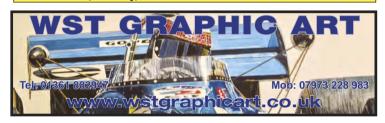
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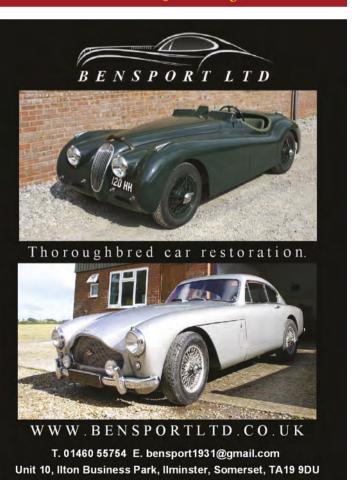
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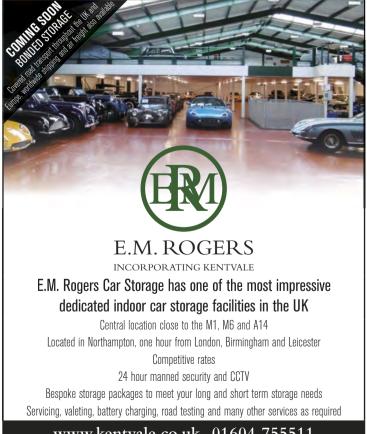
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1970 Aston Martin DB6 MkII FI finished in Aston Racing Green with tan hide interior. This



1958 Aston Martin DB MkIII finished in Regal red with cream hide interior. It has been owned for the past 30 years by an AMOC member and during his ownership it has been fully restored. It is a matching numbers car fitted with overdrive and used regularly for motoring events. Please enquire for more details



1962 Jaguar E type 3.8 FHC race car. This is a freshly built car by Wren Classics raced only once since completion in 2015. It comes with current HTTP papers for GTS group7 allowing it to race in numerous high profile events. Engine by Peter Landers o Sigma Engineering, fresh straight cut gear box by Dennis Welch. On the button and completely ready for 2016 season ...£165,000



1962 Jaguar 3.4 MkII finished in Gunmetal grey with contrasting red hide interior. His is a very well kept example sitting on chrome wire wheels with the benefit of a manual 4 speed gearbox with an overdrive. The car has been the subject of regular maintenance and is excellent value for money in today's market. Very sensibly priced at£27,950



1963 Corvette Stingray finished in Deep Ocean blue and prepared for Historic racing. It comes with FIA papers and is eligible for numerous high profile events but is road registered and comes with its original interior and competition seats for racing. Realistically priced at ... £65.000



1978 Bentley T II. A beautiful example finished in Walnut Metallic with Dark Brown Interior and previously owned by a Bentley Driver's Club Committee member. Fitted with most available options and comes with a large history file with main agents and reputable specialists and with al original handbooks. These cars, if key in this condition represent quite exceptional value. Very realistically priced at£15,950 Visit our website at www.runnymedemotorcompany.com



Aston Martin in the Thames Valley

MOTOR

1990 Aston Martin Virage Coupe. A rare opportunity to acquire a beautiful example that has been serviced from new by Aston Martin Main agents and respected specialists. Finished in Buckingham Green with tan hide and just renewed wood veneers and fitted with automatic transmission, air conditioning and 5 spoke Volante alloy wheels. The car drives exceptionally well and has covered just 53,000 miles and comes with a very detailed history file. £55,000.



1963 Austin Healey 3000 MkII finished in Colorado Red and fully prepared by Denis Welch Motor Sport and a front runner in the Healey Championship. The car has a freshly rebuilt competition engine by Denis Welch and a full specification of this Alloy bodied Healey is available on frequency Low competition wind at the second request. Very competitively priced at £89 950



1962 Jaguar E type 4.2 series one finished in Gunmetal Grey with contrasting Burgundy hide interior. This Matching Numbers example is nearing completion following a chassis up restoration to the highest standard. Fabulous value at£115,000.





1965 Ford Mustang 289 Notchback finished in Racing green and fully prepared and sorted for historic racing. Whilst the current spec is beyond FIA, it can be raced in numerous race series and would easily convert back to FIA spec. This is one of the best prepared race cars we have had the pleasure of being able to offer and is race ready for 2016. Huge history file. A real bargain for one in this condition at 75,000







Mobile

 $(07836\ 222111)$



1961 Aston Martin DB4 series IV finished in Kingfisher blue with tan hide The story watches and the second seco



1955 Aston Martin DB2/4 finished in Royal Blue with cream hide interior. Sold by us to the present Dutch owner in 2005, the car has been regularly maintained and used for motoring events in Europe. It has been kept in excellent condition and any inspection is welcomed. Please enquire for further details......£195.000 further details.



1963 Jagmar 3.8 E type Lightweight finished in British Racing Green and built about 20 years ago by Phil Stott to a very high standard. Sigma engineering engine producing in excess of 300 BHP and highly placed in the Spa 6 Hours on two occasions. Prepared for 2016 season and competitively priced at£139,950





1981 Ferrari 308 GTSi (LHD) finished in Black with contrasting red hide interior and having covered just 16,000 miles from new. It has had just 3 owners and comes with a considerable service record and is now very ow very .£69.950 realistically priced at



1976 Rolls Royce Silver Shadow finished in walnut with tan hide interior. This is a stunning example with a complete service history spanning 4 service booklets backed up by a file full of invoices. It is a beautiful driving car and needs no further description. Probably under valued at only £14,950

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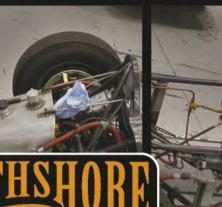






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