

WHY **NEW-LOOK F1** WILL BE FASTER THAN EVER

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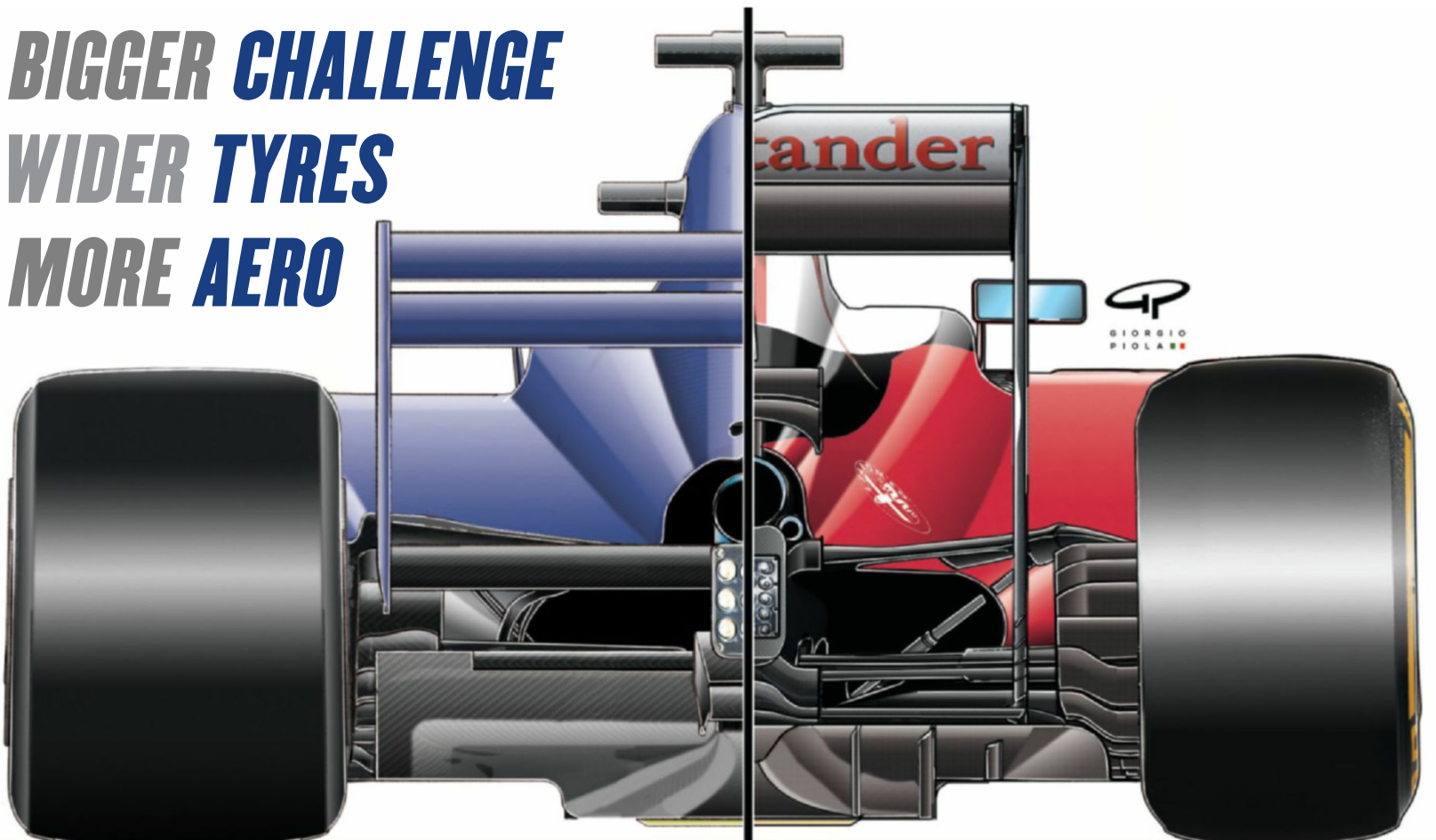
F1 2017

ALL CHANGE BUT WILL IT BE BETTER?

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WIDER TYRES

MORE AERO



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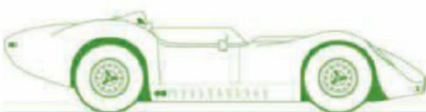
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The pros and cons of new-look F1 in 2017

THE PRELUDE TO ANY FORMULA 1 SEASON TENDS TO bring excitement because there is always the potential for change. Will the reigning champions remain on top? Who can challenge?

This year those questions are only part of the intrigue, thanks to a new set of regulations designed to make the cars faster. Wider tyres and dramatic aero should make the 2017 grid look a lot beefier and there seems little doubt that F1 lap records, many of them still held by the remarkable Ferrari F2004, will fall.

Drivers and fans alike have been calling for a greater challenge – in the form of higher corner speeds – for some time. Assuming Pirelli is up to the task of providing tyres that can cope with the new loads, F1 2017 should deliver that. It will also be fascinating to see how this generation of designers, brought up on ever-more-restrictive aero regulations, responds to things being opened up.

There are, however, two chief concerns. The first is overtaking. Traditionally, higher cornering speeds and more aero mean shorter braking distances and less overtaking. Just how long will it be before the same people who called for faster cars decide what they really want are F1 machines that can pass each other?

The second thing we all want to see is someone challenging Mercedes at the front. New rules open up the possibility of another squad stealing a march, but generally the bigger teams have the resources to respond quickest and best. Mercedes still has to be the favourite, even though we haven't yet been told officially who will be alongside Lewis Hamilton.



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Giorgio Piola

COVER STORY

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FORMULA 1'

2017

REAR TYRES

80mm wider

WEIGHT

Minimum weight of car raised by 20kg to 722kg (without fuel)

CAR WIDTH

Increased by 200mm to a 2000mm limit

REAR WING

200mm wider, 150mm lower, with swept endplates

DIFFUSER

50mm higher, 50mm wider, and 175mm longer

ENGINES

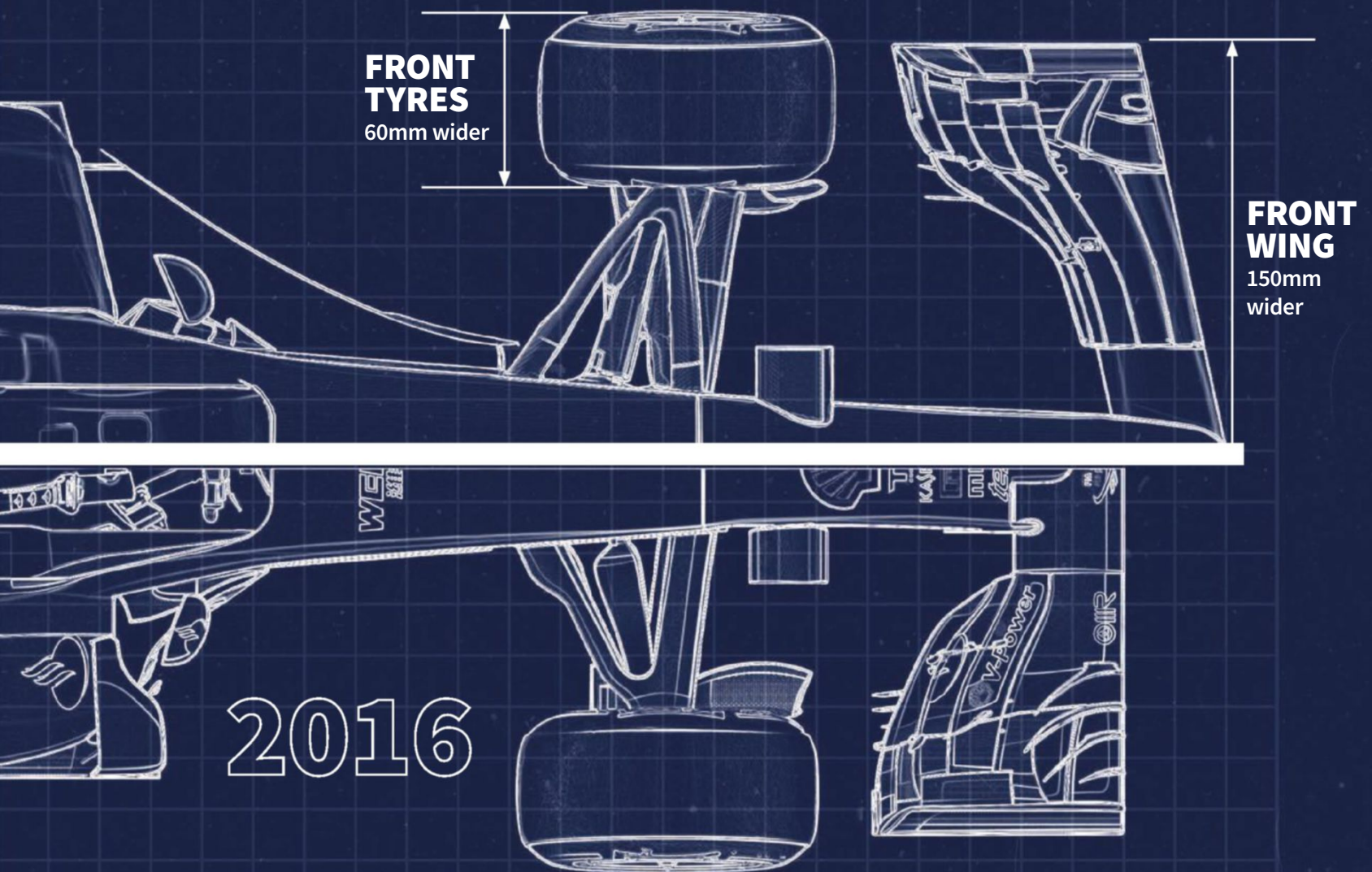
Token system abolished, but new limits on development of certain components

S NEW LOOK

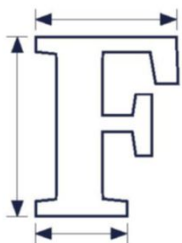
New regulations for 2017 are designed to make the cars faster, more spectacular and harder to drive. But what will the new machines look like and will they succeed in their objectives?

By Ben Anderson, Grand Prix Editor

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WHY THE BIG CHANGES?



Formula 1 is preparing itself to be bigger and better in 2017, with larger cars, enhanced aerodynamics and wider tyres, all of which are expected to make the cars comfortably the fastest we've ever seen in F1.

The changes are principally designed to restore some of F1's lost visceral appeal by making the cars more difficult to drive and more spectacular to watch. The hope is that drivers will be pushed to their physical limits again, rather than 'merely' driving around slowly to target lap times in order to protect the tyres.

F1 is banking on pure speed, expressed in the form of substantially quicker lap times, as the method by which it will be boosted among both fans and participants.

"We lost a little bit this 'wow' effect we had in Formula 1," argues McLaren racing director Eric Boullier. "Cars were heavier by 120kg, and we are now in a situation where you save fuel, you have to save tyres – it's not in the DNA of racing, which is to push as much as you can from point A to point B.

"Also, the cars are less exciting for the drivers – especially the drivers who knew the 2003-06 cars. These years the cars were very physical to drive.

"We have to bring F1 back to its DNA. That doesn't mean we are less safe, but we need to bring F1 back to this car that is very late braking, the cornering speed is unbelievable, and the grip is the best in the world."

The drivers will surely welcome this kind of Formula 1 with open arms. Many of them have been among its most vocal critics during the V6 hybrid-turbo era that began in 2014.

The 'quiet' sound produced by the engines (something that is still being worked on by the manufacturers) and Mercedes' utter dominance of consecutive championships hasn't helped. But the drivers are mainly bothered by the (lack of) challenge posed by the cars.

Double world champion Fernando Alonso has regularly spoken of his fear that GP2 lap times have got too close to F1, and even suggested, after observing much of free practice for the Brazilian Grand Prix from trackside, that fans should be paid to watch F1.

The drivers haven't enjoyed the lack of noise, they haven't enjoyed the lower cornering speeds (even though top speeds have gone up), and they have continued to complain about having to spend most of their time driving conservatively to look after the tyres (even in qualifying), rather than testing the outer limits of their personal skills.

"In F1 as it is now you always have to compromise your driving style," explained Kevin Magnussen at the end of last season. "It's about finding a good balance between things, and not pulling everything out of your lap, because you are over the limit from the moment you leave the pits – it's very easy to be on the limit with the car.

"It's very different to what I prefer. These cars are a little bit overpowered for what [grip] we have. The car is always sliding, too much wheelspin, it doesn't ever feel like you are glued to the track. It's so easy to get to the limit of the tyres. It's a bit like driving a Formula Ford, made easy by power-steering! There's no risk at the moment. It might change next year. I hope so."

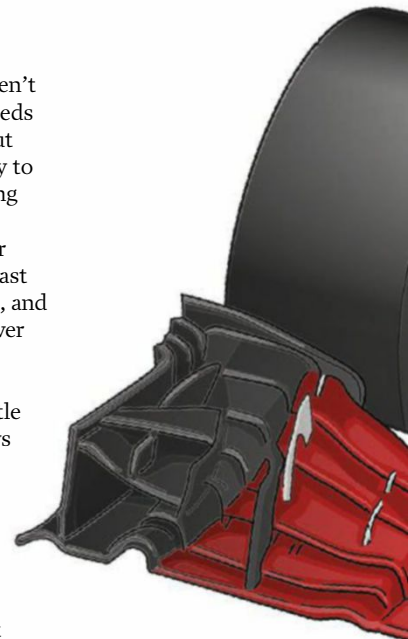
Magnussen is not the only one, and there is no doubt that F1 cars will be substantially different in 2017 – what ex-Williams technical chief Pat Symonds agrees will be an "evolution-plus" of the current breed.

There will inevitably be a natural boost in interest initially, as everyone cranes their necks to see what sort of spectacle and competitive order this latest holy grail brings to F1.

"All this was predicated on Bernie Ecclestone saying he wanted the cars to go five seconds quicker, and this will cure all the problems of the world, in the Middle East and probably the Russian borders," says Symonds. "I suspect it won't."

F1 is forever grappling with competing identities. Is it about the best drivers, or the closest racing and competition, or the most technologically advanced and quickest racing cars – and can it somehow reconcile all of these elements with competing commercial and political interests?

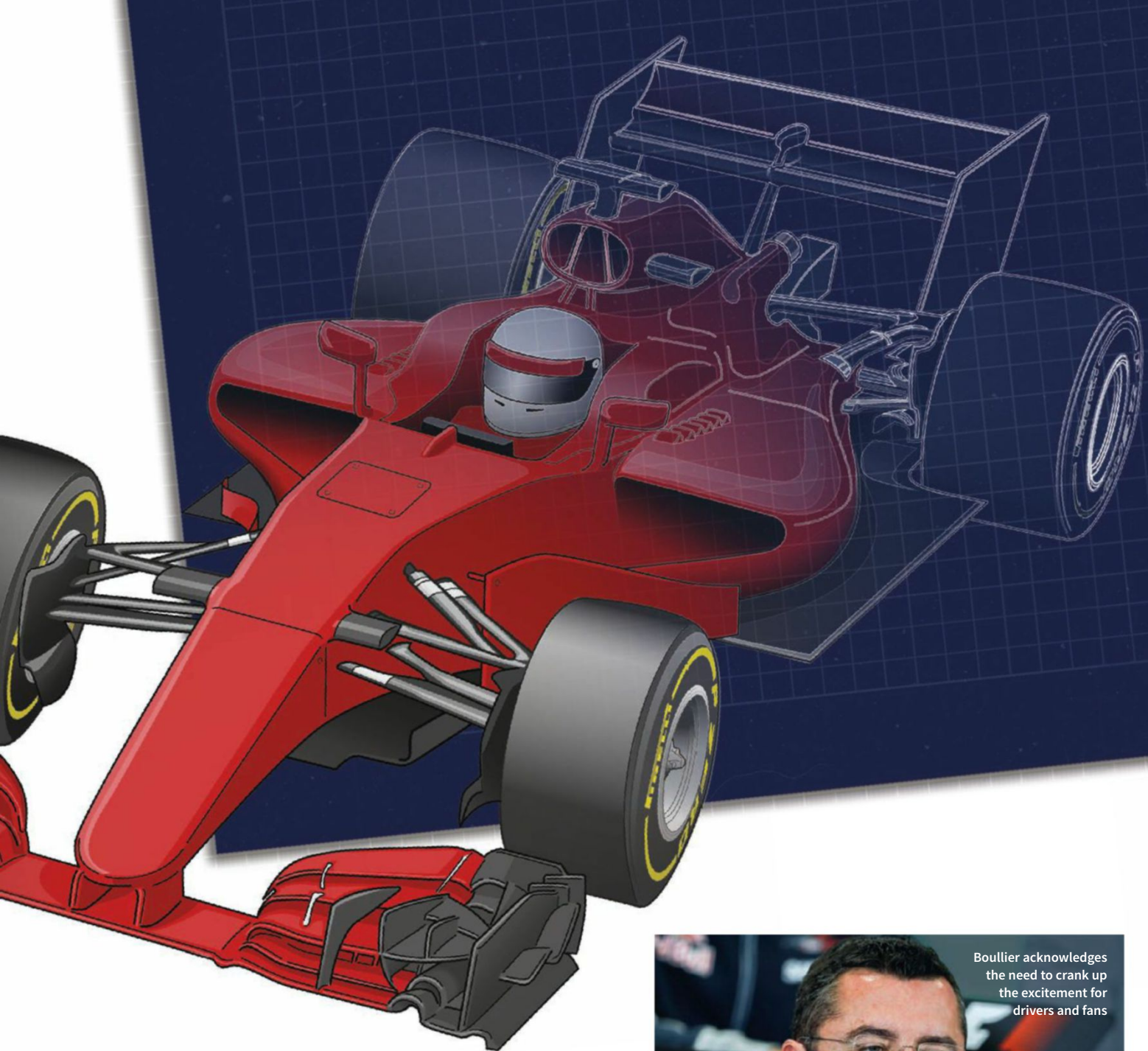
The 2017 rules changes don't solve this conundrum, but they do suggest that F1 has decided to prioritise featuring the quickest racing cars on the planet above all else. Even though,



Is this a blueprint for sorting out F1's entertainment shortfall?

The 'more-physical-to-drive' 2004 Ferrari and '05 McLaren represent an ideal for F1's rulemakers





“We lost a bit of this ‘wow’ effect we had in Formula 1. Saving fuel and saving tyres is not in the DNA of racing”

on a full-blooded qualifying lap, the Mercedes already is...

F1 will have to live with the consequences of this choice. Beefier aerodynamics and better tyres should equal more impressive cornering speeds, and greater technical and physical demands on the drivers, but with the likely consequence that races will now feature fewer overtaking moves – perhaps a good thing if extreme tyre degradation and DRS have made this art form less significant – and greater strategic convergence.

It will also need to grapple with the paradox of a tougher formula being less obviously visually arresting, though it will be welcome to see F1 cars being driven harder more often.

“What will it do to the racing? I think there are two things there,” adds Symonds. “One is that we have got more downforce, and the generalisation is that it’s harder to overtake a car the more downforce it’s got. It is true, but it is a generalisation, and there’s an awful lot about the detail we don’t know yet.



Boullier acknowledges the need to crank up the excitement for drivers and fans

DUNBAR/LAT

“The other thing is time with a constant set of rules brings equalisation. The fact is if you leave a set of regulations alone for 10 years, in 10 years’ time the cars will be closer to each other.

“We’ve done the opposite to that – we’ve ripped it up again. That might change the pecking order; it might separate things out. It’s hard to say.”

The key, as ever, will be competition. No-one will mind the consequences much if (and it’s a big if) the championship fight is closer this year.

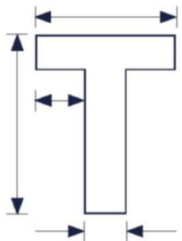
It would be fantastic to see Mercedes, Ferrari and Red Bull all able to stand a realistic chance of victory at every race if they do their jobs properly, McLaren-Honda and Renault coming fast in their mirrors – perhaps even Force India, Williams and Toro Rosso too on their good days.

Otherwise F1 2017 could end up pleasing drivers and engineers, but no-one else. >>



ETHERINGTON/LAT

F1'S BIGGEST RULE CHANGE IN 'DECADES'



here is already some disagreement over the magnitude of F1's 2017 regulation changes, with Toro Rosso technical director James Key calling it the biggest in decades.

"It's a massive change," he says. "Honestly, from a bodywork and suspension and tyre point of view, this is the biggest one I've experienced in almost 19 years in F1. From a chassis point

of view, it's the biggest change of the past two decades – even bigger than 2009, and certainly bigger than '14."

But Williams's Pat Symonds, who was involved in the Overtaking Working Group that drafted the 2009 rules, feels '17 is more evolution than revolution.

"I really don't think I'd call it revolution – everything is quite logical," he says. "But it is a lot of change at once. In 2009 we changed aero and went to slick tyres, and that was a much bigger change than a little bit of width change, so it's not unprecedented. The thing that's unprecedented is it's the first time in my career where we've been given a set of rules that has the potential to generate more downforce."

And that's the key point. F1 has for years tried to heavily restrict aerodynamic development in the interests of safety, continually tweaking the regulations to restrict the ingenious engineering that constantly finds ways to make F1 cars faster.

Limits on windtunnel and CFD use will remain, but the basic cars should be significantly quicker than their predecessors, and development should happen at breakneck pace as designers are afforded greater freedom to chase performance.

Aggressive aero development

"I think everyone understands what the changes are – it's a wider, swept front wing, the rear wing is wider and lower, we have a bigger diffuser, the car is wider, and we have more design freedom around the front of the sidepods [for bigger

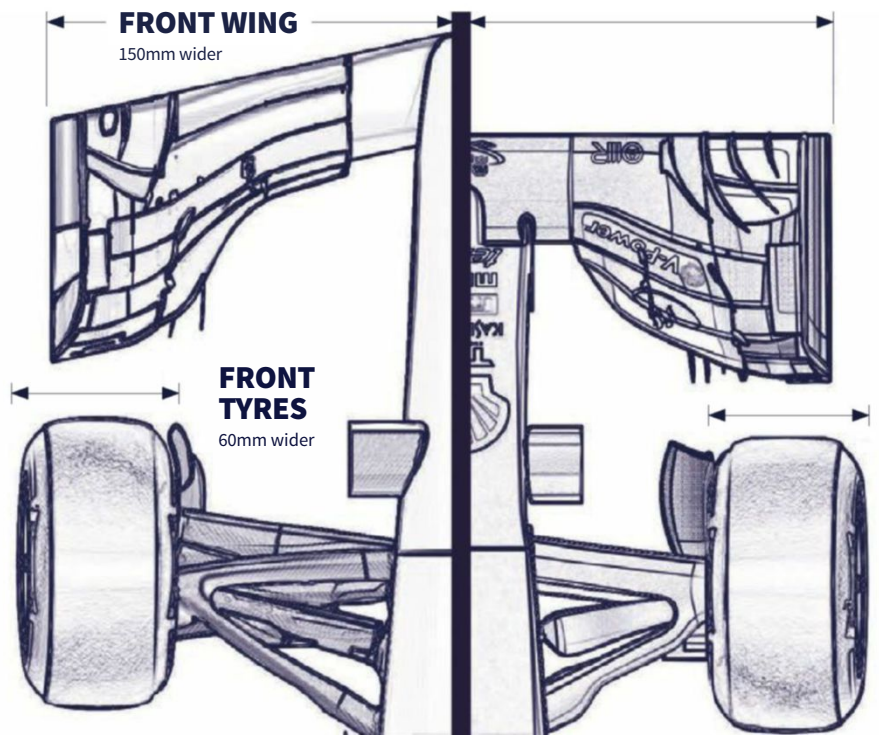
bargeboards]," explains Symonds. "The net result is that we could see 25% more downforce on the cars by the end of the year.

"What I should say is the *potential* for 25% more downforce, because you've also got the drag that goes with it, and added to that you've got the drag that comes from the wider tyres."

Consequently teams are readjusting their mindsets after years of trying to make the most of developmental areas that have steadily been decreasing in size.

"The playground for aerodynamic development has just

Toro Rosso tech chief James Key reckons this year's changes are on a greater scale than 2009's (above)





“I really don’t think I’d call it revolution – everything is quite logical. But it is a lot of change at once”

opened up immensely,” says Force India technical director Andrew Green. “The team is still trying to grasp the concept of what they can do now. They’ve been working in such a small area, and a lot of the time I have to shake them and say, ‘Forget about that tiny thing, look at all this shit. Go play, go see it!’

“The numbers keep climbing and climbing, so it’s going to be an interesting year.”

Cars that push the drivers to their limits

This is at the crux of the 2017 rule changes, the aim being to make Formula 1 cars lap significantly quicker by doing what they do best even better – go around corners faster than any other racing cars on the planet. Symonds expects “quite a significant increase” at circuits where teams will be able to make the most of their cars’ potential.

“Typical 200km/h [124mph] corners that make up so many tracks, you’re going to see that going up from 200km/h to 230km/h [143mph] or so. It’s significant as a number, it’s significant as a lateral acceleration – it adds a g to it.”

This will have a knock-on effect for drivers, with Force India’s Sergio Perez predicting they will be “destroyed” during pre-season testing while they build up resistance to the increased loads.

Mercedes restricted Lewis Hamilton and Nico Rosberg to half-day programmes during the 2016 pre-season at Barcelona, thanks to the strain created by each of them completing more than 150 laps per day. But Perez predicts the drivers will adjust quickly, while McLaren racing director Eric Boullier and Symonds reckon the cars will be no more physical to drive than they were 10 years ago. “We’ve had close to these levels of downforce in the past, and cars that have got power-steering and can handle the increased loads, the wider tyres, and things like that,” says Symonds. “They will be a lot more physical to drive than the current cars, but I really don’t think it’ll be a big thing.” >>

SPORTING REGULATION CHANGES

STANDING RESTARTS IN WET WEATHER

Should a race start under the safety car because of wet conditions, when the track is ready for green-flag racing a standing restart will now be used. The safety car will pull into the pits, with the cars lining up on the grid in race-position order. A normal race start will take place, although laps under the safety car will count towards the race distance (with one lap subtracted from the distance). But in the case of a race suspension the restart will use the safety-car procedure without a standing start.

NO MORE ENGINE STOCKPILES

Grid penalties remain for the use of power-unit elements beyond the permitted four. But to prevent teams introducing multiple fresh components after incurring an initial penalty, effectively allowing them to stockpile new elements without any further penalty because starting at the back of the grid is the maximum, the rules have been tweaked. The regulations now state: “during any single event, if a driver introduces more than one of the same power-unit element which is subject to penalties, only the last element fitted may be used at subsequent events without further penalty”.

CHASSIS-CHANGE PENALTY

If a driver has a change of monocoque after the start of the third free practice session, they must now start the race from the pitlane. Previously, a chassis change after FP3 was permitted, most recently allowing Jolyon Palmer to start the 2016 Mexican GP from the rear of the field after picking up damage on Saturday morning and missing qualifying. He would now have to start from the pits.

OLD-SPEC ENGINES

The original intention of the 2014 regulations was to prevent variation in engine specifications, meaning out-of-date power units could not be run. But dispensation was given to Manor in ’15 and Toro Rosso last year to run year-old Ferrari engines. Now, old engine specs are permitted, but “the FIA must be satisfied, at its absolute discretion, that such a power unit could fairly and equitably be allowed to compete with other homologated power units”. In ’17, Sauber is running year-old Ferrari engines.

TYRE CHOICES FROZEN TEMPORARILY

Teams will not be able to select their own tyre-compound allocations for the first five races of 2017. Pirelli will dictate not only which three compounds will be available for each of the first five races, but also how many of each one teams will have available. After that, free choice is set to return.

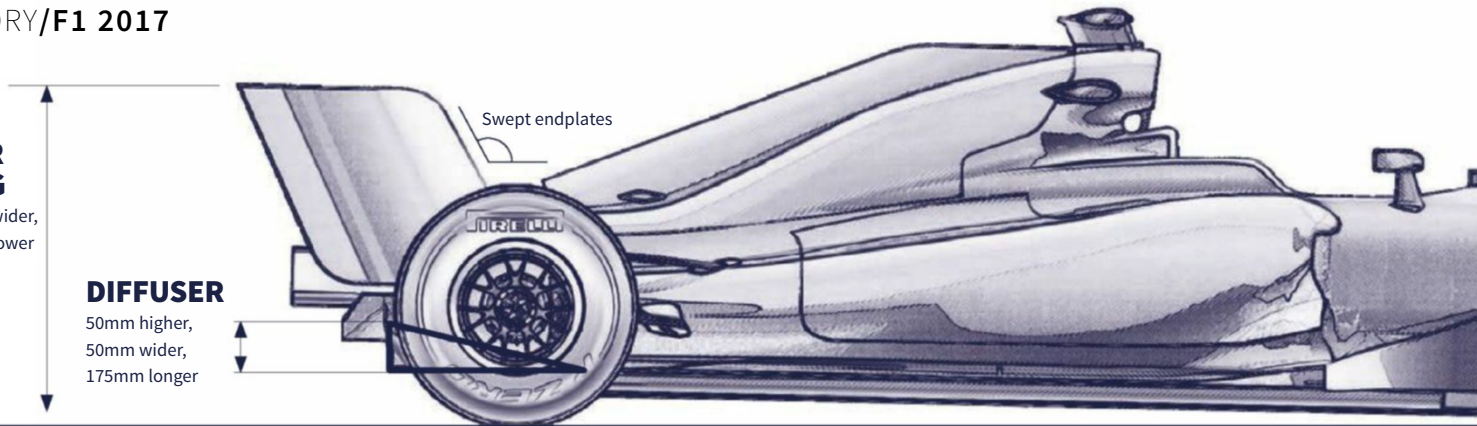
EXTRA INTERMEDIATES

In 2016, drivers were given a fifth set of intermediate tyres if either Friday practice session was declared wet. This year, the extra set of intermediates will now be given to each driver after a dry Friday if the FIA deems the chances of FP3 being wet are “high”.

LISTED PARTS

Following controversy over Haas’s success last year, the so-called ‘listed-parts’ rules have been tightened. These are the parts to which a team must own the intellectual property if it’s to be considered a constructor. Rules on non-listed parts have also been addressed. Changes include forcing teams to carry out their own aerodynamic and CFD testing of any parts; and tightening up rules preventing staff moving between teams to circumvent such rules and stopping the sharing of excessive information about parts.

EDD STRAW

REAR WING200mm wider,
150mm lower**DIFFUSER**50mm higher,
50mm wider,
175mm longer**EXPERT VIEW****GARY ANDERSON**

The 2017 regulations are aimed at making the cars faster, more spectacular and harder to drive. But they are going in the wrong direction to make the racing better, which is what we all want. It's definitely the wrong direction to ensure that costs are kept under control, as a change like this could easily double a team's development budget.

While the diffuser rule changes are supposed to make it easier to follow another car, and the increase in tyre width should allow more mechanical grip, not enough has been done to create robust aerodynamics that allow cars to follow more closely.

It is true that downforce produced by the underbody is less susceptible to turbulence, as it works as an expanding duct with the opposing surface being the ground. Because the car's ride height constantly changes, to make the ground effect work the design needs to be robust. But that isn't going to be enough because the front wing is still going to be critical to the car's overall downforce, and will lose performance in turbulent air. This turbulent wake coming off the front wing will also be detrimental to the underfloor.

It's hard to judge how well the tyres will work, because we have yet to see what Pirelli has come up with. But with the fronts and the rears being about 25% wider, that should equate to a significant increase in grip. We have no idea what the wear and degradation will be like, though.

In terms of the aerodynamic challenge, this is a big change. The wide tyres will have an impact on the way the front-wing endplates have to work to turn the airflow outside the front wheels, and teams will have gone back to the drawing board to make the most of the return of bigger bargeboards and the like.

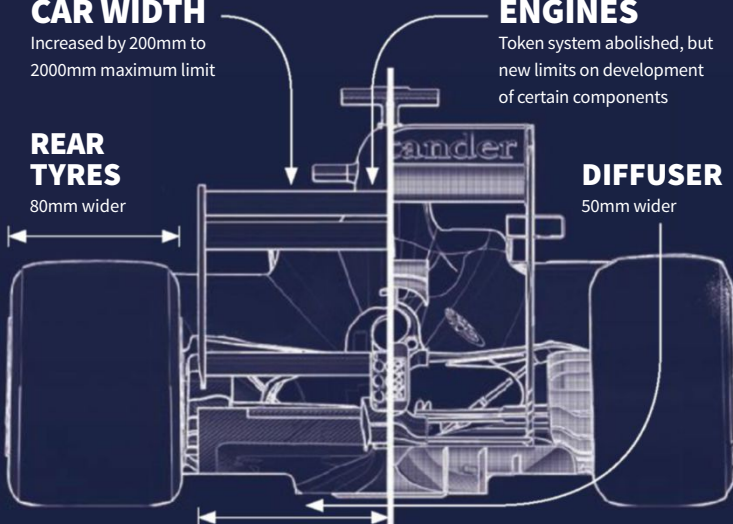
It's certainly enough to make the cars a good few seconds faster, and create the chance for the competitive order to move around. But anyone thinking these changes alone are going to transform F1 is going to have an unpleasant surprise come the Australian Grand Prix, because they simply do not go far enough.

CAR WIDTHIncreased by 200mm to
2000mm maximum limit**ENGINES**Token system abolished, but
new limits on development
of certain components**REAR TYRES**

80mm wider

DIFFUSER

50mm wider



“The big teams will be at the front. But there is room for somebody to punch above his weight”

“It's not an unknown difference,” adds Boullier. “Physically I think it'll be similar to 2005 or '06.”

Cars that look better

The upshot of these new regulations is the potential to improve the aesthetic appeal of F1, with cars that look more aggressive.

“From an aesthetic point of view the new design is going to be very exciting as well,” says Force India deputy team principal Bob Fernley. “It's much more swept back, it's more modern. We get rid of some of the boxiness of the [old] car.”

Greater set-up variation

Recent F1 cars have tended to run with as much downforce as possible at most tracks, with only slight variations in wing angles according to preference, and occasional special configurations for particular circuits. Symonds reckons the vast increase in aerodynamic potential of the 2017 machines could lead to greater variation in aero settings between teams from circuit to circuit.

“With the current formula we tend to run maximum downforce pretty well everywhere – you take it off for Monza and Spa and Montreal and that's about it,” he says. “But I think this year we will see each circuit has its optimum, and we'll be moving around a lot more.”

“Monza I don't actually think will be much different because, although we've got more intrinsic drag in the car, the quickest way to run the race is to reduce the downforce even more than we would have done. So at Monza we're going to see similar end-of-straight speeds. At the other end of the spectrum is a place like Barcelona, where you can pile downforce and drag on and you still go quicker.”

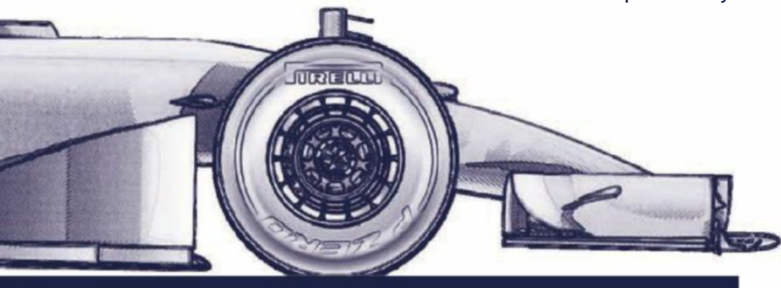
“Bear in mind that at a place like Monza, if we feel the fastest way around is to have a similar end-of-straight speed but we've got more drag from the tyres, it means we'll have to take off even more wing – so through a corner like Parabolica we'll be a bit slower than we were last year, so we're going to see more variation of set-up.”

Tyres are the great unknown

Pirelli will produce bespoke wider tyres for this new generation of F1 car, having been tasked with a dual brief of increasing the proportion of mechanical grip available through the profile of the tyres, while also reducing degradation in order to allow drivers to push the limits of the cars for longer in races.

The Italian tyre manufacturer tried various prototypes across 24 days of testing in 2016, completing an estimated 7500 miles

Swept-back look is intended to please the eye



of running using '16 cars from Mercedes, Red Bull and Ferrari that were adapted to replicate some of the aerodynamic profiling expected on the '17 cars.

What sort of tyres Pirelli produces, and how they withstand the loads generated by the 2017 cars, is the great unknown heading into this year. The test mules naturally fell significantly short of producing the simulated loads expected from the actual '17 cars, and Pirelli admits the rubber will have to be modified once the season is up and running.

"Tyres is the bit nobody knows," agrees Symonds. "I guess the thinking is, 'Well, it's a wider tyre – there must be more grip,' but what makes a wider tyre have more grip is lots of things: an increased contact-patch area, lower shear stresses in the contact patch so that you can run softer compounds, all this sort of stuff.

"The contact patch is wider, but it's not quite as long, so you haven't got the increase in area that you quite think. On top of that, a lot depends on where we get to with compounds, because under the new supply contract there was a requirement from the FIA, driven by the teams, as to what the tyres should be like.

"They specified levels of degradation and levels of performance, relative levels of degradation, relative levels of performance, and also the idea that if you did overstress the tyre, it comes back to you – not like the current tyres. We have no idea whether we're getting to that or not, and I think that's going to be the real determining factor. Until we start testing in February, we're not going to know exactly where we are."

Will the changes harm the racing?

The drivers are excited by the prospect of driving substantially quicker cars, and potentially being able to push them to their limits more often, but some have already raised concerns about the possible consequences for the nature of the racing.

Whether the continued presence of DRS on the rear wings, and the potential for generating more downforce from expanded diffusers, is enough to offset the likely impact of reduced braking zones, less variability of tyre grip between cars, and the sensitivity of an increased aero platform to following in the 'dirty air' of rivals, remains to be seen.

"I think there will be consequences," says Haas team principal Gunther Steiner. "It cannot be without unexpected things, but we are pretty good at dealing with that stuff. We just need to adapt quickly to get it better instead of discussing it until we're beating a dead horse. We need to be focused – what are we going to do to solve the problems? What needs adjusting?"

"That will come, but I think it's an exciting time. I personally like it. And it's so difficult to predict what will happen, which is good because, if you continue to do more of the same, what will change? Right now there is very little unpredictability. The silver cars win. Maybe sometimes the Red Bull can beat them.

"It's very difficult because they gave themselves such a big advantage, but fair play, they did a good job, they didn't luck in to it. So let's see what comes out. The big teams will do well, because they have the most resources, but maybe some wildcards will stroll in there."

"Definitely the big teams will be at the front," agrees Boullier. "But there is room for somebody to punch above his weight. It's like starting from a blank sheet of paper, which is good. It's going to be an exciting chapter for F1." >>

ENGINE POWER PLAY

Engines – or what are now termed 'power units' in F1 parlance – were the big differentiators in performance when the V6 hybrid-turbo rules were first adopted in 2014, and they remain a major player heading into the fourth season under these regulations.

Performance has converged, but Mercedes retains a significant advantage over Ferrari and Renault, with Honda battling to catch up after joining the party a year late.

The token system that limits development from season to season has been abolished this year, which should afford the less competitive manufacturers more freedom as they work towards achieving the convergence demanded by F1's governing body the FIA. But the same freedom will also be there for Mercedes to try to stretch further away...

It all depends on how much development scope remains within the current rules, which now dictate that manufacturers must supply an equal specification to customers as to their own works teams, with a €1 million reduction in the cost of that supply.

This cost reduction will supposedly be achieved through limiting the scope of development within the regulations. The FIA has set new limits on the weight, dimensions and material make-up of certain engine components this year, while also restricting the number of different fuel formulations that each driver can use.

Minimum weights for the crank assembly of the internal-combustion engine – plus the MGU-H and the MGU-K engine ancillaries – now apply, as does a total weight for the Energy Recovery Systems, which now cannot be reduced in volume in-season for packaging reasons.

There is now a maximum compression ratio for each cylinder head of the internal-combustion engine, and only five different fuel formulations (a major area of current development) per competitor are now allowed across the year, with just two permitted for use at any single race.

Increasing the fuel limit from 100kg to 105kg has eased fears over the possible need for extra fuel saving in 2017, given the increased drag levels of the new cars.

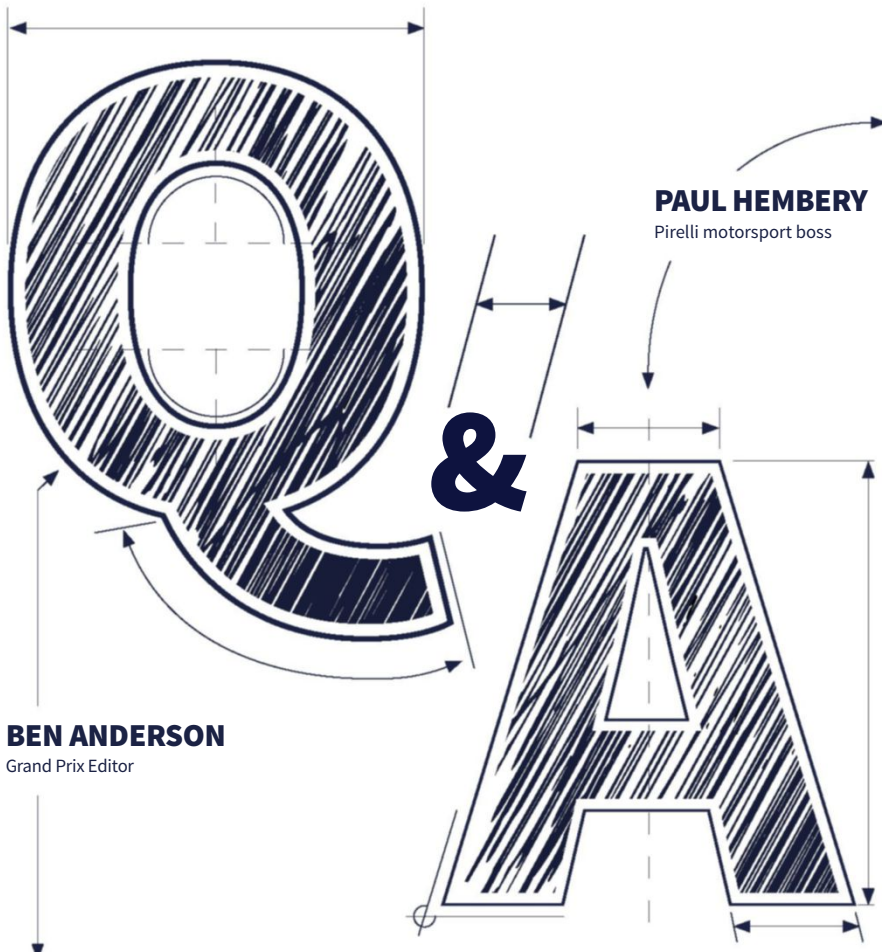
"That is more than enough," says Williams technical chief Pat Symonds. "We've added 5% to the fuel volume, and predictions show we won't need 5%, so we're in a better position. We won't use the 105kg – we'll just not fill the cars up. We rarely fill them up now."

BEN ANDERSON



Will mighty Mercedes be toppled more often?

PIRELLI



BEN ANDERSON
Grand Prix Editor

PAUL HEMBERY
Pirelli motorsport boss

Ben Anderson 2017 will be a big year for Pirelli; how do you go about meeting the challenge?

Paul Hembery It's such a big change to the tyre – with the physical size, and also the type of vehicles that we're going to be using, the challenge is an interesting technical one. We have a different input, of course. We have to provide a performance improvement to meet the chassis, try to change the driveability as well as the tyres, so it's a different product for the drivers. Encasing all that is a lot of work – on indoor drum testing, indoor simulators – and when we get to the actual 2017 cars in Barcelona we'll understand what we're really dealing with.

BA Do you approach this with any nervousness or apprehension? You've said teams were already pushing the tyres into unknown areas, and these new rules are

Changes have meant increased costs for Pirelli running into the tens of millions



XPB IMAGES



STALEVILAT

WHY FORMULA 1 2017 DEPENDS ON PIRELLI

F1's control tyres will be much bigger and are expected to be much better in 2017, and will be the key element in determining how fast the cars are ultimately able to go, and what the racing will be like. The front tyres will increase in width from 245mm to 305mm, with the rears going from 325mm to 405mm – an increase of 25%. The aim is significantly faster lap times and tyres that don't degrade to the degree we've become used to during Pirelli's time in F1 so far. Motorsport boss Paul Hembery explains how Pirelli plans to help reshape the nature of F1 this year.

a whole new realm. How do you build a tyre that can cope?

PH We have to believe in the data the teams give us. That would give us a good idea in terms of integrity, performance, what the tyre's going to have to suffer. Of course we have to go well beyond that, because the rate of development will be quite significant. I wouldn't say it's a concern – it's part of a challenge. It's a stimulating challenge, because we're going to be doing something that changes Formula 1 from where it is at the moment. You're talking about four or five seconds in lap time improvement, and that's going to be in the corners because the drag in a straight line means the cars are going to be slower on the straights. It will be quite different, especially for the drivers.

BA Is it a tougher technical challenge to build a tyre that can withstand much greater loads and also degrade less?

PH The real challenge is that the mule cars are quite substantially away in terms of actual performance compared to the data we're seeing in simulations. While the simulation data allows us to do structural testing indoors, the compounding work is something you can only define when you're on track. In reality we're only going to see representative conditions when we get to Melbourne, China and Bahrain [the first three races]. That's the biggest unknown, and of course when you go into an unknown you try to be more conservative. It is a wider tyre. Will the wear levels be concentrated? They shouldn't be. We're working on that. Will the performance of the car be such that we're not getting the temperature of the tyre that we anticipated in our simulation? In that case the tyre compounds won't be working in the way that we want them to. There are a number of areas that are unknown. Everybody's worked to make the best of a compromised situation. We're not complaining. It's just a pragmatic reality that there are some elements that will need improvement. But we do have 25 days of in-season testing with the actual [2017] car. In the past we haven't been able to test. While we're not making claims that we'll find perfection immediately, we'll at least have the opportunity for 2018 to work with the evolution of the tyre and the car together, so we can continually improve. That will be – for Formula 1, Pirelli and everybody – a great step forward.

Early tests with 'mule' cars are of limited use



PIRELLI

BA The tyres won't be in danger of falling apart in the early races?

PH No. It's more about the thermal degradation. Will the temperatures get high enough in the tyres? Maybe the warm-up will be too slow. Maybe we'll have problems with graining or blistering. We're not really clear. We have some ideas, some theories, but until we get out there on the track there are a couple of question marks.

BA That's why you wanted a hot-weather pre-season test?

PH It is what it is. It just would've meant we understood better earlier on if we were hitting the right area in terms of compound choice. We would've liked to hit the target with a bit more confidence to start with.

BA How long would it take to make a change in-season, if you needed to?

PH It could be Austria [July]. If we've got excessive blistering or graining, something that starts falling into a safety category, then we would ask to make a change. It'll [likely] be more about the compounds not being where they need to be. We had that in the first season we came back – we had to change the hard compound in Barcelona. If there is something that's clearly amiss then we'll make the change. If not, it'll be something to work on for 2018.

BA How has Pirelli readied itself for these changes?

PH We've had to spend a lot of money – I think tens of millions to change all the equipment. We're going to be taking more containers, because the tyres take up more space. It's all those elements of preparation – upgrading your testing machinery, integrity testing, force of moment testing, the amount of work you do externally with other partners. The technical team's always evolving and expanding, bringing in more people. We've ramped it up a little bit for this change. It's not been cheap, that's for sure.

BA Recent seasons of high degradation have had increased overtaking and varied strategy, but also led to criticism of Pirelli, which hasn't been a great advert for a tyre company. Is it a relief to be involved in a new phase of pushing the boundaries?

PH I guess if we go to extremes we'll get complaints that the racing is boring – that's going to be the cry in the future. You can't have it



PIRELLI

both ways. There are different schools of thought as to what the impact's really going to be. But the drivers will enjoy it...

BA Changing the formula so dramatically is going to have some big knock-on effects...

PH Someone will gain a technical advantage and move into a dominant position. That's the most likely outcome. We just try to take the tyre aspect out of the equation. And of course then you take a variable out of the racing we've had for the last few years. We'll need the teams to have got the cars close together in terms of performance.

BA Is the general feeling about 2017 one of excitement, confidence, or trepidation?

PH The nervousness and trepidation is really exciting. I think the cars look a lot better with the tyres that size. It just looks a little more aggressive. They've been saying the cars are too easy to drive – I think when we get to Barcelona, flat-out in Turn 3, they'll feel that. There's a huge amount of work ahead for everybody. It's a big change for F1. 🌩

Fattening of rear tyres is obvious, and the changes have thrown up a lot of unknowns



WORLD ENDURANCE CHAMPIONSHIP

Ginetta launches LMP1

BRITISH RACING CAR CONSTRUCTOR Ginetta is building a new privateer LMP1 chassis for the 2018 season with aerodynamics developed by design legend Adrian Reynard.

Ginetta is aiming for a multi-car attack on next year's Le Mans 24 Hours and the World Endurance Championship with the new P1 contender. It intends to lay down a batch of 10 chassis and is planning for the cars to be run by works-supported privateers rather than mounting a full factory operation itself.

The new LMP1 will be designed in-house under the control of Ginetta technical director Ewan Baldry at the company's Leeds base. Reynard, whose eponymous company built a line of successful racing cars for multiple categories between 1973 and 2001, will oversee aero development through his Auto Research Center company in Indianapolis. Ginetta is expected to use Mecachrome engines.

The plans mean that Ginetta is on course to return to Le Mans for the first time since 2010. It applied its name to Zytek LMP1 and P2 chassis after Ginetta boss Lawrence Tomlinson took a stake in the British engineering group.

Tomlinson explained that he had been

attracted to the LMP1 privateer category by the freedoms offered within its rulebook, which is being opened up over the 2017-18 seasons to encourage more non-factory teams.

"Ginetta has been away from Le Mans for too long and, as a company, we want to be fighting at the top level," he said. "There is currently a void in LMP1 with Audi pulling out, and the top line of factory hybrid cars is very thin, so there needs to be something else underneath, and that's where this project comes in.

"With Audi gone we aim to produce a prototype capable of running hot on the heels of the works hybrid cars, a few seconds per lap off, and well clear of LMP2 pace. Overall podium finishes have to be the aim for this project."

The decision to build an LMP1 follows Ginetta's entry in 2015 into the LMP3 arena, from which it has largely withdrawn after a dispute with drivetrain supplier ORECA, and then its failure to land one of the four franchises to build chassis for the new LMP2 formula.

"LMP1 will be the new LMP2 in essence," added Tomlinson. "In terms of design and engineering there's no freedom in P2 anymore. Teams buy one of four chassis, fit the spec



WEC

LMP1 OVERHAUL ON CARDS FOR 2020

The LMP1 category could undergo a major overhaul after the current rules freeze ends ahead of the 2020 World Endurance Championship season.

A number of possible directions for the future will be on the table when the FIA, WEC promoter the Automobile Club de l'Ouest and the manufacturers begin discussions about 2020 early this year. The process follows the announcement in November of a freeze on LMP1 rules until the end of '19 in the wake of Audi's WEC withdrawal.

The move was billed as a delay on the introduction of new regulations for 2018 that would have increased the scope for energy retrieval, but ACO sporting director Vincent Beaumesnil (above) has revealed that everything is up for discussion in the drive to reduce costs and attract a manufacturer.

"We have postponed the new regulations for two years, but it was always the intention to look at all the possibilities," said Beaumesnil. "For sure, we will evaluate other possibilities in addition to three hybrid systems and 10 megajoules [which had been due to come into force in 2018]. There is a real cost question that we have to examine."

ACO president Pierre Fillon is reported to have floated the idea of a reduction in the number of permissible energy-retrieval systems from the present two to one, but Beaumesnil said that no decisions had been made.

GARY WATKINS

design for 2018 attack

engine and off they go. That freedom of creativity will shift to the privateer LMP1 category, where there is much less restriction."

Tomlinson said that he was "very excited" to have Adrian Reynard on board.

"Adrian is a class-leading designer and brings a lot of experience to the table," he added.

Reynard explained that he had been attracted to the project by Tomlinson's drive and the freedoms in the P1 regulations.

"I've known Lawrence for a while and he has so much energy, while LMP1 is one of the last bastions of free enterprise in terms of design left in motor racing," said the 65-year

old. "There is still sufficient scope for innovation, and that's what I like. I'm very excited to think that we might be able to punch above our weight."

Paolo Catone, who designed Peugeot's Le Mans-winning 908 HDi and latterly BR Engineering's LMP2 car, is also a chassis consultant on the project.

Tomlinson said he was making an investment at the "multi-million level" in a project that

was "already well down the road".

He also revealed that he already had interest from new and existing sportscar teams about running the new Ginetta LMP1.

The Automobile Club de l'Ouest, organiser of Le Mans and promoter of the WEC, has welcomed Ginetta's LMP1 announcement.

"Lawrence Tomlinson has a good vision on prototype racing that he shares with us and is putting together a good project," said ACO sporting director Vincent Beaumesnil.

"This is another good sign for the LMP1 class and we are confident we will have a good grid of privateers in 2018."

The announcement by Ginetta follows last year's news that BR Engineering, sister company of Russian entrant SMP Racing, is working on a privateer P1 programme in conjunction with Dallara for 2018. Ginetta and BRE will be able to exploit new aerodynamic freedoms and a weight break that come into force this year, as well as the introduction of DRS next season.

ROB LADBROOK AND GARY WATKINS

"We might be able to punch above our weight"

FORMULA 1

FERRARI TO REVAMP KEY AREAS FOR 2017

FERRARI IS EXPECTED TO overhaul several areas of its Formula 1 car for 2017 in a bid to bounce back from a winless campaign.

While major regulation changes this season will force substantial aerodynamic redesigns on all cars, the revised technical team at Maranello has also targeted several areas under the skin of its new car – codenamed 668 – that can be heavily revised.

Ferrari's 062/2 power unit will feature an internal-combustion engine aimed at making better use of the MGU-H, which should increase the efficiency of the hybrid systems and reduce the risk of turbocharger unreliability.

In the combustion chamber, a switch to a new multi-jet ignition system is believed to be under consideration, as part of Ferrari's growing relationship with the Mahle technology organisation.

Revisions to the gearbox are anticipated too, with Ferrari moving back to a more conventional solution aimed at improving traction, after its 2016 concept of mounting the rear suspension between the differential and the gearbox was troublesome.

Ferrari is also expected to follow a similar front suspension layout to Mercedes. But a potential row is brewing after Ferrari queried trick technology pioneered by Mercedes with the FIA.

Discussions over certain systems replicating the effects of FRIC (front and rear interconnected) suspension, which was outlawed in 2014, remain ongoing.

**FRANCO NUGNES
AND JONATHAN NOBLE**



WORLD RALLYCROSS CHAMPIONSHIP

Lydden Hill loses World Rallycross to Silverstone

SILVERSTONE WILL REPLACE LYDDEN HILL AS the host of Britain's round of the World Rallycross Championship from 2018.

The event has been held at Lydden Hill since the inauguration of the World Rallycross Championship in 2014, but promoter IMG has now tied up a deal with the home of Formula 1's British Grand Prix.

Paul Bellamy, World RX managing director at IMG, said: "We have been in talks internally at IMG for some time about creating a large-scale motorsport festival weekend and we are delighted that Silverstone is able to share our vision for the future."

While IMG did not release any further details, Autosport understands that a new purpose-built track will be created in

the F1 layout's infield, based around the Stowe circuit.

The cars will be based in The Wing pits complex, and then will file out onto the Stowe circuit, which will be run in a clockwise direction rather than its usual anti-clockwise configuration.

The arrival of World RX next year will mark the first time Silverstone has hosted rallycross.

Lydden is regarded as rallycross's spiritual home, having been used for the category's first event in 1967. It was the European championship's British venue from 1973-96, and again from 2009 until the advent of the world series.

The Kent track will still hold its round of the 2017 World RX Championship on May 27-28 this year.

MATT JAMES

DAKAR RALLY

Upset at Dakar

X-RAID TEAM PRINCIPAL SVEN Quandt has pushed the FIA and Dakar Rally organisers to clarify the future of the South American event, which got under way this week.

Quandt's company has won four of the past five Dakars with Minis, but he is ready to drop the four-wheel-drive concept in favour of a buggy-style racer more akin to Peugeot's 3008 DKR, an evolution of the car that won in 2016.

Quandt told Autosport: "For two years, we have been working on the two-wheel-drive car and it's a nightmare to know which way to go. We need more consistency. If Peugeot is winning Dakar again this year, then the two-wheel-drive cars could be penalised with the balance of



performance and suddenly four-wheel drive is the right answer.

"We need some direction from the FIA about the regulations – for sure it's costing too much for us to be developing two different cars."

Peugeot is expected to present a major challenge for honours this month. Four 3008 DKRs – driven by 12-time winner Stephane Peterhansel, Carlos Sainz Sr, Sebastien Loeb and Cyril Despres – line up against a Milkko Hirvonen-led X-raid Mini squad.

The event kicked off in the Paraguayan capital of Asuncion on

Monday (January 2) with a 24-mile timed section as part of a 282-mile route towards the Argentinian border. Two-time winner Nasser Al-Attiyah (above) topped the times in his Toyota Hilux, although an oil leak caused a fire on the road section and he had to be towed by team-mate Giniel de Villiers.

Xevi Pons was second in his Ford Ranger, ahead of Toyota's Nani Roma and the leading Peugeot of Sainz.

The rally finishes in Buenos Aires, after 5500 competitive miles and 12 stages, on January 14.

DAVID EVANS



OGIER'S NEW RIDE Part of the new M-Sport Ford Fiesta livery of four-time World Rally champion Sebastien Ogier was revealed over Christmas; the full scheme is set to be unveiled at the Autosport International Show next week. Ogier believes he is not under pressure after his move to M-Sport from outgoing squad Volkswagen. "I have achieved a lot these last years but I feel I am in a position that I have nothing to lose," he said.

FORMULA 1

Bottas Merc deal close

VALTTERI BOTTAS IS LOOKING THE most likely candidate to replace world champion Nico Rosberg at Mercedes in 2017, with Felipe Massa prepared to postpone retirement to rejoin Williams in his place, and Mercedes junior Pascal Wehrlein lined up to join Sauber.

Williams driver Bottas visited Mercedes' Brackley factory before Christmas. It is understood that Bottas tried out the cockpit of the 2017 Mercedes to begin planning a potential seating position, and ran through initial technical preparations with the engineers he could be working with this year.

No deal for Bottas to join Mercedes had been agreed as Autosport closed for press, but it is believed that Sauber is happy to take Wehrlein, while Massa has told Williams he will accept an offer to replace Bottas should he leave, which paves the way for the Finn to become Lewis Hamilton's new team-mate.

No announcement is expected this week, and any official statement may be coordinated with Williams and Sauber, given the interdependence of the various arrangements.

Bottas emerged as the frontrunner for the vacant Mercedes seat during December, but Williams rejected an initial offer of Wehrlein as a replacement, plus a reduction in the cost of its customer-engine supply, to release Bottas from the final year of his contract.

The team was reluctant to let Bottas go, and deputy team principal Claire Williams told the BBC the team would only let him leave "if an experienced, credible alternative

was available" to line up alongside rookie Lance Stroll in 2017.

Although no deal has been formally agreed, that alternative is expected to be Massa. The Brazilian's 2016 form was patchy, but outgoing Williams technical chief Pat Symonds praised Massa as a key part of the team's recent revival, and he should slot seamlessly back into the line-up provided he is mentally and physically prepared.

Autosport understands that Mercedes is happy for Wehrlein to join Sauber for 2017, and details of this contract were being finalised as Autosport closed for press.

Mercedes set itself the task of finding Wehrlein a drive as a precursor to any deal for Bottas to replace Rosberg, who shocked F1 by retiring after agreeing a two-year contract extension with Mercedes last summer.

Wehrlein, the 2015 DTM champion, enjoyed a strong rookie season with Manor in 2016, but his paymasters are concerned that he lacks the experience to cope with the pressure of a potential title campaign.

Sauber was already lining up Wehrlein as a potential replacement for Felipe Nasr before Rosberg's retirement shook up the market.

Should all parties reach agreement, the only vacancies remaining on the 2017 grid would be at Manor. Ousted Haas driver Esteban Gutierrez is a frontrunner for one of the seats there, with Nasr also a contender, while reserve Rio Haryanto is working on a return to full-time action.

ROBERTO CHINCHERO AND JONATHAN NOBLE

IN THE HEADLINES

SYMONDS LEAVES WILLIAMS

Pat Symonds left his role as Williams chief technical officer at the end of 2016. Symonds, 63, joined Williams in mid-2013, at which time the team said he had signed a three-year contract. His departure comes amid strong rumours that Mercedes technical chief Paddy Lowe is due to switch to Williams in a senior technical role.

BP TO OIL UP RENAULT?

Renault is poised to land a Formula 1 partnership with oil company BP for 2017. McLaren is also set to join forces with BP after its former partner Exxon Mobil switched to Red Bull, but McLaren's deal is believed to be a technical arrangement, with a much smaller commercial aspect than Renault's.

NEWY SUGGESTS F1 WINDTUNNEL BAN

Formula 1 could ban windtunnels outright if it wanted regulations that restricted resources but rewarded creativity, reckons Adrian Newey. Red Bull's chief technical officer believes F1 could level its playing field with further limits on windtunnels and CFD, telling Sky Sports F1: "You could restrict research resources much more heavily than we do, perhaps scrap windtunnels altogether."

SCHUMACHER JR TO PREMA

Mick Schumacher, the son of seven-time world champion Michael, will contest next season's Formula 3 European Championship with Prema Powerteam. The 17-year old will step up to the championship after finishing runner-up in the German and Italian Formula 4 championships this year with Prema, which will also run Briton Callum Iott and Chinese Ferrari junior Guan Yu Zhou this season.

CHILTON RETURNS TO BTCC

Tom Chilton will return to the British Touring Car Championship for the first time since 2011 this year, driving a Power Maxed Racing Vauxhall Astra. The 12-time BTCC race winner is hopeful of continuing in the World Touring Car Championship as part of a dual campaign.

LAPIERRE TO DEFEND LMP2 TITLE

World Endurance LMP2 champion Nicolas Lapierre will defend his title with the Signatech Alpine squad. The Frenchman, who won the 2016 crown with Gustavo Menezes and Stephane Richelmi (see review, page 30), has been retained to drive an ORECA-Gibson 07.

CITROEN UNVEILS 2017 CHALLENGER

Citroen launched its 2017 World Rally Championship contender in late December. The C3 WRC has already completed 6000 miles of testing and will make its debut at the Monte Carlo Rally later this month, with Briton Kris Meeke leading the team.



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FEEDBACK

Button's Honda one of the worst?



I enjoyed working through the Christmas issue, but I think I might have squeezed Jenson Button's 2006 Honda RA106 victory in the wet in Hungary into the '10 of the worst F1 winners' piece. The car didn't achieve much beyond that (two other podiums), but I am an unashamed Button fan.

John Turner
Byemail

What about Brambilla's March?

Your One-Hit Wonders issue (December 29) got me thinking about other possible candidates. One that sprang to my mind was Vittorio Brambilla's victory in the 1975 Austrian Grand Prix. Not only was it the sole world championship success for the March 751, it was Brambilla's only win, and he made things dramatic by crashing after the finish line!

Interestingly, second in that race was James Hunt's Hesketh, which had already joined the One-Hit Wonders list

in the Dutch GP just two months earlier. With so many 'small' teams using the Cosworth DFV engine, the '70s was clearly a good era for solo successes.

Robert Kellow
Byemail

F1 finance proposal

The EU corporate competition commission is investigating Formula 1 for anti-competitive actions in the unequal financial arrangements for F1 teams. A solution to this could be:

1. Pay each constructor team equally;
2. Pay each power unit manufacturer a set amount for each team they provide (including their own). The main losers would be Red Bull and Williams.

Bruce Merchant
California, USA

Massa should stay away

Felipe Massa. Everyone likes him, don't they? A decent bloke with a big heart who, on his day, could win grands prix

The 2006 Hungarian GP-winning Honda failed to make our 'worst F1 winners' list

with genuine style. But perhaps what defines him for most Formula 1 fans is the class he showed in moments of defeat, most prominently in Brazil 2008 – and also how he handled life as a number two at Ferrari.

The trouble is, it's been years since Massa made significant headlines in F1. In terms of performance at Williams, he has become a nonentity. Which is why his non-retirement has to be the most uninspiring 'return' anyone could imagine. Nothing personal, Felipe, but your time was up – and still should be.

Elliott Jones
London

CORRECTIONS

The Vittorio Jano-designed Lancia D50 was, of course, a V8 and not a straight-six as inexplicably written in our Christmas issue (page 97). The editor has spent the required three days standing in a corner...

Pierre Levegh's Talbot failed while he was leading the 1952 Le Mans 24 Hours, and not the 1953 event as stated on page 117 of our Christmas issue.

Eagle-eyed readers will have spotted that the Brabham pictured on page five of the One-Hit Wonders (December 29) issue was not a fan car, unlike the others in the piece. The standard BT46 was, however, also a one-hit wonder, scoring its only success at the 1978 Italian GP.

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Inefficiency formula

Leading teams are spending huge sums for small gains – and the commercial rights holder is underwriting this lack of efficiency

By Dieter Rencken, Special Contributor

[@RacingLines](#)

FORMULA 1'S INCREASINGLY PRESCRIPTIVE sporting and technical regulations have levelled the *theoretical* cost of contesting a world championship season. Where once the headcount levels and working hours of race teams were unrestricted and windtunnel runs unlimited, restrictions and curfews apply to mechanical crews across the board – from Mercedes down to Manor – and aerodynamic-research resources have systematically been pegged back.

Controlled tyre options, bans on testing save for officially sanctioned sessions, along with cost-capped long-life powertrain components, all have cut operational costs, while bans on spare cars and exotic materials, and the imposition of flex tests, have helped reduce component costs. Indeed, where once teams built up to 10 chassis per annum, that number has on average been halved. So, with input costs largely controlled, *theoretically* the actual budgets required to design, build and race two F1 cars are largely similar.

Estimates put the annual cost of F1 competition – from manufacturing and component acquisition to freight, tyres and travel/subsistence, but excluding bonuses, executive salaries, hospitality and marketing – somewhere between £80 million and £100 million. That is roughly what Sauber and Manor spent during 2016 – though neither enjoyed much development – and marginally less than the individual budgets of Force India and Toro Rosso, both of which developed modestly (if very effectively for the most part) during the season.

So why are some teams spending so much more than this? Mercedes and Ferrari spent £265m and £225m (not including engine costs) during 2016, while Red Bull Racing forked out £215m – in each case well over £100m more than the baseline, or an additional £2m per week on activities unrelated to going racing. In fact, Mercedes burned an additional £3m a week...

True, substantial executive bonuses and eye-watering stipends are included in these figures, as are marketing and hospitality costs – the bigger the team, the larger such bills. Still, an extra million (or three) quid per week is not to be sneezed at, making the achievement of fourth-placed Force India all the more remarkable. Still, you have to ask where the Big Three's money is going.

Permitted development and simulation is the simple answer, but in the background lurk more complicated implications, since large portions of those costs are indirectly covered by commercial rights holder Formula One Management via

various non-performance-related bonuses 'earned' by so-called Constructors Championship Bonus teams. McLaren, too, is a CCB – and spent well over £1m/week on development.

In the recent book *Total Competition*, co-written by Ross Brawn and Adam Parr, Brawn suggests that "at one time [the gain] was something like £100,000 per tenth of a second per lap. Proposals [from engineers] had to meet that ratio".

Brawn's record includes world titles with Jaguar, Benetton, Ferrari and his own eponymous team, plus the foundation of Mercedes' recent successes, so he isn't plucking figures from thin air. And he does clarify that "the cost was tooling, manufacturing, everything" before adding the significant caveat that the cumulative improvement of a £1m spend does not necessarily equal a full second. Still, his numbers provide for some intriguing implications.

Let us assume an actual improvement of half that, a cost of £200,000 per tenth of a second, or a cumulative cost of £2m per second. Given Brawn's caveat, it may be too much to expect the £56m bonus disbursed by Formula One

Management to Mercedes to enable the silver team to pull away from Force India (a team running the same tyres and powertrain) at a rate of 28 seconds per lap, but surely that additional spend should have made a bigger laptime difference

“Should Mercedes be 28 seconds a lap faster than Force India?”

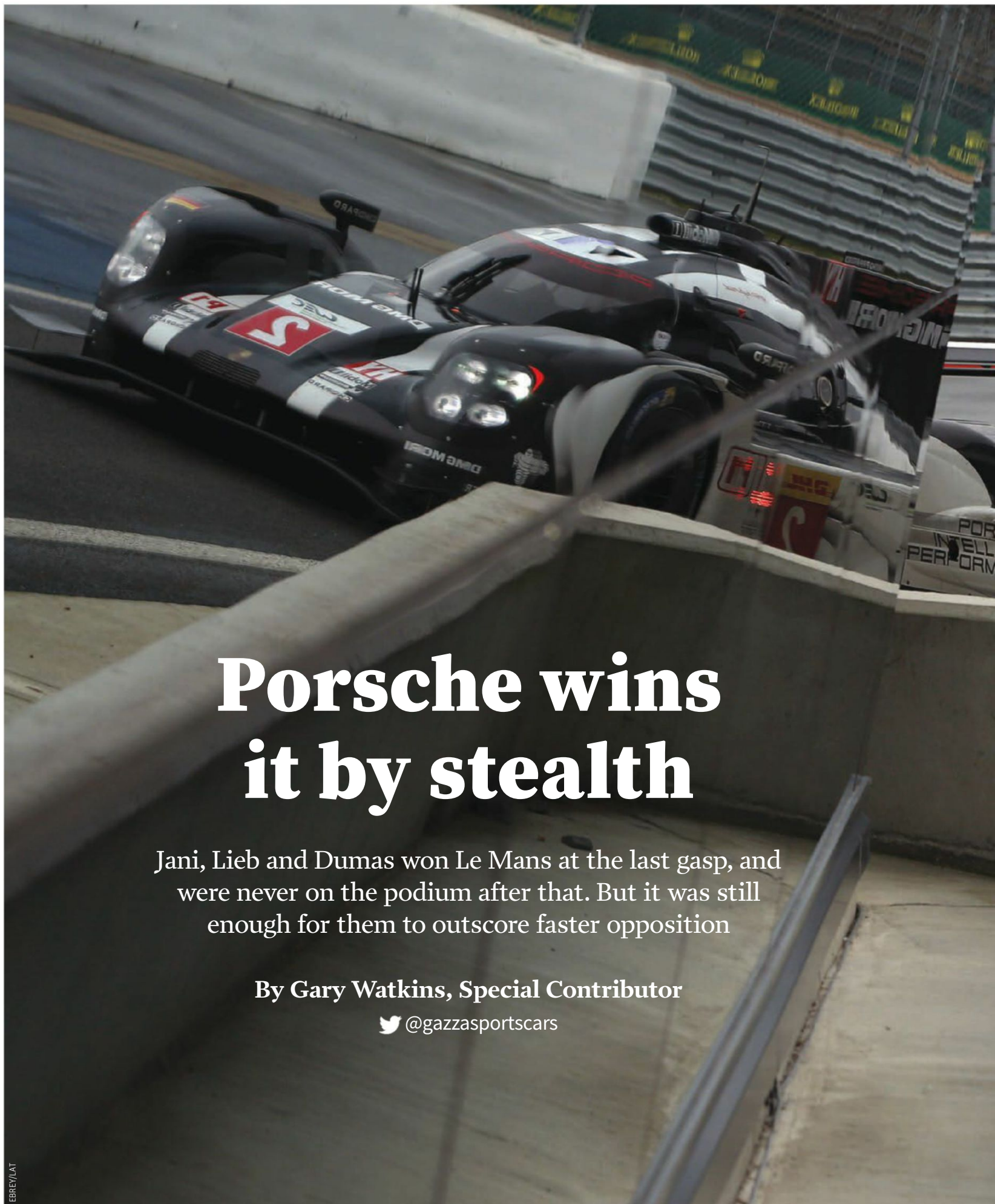
than we actually saw throughout the season. Ferrari's £80m FOM booty should have provided an even more spectacular performance boost over Sauber.

Far from making a mockery of Brawn's theory, these calculations highlight the cost-ineffectiveness of the majors who, rather than crowing about their wins and title successes, should instead examine their internal inefficiencies – then join the chorus calling for annual cost caps of, say, £150m.

As Force India deputy team principal Bob Fernley asks: "Even with a cost cap of £150m per year, that's £1m a week spent on development. How much more do you need?"

The wonder of it all is that successful businessmen such as Dieter Zetsche (Mercedes), Sergio Marchionne (Fiat-Chrysler, Ferrari) and Dietrich Mateschitz (Red Bull) don't insist on the same levels of efficiency from their F1 teams as they do from their mainstream production facilities. Imagine car factories 'wasting' so much money every year with little tangible return.


An even bigger wonder is that FOM, having funded these budgets, fails to grasp why independents are unable to fight at the sharp end, and act to remedy the situation. ❄



Porsche wins it by stealth

Jani, Lieb and Dumas won Le Mans at the last gasp, and were never on the podium after that. But it was still enough for them to outscore faster opposition

By Gary Watkins, Special Contributor

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Porsche claimed the drivers' and manufacturers' titles after winning six of the nine races – the big one, the Le Mans 24 Hours, included. So the German manufacturer took a clean sweep of all the important prizes over the course of the 2016 World Endurance Championship. You may even think that it dominated, but that couldn't be further from the truth.

The enduring image of the 2016 WEC will always be the leading Toyota slowing and then parking on the start-finish straight at Le Mans, halted by an engine problem that handed Porsche drivers Neel Jani, Marc Lieb and Romain Dumas victory. It was a dramatic way for Porsche to take victory with just five minutes to go. The manner in which Jani and his team-mates sealed the title was the extreme opposite.

The drivers of the #2 Porsche 919 Hybrid limped across the line to become world champions, not in the literal sense like team-mates Mark Webber, Timo Bernhard and Brendon Hartley in 2015 courtesy of throttle bodies held open by cable ties. This was more a metaphorical limp: Jani, Lieb and Dumas took the title without finishing on the podium over the post-Le Mans leg of the series.

The champions owed their championship success to a big-scoring start to their campaign culminating in a maximum haul in the double-points Le Mans round. And the fact that none of their rivals, within Porsche or at Audi and Toyota, managed to knit together a consistent championship challenge.

It was an anti-climactic way for the



drivers of the #2 Porsche to seal the title, and perhaps unsatisfactory for the WEC. But it could have been different.

They might have won at the Nurburgring in July, even after Jani had an early spin following contact with one

of the Ford GTs. A pitstop during a full-course yellow gave Lieb the lead over team-mate Hartley, but a clear shot at victory disappeared when the German tagged a GTE Am Porsche and received a drivethrough penalty. And with it leaked away the momentum that had gained them a 39-point lead after Le Mans.

It wasn't helped by a round of chassis swapping, nor that they were under strict instructions to bring the car home each time. An understandably conservative tyre choice in mixed conditions in Mexico City in September almost

of the Ford GTs. A pitstop during a full-course yellow gave Lieb the lead over team-mate Hartley, but a clear shot at victory disappeared when the German tagged a GTE Am Porsche and received a drivethrough penalty. And with it leaked away the momentum that had gained them a 39-point lead after Le Mans.

“Lieb and Dumas didn't impress, which is why they won't be in LMP1 in 2017”

ROUND BY ROUND

Silverstone

- 1 Jani/Lieb/Dumas
- 2 Kobayashi/Sarrazin/Conway
- 3 Imperatori/Kraihamer/Tuscher

Audi triumphs on the road with Lotterer/Fassler/Treluyer after a hard-fought battle with the #2 Porsche is decided when the 919 sustains a puncture. The R18 loses victory when its skid block is found to be worn beyond the prescribed limits.



Spa

- 1 Duval/di Grassi/Jarvis
- 2 Jani/Lieb/Dumas
- 3 Imperatori/Kraihamer/Tuscher

Engine failure for the Buemi/Davidson/Nakajima Toyota hands a first WEC victory to the Duval/di Grassi/Jarvis Audi combo. Jani, Lieb and Dumas limp around to a distant second with little or no hybrid punch from the sixth lap.

Le Mans

- 1 Jani/Lieb/Dumas
- 2 Kobayashi/Sarrazin/Conway
- 3 Duval/di Grassi/Jarvis

The Buemi/Davidson/Nakajima Toyota appears to have prevailed in a thrilling battle with Porsche only to lose victory with an engine issue with five minutes remaining. Jani, Lieb and Dumas inherit an 18th Le Mans victory for the Stuttgart sportscar firm.



Nurburgring

- 1 Webber/Bernhard/Hartley
- 2 Duval/di Grassi/Jarvis
- 3 Lotterer/Fassler

The reigning champions bounce back to score their first win of the season. Audi has the edge early on, but Webber and his team-mates take control from mid-race as temperatures drop. Audis end up two-three after battle with the #2 Porsche.



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certainly cost the eventual champions a podium, and then a broken floor stymied their run in Austin two weeks later.

Even at the finale in Bahrain in November, when the championship would have been more or less assured with a finish, they encountered more misfortune. Jani was sideswiped early on by a GTE Am Porsche in a straight line, the resulting damage leaving them sixth at the flag. That was still more than enough to give them the title.

Jani and co had their fair share of problems over the second half of the

season, but there were times when they looked out of sorts, most notably at Fuji and Shanghai in October. Lieb and Dumas didn't impress, which is why they won't be driving for the Porsche P1 team in 2017.

But to suggest that Jani, Lieb and Dumas weren't worthy champions would be to overlook their early-season performances. They lost a shot at victory at Silverstone in April with a puncture, only to be awarded full points after the winning Audi of Andre Lotterer, Marcel Fassler and Benoit Treluyer was

Audi finally got the win it deserved at the last race in Bahrain

excluded. They got lucky at Le Mans, but they had been duking it out with the Toyotas for much of the race. Jani and Lieb were both stellar over the 24 Hours.

The fortunes of Jani and co over the final six races were in stark contrast to those of their team-mates. Reigning champions Webber, Bernhard and Hartley won four times and were on the podium in the other two races, yet they effectively had no chance of retaining their 2015 title when they set out on their phenomenal run.

A disastrous start to the year meant >>

Mexico City

- 1 Webber/Bernhard/Hartley
- 2 Lotterer/Fassler
- 3 Kobayashi/Sarrazin/Conway

Webber and co come out top again in a topsy-turvy race interrupted by rain. All the factory cars hit problems of some sort, but the winning Porsche has the fewest. Toyota shines in mixed conditions and comes through to take third.



Austin

- 1 Webber/Bernhard/Hartley
- 2 Duval/di Grassi/Jarvis
- 3 Kobayashi/Sarrazin/Conway

Audi loses a dead-cert victory. Both cars fall foul of full-course yellows, #8 has a battery problem and Treluyer goes off in #7 in his first race back from injury. The reigning champions make it three in a row with a clean race, but #2 crew is still 37.5 points clear.

Fuji

- 1 Kobayashi/Sarrazin/Conway
- 2 Duval/di Grassi/Jarvis
- 3 Webber/Bernhard/Hartley

Toyota prevails in a three-horse race involving each manufacturer after it short-fills the #6 car and elects not to give Kobayashi fresh tyres at his final stop. Duval comes back at the local hero but falls 1.4 seconds short as Audi defeats Porsche.



Shanghai

- 1 Webber/Bernhard/Hartley
- 2 Kobayashi/Sarrazin/Conway
- 3 Buemi/Davidson/Nakajima

The #1 Porsche dominates on the way to a one-minute victory, but Toyota should be closer after twice sustaining punctures. Buemi and team-mates notch up first podium of season. Audi loses any chance of the title after a disastrous weekend.

Bahrain

- 1 Duval/di Grassi/Jarvis
- 2 Lotterer/Fassler/Treluyer
- 3 Webber/Bernhard/Hartley

Audi dominates on its final race in the prototype ranks for the foreseeable future. #8 has the edge on sister car and gains time pitting under full-course yellow. Sixth gives Jani, Lieb and Dumas the title on a day Toyota doesn't feature at the front.



THE LE MANS PROBLEM NEEDS TO BE SOLVED

THE WORLD ENDURANCE LMP1 TITLE WASN'T won in a very satisfactory way in 2016. Not wrong, just unsatisfactory, given that the eventual champions didn't pick up a single piece of silverware between their Le Mans trophy and gongs for winning the end-of-season crown.

Awarding double points for the Le Mans 24 Hours somehow skews the championship. I'm not saying that's not correct, just that it has such an effect on the eventual outcome that it detracts from the remainder of the series. So if we want the WEC to become more than a sideshow of races around Le Mans, something has to be done about it.

One solution, and I've talked about this before, is to have more points up for grabs right at the end of the season. And I'm not talking about some kind of gimmick like the decision to award double points for the 2014 Formula 1 finale in Abu Dhabi.

Extra points need to be earned, which is why I like the idea of a longer race to finish the season. It's not a new idea, of course, but one that has merit. Why not have a 12-hour race to bring the curtain down on the WEC and award points and a half? It would help ensure the championship is truly open right down to the wire.

Another solution talked about in one of the innumerable working groups that help shape the WEC was the idea of awarding points in increments at Le Mans. That's not favoured by the organisers, and I tend to think that Le Mans should be all about finishing.

Whatever it is, a solution needs to be found. A problem that affects all the classes in the WEC is going to be more pertinent than ever in LMP1 with only two manufacturers.

GARY WATKINS

MAUGER/LAT



“The latest Audi R18 was a complex machine and remained a finicky beast”

they had just 3.5 points on the board after Le Mans. Had they avoided any one of their early-season misfortunes — a shunt with a backmarker for Hartley at Silverstone, twin punctures at Spa that mangled the hybrid gearbox, and a water-pump issue at Le Mans — they would probably have retained the title.

Webber, Bernhard and Hartley performed at a higher level than during their championship year and certainly added up to the best line-up in the WEC, and perhaps by some margin. Their performances deserved more than an eventual fourth place in the points.

That said, two of their four victories owed something to luck. The new Audi R18 e-tron quattro could have won in Mexico and should have done so at Austin. But the German manufacturer's failure to convert its superiority into race victories on those two days summed up what turned out to be its final season in the prototype arena.

Either Audi could have won in the altitude of Mexico City. A wheelbearing failure did for the #8 R18 shared by Loic Duval, Lucas di Grassi and Oliver Jarvis, while brake-balance problems stymied Lotterer's charge in the sister car. Then came Austin, and Audi threw it away. Such was the pace advantage of the R18 around the Circuit of the Americas that the #8 car finished only 24s down on the

winning Porsche despite four delays of varying magnitude.

The latest turbodiesel LMP1 car to be given the R18 e-tron quattro monicker was a complex machine, now with battery energy storage rather than the previous flywheel, and there were warnings from Audi that it might take time to hone its reliability and get on top of its radical aerodynamics. It probably never truly achieved either, though it did bow out of the prototype ranks in fine style with a one-two in Bahrain.

The R18 remained a finicky beast that was at its best in hot conditions. There were races at which its speed waned away as the temperatures cooled, nowhere more so than during the night at Le Mans. The car had the pace to win four or five of the final races, but didn't add to the victory Duval and his team-mates inherited at the retirement-fest at Spa in May until the last time of asking.

The Mexico issues that left them with only half a point for 15th position cost the #8 crew dear. As did a disastrous race at Shanghai in which the two Audis finished only fifth and sixth. So much so that they were out of contention for the title going to the season finale, though Duval and his team-mates recovered to second in the points with victory.

Jani, Lieb and Dumas still faced a challenge in Bahrain, albeit from an



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Rebellion again
did a solid job, but
now moves to LMP2



Reigning champs stood out, but a terrible start hampered their challenge

LMP1 WINNERS



a slightly fortuitous repeat result at Austin were followed by a victory on home ground in Japan.

The TS050 was truly competitive at Fuji, the track requiring the least downforce of any of the circuits on the WEC's second leg. Kobayashi put in a blinding drive at the end that, coupled with some clever tactics, vaulted him ahead of the #8 Audi at the final round of pitstops to give Toyota its first WEC victory since 2014.

The Anglo-Swiss Rebellion Racing team dominated the privateer P1 category as usual, even making it onto the overall podium on two occasions. The best of the Rebellion-AER R-Ones was elevated to third on the exclusion of the #7 Audi at Silverstone and then came through to the same position in the race of attrition at Spa.

What had previously always been regarded as the secondary line-up at Rebellion came good in 2016. Alexandre Imperatori, Dominik Kraihamer and Matheo Tuscher got the upper hand over team-mates Nick Heidfeld, Nicolas Prost and team newcomer Nelson Piquet Jr in the opening races and it was they who collected Rebellion's first overall trophies since 2013. When the team opted to slim down to one car for the flyaway races, it chose Imperatori and his team-mates to continue, and they easily claimed the P1 privateers' title in front of the ByKolles squad and its CLM-AER P1/01.

Porsche had it easy in a way too. Or rather its rivals made life easy for the 2015 benchmark. The German manufacturer had the proven car in the updated 919 Hybrid and that ended up being decisive. 🍀

unlikely quarter. The second Toyota driven by Kamui Kobayashi, Stephane Sarrazin and Mike Conway mounted an improbable championship challenge over the final races.

Toyota returned to the WEC after its annus horribilis in 2015 with a new chassis, a new turbocharged V6 engine and battery-energy storage. The Japanese manufacturer intensified its focus on Le Mans, producing an ultra-low-downforce car that came so close to scoring that elusive victory.

A broken coupling on a pipe from turbo to wastegate ultimately robbed Sebastien Buemi, Anthony Davidson and Kazuki Nakajima of victory at the death, but it shouldn't be forgotten that it was the sister car that led the Toyota challenge for much of the way until a

spin from Kobayashi resulted in body damage that cost time in the pits and blunted its performance thereafter on the way to second.

There had already been another near-miss at Spa. Toyota's decision not to run in Le Mans aero configuration like its rivals and the correct call on Michelin tyres for the hot conditions played into its hands. Buemi, Davidson and Nakajima were on course for victory until engine failure, the result of the car bottoming out at Eau Rouge.

Kobayashi and his team-mates didn't look like championship challengers when the WEC resumed at the 'Ring. Toyota's third and final aero kit – the maximum allowed under new rules for 2016 – lacked downforce around the German circuit. But a strong third in Mexico and

PROTOTYPE CHAMPIONSHIP

POS	DRIVERS	TEAM / CAR	1	2	3	4	5	6	7	8	9	PTS
1	Romain Dumas (F) Marc Lieb (D) Neel Jani (CH)	Porsche Team · Porsche 919 Hybrid	1	2	1	4	4	4	5	4	6	160
2	Loic Duval (F) Lucas di Grassi (BR) Oliver Jarvis (GB)	Audi Sport Team Joest · Audi R18 e-tron quattro	DNF	1	3	2	27	2	2	5	1	147.5
3	Stephane Sarrazin (F) Kamui Kobayashi (J) Mike Conway (GB)	Toyota Gazoo Racing · Toyota TS050 HYBRID	2	DNF	2	6	3	3	1	2	5	145
4	Brendon Hartley (NZ) Timo Bernhard (D) Mark Webber (AUS)	Porsche Team · Porsche 919 Hybrid	DNF	26	13	1	1	1	3	1	3	134.5
5	Andre Lotterer (D) Marcel Fassler (CH)	Audi Sport Team Joest · Audi R18 e-tron quattro	EX	5	4	3	2	6	DNF	6	2	104
6	Benoit Treliuyer (F)	Audi Sport Team Joest · Audi R18 e-tron quattro	EX	5	4	-	-	6	DNF	6	2	70
7	Alexandre Imperatori (CH) Dominik Kraihamer (A) Matheo Tuscher (CH)	Rebellion Racing · Rebellion-AER R-One	3	3	DNF	7	5	7	6	24	7	66.5
8	Anthony Davidson (GB) Sebastien Buemi (CH) Kazuki Nakajima (J)	Toyota Gazoo Racing · Toyota TS050 HYBRID	16	27	NC	5	DNF	5	4	3	4	60
9	Gustavo Menezes (USA) Nicolas Lapierre (F) Stephane Richelmi (MC)	Signatech Alpine · ORECA05	8	7	5	8	7	8	9	11	11	47
10	Roman Rusinov (RU)	G-Drive Racing (Jota) · ORECA05	7	11	6	DNF	13	10	7	8	9	36

11 Ricardo Gonzalez/ Filipe Albuquerque/ Bruno Senna (RGR Sport (OAK) Ligier JSP2) 30; 12 Will Stevens (G-Drive (Jota) ORECA05) 26.5; 13 Rene Rast (G-Drive (Jota) ORECA05) 26; 14 Nicolas Prost/ Nick Heidfeld (Rebellion Racing Rebellion-AER R-One) 25.5; 15 Nelson Piquet Jr (Rebellion Racing Rebellion-AER R-One) 25; 16 Pipo Derani/ Chris Cumming/ Ryan Dalziel (Extreme Speed Motorsports (OAK) Ligier JSP2) 20; 17 Simon Trummer/ Oliver Webb (ByKolles Racing Team CLM P1/01) 19.5; 18 Kirill Ladygin/ Vitaly Petrov/ Viktor Shaytar (SMP Racing (AF) BR Engineering BR01) 15.5; 19 Alex Brundle (G-Drive (Jota) ORECA05) 13.5; 20 Jonny Kane (Strakka Racing Gibson 015S) 13; 21 Nick Leventis (Strakka Racing Gibson 015S) 12.5; 22 Pierre Kaffer (ByKolles Racing Team CLM P1/01) 10.5; 23 Danny Watts (Strakka Racing Gibson 015S) 10; 24 James Rossiter (ByKolles Racing Team CLM P1/01) 8.5; 25 Nicolas Minassian/ Maurizio Mediani (SMP Racing (AF) BR Engineering BR01) 7.5; 26 Nathanael Berthon (G-Drive (Jota) ORECA05) 6.5; 27 Mikhail Aleshin (SMP Racing (AF) BR Engineering BR01) 5.5; 28 Matt Rao/ Richard Bradley (Manor ORECA05) 4.5; 29 Roberto Merhi (Manor ORECA05) 4; 29 Ho-Pin Tung/ David Cheng (Baxi DC Racing Alpine ORECA05) 4; 31 Sean Gelael (Extreme Speed Motorsports (OAK) Ligier JSP2) 3.5; 31 Johannes van Overbeek/ Scott Sharp/ Ed Brown (Extreme Speed Motorsports (OAK) Ligier JSP2) 3.5; 33 Lewis Williamson (Strakka Racing Gibson 015S) 3; 33 Antonio Giovinazzi (Extreme Speed Motorsports (OAK) Ligier JSP2) 3; 35 Nelson Panciatici (Baxi DC Racing Alpine ORECA05) 2.5; 36 Tom Blomqvist (Extreme Speed Motorsports (OAK) Ligier JSP2) 2; 36 Giedo van der Garde (Extreme Speed Motorsports (OAK) Ligier JSP2) 2; 38 Tor Graves (Manor ORECA05) 1.5; 38 Paul-Loup Chatin (Baxi DC Racing Alpine ORECA05) 1.5; 38 Alex Lynn (Manor ORECA05) 1.5; 41 James Jakes (Manor ORECA05) 0.5; 41 Simon Dolan/ Jake Dennis (G-Drive (Jota) Gibson 015S) 0.5; 41 Matt Howson/ Antonio Pizzonia (Manor ORECA05) 0.5; 41 Mathias Beche (Manor ORECA05) 0.5; 41 Shinji Nakano (Manor ORECA05) 0.5; 41 Julien Canal/ Roberto Gonzalez (Manor ORECA05) 0.5; 41 Tom Dillmann (Extreme Speed Motorsports (OAK) Ligier JSP2) 0.5. Note: All LMP2 cars ran with Nissan engines.

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AUTOSPORT'S TOP 10 LMP1 DRIVERS

**1 LUCAS DI GRASSI**

Di Grassi took another step as a sportscar driver in 2016. Maybe it was the fact he was in his third full season with Audi's LMP1 squad or maybe that the new R18 e-tron quattro suited his driving style. Or maybe a bit of both. Whatever, there were occasions when the Brazilian put in some blinding performances that took some believing. Le Mans was one. Di Grassi flew on Sunday morning as the #8 Audi came alive, though even he admitted that the traffic seemed to part for him like the Red Sea. And in Bahrain he was extra special in both qualifying and the race as he signed off as a full-time WEC driver.

**2 SEBASTIEN BUEMI**

There were no wins for the 2014 WEC title winner in what on the face of it looks like an abject season for Buemi and the #5 Toyota. Yet the Swiss was back to his best in 2016 with a car that was competitive – at times. Buemi was outstanding at Le Mans once he got the bit between his teeth. His drive would have been deserving of the ultimate prize in sportscar racing, but it wasn't to be. The bad luck that deprived Buemi, Anthony Davidson and Kazuki Nakajima of victory in France was ever present through the season. It explains why they have but one piece of silverware to show for their efforts in 2016.

**3 NEEL JANI**

Making judgements on the eventual champions' season of two halves isn't easy, except to say that Jani stood head and shoulders over team-mates Marc Lieb and Romain Dumas. The Swiss driver did little, bar failing to win races, to dissuade anyone of the opinion that he's one of the world's top LMP1 drivers. When the car was up to the job, Jani performed. Fuji was a case in point: after a change of nose transformed the #2919 Hybrid, Jani was the quickest Porsche driver. Ditto Le Mans, where Jani notched up a second consecutive pole and then posted his most impressive race performance of the season.

**4 BRENDON HARTLEY**

There's a certain expectation now when Hartley climbs aboard his Porsche. You know you might be in for something that extra bit special. The Kiwi cemented his place among the LMP1 elite in 2016, but would undoubtedly have been higher in this list but for one error of judgement that had big implications. It might seem unfair to hark on about a split-second mistake lapping a slower car that put the #1 Porsche out of a commanding position at Silverstone way back in April. But it was an error nonetheless and one that ultimately cost him and his crew the championship.

**5 TIMO BERNHARD**

There's not much to say about Bernhard's season except that he did exactly what we expected of him. The German was quick, consistent, a team player and a key member of the best – and 'winningest' – driver line-up in the championship in 2016. There were some top performances along the way, Le Mans, Shanghai and Bahrain included. Bernhard – the driver, not the man – actually proved he was human in 2016 with a rare mistake. Not that anyone held a little off in mixed conditions in Mexico City against him and it had no bearing on the final result.

**6 MARK WEBBER**

This was Webber's best season of what turned out to be a three-year stint with Porsche in the WEC. It wasn't because he was any better over the cut-and-thrust of the six-hour races, but because he conquered Le Mans for the first time. If there were any doubts about the Australian's motivation around the Circuit de la Sarthe – and there had been after the previous two years – he well and truly buried them over the course of a fight back from an early delay. It was a hopeless task really, but Webber was quicker than all his team-mates bar Jani. Four wins meant he signed off in style.

**7 LOIC DUVAL**

It would be wrong to say that Duval had a poor 2015 campaign in the wake of his monster accident at Le Mans the previous season. But the Frenchman definitely performed at a higher level in 2016, even if he was shaded by team-mate Lucas di Grassi. Austin and Mexico City were probably his best races of the season, though neither yielded a victory. The bad luck in America ultimately cost them the title. Duval undoubtedly had an impressive second half of the season and he was back at the top of his game at Le Mans. That, understandably, hadn't been the case in 2015.

**8 ANDRE LOTTERER**

Lotterer didn't have his best season in what turned out to be his final year with Audi. There were no race wins – once the #7 R18 had been excluded at Silverstone – and perhaps even some off days, too, though he was part of a trio that had to play second fiddle to their team-mates during the championship run-in. That said, Lotterer still pulled out some mighty performances. He was impressive in Austin, but perhaps his best race was Mexico City. The German hauled the #7 Audi back into contention in mixed conditions and might have been rewarded with an unlikely win but for a late braking issue.

**9 KAMUI KOBAYASHI**

Kobayashi made an immediate impact in the LMP1 ranks with Toyota in 2016 in the way he didn't in his first foray into sportscars in GTE with Ferrari in 2013. Le Mans provided the high and arguably the low of his season. Kobayashi starred as he and his team-mates battled with the #2 Porsche at the top of the leaderboard, but it was his clash with a GTE car that took the Toyota out of contention. Kobayashi was impressive on the way to the trio's only victory of the season on home ground at Fuji, though the real stars that day were the strategists on the pitwall.

**10 MIKE CONWAY**

This was Conway's best season yet since he joined Toyota in 2014 and it is easy to forget that it was only his second full season in LMP1. The Brit quite correctly is getting better year on year. Conway played a key role in the #6 Toyota's unlikely title challenge together with team-mates Kobayashi and Stephane Sarrazin. He was strong at the Le Mans 24 Hours, particularly impressive in Mexico City and then Shanghai, and solid everywhere else. He eradicated the mistakes that had previously been part of his game and seemingly has a bright future in LMP1.



Alpine racers get a clean downhill run

By Gary Watkins

An early-season purple patch coupled with phenomenal consistency easily saw the Signatech Alpine squad home in LMP2. Nicolas Lapierre, Gustavo Menezes and Stephane Richelmi took class honours at Spa and the Nurburgring either side of victory in the double-points Le Mans round to set themselves on course for the title. Another win at Austin and their reliability over a season in which they never finished lower than fourth allowed them to take the crown with a race to spare.

Yet Signatech didn't dominate proceedings in P2, just as Porsche didn't run away with the overall title, no matter what the results suggest. Rarely was its ORECA-Nissan 05 – badged an Alpine A460b in deference to the team's long-standing relationship with the French sportscar constructor – the fastest car in class. But it was always there or thereabouts and the team made few if any mistakes, though could be prone to conservative tactics. That meant it was always going to be hard to beat.



So did the presence of Menezes in its line-up as the mandatory silver-ranked driver. The recruitment of the American, just 21 at the start of the season, from the ranks of the European Formula 3 Championship undoubtedly gave Signatech a massive – and some would say unfair – advantage over the team that ultimately ran it closest in the

Menezes, Richelmi and Lapierre came out on top of LMP2 contest

points. Menezes, it should be pointed out, was generally quicker than gold-ranked Richelmi.

The RGR Sport Ligier squad may have had an ex-F1 driver and an Audi contractee on its books in Bruno Senna and Filipe Albuquerque, but its silver, Mexican Ricardo Gonzalez, was a true amateur who was never going to be on the pace of his opposite number at Signatech. That made the results notched up by the RGR Ligier-Nissan JSP2 all the more impressive.

The team that was initially run out of the premises of the Morand squad in Switzerland, before moving fully under the umbrella of OAK Racing post-Le Mans, won at Silverstone and then, emotionally for race promoter Gonzalez, in Mexico City. Its championship challenge was ultimately blunted by engine problems at Le Mans that left Senna, Albuquerque and Gonzalez 10th in class, though they were the sixth WEC crew home.

RGR probably wouldn't have won the title even had the team had a clean Le Mans, because they were never on course



RGR led the Ligier charge with two wins



Bad luck limited G-Drive to three 2016 victories

LMP2 CHAMPIONSHIP

POS	DRIVERS	TEAM/CAR	1	2	3	4	5	6	7	8	9	PTS
1	Gustavo Menezes (USA) Nicolas Lapierre (F) Stephane Richelmi (MC)	Signatech Alpine · ORECA 05	4	1	1	1	2	1	3	4	3	199
2	Bruno Senna (BR) Filipe Albuquerque (P) Ricardo Gonzalez (MEX)	RGR Sport by Morand (OAK) · Ligier JSP2	1	4	10	2	1	2	2	3	2	166
3	Roman Rusinov (RUS)	G-Drive Racing (Jota) · ORECA 05	3	5	2	DNF	8	3	1	1	1	162
4	Chris Cumming (CDN) Pipo Derani (BR) Ryan Dalziel (GB)	Extreme Speed Motorsports (OAK) · JSP2	2	2	16	3	3	5	5	5	4	116
5	Rene Rast (D)	G-Drive Racing (Jota) · ORECA 05	3	5	2	DNF	8	3	-	-	1	111
6	Alex Brundle (GB)	G-Drive Racing (Jota) · ORECA 05	-	-	-	DNF	8	3	1	1	1	98
7	Will Stevens (GB)	Manor/G-Drive · ORECA 05	DNF	8	2	-	-	-	1	1	-	92
8	Jonny Kane (GB)	Strakka Racing · Gibson 015S	5	DNF	4	4	4	DNF	6	-	-	66
9	Kirill Ladygin (RUS) Viktor Shaytar (RUS) Vitaly Petrov (RUS)	SMP Racing (AF) · BR Engineering BR01	8	9	3	6	DNF	6	10	7	8	63
10	Maurizio Mediani (I) Nicolas Minassian (F)	SMP Racing (AF) · BR Engineering BR01	10	DNF	7	8	7	4	8	6	9	59

11 Nick Leventis (Strakka Racing Gibson 015S) 58; **12** Sean Gelael (Extreme Speed Motorsports (OAK) Ligier JSP2) 40; **13** David Cheng/Ho-Pin Tung (Baxi DC Racing Alpine ORECA 05) 40; **14** Roberto Merhi (Manor ORECA 05) 35; **15** Danny Watts (Strakka Racing Gibson 015S) 34; **16** Mikhail Aleshin (SMP Racing (AF) BR Engineering BR01) 34; **17** Matt Rao/Richard Bradley (Manor ORECA 05) 33; **18** Lewis Williamson (Strakka Racing Gibson 015S) 32; **19** Ed Brown/Johannes van Overbeek/Scott Sharp (Extreme Speed Motorsports (OAK) Ligier JSP2) 32; **20** Antonio Giovinazzi (Extreme Speed Motorsports (OAK) Ligier JSP2) 30; **21** Giedo van der Garde (Extreme Speed Motorsports (OAK) Ligier JSP2) 30; **22** Nathanael Berthon (G-Drive (Jota) ORECA 05) 27; **23** Nelson Panciatici (Baxi DC Racing Alpine ORECA 05) 26; **24** Tom Blomqvist (Extreme Speed Motorsports (OAK) Ligier JSP2) 18; **25** Tor Graves (Manor ORECA 05) 14.5; **26** Paul-Loup Chatin (Baxi DC Racing Alpine ORECA 05) 14; **27** Antonio Pizzonia/Matt Howson (Manor ORECA 05) 10; **28** Tom Dillmann (Extreme Speed Motorsports (OAK) Ligier JSP2) 10; **29** Jake Dennis/Simon Dolan (G-Drive (Jota) Gibson 015S) 8; **30** Julien Canal/Roberto Gonzalez (Manor ORECA 05) 6; **31** Alex Lynn (Manor ORECA 05) 4.5; **32** James Jakes (Manor ORECA 05) 4; **33** Shinji Nakano (Manor ORECA 05) 0.5.

Note: All LMP2 cars ran with Nissan engines.

for class honours at the 24 Hours. But it is worth pointing out that they lost ground to Signatech to the tune of 34 points in June and the deficit in the final classification was just 33.

The G-Drive Racing team could look to reliability problems over the course of the season and think what might have been. The Jota-run ORECA-Nissan was generally the fastest car in the field with a revolving cast of drivers in which only Roman Rusinov ended up being a permanent fixture. The Russian, who'd claimed the title in 2015 when G-Drive ran together with OAK, ended up third in the standings, just four behind the RGR drivers.

G-Drive lost any number of victories with a diverse range of problems. A fuel-pump issue cost Rusinov, Rene Rast and Nathanael Berthon victory first time out at Silverstone; the car would have been quick enough to come back from a body-damaging incident to claim the victory. G-Drive was the big loser in the slow zones – local yellow flags in which speed is limited to 80km/h (50mph) – on the way to second at Le Mans.

There was a catastrophic gearbox failure at the Nurburgring, then an exploding brake disc in Mexico.

It looked as though G-Drive was never going to convert its pace – which included a run of four straight poles at the start of the season – into a race victory. And when it did, at Fuji, it had to come back from a late drivethrough penalty after Will Stevens, who was making the second of three appearances with the team, was adjudged to have exceeded track limits while overtaking Senna for the lead.

Stevens, Rusinov and Alex Brundle, brought into the team at the Nurburgring, followed up on their Fuji success in Shanghai. Rast, the team's talisman driver, returned to the squad after missing two races to finally get a victory against his name in Bahrain. The late-season run was, however, never going to be enough to give Rusinov the title given Signatech's consistency.

OAK also fielded a pair of Ligiers in conjunction with US entrant Extreme Speed Motorsports. The lead ESM car shared by Pipo Derani, Ryan Dalziel and

LMP2 WINNERS



Chris Cumming was on the podium four times and only once out of the top five, but Canadian Cumming as the team's silver driver wasn't on a par with Menezes or even Gonzalez in terms of speed or consistency. Victories were never really on the cards, and the team didn't help itself with a mid-season swap from the benchmark Dunlop tyres to Michelins and then back again.

The successful Manor single-seater squad was reborn in the LMP2 ranks of the WEC after the departure of team bosses John Booth and Graeme Lowdon from the F1 operation of the same name at the end of 2015. It fielded a pair of ORECA-Nissan 05s, though only had one entry for Le Mans and slimmed down to one car for two races while it sought a fix to braking issues that afflicted the French coupe.

The team made an immediate impact and notched up its only podium of the season thanks to a last-lap move from ex-F1 driver Roberto Merhi that secured third spot for the Spaniard and British team-mates Richard Bradley and Matt Rao at Spa. 🏆

GTE

Danes' glory as battles rage off track

By Gary Watkins

You might think that a new era for GTE Pro created some close racing given that Aston Martin, Ferrari and Ford shared out the class victories equally in 2016. Yet that actually wasn't the case. One manufacturer usually held the upper hand as the Balance of Performance swung back and forth with a raft of changes over the course of the season.

Ferrari's new turbocharged 488 GTE held sway at the opening two races, before Ford came good at the Le Mans 24 Hours on the 50th anniversary of the first of its overall triumphs at the French enduro. Ferrari and works team AF Corse won again at the Nurburgring, before it was Aston Martin Racing's 'turn' in Mexico City and then Austin. Ford dominated proceedings at Fuji and Shanghai, before another shift in the BoP and one more victory for Aston in the Bahrain finale.

That allowed Aston duo Nicki Thiim and Marco Sorensen to claim the title in the Vantage GTE that they had initially shared with Darren Turner before a post-Le Mans reshuffle. The Brit, who was subsequently paired variously with Richie Stanaway, Fernando Rees and Jonny Adam, endured a disastrous championship run-in. When Adam lost a wheel in Bahrain, leaving the second Aston only fifth, Ferrari snuck through to claim the manufacturers' crown.

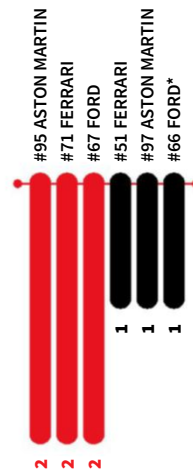
There was occasionally some good racing between the manufacturers, most notably at the Nurburgring, where Gianmaria Bruni muscled the lead AF Ferrari past Thiim after the second round of pitstops. Bruni and team-mate James Calado then made life difficult for the Danish Aston duo in Bahrain. And the British-based Ganassi Ford squad kindly allowed its two crews to race hard at Fuji and Shanghai, Andy Priaulx and Harry Tincknell coming out on top in a fierce battle each time with the more-fancied sister car of Olivier Pla and Stefan Mucke.

The best racing in GTE Pro, however, was provided by two teams that weren't involved in the full championship. The US – or 'real' – Chip Ganassi squad and the Risi Competizione Ferrari team battled hard nearly all the way at Le Mans. The winning Ford GT shared by Dirk Muller, Joey Hand and Sebastien Bourdais prevailed by almost a minute over the Ferrari 488 driven by Giancarlo Fisichella, Toni Vilander and Matteo Malucelli. Multiple penalties that followed a series of protests from both camps reduced that to just 20s in favour of the American car.

The new GTE technical rules, which allowed for greater technical freedoms, were devised to make the BoP process easier, but appeared to have the opposite effect. There was certainly some learning



GTE PRO WINNERS



*Was first WEC entry home at Le Mans, but GTE Pro class won by #68 Ford.

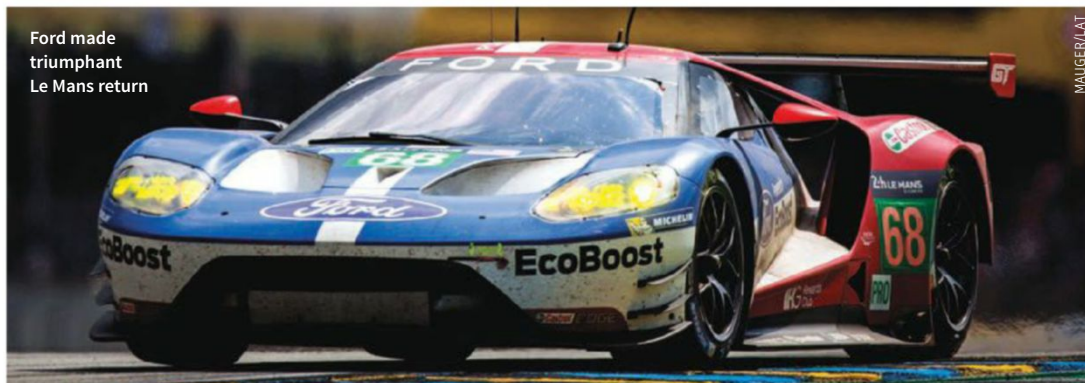
to do on the part of the rulemakers, particularly getting to grips with the return of turbocharged engines.

But the sad truth is that competing in GTE Pro in 2016 was as much about not performing as performing as the manufacturers jockeyed for position in the BoP stakes. Even the rulemakers admitted it was going on. It would be wrong and probably impossible to say who was most culpable.

AMR also claimed the meaningless teams' title and might have triumphed in the GTE Am class too with a bit more luck. The combination of Pedro Lamy, Mathias Lauda and Paul Dalla Lana was easily the best in the division and won no fewer than five times. But two non-finishes, most pertinently when double points were on offer at Le Mans, gave them only the faintest of hopes of snatching the title from long-time points leaders Emmanuel Collard, Rui Aguas and Francois Perrodo heading to Bahrain.

Engine failure for the Vantage GTE in the third hour gave the AF Corse Ferrari trio the title. They won just once aboard their 458 Italia – GTE Am doesn't allow current-year cars – but crucially notched up maximum points at Le Mans behind the visiting Scuderia Corsa Ferrari team.

The Aston's Bahrain failure allowed Proton Porsche drivers David Heinemeier Hansson and Khaled Al Qubaisi to snatch the runner-up position. A second victory of the year with factory driver Pat Long, who missed two races, aboard their 911 RSR allowed them to sneak ahead of the Aston crew by just two points. ❄



Ford made triumphant Le Mans return



Thiim/Sorensen
Aston sealed title
at Bahrain finale

GT CHAMPIONSHIP

POS	DRIVER	TEAM/CAR	1	2	3	4	5	6	7	8	9	PTS
1	Marco Sorensen (DK) Nicki Thiim (DK)	Aston Martin Racing · Aston Martin Vantage GTE	3	DNF	5	3	3	1	5	4	1	156
2	Davide Rigon (I) Sam Bird (GB)	AF Corse · Ferrari 488 GTE	1	1	DNF	2	4	3	4	5	3	134
3	Gianmaria Bruni (I) James Calado (GB)	AF Corse · Ferrari 488 GTE	2	DNF	DNF	1	2	2	3	3	2	128
4	Olivier Pla (F) Stefan Mucke (D)	Ford Chip Ganassi Team UK · Ford GT	5	DNF	4	4	11	13	2	2	6	118
5	Andy Priaulx (GB) Harry Tincknell (GB)	Ford Chip Ganassi Team UK · Ford GT	4	2	18	12	5	4	1	1	4	117.5
6	Darren Turner (GB)	Aston Martin Racing · Aston Martin Vantage GTE	3	DNF	5	5	1	5	6	DNF	5	115
7	Richie Stanaway (NZ)	Aston Martin Racing · Aston Martin Vantage GTE	DNF	3	6	5	1	-	6	DNF	-	88
8	Michael Christensen (DK) Richard Lietz (A)	Dempsey Racing · Proton Porsche 911 RSR	9	4	12	6	6	6	7	6	7	74
9	Billy Johnson (USA)	Ford Chip Ganassi Team UK · Ford GT	5	DNF	4	-	-	-	-	-	-	60
10	Jonny Adam (GB)	Aston Martin Racing · Aston Martin Vantage GTE	-	3	6	-	-	-	-	-	5	56

11 Emmanuel Collard/Francois Perrodo/Rui Aguas (AF Corse Ferrari 458 Italia) 55.5; **12** Fernando Rees (Aston Martin Racing Aston Martin Vantage GTE) 55; **13** Marino Franchitti (Ford Chip Ganassi Team UK Ford GT) 54.5; **14** Mathias Lauda/Paul Dalla Lana/Pedro Lamy (Aston Martin Racing Aston Martin Vantage GTE) 38; **15** David Heinemeier Hansson/Khaled Al Qubaisi (Abu Dhabi-Proton Racing Porsche 911 RSR) 34.5; **16** Patrick Long (Abu Dhabi-Proton Racing Porsche 911 RSR) 33.5; **17** Pierre Ragues (Larbre Competition Chevrolet Corvette C7.R) 19.5; **18** Adam Carroll/Ben Barker/Mike Wainwright (Gulf Racing UK Porsche 911 RSR) 18; **19** Christian Ried/Joel Camathias/Wolf Henzler (KCMG Proton Porsche 911 RSR) 17; **20** Yutaka Yamagishi (Larbre Competition Chevrolet Corvette C7.R) 16.5; **21** Philipp Eng (Dempsey Racing-Proton Porsche 911 RSR) 16; **22** Paolo Ruberti (Larbre Competition Chevrolet Corvette C7.R) 12; **23** Andrew Howard/Gary Hirsch/Liam Griffin (Aston Martin Racing Aston Martin Vantage GTE) 8; **24** Jean-Philippe Belloc (Larbre Competition Chevrolet Corvette C7.R) 4; **25** Ricky Taylor (Larbre Competition Chevrolet Corvette C7.R) 3.5; **26** Lars Viljoen (Larbre Competition Chevrolet Corvette C7.R) 2; **27** Alessandro Pier Guidi (AF Corse Ferrari 488 GTE) 1; **27** Aaron Scott/Duncan Cameron/Matt Griffin (AF Corse Ferrari 458 Italia) 1; **27** Romain Brandela (Larbre Competition Chevrolet Corvette C7.R) 1; **30** Klaus Bachler (Abu Dhabi-Proton Racing Porsche 911 RSR) 0.5; **30** Kevin Estre (Abu Dhabi-Proton Racing Porsche 911 RSR) 0.5.



Collard/Perrodo/
Aguas Ferrari
won GTE Am

GTE AM

1 Emmanuel Collard/Francois Perrodo/Rui Aguas (AF Corse Ferrari 458 Italia) 188; **2** David Heinemeier Hansson/Khaled Al Qubaisi (Abu Dhabi-Proton Racing Porsche 911 RSR) 151; **3** Mathias Lauda/Paul Dalla Lana/Pedro Lamy (Aston Martin Racing Aston Martin Vantage GTE) 149; **4** Patrick Long (Abu Dhabi-Proton Racing Porsche 911 RSR) 130; **5** Christian Ried/Joel Camathias/Wolf Henzler (KCMG Proton Porsche 911 RSR) 121; **6** Pierre Ragues (Larbre Competition Chevrolet Corvette C7.R) 108; **7** Adam Carroll/Ben Barker/Mike Wainwright (Gulf Racing UK Porsche 911 RSR) 106; **8** Yutaka Yamagishi (Larbre Competition Chevrolet Corvette C7.R) 73; **9** Paolo Ruberti (Larbre Competition Chevrolet Corvette C7.R) 45; **10** Ricky Taylor (Larbre Competition Chevrolet Corvette C7.R) 43; **11** Andrew Howard/Gary Hirsch/Liam Griffin (Aston Martin Racing Aston Martin Vantage GTE) 24; **12** Jean-Philippe Belloc (Larbre Competition Chevrolet Corvette C7.R) 20; **12** Romain Brandela (Larbre Competition Chevrolet Corvette C7.R) 20; **14** Lars Viljoen (Larbre Competition Chevrolet Corvette C7.R) 15; **15** Aaron Scott/Duncan Cameron/Matt Griffin (AF Corse Ferrari 458 Italia) 12; **16** Klaus Bachler (Abu Dhabi-Proton Racing Porsche 911 RSR) 11; **17** Kevin Estre (Abu Dhabi-Proton Racing Porsche 911 RSR) 10.

Champ's Elysee ends its arc des triumphes

Citroen star Lopez looked under threat early on, but circumstances transpired to help him take a third crown as the marque bowed out

By Jack Cozens, WTCC Correspondent

🐦 @JHCozens



LE MEUR/DPP1

Just as he had done the previous two years, Jose Maria Lopez cruised to the World Touring Car title in his Citroen C-Elysee. That's how it looks on paper, anyway. Same old pattern, same results, same story. Case closed. Right?

While the result was utterly predictable – indeed, the cancellation of the Thailand round meant Lopez had the title wrapped up by the end of the first weekend in September – for a good spell there appeared to be a challenge for the crown.

That challenge, led by Honda's Tiago Monteiro, ultimately unravelled as, one

by one, events went against Lopez's rivals. The season was one of 'what ifs?', most of which had varying degrees of significance, but cumulatively mask how strong the competition was in the first half of the year and, potentially, whether any genuine test of Lopez's and Citroen's mettle might have happened.

The campaign certainly started in auspicious fashion. Rob Huff gave the proverbial monkey no time to clamber onto his shoulders as he won at the first attempt following his switch from Lada to Honda. And, although Lopez ran out the winner of race two, he had to hold on as a charging Monteiro hounded the world champion in the closing laps, eventually

Lopez leads at start of second race at Paul Ricard, which he would win

finishing just 0.284 seconds short.

Thanks to that stellar showing, plus a win and a second at the next event in Slovakia, Monteiro joined an elite club of two people (alongside Sebastien Loeb, no less) to have headed Lopez in the drivers' standings at any point during the Argentinian's three-year full-time stint in the WTCC.

So bereft of a challenge to Lopez had the championship been in 2014 and '15 that any excitement over Monteiro's showing had to be whispered for fear of breaking the jinx, while that was also tempered by the fact that Honda and Citroen were not on level playing fields. As the reigning champion manufacturer,



all of Citroen's C-Elysees started the season with the maximum amount of ballast, upped to 80kg for 2016.

That was much to the chagrin of Citroen, which was due to pull out of the WTCC at the end of the year, plus Lopez's team-mate Yvan Muller. But while they aired their dirty laundry in public, Lopez was much more reserved in his comments – confident perhaps that the third round of the season, where Honda took on 70kg, would be a much better litmus test for the two cars' comparative levels.

But Hungary came and went with Honda still up there. OK, Lopez took back the championship lead, but the C-Elysee was hardly streets ahead of the Civic at

the Hungaroring. Huff, in fact, might well have won the second race had it not been for a dubious drive-through penalty for a pass on Muller for second. Still, even that wasn't the perfect test given it had rained all day. Perhaps Marrakech would prove how far ahead Citroen was.

Er, not quite...

Honda set out its stall nice and early, with Huff fastest in the Friday test session and Monteiro quickest in first practice. The margins were fine, but the message was consistent each time: Honda was faster than Citroen. Huff led a factory Honda 1-2-3 lockout in qualifying from Norbert Michelisz and Monteiro, and the trio converted >>



INVESTIGATION EXPOSES HONDA'S FLOORS

IT WAS ALMOST TOO GOOD TO BE TRUE: surely Honda was not capable of taking on and beating Citroen in a straight fight – particularly on a street circuit where Citroen had been so dominant for the previous two years.

Just hours after it had done just that, though, warning signs appeared with the issuing of the Marrakech race classifications, which confirmed that the Civic's flat floor was being investigated.

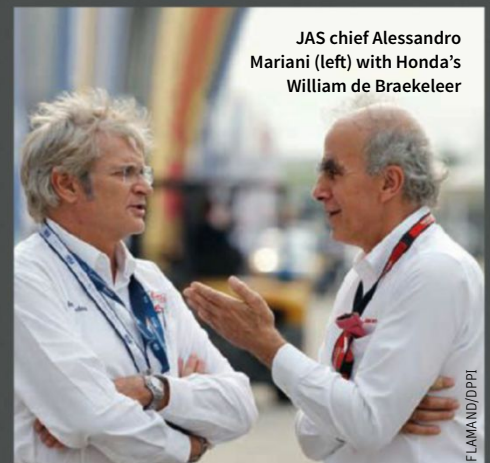
Honda had been given ample warning: it was investigated in Hungary for the same reason, although on that occasion the local stewards decided to end that particular examination, having been short on time to complete a thorough check of the cars.

The Civics were passed through scrutineering in Marrakech, but then entered back into investigation by the championship's technical delegate Manuel Leal, who had noticed an irregularity. Honda's flat floor at the start of the season had matched the homologated version, but the one used in Hungary and Morocco had been modified, with lead added to the Nomex composite that formed the floor.

This made the floor heavier, which, while not the most likely advantage, allowed Honda to improve and play with its weight distribution, the car's centre of gravity having been lowered.

In Leal's eyes, this constituted a 'different' part to the one homologated, therefore constituting a breach of articles 263.003 and 263.004 of Appendix J of the sporting code, which expressly prohibits the modification of homologated parts.

Stewards at the Nurburgring agreed and, while the JAS-run Honda team was partially successful in its appeal against the decision, the loss of its Marrakech results went some way to killing off its title aspirations.



JAS chief Alessandro Mariani (left) with Honda's William de Braekeleer

FLUAMND/DPPI

that into a race-two whitewash in that same order in the rain. It was a great performance, and proved how adaptable the 2016 Civic was, given Citroen's strength over the kerbs and bumps. There were now three drivers ready to take Lopez on.

Could a title fight really be on the cards? Something had to go wrong. Sure enough, a storm was brewing.

With the issuing of the Marrakech results came an asterisk. The classifications remained provisional, 'subject to the conclusion of the further investigation concerning flat bottom of car 5, 12, 18 [and] 55'

The floor of the Civic was the part in question, the construction of which had been changed from that originally submitted in its homologation form, and meant all four cars were under investigation for a breach of technical regulations (see p35).

At the Nurburgring the stewards considered the evidence and dealt Honda a crushing blow: it had been disqualified



from the previous two rounds. The manufacturer refuted that judgement, immediately lodging an appeal and vowing to run the floor in defiance of the ruling, before later switching back to its original.

But things only got worse. Try as the team might at the Nurburgring, it didn't seem able to escape the cloud that loomed above its awning.

Monteiro fought hard at Nurburgring but crashed out on final lap of race one, gifting win to Lopez

Michelisz was the only one of the three able to make the Q3 shootout, with Monteiro 10th and Huff starting 16th for race one after taking an engine penalty. Come race day, though, Monteiro looked a man determined and, starting from the reversed-grid pole, immediately tried to make a break for it.

Mehdi Bennani helped, his Sebastien Loeb Racing Citroen backing the pack up as Monteiro edged away, but once Volvo's Thed Bjork and the factory Citroens had jumped Bennani, and Bjork had retired from second, Monteiro was soon looking in his rear mirrors.

Even then he looked as though he might hold on to win, having once fended off Muller at the end of Dottinger Hohe, but half a lap from home disaster struck.

Down went Monteiro's front right tyre, and off went the Civic towards the Armco at high speed. Monteiro skated along the barrier before being spat back onto the circuit into the path of the hapless Muller, with both out on the spot. Lopez just avoided the crash and

DRIVERS' CHAMPIONSHIP

POS	DRIVER	TEAM	CAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Jose Maria Lopez (RA)	Citroen Total	Citroen C-Elysee WTCC	6	1	5	1	13	1	2	1	1	1	5	8	5	5	5	1
2	Yvan Muller (F)	Citroen Total	Citroen C-Elysee WTCC	13	4	7	5	12	2	3	2	DNF	DNS	3	11	9	2	3	5
3	Tiago Monteiro (P)	Honda Racing Team JAS	Honda Civic WTCC	4	2	1	2	11	3	EXC	EXC	DNF	DNS	6	5	10	1	4	4
4	Norbert Michelisz (H)	Honda Racing Team JAS	Honda Civic WTCC	3	3	6	4	DNS	10	EXC	EXC	3	2	10	3	8	3	6	8
5	Mehdi Bennani (MA)	Sebastien Loeb Racing	Citroen C-Elysee WTCC	2	8	2	6	1	8	6	5	5	5	9	10	4	8	8	7
6	Rob Huff (GB)	Honda Racing Team JAS	Honda Civic WTCC	1	6	3	14	10	6	EXC	EXC	4	4	7	4	6	4	2	3
7	Nicky Catsburg (NL)	Lada Sport	Lada Vesta WTCC	8	5	10	3	3	13	DNF	7	9	6	2	1	3	7	13	12
8	Tom Chilton (GB)	Sebastien Loeb Racing	Citroen C-Elysee WTCC	11	9	8	7	2	5	5	EXC	2	3	14	16	2	10	1	9
9	Gabriele Tarquini (I)	Lada Sport	Lada Vesta WTCC	DNF	DNF	4	13	5	DNF	4	3	7	9	1	2	12	13	14	13
10	Thed Bjork (S)	Polestar Cyan Racing	Volvo S60 WTCC	7	DNF	EXC	EXC	15	4	9	10	DNF	8	DNF	15	7	6	11	14

11 Tom Coronel (ROAL Motorsport Chevrolet RML Cruze TC1) 11; 12 Hugo Valente (Lada Sport Lada Vesta WTCC) 78; 13 Fredrik Ekblom (Polestar Cyan Racing Volvo S60 WTCC) 47; 14 James Thompson (Munnich Motorsport Chevrolet RML Cruze TC1) 26; 15 Nestor Girolami (Polestar Cyan Racing Volvo S60 WTCC) 12; 16 Gregoire Demoustier (Sebastien Loeb Racing Citroen C-Elysee WTCC) 11; 17 John Filippi (Campos Racing Chevrolet RML Cruze TC1) 9; 18 Esteban Guerrieri (Campos Racing Chevrolet RML Cruze TC1) 9; 19 Robert Dahlgren (Polestar Cyan Racing Volvo S60 WTCC) 6; 20 Rene Munnich (Munnich

ROUND BY ROUND

Paul Ricard

R1 Rob Huff

R2 Jose Maria Lopez

Huff starts his Honda campaign with a victory in the opening race from second on the reversed grid, beating Bennani and Michelisz. Monteiro almost gives Honda a perfect start to the year in race two, barging past Muller for second before reeling in leader Lopez, ultimately finishing a quarter of a second short.



Slovakia Ring

R1 Tiago Monteiro

R2 Jose Maria Lopez

Making up for his French near-miss, Monteiro wins the opening race with a late pass on Bennani. Lopez's win in race two is the more impressive, as he stages a fightback to re-catch and pass Catsburg to deny the Dutchman a first WTCC victory. But Monteiro tops the standings after also passing Catsburg.

Hungaroring

R1 Mehdi Bennani

R2 Jose Maria Lopez

Following two second-place finishes, Bennani goes one better with a poignant win (after the death of his uncle) at a wet Hungaroring as the big names toil as a result of poor tyre choices. Lopez wins the second race from Muller after a questionable mid-race drive-through penalty for Huff for a move on Muller.



Marrakech

R1 Tom Coronel

R2 Jose Maria Lopez

The results sheets show a comfortable one-two for Citroen led by Lopez in race two, but on-track the pair are well beaten by the three factory Hondas before an investigation deems their flat floors illegal and disqualifies them. That doesn't affect the first race, won by ROAL Motorsport's Coronel.

Nurburgring

R1 Jose Maria Lopez

R2 Jose Maria Lopez

To add to the pain of its flat-floor penalties, Honda loses what would have been a hard-fought win with Monteiro when the Portuguese crashes on the final lap at the Nordschleife, wiping out himself and Muller. Lopez inherits the victory and goes on to seal a win in race two from Michelisz.





Monteiro enjoys a popular race-two victory at home, in Portugal

“Stewards at the Nurburgring considered the evidence and dealt Honda a crushing blow”

went on to win before adding a second victory off the main-race grid. All of a sudden, Lopez’s lead was a devastating 69 points. Two weeks later it had been upped to 94 ahead of Bennani, and a whopping 115 over Monteiro, as Honda’s appeal was only partially overturned – with the decision on its Marrakech results upheld. Come the next round at Moscow Raceway, Honda appeared to have the

wind back in its sails – until more rain arrived to dampen its prospects. While clearly the fastest car in the dry and in light rain, a downpour in qualifying dropped the Civic down the order. The rain stayed, helping Lada drivers Gabriele Tarquini and Nick Catsburg to win, with the Hondas showing a hint of their true potential as they fought through the pack near the race-two finish – although only when the rain had abated. >>

	17	18	19	20	21	22	PTS
	4	2	4	1	9	3	381
	5	1	3	2	4	6	257
	3	3	10	8	DNF	5	214
	1	8	2	11	5	4	212
	15	4	11	3	16	1	206
	2	9	9	13	3	8	200
	7	11	5	4	8	14	175
	8	6	DNF	9	2	DNF	163
	10	10	16	5	1	7	147
	6	7	1	7	6	2	117

Motorsport Chevrolet RML Cruze TC1) 2; 21 Ferenc Ficzá (Zengo Motorsport Honda Civic WTCC) 2; 22 Sabine Schmitz (Munnich Motorsport Chevrolet RML Cruze TC1) 1.



Vila Real

R1 Tom Coronel
R2 Tiago Monteiro
Coronel clinches a brilliant second win of the year after leaping off the reversed-grid pole, resisting Chilton. There’s a more popular winner in race two though, as Monteiro backs up pole with victory in front of his home crowd, and Muller splits the Portuguese from Michelisz and Huff.



Moscow Raceway

R1 Gabriele Tarquini
R2 Nick Catsburg
Honda looks well placed to bounce back from its recent disappointment, but a downpour allows Lada to sweep to a qualifying 1-2-3. Tarquini and Catsburg start race one down the order, but charge through to a one-two, and the pair repeat that result in race two, this time with Catsburg ahead.



Rio Hondo

R1 Tom Chilton
R2 Jose Maria Lopez
Chilton is the fastest man out of the blocks after the mid-season break, scoring his first win since his switch to Sebastien Loeb Racing for 2016. Lopez ends a five-race winless run with victory in the second race, moving into first when Michelisz and Muller tangle as the trio battle for the lead.

Motegi

R1 Norbert Michelisz
R2 Yvan Muller
While Lopez hands team-mate Muller a token first victory of the season on the final lap of the main race, the Argentinian provisionally clinches the 2016 title, pending the cancellation of the round in Thailand. Before that, Michelisz grabs his first win since moving to the factory Honda squad.



Shanghai

R1 Thed Bjork
R2 Jose Maria Lopez
Pre-race talk is about Muller, who announces his retirement from the series on the event’s eve. The Frenchman scores his last podium in the second race, trailing team-mate Lopez, while Bjork snatches a famous first win for Volvo and Polestar on the final lap of race one from Honda’s Michelisz.

Losail

R1 Gabriele Tarquini
R2 Mehdi Bennani
Less than a month after Lada’s decision to quit, Tarquini gives the marque one last hurrah with victory in the reversed-grid race. Bennani wins after resisting pressure from Bjork, while Monteiro takes third place overall ahead of team-mate Michelisz with a last-lap pass on Muller for fifth.



That killed off any real hope of a fight, with Lopez retaining a sizeable gap to the rest. Monteiro did record a home win in Vila Real, much to the adulation of an impressive crowd, but Lopez was able to go five races without a podium between Nurburgring and his next victory (on home soil) without any damage done to his 100-plus points lead. More significantly, as rumours began to grow about the cancellation of the Thailand round over financial disagreements, Lopez also found himself with a tangible opportunity to wrap up the title in Japan.

Lopez exhibited many great attributes during his time in the WTCC and, having led all of the second race at Motegi, he slowed on the final lap to hand teammate Muller his first and only win of what proved to be his final season in the WTCC, the Frenchman announcing his retirement later in September. But it mattered not: Lopez was champion with two rounds to spare.

“I am probably one of the happiest people in the world right now,” he said. “Sometimes, behind the cameras, people see a hard and cold man but you know we all are human beings and there are a lot of things and a lot of emotion behind a world championship. You don’t win a championship easily.”

A routine title, then, was the final result for Lopez, but the story behind his third crown was by no means conventional. Nurburgring aside, he’d hardly been at his commanding best over the first half of 2016 – but rather than indicating any



Tarquini justified Lada's faith with a strong season, including a win in Qatar

weakness on his part, it perhaps highlighted the scale of the challenge for his competitors to get close to him.

With 11 different race winners, improved performance from Citroen's challengers and the addition of Volvo, which managed one win with Bjork, the 2016 campaign was certainly the best of the TC1 rules cycle. So it's a shame that competition is unlikely to be seen next year, with no Citroen factory squad and likely no Lada cars at all after the Russian

manufacturer's shock withdrawal.

What's next for the WTCC was the question asked by Autosport after the Qatar round last season, and there's a sense of deja vu a little more than 12 months on. Boss Francois Ribeiro and the championship have responded well to problems thrown at them over the previous three years but, with a loss of top-level cars and drivers and the addition of a second class, there's plenty of uncertainty about 2017. 🍀

Muller's Motegi win would be his last in WTCC



AUTOSPORT'S TOP 10 WTCC DRIVERS



1 JOSE MARIA LOPEZ
A World Touring Car top 10 drivers' list from any of the past three years wouldn't be justifiable had Lopez not been at number one. The 2016 season was without doubt Lopez's most challenging, so it's a mark of how consummate a professional he is that he was able to emerge with another crushing winning margin of over 100 points. While team-mate Muller moaned at the beginning of the season, Lopez did his best to get on with the task in hand, accumulating points while those around him slipped up. A devastating double at the Nordschleife was a stark reminder of his potency.



2 TIAGO MONTEIRO
Forget the fact that less than half a lap from the end of the season Monteiro was set to finish the year fourth in the points; Lopez aside, the Portuguese was the standout performer. Despite his familiarity with the team, Monteiro realistically went into the season third of the Honda drivers on paper. He quickly dispelled that notion by coming close to pole at the season opener and then causing Lopez a rare sweat by chasing the Citroen star down in the main race. He only had to wait until Slovakia for his first win. Had circumstances allowed, Monteiro could well have mounted a title tilt.



3 NORBERT MICHELISZ
Michelisz justified the faith that Honda had shown in promoting him from Zengo Motorsport – with which he'd been affiliated for eight years – early in the season, producing several consistent performances. A home round in Hungary blighted by raceday troubles was cruel, just as he'd settled into the team, but Michelisz put that behind him and was the team's top scorer over the second half of the campaign. A win was justified, even though it came from the reversed grid in Japan, and topped a strong campaign – especially impressive given his lack of works-team experience.



4 MEHDI BENNANI
Undoubtedly, 2016 was Bennani's best season in the WTCC. The Moroccan driver made the most of spots at the front of the reversed grid at the first two rounds of the year to grab two second-place finishes in France and Slovakia. He then went one better by taking an emotional win in Hungary, following the death of his uncle. By the end of the year he was qualifying at the front of the main grid on merit, and was able to wrap up the Independents' title for the first time with one round to spare. Bennani jumped Huff in the points for good measure as a result of his win in the very last race of the year in Qatar.



5 NICK CATSBURG
It might sound condescending to still be talking about Nick Catsburg's relative infancy in touring cars given his wealth of experience in racing prior to his move to Lada in the middle of 2015, but in the space of 18 months he's proved himself capable of matching and beating world champion team-mates. A truly accomplished driver, Catsburg was the star of the Moscow meeting in June with a stunning pole and race-two win. Lada was much improved in 2016, but Catsburg was the only one of its three drivers who consistently showed near the front of the field.



6 ROB HUFF
Huff started his first campaign as a Honda driver with victory at Paul Ricard in pretty dominant fashion, but over the course of the season was ever so slightly outdone by his team-mates. He should really have a second win on his 2016 record, given the commanding performance he produced in Marrakech, but Honda's flat-floor irregularities meant he was stripped of that. That he managed five more podiums throughout the season to add to his win was more than enough to justify his move to Honda despite Lada's improved form, but Huff's season probably fell a little short of his expectations.



7 YVAN MULLER
Sentimentality alone is not enough justification to merit Muller's placing any higher. Yes, the Frenchman ended up second once more, but his championship position – and margin over third-placed Monteiro – masked the fact that he struggled at times in 2016. After a shaky start at home, Muller looked as though he'd returned to his best with a fine pole in Slovakia, but he dropped to fifth in the race – a theme typical of his season. That he bowed out of his final WTCC campaign with a sole victory (and even then only when it was handed to him by Lopez) was both a pity and a huge underachievement.



8 GABRIELE TARQUINI
After it appeared that his career had effectively been ended when Honda announced it would not retain him for 2016, Tarquini earned a stay of execution in the WTCC when Lada stepped in to offer him a contract. The Italian enjoyed a strong year overall, and became a multiple winner after adding a second win in Qatar in November to his earlier success in Russia. Lacked consistency across the year, with just 12 points scored between Moscow and Losail, but put in a solid display that justified his stay on the grid. Now Tarquini waits for another eleventh-hour offer.



9 TOM CORONEL
This year marked a return to form for Coronel, who had one of his worst campaigns in the WTCC in 2015. Early competitive showings hinted at what was to come – even if results were hard to come by – across the opening rounds, but his Marrakech victory really was a surprise. OK, Coronel was helped by the fact that Valente took pacesetter Thompson out on lap one, but he and his ROAL Motorsport team stuck with a bold set-up – including an aggressive angle of rear toe-in – that clearly paid dividends. A second win, plus a further podium for second in Argentina, were the other highlights.



10 TOM CHILTON
That Chilton is 10th on the list, six spots behind team-mate Bennani, does not mean 2016 was a bad season for the Brit. OK, his predictions (finishing in the top three of the standings and winning the independents' title) after getting his hands on the dominant Citroen C-Elysee proved wide of the mark. But, once settled with the car and team, Chilton was a match for Bennani, who had a year's prior experience in the machinery. Chilton drove brilliantly all weekend at the Nordschleife to grab two podiums and, while protecting a lead wasn't a strength, he excelled in hanging on to good positions.



THE GREATEST SHOW ON EARTH

The NEC is the place to be next week. Here's a taste of what to expect at Autosport International

By Mitchell Adam, International Editor

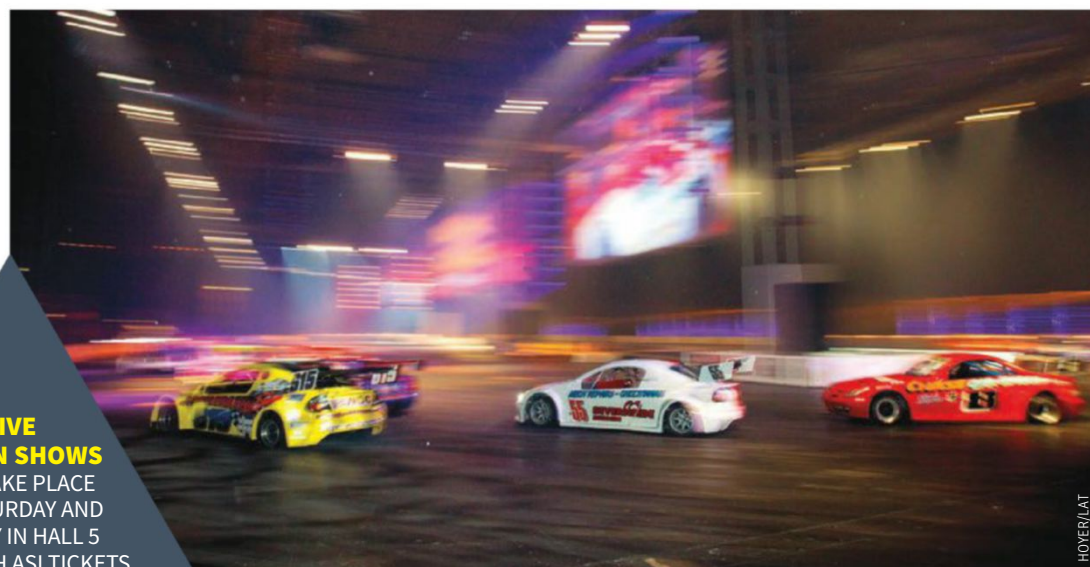
[@DrMitchellAdam](#)

The new motorsport season starts in Birmingham again in 2017, with the annual Autosport International show at the NEC.

On January 12-15 the very best of motorsport will be in the spotlight, with exclusive displays, high-profile guests and activities spanning everything from karting and club motorsport to Formula 1.

The first two days of Europe's biggest motorsport show will focus on the industry itself, with companies and personnel from across the world converging to assess the developments that will shape the season ahead, before doors open to the public on Saturday and Sunday.

Here's just a taste of what you can expect to see at the show.



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THE SHOWSTOPPERS

Wherever you look within the NEC, there will be a stunning and diverse array of race cars to inspect, from the Lotus 49 (see page 48) to the basis of the new Electric GT Championship.

The *F1 Racing Grid* is back, and Formula 1 cars are accompanied within the halls by machinery from other disciplines, along with areas curated by the British Touring Car Championship and the Rally GB round of the World Rally Championship.

The 30th birthday of Ford's RS500 Cosworth Group A touring car and a fleet of Formula Fords from the category's 50-year history will also be

among the special celebrations in the spotlight.

An Electric GT Championship will be staged for the first time in 2017, and the race-going Tesla Model S P85+ that will fill the grid will be on show.

Other Autosport International areas focus on karting, national motorsport, oval and historic competition, with a host of constructors, championships and suppliers present.

Motoring standouts within the Performance Car Show include the Ford GT, Aston Martin DB11, new Honda NSX, Lexus LC500 V8 Sport, and Lamborghini Aventador and Ferrari 458s specially modified by leading tuner Liberty Walk.



RS500 display will celebrate icon's 30th birthday

MCKLEIN/DE

LIVE ACTION

As ever, the Live Action Arena will be one of the highlights of Autosport International. This year Sky Sports F1 commentator David Croft will host the action-packed shows in the 5000-seat amphitheatre.

The history of rallycross, which is 50 years old in 2017, will be one of the key elements. A Porsche 911 and several Group B machines will form part of a 10-car showcase. Sportscar legend Vic Elford, who won the first rallycross event, will drive the 911, while other stars will include multiple champions Martin Schanche and Kenneth Hansen.

Motorsport stars such as BTCC champions Gordon Shedden, Matt Neal, Colin Turkington and Andrew Jordan (see page 46) will go head-to-head in a time trial, and three-time Le Mans 24 Hours winner Allan McNish will also be interviewed by Croft.

The GTE Pro title-winning Aston Martin Vantage and stunt driver Terry Grant are also part of what will be a packed programme.



Croft will interview the stars in Live Action Arena

MAUGER/LAT

CELEBRATE WITH WILLIAMS

After starring at the show last year, the Williams F1 team will launch celebrations for its 40th anniversary at Autosport International in 2017.

This year's major presence will be in the shape of an interactive experience, through which fans can navigate its illustrious F1 history, as part of an overhaul of the main Autosport stage.

Williams is bringing its very first F1 winner to the show, the FW07 driven by Clay Regazzoni to victory in the 1979 British Grand Prix at Silverstone. That will be joined by a pair of championship-winning cars in the forms of Nigel Mansell's 1992 FW14B and Damon Hill's '96 FW18 – read more about Hill being reunited with that car on page 42.

Rounding out the display is the FW25 driven by Juan Pablo Montoya to win the Monaco Grand Prix in 2003, while key team members will also appear.

"We are delighted that we will be returning to the world's biggest motor racing show again in 2017, a year that marks our 40th anniversary," says deputy team principal Claire Williams. "We get such great support from the fans and we can't wait to be able to give something back at Autosport International. We're looking forward to showing off some of our most famous racing cars."



Regazzoni scored Williams's first GP win at Silverstone in 1979

LAT

BACK IN T

Damon Hill was recently reunited with his 1996 Formula 1 world title-winning Williams FW18. He told *F1 Racing* about driving the car you can see at Autosport International next week

To jump back in a machine that I spent only a year driving and to feel completely at home again after a 20-year gap is something quite bizarre and illuminating, because it means those memories and experiences are not forgotten.

It's like riding a bicycle, that old chestnut: you just get in there and it all becomes automatic. Even the mechanics just remember what they used to do and what routines they had, and they automatically slot straight back in after a 20-year gap – and that's something to behold.

The time hadn't really passed. I was trying to remind myself what was different and I could barely find anything. Obviously, when I look at myself in the mirror, it's easy to see the difference, but in the cockpit, my mind is the same mind. I kept saying to myself: "Now, Damon, you're 20 years older, just take it easy". But you can't, because your default mode is to push hard and go to the limit. The limitation simply becomes physical; you just haven't got the stamina and the strength anymore to push the thing to the limit for any length of time.

Towards the end, I was starting to get neck ache, and that's when I was driving



in the wet on a cold track on wet tyres. I started to think: "Wow, these cars were pulling quite a lot of g-load and you were pretty well adapted". A muscle doesn't take long to build up, but, even so, your heart is pumping. In a grand prix, your heart would be pumping pretty hard for an hour-and-a-half to two hours and you're sweating a lot. I just wouldn't be able to do that anymore.

I haven't raced since I did a VW charity race years ago at Brands Hatch, in a VW Scirocco. I got beaten by Johnny Herbert, Julian Bailey and Martin Donnelly, so I decided then that it was definitely a good idea to retire!

I drove a GP2 car at Paul Ricard when the series was launched in 2005 and I also drove the GP Masters car. Up until about five or six years after I'd stopped racing, I still felt quick. Even now the default mode is that there's only maximum attack: it's the only time when you draw on all of your resources and your survival instincts kick in. If you don't drive flat-out, then you're kind of half-asleep and you're vulnerable. The only way to be safe is to be fully on attack-and-push mode and that brings in all the instincts you need to keep the thing on the track.

That's the bit that changes over time – the bit that goes, "You don't need this". Also, when you're younger you factor in that you might have an accident, and if you have an accident you're going to go: "Well, hope it turns out OK", you get a big whack and you either hurt or you don't.

But, to be honest, I don't really fancy going through that again. I must say, quite surprisingly, the truth is that I didn't really feel any kind of anxiety about it, but then after a bit you just start thinking to yourself: "What happens if you go off there?" or, "Wouldn't it be a shame if you crashed the car on a day like today?" You start thinking like that and then you sort of just go: "We'll just leave it there, get the car back in one piece". But the desire has never changed >>



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THE ZONE



ALL PICS: GRIFFITHS



– I suppose you could fool yourself and start thinking: “I could do this again easily”, but I don’t completely trust that voice in my head.

In terms of things like hand-eye coordination, I didn’t even think about it. The first time it stepped out, my arms crossed reflexively to correct the slide. I came round on the start/finish straight and gunned it and was getting wheelspin and sliding sideways, but it never felt like it was beyond me. It’s actually harder to drive these things in the slow corners than it is the quick corners, but it’s a nice car. I never drove a car that was as beautifully balanced as this thing. That was it, I think.

I had driven the FW18 once, briefly, since retiring, at the Goodwood Festival of Speed in 2014. That was the first time I’d got back in it at all. That was quite an emotional experience.

The familiarity of that little cockpit and that zone, the little bubble that you live in as a racing driver, it triggered all of the emotions that you feel as a racing driver, because to do the job you have to have all your emotions in check. There are so many emotions going on, it’s just that you manage them. You feel an enormous sense of relief and elation when you win a race, and it all takes place in that cockpit, with that little view the size of a letterbox. So even just sitting in it and not going anywhere brought back all that intensity.

I said to Frank Williams: “Thanks for letting me sample again what that experience was”. It’s not a thrill-seekers’



thing; people talk about motor racing as: “Oh, you need a thrill”. It’s not that. It’s your life, it’s your career, it’s your ambition.

Everything is encapsulated. And that’s your place of work, that’s where you do it, that’s your workshop. If you’re an artist, that’s where you create things from. So it’s a very intense, profoundly moving experience to go back into that place again. Imagine if astronauts could go back to the moon again; they’d be overwhelmed by all the experiences. And then you get out of the car and you’ve got to do all the media and bits to camera and stuff, and that’s all not very real. It brings back all the extra stuff you went through outside of the car, because that’s part of the job, and that’s not always the bit you want to do, that’s not the bit that drove you in the first place to become a racing driver. You can see why Kimi Raikkonen keeps his mouth shut most of the time – it’s because he just wants to drive. I can completely understand that. And you’ve got others who like all the attention and the media – they ham it up.

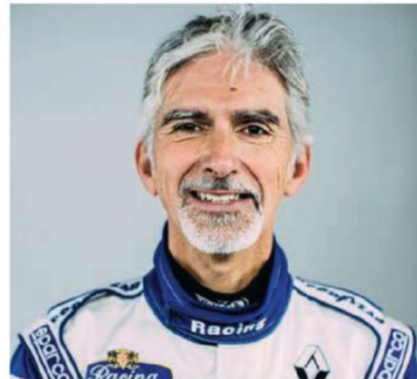
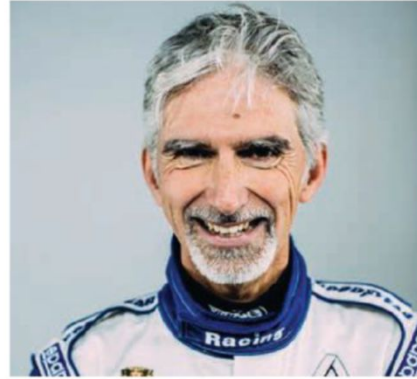
But when you’re strapped in and driving, you’re acutely aware that the thing behind you is like an exploding bomb going off the whole time.

There’s a lot of energy just sitting there. And the car is very frisky, it’s very light, so at first you just feel it; you feel that power that’s under your control, but you’ve got to keep that under control and keep the car pointing in the

**HILL'S
1996 IN
NUMBERS**

16 STARTS
8 WINS **10** PODIUMS
9 POLE POSITIONS
5 FASTEST LAPS **97** POINTS

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“You’re acutely aware that the thing behind you is like an exploding bomb going off”

Damon Hill

right direction. It’s an amazing thing to have that, and open it up for the first time and to be going down the back straight at Silverstone with one of those Renault V10s.

It’s quite a pleasant experience. It has an incredibly wide power band, so you can open it up at quite low revs and it really pulls like a train. You feel that, and it’s a lovely sound: it sings. It’s got a lovely resonance to it.

In spite of all of that, I’m not tempted to do any historic racing or anything like that. It’s gone. I’m a dull tool compared to what I used to be and I can’t be sharpened again, like a rusty old axe. When you’re racing you’re razor sharp and you can’t get back there, and you know you can’t get back. Guys who think they’re as sharp when they’re 40 as they were when they were 22 are lying to themselves. It’s just not true. You get a window and then it closes.

I was lucky, I think, because I peaked at about the right time and I got to a peak, so I knew what it was like to be there, which meant I knew when it wasn’t possible to get back there again. It was harder and harder. It was very interesting, because when I was

racing with Michael Schumacher, in races where I was right out there on the edge, I remember thinking to myself: “There’s not much oxygen up here”. I was gasping for oxygen, and I was thinking: “I can stay here, but I can’t stay for as long as you can”.

I met Franz Klammer [the former champion Alpine ski racer] at a golfing event. We got chatting about skiing and he said: “The thing is, there’s not much oxygen up there”. He said exactly the same thing! He knew that once you’re out there on the very edge of your abilities, you can’t stay there forever. It’s not the death zone, but it’s the peak where you just can’t keep doing it forever. You can maybe get there for a bit, but as you get older you can’t ever get back there. But I do feel immensely privileged to have got the chance to do it at all and have a sample of it.

When you think about it, drivers like Ayrton Senna and Schumacher – and Lewis Hamilton, I suppose, as well – they can go out there and be there on the very outer limits of the atmosphere for longer than anyone else. That’s why they’re special. ■

A CHAMPION OUT TO PROVE A POINT

Andrew Jordan is changing teams again for the 2017 season, but is confident that he can get back on top in the British Touring Car Championship

By **Matt James, BTCC Correspondent**

[@MattJMNews](#)

The biggest challenge of Andrew Jordan's touring car career lays ahead of him in 2017. He is swapping to the WSR BMW 125i M Sport for his 10th year in the British Touring Car Championship – but that's just half of the task ahead.

Not only is he switching to rear-wheel drive for the first time in his BTCC career with a new team to learn, but there is something bigger at stake: his reputation.

This will be his third different team in as many seasons and he hasn't really hit the winning groove since stepping away from his family-run Eurotech Racing back in 2014.

His title-winning year in 2013 had been a real head-turner. He took six wins over the 30 races, including an all-important brace at Rockingham towards the end of the season when the pressure was on.

Even as reigning champ in 2014, there were four wins as he drove to fifth in the points, despite a mid-season shunt that left him concussed. But then, things dried up.

A much-heralded switch for 2015 to the factory MG team, run by Triple Eight Racing, fell apart before halfway through the year and there was a decidedly frosty atmosphere in the garage. It didn't bring a single win.

Last year he joined Motorbase

Performance. He won twice in the Ford Focus but he was overshadowed by team-mate Mat Jackson, who took five wins and finished third in the points.

So this season he needs some special results to catapult his career back to the trajectory it had three seasons ago. "There are plenty of other drivers who have swapped teams like I have – even in the same timeframe I have," says Jordan. "But they don't get the grief that I do. Maybe that's because of what I've achieved in the past. I'm not sure.

"At the touring car awards ceremony last year, [compere] Steve Rider was on stage taking the piss with lots of pre-rehearsed jokes about me swapping teams. That just fuels me, it fired me up. I was glad he did in a way, because I can step on to that stage next season and ask him who's laughing then. It motivates me.

"It's only the people who I don't care about who are pointing out that I've swapped teams three times. The ones who know and who I care about know what's going on."

Jordan is not short of motivation this year. He had three tests with WSR at the end of 2016 and they have fired him up hugely. "When we ran the Hondas ourselves back over the winter of 2012, we were constantly working on the car, tweaking things and pushing the development as hard as we could," he says. "There was a real passion to it.

"I've found that already with WSR. The amount of things it's doing away from the track, developing and spending money in the right areas, you can see it's a similar commitment."

And Jordan says that the impetus of the



EBREY

JORDAN'S BTCC CAREER IN NUMBERS

16 WINS
9 POLE POSITIONS
6 FASTEST LAPS
**4 TITLES (OVERALL 2013;
INDEPENDENTS' 2012, 2013, 2016)**

BMW 125i M SPORT IN NUMBERS

25 WINS 6 POLES 31 FASTEST LAPS
2 DRIVERS' TITLES (overall 2014;
 Independents' 2014)
4 OTHER TITLES
 (Teams' 2014 and 2016;
 Independents' 2014;
 Manufacturers' 2016)

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“I’m going to be able to silence a lot of people at the end of 2017”

Andrew Jordan

team and its backroom staff means he will be giving his all in 2017 too.

“It costs a lot of money to go motor racing and, when you see the team pushing the boundaries and working really hard to give you the best car that they can, then you know you have to bring your A-game every time you get in the car,” says the 27-year-old. “I’m not saying I didn’t before, but the hunger is there.

“Your job as a driver is to go there and win. I don’t want to look back at the end of the season and think, ‘If only I’d spent an hour more on the data’ here or ‘I wish I’d researched that better’ there. I want to be totally on top of it. That’s what it takes to win and I’m prepared to put that in.”

The initial testing has helped cement that

feeling of optimism ahead of the new campaign. Although his first day of running was in the wet, even just a few miles in the BMW 125i M Sport were enough to convince Jordan he had taken the right path.

“I stepped out of the car and I knew this was the right place to be, straight away. I’ve got to grips with the BMW very quickly,” says Jordan after initial tests. “I think I’ve adapted to rear-wheel drive too. I know the racing will be different and there are things that I have to learn in terms of on-track battling, but I know I can get a quick laptime out of it.

“What has impressed me the most is the level of attention to detail from the team. With its passion and my determination, I’m going to be able to silence a lot of people at



Jordan is planning to add a lot more than just a couple of trophies to his cabinet

the end of 2017. Like I say, I just want to see Steve Rider again...”

Jordan will be joining an impressive roster of BTCC champions at the NEC in Birmingham for the Autosport International Show. He will be alongside fellow champions Matt Neal, Gordon Shedden and Colin Turkington, but Jordan himself perhaps has the most to prove in the campaign ahead.

LOTUS 49 IN NUMBERS

12 WINS 19 POLE POSITIONS
14 FASTEST LAPS
**2 TITLES (DRIVERS' AND
CONSTRUCTORS' 1968)**



THE LOTUS 49 HITS 50

The car that brought the DFV engine to F1 is half a century old in 2017. To celebrate, Classic Team Lotus will bring together all seven remaining examples at Autosport International

By Kevin Turner, Editor

[@KRT917](#)



◀ R2/R11

Perhaps the most important of the seven chassis is the car that Jim Clark used to win the 1967 Dutch Grand Prix on the Lotus 49's debut. The work of team boss Colin Chapman and designer Maurice Philippe, the 49 introduced the world to the Cosworth DFV, which was also a stressed member.

After winning at Zandvoort, Clark took R2 to victory in the British (above) and United States GPs. He should have won the Italian GP

too (left), after charging back into the lead from a lap down, only for a faulty fuel pump to drop him to third on the final lap.

Clark took R2 to the 1968 Tasman title before it was loaned to legendary private entrant Rob Walker for Jo Siffert, then upgraded to B-spec for Jackie Oliver. It was redesignated as R11 and sold to privateer Pete Lovely.

In 2010 the car was restored to 1967 specification and is still raced by American owner Chris MacAllister.

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▲ R3

Graham Hill raced alongside Clark during the 1967 F1 season, largely using R3. Although he led races, Hill failed to win a GP and the chassis was soon sold to John Love (above), who drove it in South Africa. It also sprouted wings, but was returned to uncluttered 1967 form before its acquisition by Beaulieu National Motor Museum.

R5/R10 ▶

Chassis R5 won first time out in Monaco in 1968 (right) in the hands of Hill and was also put on pole for the US GP by Mario Andretti. Renumbered R10, it was used by Jochen Rindt in the 1969 Tasman Series before winning the Monaco GP again with Hill. Emerson Fittipaldi also contested the first three GPs of his F1 career in R10.



◀ R6

Oliver had only raced R6 twice before suffering a massive accident in practice for the 1968 French GP. The car was repaired and used by Hill to win that year's Mexican GP (left), a result that secured the Briton his second world title. Rindt used the car in 1969, finally taking his first world championship GP victory at Watkins Glen. In C-specification, R6 completed the Lotus 49's Monaco hat-trick in 1970 when Rindt benefited from leader Jack Brabham's last-corner error. It is now in the collection of Richard Mille.

▼ R7

Sold to Walker, R7 won the 1968 British GP at Brands Hatch, driven by Jo Siffert (below). Hill also raced the car for Walker before it was retired from contemporary action. Historic racer Geoff Farmer acquired the car from the Walker family and used it in competition, winning at the Goodwood Revival in 1999.

R8 ▶

Raced by Hill in the 1969 Tasman Series (right), R8 was also driven by Richard Attwood before being sold to Jo Bonnier. It was then bought by Dave Charlton and raced in South Africa before passing into the hands of Australian collector John Dawson-Damer. He restored it and the car is now owned by F1 design guru Adrian Newey.



◀ R12

Built by Lotus for Ford as a display car, R12 starred at the 1969 Olympia Racing Car Show. Later donated to the Donington Collection, it is now in Richard Mille's collection.

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Capacity: (nom / 1hr rate) 12.5Ah / 17.5Ah
Current: (1hr / 15 pulse) 600A / 700A
LifeSpan: (in RCW battery) 3 yrs
Temperature: (max) -20°C to +60°C
Weight: (gross) 1.8kg
Applications: (typical) 6 to 8



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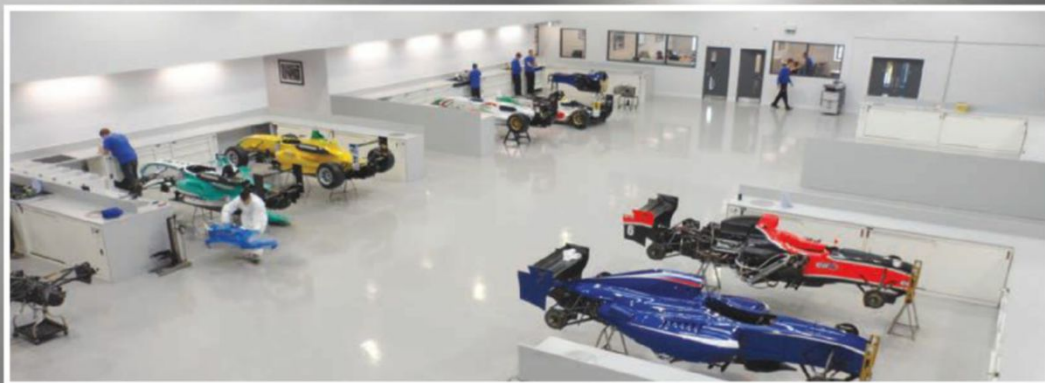
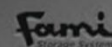
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Ahmed in, Norris out of NZ Toyota series

BRDC BRITISH F3 AUTUMN TROPHY title winner Enaam Ahmed is to contest the Toyota Racing Series in New Zealand, while reigning TRS champion Lando Norris has pulled out.

Sixteen-year old Ahmed has not yet confirmed his full plans for 2017, but he heads to New Zealand with Giles Motorsport alongside Red Bull Juniors Luis Leeds (a title contender in British Formula 4 last season) and Richard Verschoor (the SMP and Spanish F4 champion). The first round takes place next week at Ruapuna Park (January 14-15).

"I'm really excited to be going into TRS with such fierce competition," said Ahmed. "It's going to be a really good challenge to go up against these experienced guys as I wasn't old enough to do it last year. Let's see how it goes."

Meanwhile, McLaren Autosport BRDC Award winner Norris has decided to concentrate on preparing for his rookie campaign in the Formula 3

European Championship, after announcing last November that he would rejoin the M2 Competition team for a crack at a second TRS crown.

"I'm massively disappointed to miss out on the opportunity to defend my Toyota Racing Series title, but I believe I've taken the right decision – although it was a hard one to reach," said Norris.

"Last year was a very busy season of racing that started in January and finished in November. I need to be in the best possible shape, mentally and physically, from the start of the Euro F3 season in April. Being successful in F3 is my number-one priority in 2017, so unfortunately it's a case of sacrificing the TRS opportunity.

"Additionally, having recently won the McLaren Autosport BRDC Award, I really want to spend some time at the Autosport International Show at the NEC in January where I'll now also have important commitments with the BRDC."



MABA winner Norris will focus on European Formula 3 this season

Also among the 20-car field for the TRS are European F3 racer Pedro Piquet, recent Carlin F3 signings Jehan Daruvala and Ferdinand Habsburg, new Ferrari protege Marcus Armstrong and BRDC British F3 ace Tom Randle.

The series takes place over five consecutive weekends of triple-header races, finishing with the historic New Zealand Grand Prix at the Manfeild circuit – recently renamed in honour of the late Chris Amon – in mid-February.

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BRITISH GT

Fuller and Webster join GT4 champs

DEFENDING BRITISH GT4 CHAMPION TEAM RCIB Insurance Racing has signed former British Touring Car driver Howard Fuller and GT Cup graduate Sam Webster for this year.

Fuller and Webster will share the same Ginetta G55 GT4 that won the Team Hard-operated squad the British GT4 Teams' title in 2016 in the hands of William Phillips and Jordan Stilp.

Fuller contested part-seasons in the BTCC with Team Hard in 2012 and 2013, handling a Honda Civic and a Vauxhall Insignia for the squad.

Webster competed in both the world and European KZ karting championships before his move into GT racing in 2016. He ran in the GT Cup with a Fox Motorsport Ginetta before

entering the British GT finale at Donington Park alongside Jamie Stanley.

The team will also benefit from access to the experience of former British GTC champion Adam Wilcox as driver coach.

Team boss Tony Gilham said: "After winning the Teams' title last year we're going all-out for the Drivers' championship this year in GT4, and we feel that we've got a very solid driver pairing in Sam and Howard."

"Sam has tested with us already and was rapid right out of the box and showed how much he's learned with his running last year. He's also got a great karting pedigree.

"Howard will be going into his sixth year

with this team and has so far never had the chance his talent and professionalism deserves – he's only done bits and pieces – so he'll benefit from being able to contest a full season.

"The two have history and work very well together. Sam was a finalist in our VW Scholarship last year and Howard was his coach for that competition. They'll be a great team."

Webster added: "Having had a taste of what British GT is all about last year at the final round, I can't wait to get started this season in my first full season of car racing.

"I know just how tough the task ahead will be. Howard has great experience and I will be looking to form a strong working relationship"

BRDC BRITISH F3

Hingeley joins Dane Kjaergaard at Fortec for BRDC British F3

BEN HINGELEY WILL SWITCH TO RACE for Fortec Motorsports in his second campaign in the BRDC British Formula 3 Championship this year.

After claiming the Formula Jedi title in 2015, his first year of car racing, Hingeley graduated to the revamped British F3 Championship with HHC Motorsport last season.

Hingeley had an inconsistent

campaign, but finished the season in strong form with podiums at Snetterton and Donington Park – where he also secured his first pole position – to finish 10th in the points.

Following HHC's withdrawal from the championship at the end of the season, Hingeley had been looking for alternative options, and contested the Autumn Trophy event at Snetterton

with Fortec last October.

He has since completed further testing mileage with the outfit, including a visit to Valencia in the middle of December.

"I am delighted to be returning to the British F3 Championship with Fortec Motorsports," said the 19-year old. "We have just returned from a fantastic few days testing in Valencia and I'm feeling

really confident for the coming season.

Fortec is a professional team with a wealth of experience, and I'm looking forward to working with them."

Hingeley is the team's second driver confirmed for the 2017 season, since Nicolai Kjaergaard has also agreed a deal to race in F3. The Dane finished 13th in the British F4 points in what was his first season of car racing in 2016.



GIBSON/LAT

FF1600

Reynard returns to FF1600 in NZ

FAMED RACING CAR CONSTRUCTOR Adrian Reynard will compete in one of his Formula Ford 1600s for the first time in more than 40 years this month.

The 65-year old, who competes regularly in a Radical SR3 in the 750 Motor Club Bikesports Championship, will race a Reynard 84FF in the historic Formula Ford event at the Hampton Downs Tasman Revival meeting on January 14/15. He will go up against former Reynard chief designer Malcolm Oastler, who raced Formula Ford in his native Australia before emigrating to the UK in the mid-'80s.

"It will be good to get back in a FF1600

again, which is something I haven't done since 1974 because Formula Ford 2000 came along for 1975, and I thought that was a good category to have a go at," said Reynard.

"It's going to be fun going up against Malcolm in another Reynard chassis, because the first car he designed for me was the 1987 Formula Ford. We're calling this the Reynard Formula Ford Challenge!"

The first car built by Reynard was a FF1600 in 1973, which he continued to race the following season.

The car Reynard will drive is owned by John Pickford, while Oastler will race an 85FF.

IN BRIEF



FITTIPALDI GETS FERRARI GIG

Enzo Fittipaldi, the grandson of two-time F1 world champion Emerson Fittipaldi, is one of two new drivers added to the Ferrari Driver Academy. 15-year-old Fittipaldi, who took a best finish of eighth in his Ginetta Junior campaign last season in the UK, and whose older brother Pietro races in Formula V8 3.5, joins highly rated New Zealander Marcus Armstrong after tests at the Ferrari-owned Fiorano circuit last November.

JUNIOR CHAMPION RETURNS

Ginetta Junior Winter Series rookie champion Harry Dyson will contest a full season of the main category this year. He will continue to drive for the JHR Developments team with which he made his debut last year, just days after turning 14. He took a rookie class podium in his first race at Silverstone.

TEAM HARD AXES SCHOLARSHIP

Team Hard will not hold its annual VW Scholarship event this year. In previous years, the scheme has given anyone over the age of 16 the chance to win a fully funded season in the Volkswagen Racing Cup, but the team has said it cannot commit to running the programme this year. It expects to hold the scholarship again in 2018.

CLARKE GETS FULL HISTORIC SEASON

James Clarke will contest full campaigns in the BARC Clubmans and HSCC Historic Touring Car Championship this year. Clarke competed in both championships in 2016 but only after he had turned 16 in April, meaning he missed the start of both campaigns. A graduate of the Junior Saloon Car Championship, Clarke took five wins in the Sports 1600 'Cup' class in Clubmans and two Class C wins in the HTCC.

EDEN AIMS TO BREAK BLIND RECORD

Former Cooper-Bristol racer Nick Eden is planning a challenge on the world land speed record for a blind driver. Eden, 61, lost his sight after an accident at the Nurburgring in August 2014, when his car was tipped into a violent series of rolls. However, he still has a desire to drive fast and hopes to better the current world record for a blind driver of 203.1mph. His chosen vehicle and venue for the test are being decided.



PAUL LAWRENCE

FIA FORMULA 4

Ericsson's brother gets Fortec F4 test

THE YOUNGER BROTHER OF Sauber Formula 1 driver Marcus Ericsson tested a British F4 car for the first time before Christmas with Fortec Motorsport, and could compete in the TOCA support series.

Hampus Ericsson, 14, tested with the team at Valencia for two days. The Ericsson family has strong connections with Fortec:

Marcus won the Formula BMW title in 2007 with the squad, as well as racing in British F3 the following year. Hampus will turn 15 before the start of the F4 season.

"He went really well, it was his first ever time testing a car so he was in at the deep end," said Fortec's Dan Mitchell.

Fortec has tested a number of other drivers too, including British karting champions

Oliver York and Mark Kimber.

Also in F4, the SWB Motorsport team is set to return this year after taking a sabbatical during 2016.

The squad ran Rafael Martins in the series in 2015, the Brazilian finishing ninth in the standings.

The team has two F4 cars and plans to return to the grid after focusing on other areas of its business last season.

AMOC

AMOC gets help from Legends

DUNCAN WILTSHIRE AND HIS MOTOR Racing Legends organisation will provide support for Aston Club Racing in operating Aston Martin Owners Club meetings.

AMOC has struggled for entries in recent years. Wiltshire and his team, which already runs successful historic series such as the Stirling Moss Trophy and the Royal Automobile Woodcote Trophy, will now help to organise the AMOC racing portfolio, which includes the Aston Martin GT Challenge, Intermarque and Innes Ireland Cup.

"It was too much work for us to support it and it just wasn't viable," said ACR director

Roger Bennington. "We've now got Duncan on board. He's going to be the main pin. I'm still going to be assisting him and I will be dealing with the GT and Intermarque series.

"Duncan's expertise comes in the '50s so he will look after the Innes Ireland and 50s Sports Cars. Between us we should be able to run the meetings with more cars. Duncan used to run an MGB himself in Equipe GTS last year, so he is familiar with a lot of people anyway.

"I want to build up the GT side, we've got a class for homologated cars and an open class and I hope to build that up to 25 cars."



Big anniversaries to celebrate in 2017

By Marcus Pye, the voice of club racing

[@Autosport](#)

ANNIVERSARIES ARE THE LIFEblood OF MOTORSPORT, priceless opportunities to entertain and – dare I say it – educate subsequent generations of enthusiasts while re-engaging those who remember it as it was ‘back in the day’. Just as the majority of today’s fans flock to Goodwood (or other options, such as Vintage Sports Car Club race meetings, sprints or hillclimbs) to acquaint themselves with the wondrous cars that competed long before they were born, the more life-experienced may relish a trigger to transport them back to big events of their youth.

This year brings a particularly rich vein of landmarks, none finer than the 70th anniversary of the inaugural Royal Automobile Club British Hillclimb Championship, the longest established continuously run car competition in the land. Like Formula 1’s calendar it has expanded dramatically since 1947, when George Abecassis (1933 Bugatti Type 59) won the first of five rounds at Bo’ness – I’d be fascinated to get hold of an event programme – and Raymond Mays snared the title in the inimitable works development ERA R4D, now with Brian Fidler.

The 1947 trail progressed to ultra-steep Shelsley Walsh, Bouley Bay (a daunting climb from the island of Jersey’s north coast, which I first experienced in a rented Mini on a family holiday in the early ’70s, and enjoyed ascending competitively on occasion in the ’80s), Craigantlet in Northern Ireland and charismatic Prescott. All will doubtless mark the achievement. Indeed, Shelsley is staging a very special Championship Challenge, embracing four rounds (two double-headers per day) over the August 12-13 weekend. Having attended the Golden Jubilee there I certainly intend to be back in Worcestershire for the Sunday half...

There is much to choose from without leaving these shores, so start planning your diaries if you haven’t already. Goodwood has a momentous ‘big-number’ treble in store with the 75th Members’ Meeting (March 18-19), 25th Festival of Speed (June 30-July 2) and 20th Revival (September 8-10). Chateau Impney’s speed hillclimb (July 8-9) also celebrates 50 years since the final period sprint at the Droitwich venue.

Formula Ford hits its half-century on July 2 – its HSCC-orchestrated Historic (Pre-1972) subset is playing within the Legends of Brands Hatch Superprix over that very weekend. Formula Vee gets there a couple of weeks earlier, on June 18, but before that the 50th anniversary of the Ford Cosworth DFV engine’s debut victory, at the Dutch GP in Jim Clark’s Lotus 49, lands on June 4. See and hear Keith Duckworth’s masterpieces in action in FIA championship rounds at the Masters Historic Festival (Brands Hatch, May 27-28) and the Silverstone Classic (July 28-31).

Looking further afield, the DFV’s momentous achievement will not be heralded at Zandvoort’s superb Historic GP (September 1-3) or over the border into Belgium on the programme for the 25th edition of the Spa Six Hours Pre-’66 spectacular (September 15-17). But the big daddy of continental landmarks will surely be the 85th running of the Le Mans 24 Hours on June 17-18.

On a personal note I’m very much looking forward to the 50th anniversary of my first visit to Castle Combe in the summer – I hope it’s certainly not as wet as it was in 1967 – and, in mid-July, 40 years of writing for Autosport. Whichever events you choose to visit in 2017 may I wish competitors and officials a safe season and everybody a happy and above all healthy new year.



WHITTINGHAM TO FF2000

Chris Whittingham has shocked racing rivals by announcing his graduation to Formula Ford 2000 “after a 37-year apprenticeship in FF1600.” The Surrey stalwart is offering his PRS RH02 for sale, having acquired a Royale RP30 for the Pinto class. Early-season HSCC Historic FF2000 rounds will hopefully preface a Dutch Monoposto campaign.

DOUGIE LAWRENCE: 1916-2016

Dougie Lawrence, New Zealand motorsport’s eldest statesman and one of its best-loved characters, passed away peacefully on December 29, less than a fortnight shy of his 101st birthday. Patriarch of a remarkable family, the fabled Hamilton garagiste was a gritty racer who traded up from a roustabout Citroen Special via an ex-Bruce McLaren Cooper Bobtail to a new Lola Mk1 (BR-29) in 1961.

The little sportscar propelled son Graeme to greater things, and he won the 1970 Tasman title in the ex-Chris Amon F2 Ferrari 246T.

Omnipresent at circuits until his later nineties, Dougie lived life to the fullest, proudly supervising his boys Graeme, Tony, Brian and Wayne, as a shared passion cemented the Lawrence name among the sport’s greats.



PRE-’80 ENDURO FOR SPA

A Spa Six Hours support race in September should boost the HSCC Pre-’80 Endurance series, co-promoted with Flavien and Vanessa Marcais. Open to sports-prototypes, GT and touring cars, plus Pre-’85 Sports 2000s, it will also grace Grand Prix circuits at Silverstone (May 20-21), Brands Hatch (July 1-2) and Dijon (October 6-8).

Birley's Escort misbehaved, but held up for victory



MALLORY PARK
BRSCC DECEMBER 26

Birley claims 600th victory (possibly)

ROD BIRLEY CLAIMED WHAT COULD be the 600th victory of his impressive 44-year racing career during the annual Plum Pudding event at Mallory Park.

The West Kingsdown ace – who took his first win at Cadwell Park in 1973 at the wheel of a Hillman Imp – placed his entry promptly to secure pole position for the first part of the Saloon Car double-header. However, his Ford Escort WRC developed a vibration during practice, and Rich Hockley (Honda Civic) surged past the temporarily discombobulated Birley to lead at Shaw's Corner on lap one.

Birley retrieved the lead at Lake Esses on the next lap, and David Matthias made it an Escort one-two shortly afterwards – only for his differential to fail. Hockley was also ruled out on lap five of 18 when the fuel tank strap snapped, a legacy of a grassy moment at the Esses, as Steven Barnard (who had crashed in practice) charged through the field in his Audi TT silhouette.

Barnard seemed to have the measure of Birley and began to reel him in, but then lost impetus and was eventually defeated by more than eight seconds. Birley reckoned that this completed his sixth century of wins across circuit and oval races, but others were less sure. "We put it on Facebook," he said, "but someone commented that there was a result in 2014 that might have been changed, so we need to look at that."

Peter Felix (VW Golf) completed the podium after a superb fight with Brett Lidsey, which was resolved when the latter negotiated Stebbe Straight on the grass with three laps remaining. Graham Crowhurst climbed from row 11 to fifth

in his BMW M3, while Mike Webb (Ford Focus) completed the top six.

The result of the second encounter was declared after just a couple of laps following two race-stopping incidents. The first came when Alan Forster (MG ZR), on pole for the reversed-grid contest, spun in front of most of the pack at Gerard's Bend. Several cars were damaged, and Joe Thompson's Mini Seven was stranded. The restart was three laps old when Nik Barton lost control of his VW Golf – which he had collected only weeks earlier – at Devil's Elbow, rolling after the car dug into the gravel. Hockley was classified as the winner from Geoff Conner (Renault Clio 172) and Mike Ritchie (Honda Integra).

Ray Rowan was using the Sports Car races as a run-out for the ex-hillclimb Pilbeam-Hart MP43 he has been rebuilding for the past three years, but he nevertheless stormed into the lead at Gerard's Bend from row three of the grid. Dave Porter (Radical SR3) recovered from a slow start to claim second on lap three, then passed Rowan on Kirkby Straight on lap nine. There was contact between the pair at the hairpin shortly afterwards, however, which led to Porter retiring with CV joint failure and Rowan calling into the pits. Philip Hart therefore took the win in his Mallock Mk16 from the Caterhams of Jason Gale and Chris Aubrey.

Rowan missed race two but Porter returned, and pushed hard from the rear of the grid to claim the lead on lap four of 12. Gale had led the early stages, but Hart followed Porter through to relegate him to third ahead of Aubrey.

IAN SOWMAN



Radical ace Dave Porter (50) won the second Sports Car race after retiring from the first

RESULTS

SALOON CARS (18 LAPS) 1 Rod Birley (Ford Escort WRC); 2 Steven Barnard (Audi TT) +8.3s; 3 Peter Felix (VW Golf GTi); 4 Brett Lidsey (Renault Clio); 5 Graham Crowhurst (BMW M3 E46); 6 Mike Webb (Ford Focus ST170). **Fastest lap** Birley 49.0s (99.18mph). **Pole** Birley. **Starters** 23.

RACE TWO (2 LAPS) 1 Rich Hockley (Honda Civic); 2 Geoff Conner (Renault Clio 172); 3 Mike Ritchie (Honda Integra); 4 Birley; 5 Philip House (VW Beetle RSi); 6 Webb. **P** Alan Forster (MG ZR 160). **S** 16. Times not published.


SPORTS CARS (18 LAPS) 1 Philip Hart (Mallock Mk16); 2 Jason Gale (Caterham Supersport) +1.6s; 3 Chris Aubrey (Caterham Tracksport); 4 Ray Rowan (Pilbeam MP43); 5 Alexander Koeberle (Caterham Tracksport); 6 Jake Bailey (Mazda MX-5 Mk3). **FL** Rowan 49.3s (98.58mph). **P** Aubrey. **S** 10.

RACE TWO (12 LAPS) 1 Dave Porter (Radical SR3); 2 Hart +25.3s; 3 Gale; 4 Aubrey; 5 Koeberle; 6 Bailey. **FL** Porter 49.1s (98.98mph). **P** Clive Gimson (Triumph GT6). **S** 9.

Mazda's bold plan for a path to IndyCar

The Japanese make is giving club racers a real chance for a professional career in the United States, and it all starts with a special shootout

By Jack Benyon, Group National Editor

 @Benyon24





“It’s pretty incredible – one of these kids is going to win \$200,000,” says Mazda’s Drew Bergwall. We’re standing at the Corkscrew at Laguna Seca, watching 17 drivers aged 26 and under competing for one of motorsport’s biggest cash prizes. One that you may well not have heard of.

Last month’s Mazda Road to Indy Shootout pitted some of the best national-level drivers from around the world against each other in a mixture of on-track and off-track tests to give one the chance to compete in USF2000, the first rung on the Road to Indy ladder. Watching trackside, there’s no doubt that each of these drivers wants the prize.

The most difficult thing to get your head around when it comes to competitions like this is why Mazda would allow drivers who’ve won championships with other manufacturers to enter. And why Mazda does so much promote the Road to Indy system when it has no presence at the top in the IndyCar Series. Put simply, what’s in it for Mazda?

“We want talent that can rise to the top,” explains Kyle Kimball, who leads the project for Mazda. “That’s how we tell our story. Success comes when that person comes from the grassroots, from F1600, from Spec Miata [a Mazda MX5-based Sports Car Club of America series], goes through all of the steps and makes it to the IndyCar Series. We want the talent, whether it’s from the USA, Britain, Australia, that can rise to the top.”

It’s always a sticking point when it comes to big prizes. Is the manufacturer really picking the best driver, or is it the person bringing the most money or who will make the most public appearances at the showroom? The fact that many of the drivers involved in the shootout have won titles powered by Mazda’s biggest rivals (including Ford and Toyota) alleviates any doubt.

The poster boy for the ladder is Spencer Pigot. He won Pro Mazda and Indy Lights in consecutive seasons to fire him to IndyCar in 2016. And today – along with Indycar race winner Scott Goodyear, Mazda IMSA SportsCar drivers Joel Miller and Jonathan Bomarito, and Mazda development driver Andrew Carbonell – he’s going to help pick the winner of the prize that will set another driver on a potentially similar path.

“The main things we’re looking for are speed, consistency,

“We want the talent, whether it’s from the USA, UK or Australia, that can rise to the top”

how the drivers learn the track and the car, how they apply the feedback through the day,” says Pigot. “We’re looking at are they dropping a wheel off, locking up and pushing too hard? The basic stuff. I think there are a lot of good guys out here who will make our decision tough.”

An early and subdued breakfast on Tuesday morning highlights the pressure these young drivers are under. Winning this prize could see them progress to IndyCar, if they have the talent, by barely spending a penny. It’s what every young driver in Europe seems to complain about in modern motorsport: the lack of any sort of defined path towards an end goal.

On Tuesday each driver runs in a group of four, for three sessions on track, in a succession of qualifying runs. The cars are run by the Lucas Oil Race School, based at the Californian track, and are kept as similar as possible. Each driver gets a seat fitting and they swap cars through the three sessions to ensure equipment parity. They also get one set of tyres to use through the two-day event. Kimball and his team have really thought about how to make the shootout as equal as possible.

The cars are very similar to what you’d find in a British Racing and Sports Car Club National Formula Ford 1600 >>

paddock. It's a Ray chassis, and the only major differences are that the cars involved in the shootout have paddleshift gearboxes and are powered by two-litre Mazda engines. If you believe what you hear about some of the cars in the UK national series, they're over two litres anyway...

Speaking of the national series, Niall Murray is one of the drivers attending the shootout and he's on fire on day one. The Irishman won just about everything there was to win in an FF1600 machine in the UK in 2016: the Formula Ford Festival, Walter Hayes Trophy, Martin Donnelly Trophy and the BRSCC National Championship all went back to Ireland, the last of which qualified him for the shootout entry. Joining him from the UK's racing series are SuperSeries Shootout winner Ollie White and Scottish FF1600 champion Neil MacLennan.

There are also two Americans who've raced against that trio in the UK. Oliver Askew and Kyle Kirkwood won the Team USA Scholarship opportunity to join Cliff Dempsey Racing at the Walter Hayes Trophy and Formula Ford Festival; Askew suffered a puncture while challenging for second at the Festival and finished second in the WHT in his fifth car race (his first in the wet); while in the WHT Kirkwood climbed from 23rd to fourth in the wet against many more-experienced drivers. He passed more than 70 cars over the course of the weekend.

After Tuesday's running there is one more session for each driver on Wednesday morning, before a group of finalists is selected. Askew, Kirkwood, Murray and White all make the final, with the addition of Australian Formula Ford runner-up (and Formula 4 champion) Will Brown and Canadian Formula 1600 title winner Trenton Estep (who hails from Texas).

White takes pole in the qualifying session, but Murray struggles right from the off on Wednesday and isn't quite at the races. What he'd give to swap this performance with Tuesday's, when he was one of the favourites coming in...

With qualifying set and the six finalists lined up on the grid, it's time to head up the pitlane and take a spot at Turn 11, the final corner, with head judge Miller.

"Oh man, this is going to be close," he says. "We narrowed it down; the original goal was to work out who could be in IndyCar in four years' time – that was a big influence. We want the winner to achieve that level and that's how we arrived at the final six. One of these kids has the potential. We looked at the whole programme, on-track action, the socialising and the dinners and the whole out-of-the-car aspect."

The cars are released at five-second intervals and the race is on. For lovers of FF1600 in the UK, it's a classic.

Brown, starting third, gets four wheels off the road at Turn 10, a rapid downhill and cambered right-hander, bringing him into the pits to check his car. He'd been a dark horse for the prize but that is just enough to rule him out.



The shootout challengers came from all over the world to get a taste of the Road to Indy action

Askew works his way forwards and, within a few laps of the 30-minute race, he's stalking White. He makes the move right under our noses at Turn 11 and there's an air of inevitability that he's going to drive away. Instead White fights back, often driving side by side with Askew for three laps before the American gets the edge and ekes out the smallest of gaps.

Both drivers are phenomenal under pressure, but one stands out. Speed and consistency in all cars, coupled with a kind and easy demeanour off the track. The judges and drivers gather at Turn 11. The winner is Askew.

"I'm speechless, I've prepared so much for this competition," he says. "I didn't know what to expect. I just worked really hard after each session to try to analyse what was going on – it was tough because we didn't get any data. This is incredible, the best day of my life."

There are some disappointed faces in the crowd of six, not least White and Murray. "I'm obviously disappointed not to win," says White. "The problem is your expectations rise; as soon as I was in the final six I was thinking about winning it. It's disappointing to miss out."

There's less optimism from Murray, although he tells Autosport that he's honoured to have been in the competition to start with. "I think I threw it away today, by myself. I'll be kicking myself about that in the weeks to come," he concedes. "In the race I squeezed every tenth out of the car, very consistent in the car but it wasn't quick enough. Well done to Oliver. I was doing the same times in the same car as him yesterday; today for whatever reason the time just wasn't there."

Thus ends the shootout – until next year, when Mazda comes back with what it hopes is an even more efficient process. In an age when drivers are crying out for prizes and for help moving up the motorsport ladder more than ever, the Mazda Road to Indy provides just that. And there will be no shortage of Brits wanting to head out for a chance of \$200,000 in the future. ✨

Askew was consistent to take prize

IGNITEMEDIA





IGNITE MEDIA

MAZDA'S ROAD TO INDY

The shootout is just one part of the Mazda Road to Indy. There's a defined ladder in place where drivers can earn all or at least a majority of the money needed to step up to the next category. If you can win each championship, you're on a surefire path to IndyCar for a fraction of the budget it would take to do a single year in a championship. Here's a breakdown of the ladder.



IMS/LLC PHOTOGRAPHY

USF2000 (NEW CAR FOR 2017)

Chassis Tatuus USF-17 (F3 safety spec)

Tyres Cooper Tires

Engine Mazda MZR two-litre (sealed), four-cylinder, 170bhp

Races 14 over eight rounds

Prize \$400,000 (£320,000) for step into Pro Mazda

2016 champion Anthony Martin



IMS/LLC PHOTOGRAPHY

PRO MAZDA (NEW CAR IN 2018)

Chassis Elan Technologies (changing to Tatuus PM-18 in 2018)

Tyres Cooper Tires

Engine Mazda Renesis rotary engine (sealed), 260bhp

Races 12 over six rounds

Prize \$790,000 (£632,000) for step into Indy Lights

2016 champion Aaron Telitz



IMS/LLC PHOTOGRAPHY

INDY LIGHTS

Chassis Dallara IL-15

Tyres Cooper Tires

Engine Mazda MZR-R two-litre turbo (sealed), 450bhp

Races 16 over 10 events

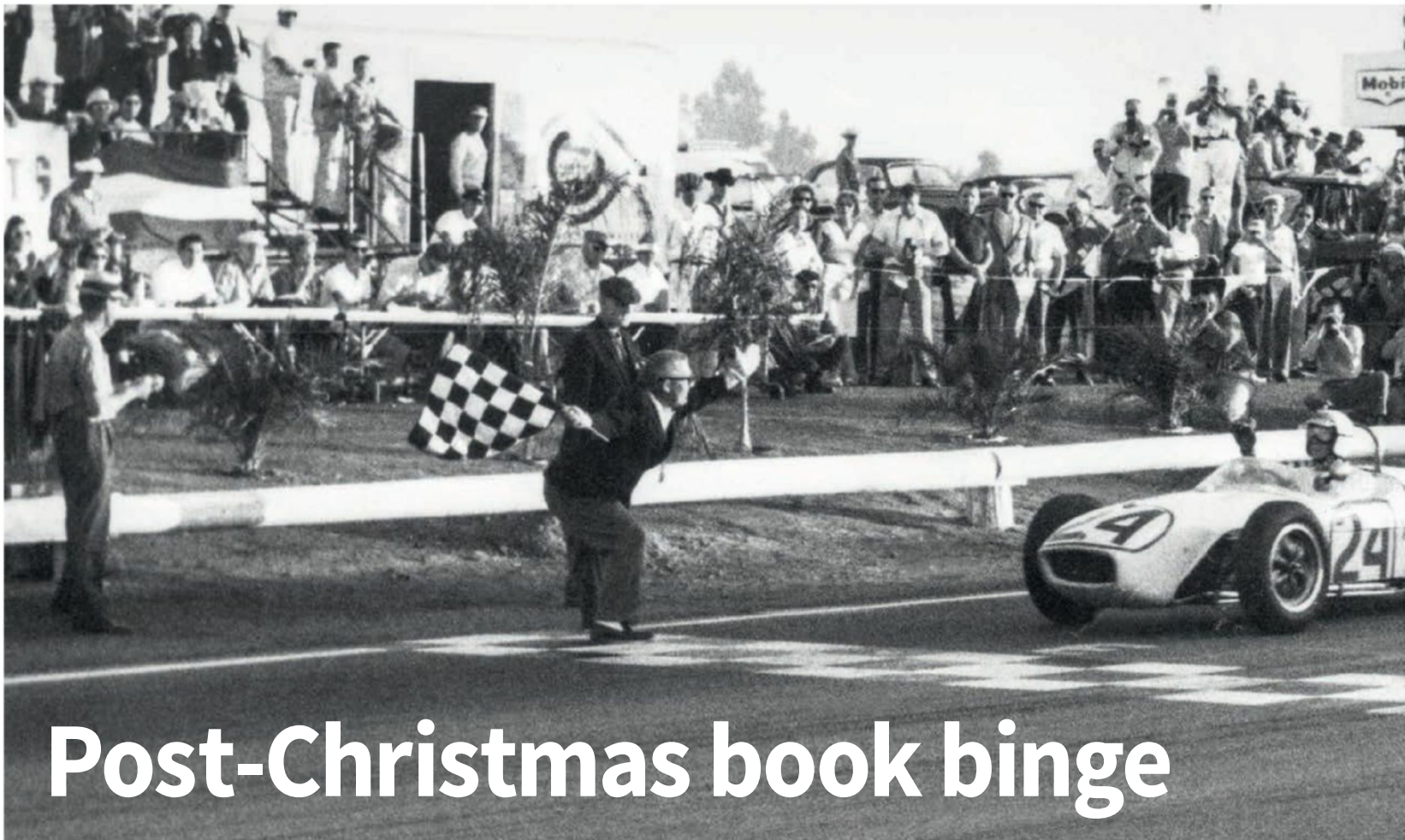
Prize \$1,000,000 (£800,000) for step into IndyCar

2016 champion Ed Jones

THE SHOOTOUT CONTENDERS

DRIVER	AGE	COUNTRY	SERIES
1 Oliver Askew	20	USA	Team USA Scholarship
2 Will Brown	18	Australia	Australian Formula Ford Championship
3 Marcel Coletta	14	Brazil	Seletiva de Kart Petrobras (Brazil)
4 Tim de Silva	20	USA	Pacific F2000 Championship
5 Trenton Estep	17	USA	Formula Tour 1600 (Canada)
6 Austin Garrison	18	USA	US Rotax MAX Challenge
7 Kyle Kirkwood	18	USA	Team USA Scholarship
10 Matt Machiko	25	USA	SCCA National Championship Runoffs
11 Neil MacLennan	18	Scotland	Scottish FF1600 Championship
13 Axel Matus	18	Mexico	Formula Panam
14 Niall Murray	21	Ireland	BRSCC FF1600 Championship
15 Peter Portante	20	USA	F1600 Formula F Championship Series
16 Timo Reger	20	USA	Skip Barber Race Series
17 Nigel Saurino	21	USA	SCCA National Championship Runoffs
18 Michael Scott	21	New Zealand	New Zealand Formula Ford Championship
19 Jonathan Sugianto	20	USA	Formula Car Challenge
20 Karthik Tharani	22	India	MRFF1600 Indian Championship
21 Oliver White	23	England	SuperSeries for Formula Ford 1600

WHAT'S ON

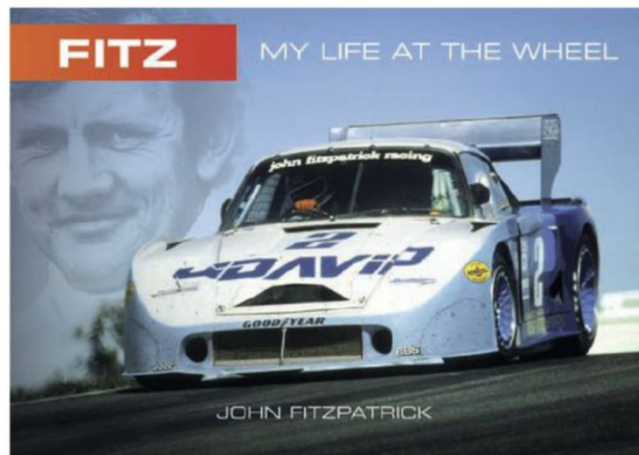


Post-Christmas book binge

The decorations have come down, the tree has been consigned to the recycling centre, and the remnants of the turkey have been creatively repurposed. But have you been the beneficiary of some financial goodwill, or some gift vouchers, which you haven't spent yet? Do you want to, before the credit card bills roll in? These recently released books are well worth a look.

JOHN FITZPATRICK: MY LIFE AT THE WHEEL

My Life at the Wheel by John Fitzpatrick is unlike any motor racing autobiography on sale at the moment. It's more than just a record of John's career and racing exploits; instead, it's a timeline of one man's relationship with motor racing, from his teenage days driving a Mini bought for him by his father to defeating the works Rothmans Porsche 956s on home ground in the wet at Brands Hatch. Fitzpatrick's work gives an insight into the changing landscape of motorsport as



it evolved from the grassroots into the commercial powerhouse that it is today. Complete with 231 colour photographs and a further 128 in black and white, the evolution of both Fitzpatrick's career and the cars he raced gives the book a rather

'Fitz' (above) and Bizzarrini (right) both give insights into the history of sportscar racing

more viscerally visual element. All this – the narrative as well as the imagery – makes it a very competitive package.

RRP £49.99. ISBN 9780692725436

LOTUS 18: COLIN CHAPMAN'S U-TURN

A book about a car as famous as the Lotus 18 would be interesting enough for most motor racing fans, but this masterpiece by Mark Whitelock is more about a revolution in design. The Lotus 18 marked, as the title suggests, a change in the company's construction philosophy with its clever spaceframe chassis. Its place in the pantheon of racing greats was earned by epic victories such as Stirling Moss's at Monaco in 1961 against the Ferraris of Richie Ginther, Phil Hill and Wolfgang von Trips. Whitelock's writing does justice to the topic at hand, leaving no stone unturned in his analysis of Chapman's iconic machine. Complete with

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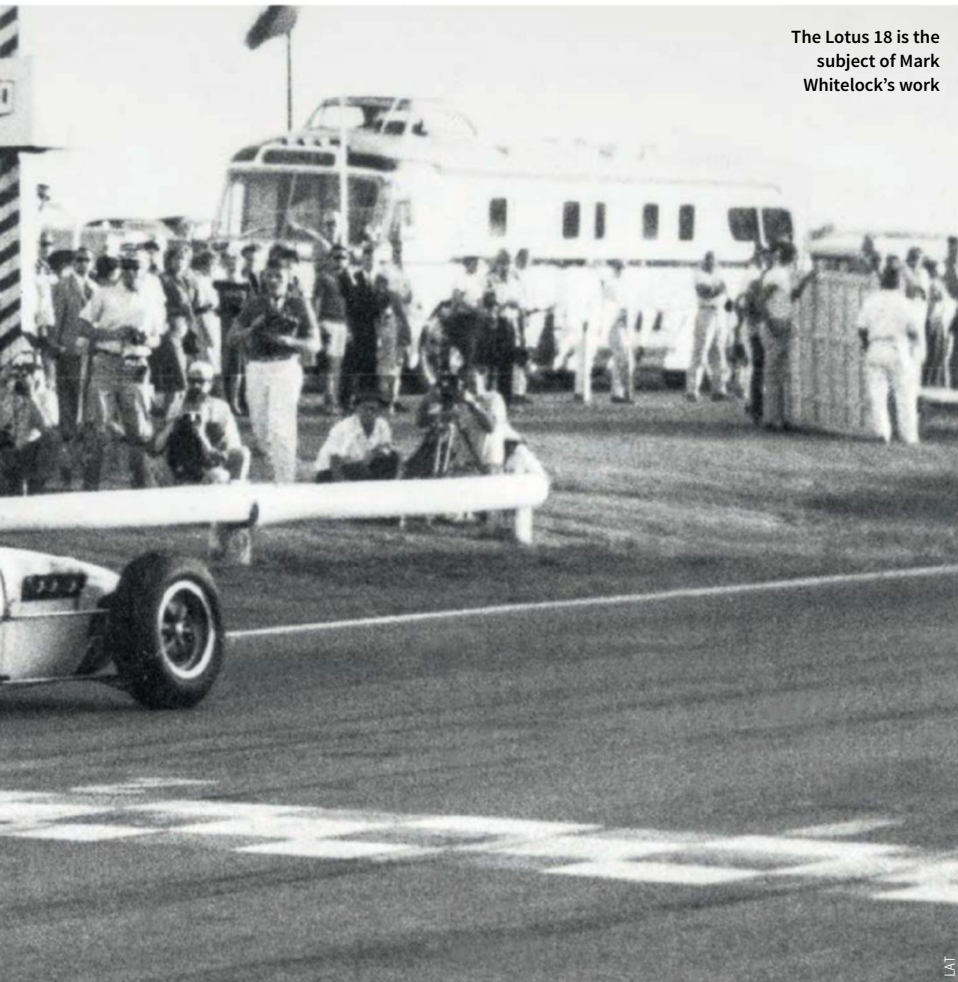
DOWNLOAD IT
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HOT ON THE WEB THIS WEEK

YouTube **PREMATURE TOW JOB**

Search for Most insane truck tow ever Coronel
Few competitors document their highs and lows quite so assiduously as Tim and Tom Coronel on the Dakar Rally. With the 2017 event now under way, check out this snapshot of life on the road from last year – as a helping hand from a passing truck threatens to go badly awry...



The Lotus 18 is the subject of Mark Whitelock's work

photographs in both monochrome and colour, as well as detailed engineering diagrams, this is a text fit for a car that occupied a pivotal moment in F1 history and influenced future designs, too.

RRP £45. ISBN 9781845845209

ISO BIZZARRINI: THE REMARKABLE HISTORY OF A3/C 0222

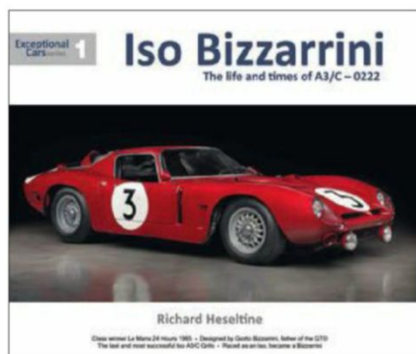
Moving away from Formula 1 to the

arena of sportscar racing, the somewhat clunky-on-the-tongue Iso Bizzarrini A3/C 0222 explores a sportscar with a remarkable history. This biography, written by Richard Heseltine, follows A3/C 0222's journey from its test days in 1964 to class victory at Le Mans, and, after 40 years away, its restoration and return to the road.

Detailed reportage of the enigmatic company and its flamboyant owner lends context and conveys an important insight into the fate of successful motor racing machines once the company that gave birth to them no longer exists. Even after its competition career had ended, A3/C 0222 remained Bizzarrini's most successful racer. Heseltine's book is a testament to this very successful and important racing automobile, and worthy of its publisher's description, a 'remarkable history'.

RRP £30. ISBN 9781907085543

CHRISTOPHER SHARP



TV PICK
OF THE
WEEK

DAKAR RALLY

Eurosport 1 and 2
All week

OK, it doesn't start in Dakar and doesn't involve Paris, but one of the world's most gruelling motorsport tests still has plenty to offer. As well as the challenging terrain, there's a nine-time World Rally champion in Sebastien Loeb aiming to outgun 12-time Dakar winner Stephane Peterhansel.

INTERNATIONAL MOTORSPORT

DAKAR RALLY

Asuncion, Paraguay to
Buenos Aires, Argentina
January 2-14

24 HOUR PROTOTYPE SERIES

Dubai, United Arab Emirates
January 10-11

ASIAN LE MANS SERIES

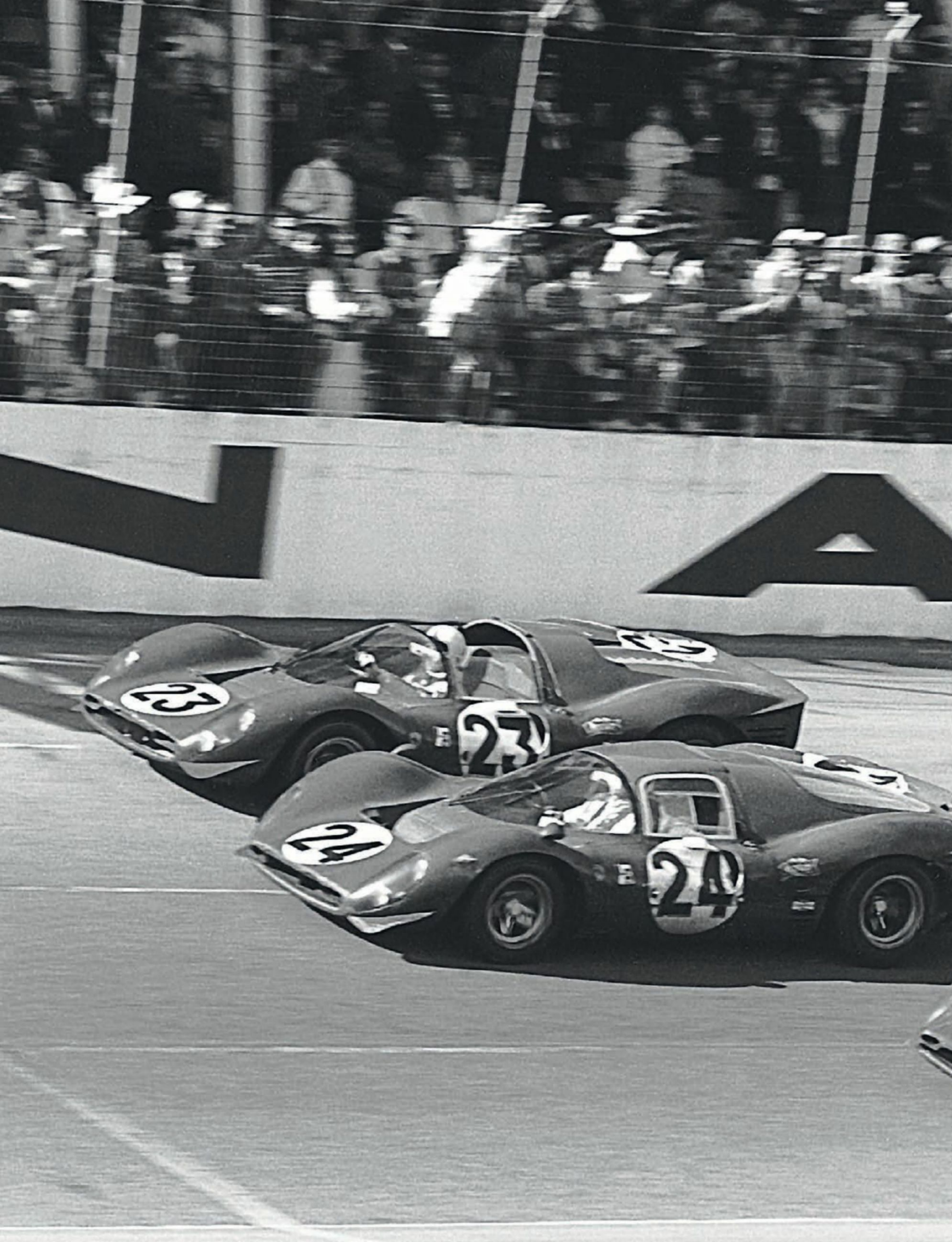
Rd 3/4
Buriram, Thailand
January 8

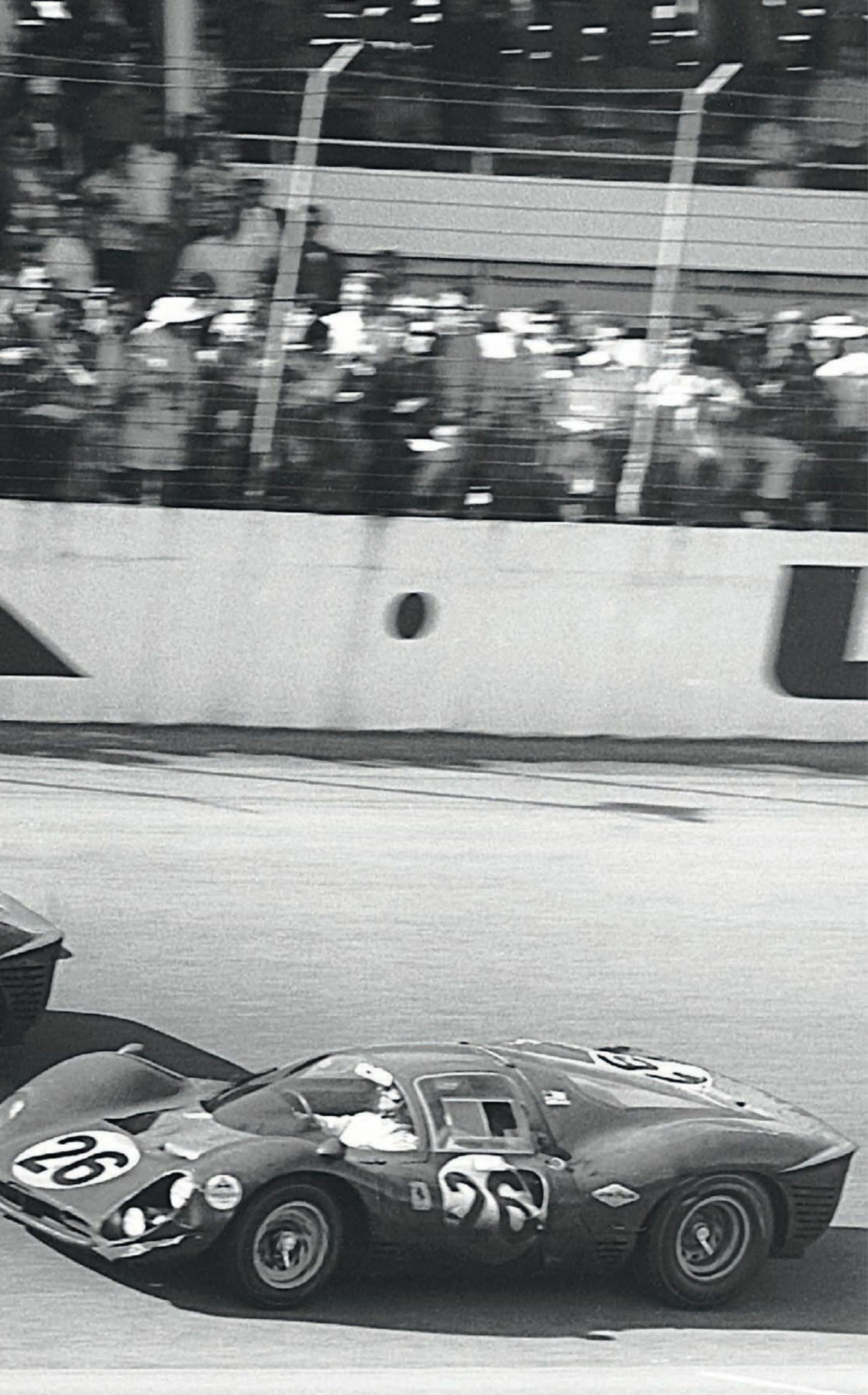
ANDROS TROPHY

Rd 4/7
Isola 2000, France
January 6-7



ANDROS TROPHY



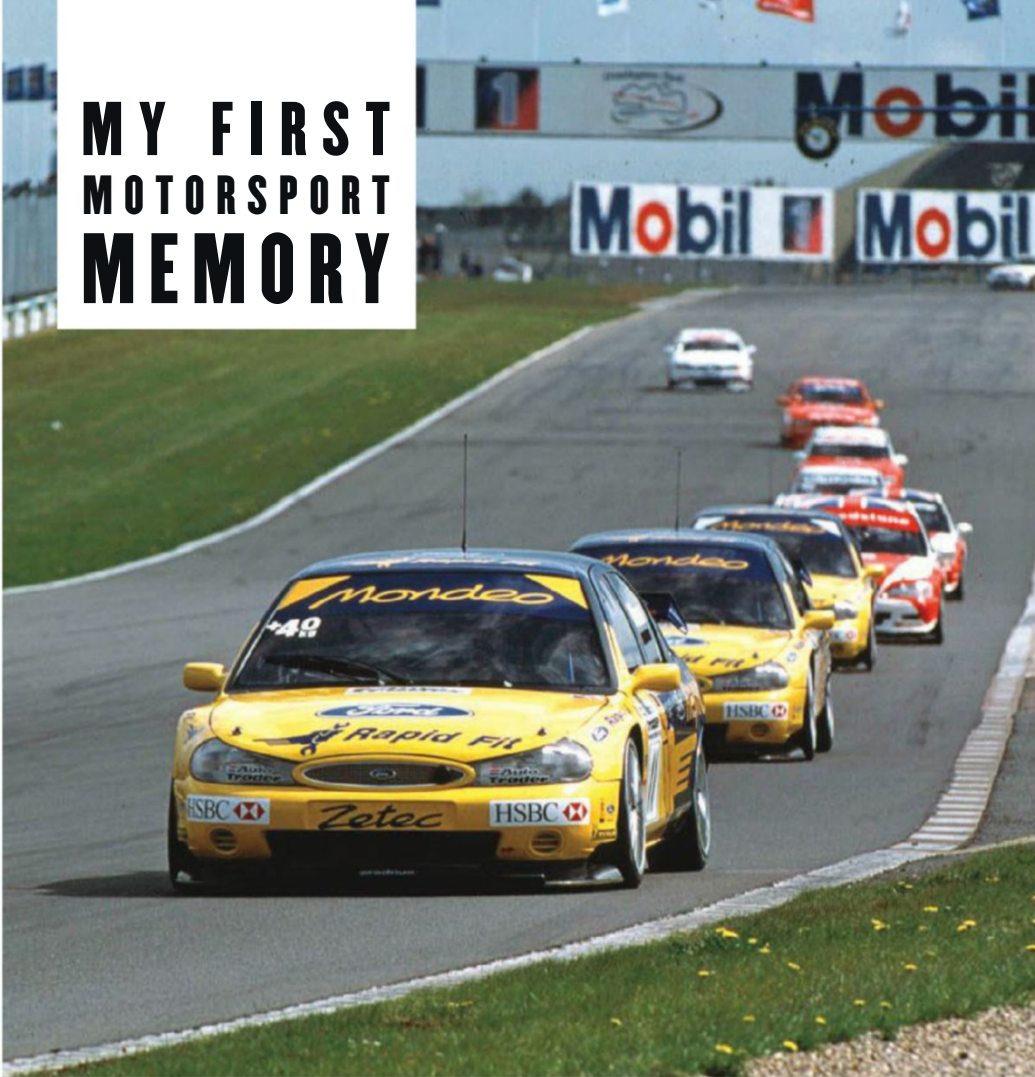


THE ARCHIVE

After finally being beaten at Le Mans by Ford in 1966, Ferrari took revenge in Ford's back yard at the following year's Daytona 24 Hours. The new 330 P4s of Chris Amon/Lorenzo Bandini (#23) and Ludovico Scarfiotti/Mike Parkes (#24) led a Ferrari 1-2-3 as the big Fords wilted.

www.mcklein.de
[@mcklein_rally](https://twitter.com/mcklein_rally)

MY FIRST MOTORSPORT MEMORY



J. BLOXHAM/LAT



SCOTT MITCHELL

[@ScottAutosport](#)

A COCKTAIL OF TIN-TOPS AND RALLYCROSS

My strongest childhood memory isn't actually from being at a track – it's from catching up on all of the British Touring Car Championship season reviews from the Super Touring era (with a multi-year delay). So it was pretty fitting that the first circuit race I attended was a BTCC round at Donington Park in 2000. I remember being eight years old and standing in the viewing area on the inside of the Craner Curves, mesmerised by the blue-and-yellow Ford Mondeos and cheering on Alain Menu. I had no idea I was witnessing Super Touring's dying days – this was just an incredible spectacle.

A funny thing can happen when you try to remember an event specifically, though: you lie to yourself. Maybe not intentionally, but it's all too easy to retro-fit the details. So, cards on the table: I couldn't tell you whether that Donington trip was when Menu won twice, or later in the season when Menu was at the tail of the top 10. I couldn't tell you whether I was already religiously watching season review videos and hero-worshipping Menu, or whether this trip to Donington sparked that particular bit of fandom.

Honestly, I thought I could be more specific. And that's disappointing in one sense, but it also represents what I love most about motor racing: how diverse it is. I never had that one event where all of a sudden a love of motorsport crystallised and I thought 'I have to come back to this again'. Motorsport fascinates me because of the eclectic mix of racing that I was exposed to from the first days of my life. And I don't mean that in an overdramatic sense, I mean it literally.

My dad competed in rallycross and likes to remind me I probably wouldn't have been born if his Mk2 Escort didn't need new shock absorbers. He was mostly successful at Lydden Hill – the scene of my first real out-of-hospital visit as a baby. During my childhood I watched my dad shunt there. I washed the wheels of Mike Sellar's Ford Fiesta. And if you can dig out the 2001 British Rallycross review and fast-forward to the podium after the A Final, you can see my younger brother and me running around like loonies while getting a champagne shower.

Eventually I started racing karts and went on to become fascinated by many different series. Rallycross and tin-tops are where it all started. I accept my first memories have already faded. More important is how, collectively, they created a picture that has not paled in the slightest. ❄️



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Autosport, ISSN number 0269946X, is published weekly by Autosport Media UK Ltd, Bridge House, 69 London Road, Twickenham TW1 3SP, United Kingdom. Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431. Subscription records are maintained at Autosport Media UK Ltd, Bridge House, 69 London Road, Twickenham TW1 3SP. Air Business Ltd is acting as our mailing agent.

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Frontline Ltd, Park House, 117 Park Road, Peterborough, Cambs, PE21 2TS.
Tel: +44 (0) 1733 555161. Printed by William Gibbons & Sons Ltd, 28 Planetary Road, Willenhall, Wolverhampton WV13 3XT.
ISSN 0269-946X. Autosport is published weekly by Autosport Media UK Ltd, Bridge House, 69 London Road, Twickenham TW1 3SP.



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Media Code: ASPT16_1