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Mercedes looks great, but there is still time

AT LAST WEEK'S FIRST FORMULA 1 TEST IN SPAIN, Mercedes hit the track and ran, and ran, and ran...

It felt very familiar, as the past two seasons have been all about the Silver Arrows, which won 32 out of 38 races during 2014 and '15. But there are still reasons for hope. By the time you read this, the second and final four-day test will either be under way or complete (it is scheduled to conclude on Friday) and we will have a far fuller picture.

The good news is that Ferrari has unquestionably made a step forward. Last week it only completed just over half of Mercedes' mileage and didn't get through all the planned work, so a lot depends on what's happening right now. It's fair to assume that there is more potential left in the Ferrari than the Mercedes so, by the time we get to Australia for the opening race of the season later this month, things may have changed.

Either way, it's great to see the motorsport season getting up and running. We've already had two major races at Daytona, where there were some dramatic finishes on the banking, the World Rally Championship is well under way, and in a few weeks there will be more action than you could hope for every weekend.

* This week's issue contains the ever-popular diary stickers, giving you a helpful, and adhesive, way to track the major events of the 2016 season. Unfortunately, these are only available to readers in the United Kingdom.







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FREE INSIDE

PERFORMANCE SUPPLEMENT



Our quarterly guide on how to be a better racing driver returns with a range of advice from some of the sport's leading drivers and coaches.





Mercedes fires testing warning shot

After the first four days of testing at Barcelona, Mercedes looks in ominous form

By Ian Parkes, Chief F1 Correspondent

y @ianparkesf1

Hamilton: "I'm just

waiting to unleash

it on the soft tyres"

e afraid. Be very afraid.

A short, simple phrase that serves as a warning to Formula 1 following a demonstration in what can only be described as Teutonic reliability and efficiency from Mercedes over its four days of running at Barcelona's Circuit de Catalunya in the first pre-season test.

After two years of dominating F1, winning 32 of 38 grands prix and back-to-back drivers' and constructors' titles, and, given the relative stability in the rules from last season to this, only complacency can undermine Mercedes this year.

On the evidence, as Lewis Hamilton and Nico Rosberg pounded round F1's proven test track for lap after lap after lap, there is nothing to suggest Mercedes is resting on any laurels.

Statistics do not lie, and last week's make for very impressive, perhaps even eye-opening, reading to Mercedes' rivals — Ferrari in particular — who would have come into the test with high hopes of eating into the German manufacturer's advantage.

As part of a very bold run plan designed to prove the car, detect any flaws or weaknesses, and make it bulletproof, Mercedes opted to complete the four-day test without any

of the three compounds of soft tyre. Instead, with the exception of a short stint on intermediates on Monday morning when the track was damp, the car used nothing but set after set of the medium compound.

What has been witnessed has been a phenomenal effort

from Hamilton and Rosberg. Between them they completed a total of 675 laps — the former 343, the latter 332 — amounting to 1952 miles, or effectively 11 grands prix at this track. To put that into context, over the 12 days of testing last season — with the first test at Jerez, and the second and third at Barcelona — Mercedes amassed 3803 miles.

It means it has achieved in four days this week just over half the total accrued from last year, hitting a target aimed for prior to the start of the test. As team technical boss Paddy Lowe remarked at the end of day one: "We are trying to cram the same job into two thirds of the time. We are trying to do more mileage a day than we did last year, but at the same time we are also trying to go through the same process of learning."

Mercedes did that, and then some, and we have still to see precisely what the F1 W07 Hybrid is truly capable of.

As Rosberg stated, Mercedes has undeniably been playing

a waiting game. "We haven't shown our cards yet," he said. "We're still holding back, and the car is quick.

"The opposition also seems to be quick, so how quick we are nobody knows for now, but we are confident."

It must be like waiting for a monster to be set free. Certainly, Hamilton showed signs of there being an itch he wanted to scratch after his second outing in the car on Wednesday.

"I'm just waiting for the day when we have more tyres and use the super-soft and the ultra-soft, and start unleashing it and see how it goes," said Hamilton.

"Those are the test days I actually prefer, when you can find out what the car is like, make some set-up changes. When you're pounding round, it's less exciting."

Hamilton concluded his week's work with 99 laps on Thursday morning, taking him to a fraction shy of 1000 miles so far, but ultimately hitting what he thought was a "crazy" target set by Mercedes ahead of testing. But, as far as the 31-year-old is concerned, "half the battle" has been won as he has been blown away by the car's reliability.

Hamilton should get the opportunity this week to see if Mercedes can emerge victorious in the other half of the fight when it comes to performance. But even then, do not expect

Mercedes to show its full hand. Instead, it will only perhaps tease by displaying a couple of aces. For now, Mercedes shows all the signs that it has taken a considerable step. Just how considerable that step is remains to be seen.

After four titles over

two years, the thirst for more is unquenched, underlined by Lowe as he summarised the work that took place at the team's factory in Brackley and AMG High Performance Powertrains in Brixworth over the winter.

"We do a lot of work behind the scenes to keep raising the bar of how well we engineer the car and how well we test it, in advance, in its discreet elements, to make sure when we actually get to the track it all functions as we intended," said Lowe.

"That's a process that has got better, year on year, as we see the cars in general in Formula 1 becoming more reliable, year on year. That's a function of better engineering, and we would like to be the ones at the avant garde of that, leading the way."

With the rules for this year barely altered from last season, Mercedes should be in the box seat as there is potentially little scope for rivals such as Ferrari and Williams to cash in with big innovations and close the gap. >>>

MAIN PIC: XPB IMAGES





SEEING A RENAULT
works team back on
track in Formula 1 marks
the beginning of the
French manufacturer's
renewed commitment
to the pinnacle of

single-seater racing.
A return to works
status, thanks to
reacquiring the Enstone
operation that formed
the basis of its last
factory foray in F1, offers
the chance to repair
Renault's tattered
reputation, but initial
running in pre-season
testing already suggests
that the journey to
rebuild that reputation
will be long and arduous.

Red Bull's Daniel Ricciardo suggested the TAG-badged Renault engine in his new RB12 felt "pretty much like we ended last season" on day one at Barcelona. And although Renault engines have completed 119 more laps after four days of pre-season testing than they did at this stage last year, there were niggling reliability issues for the works team, as software problems and a turbo failure hampered the first two days of running for Jolyon Palmer.

Team-mate Kevin
Magnussen enjoyed a
more productive outing
on Wednesday and
Thursday, logging 264
laps, but it is clear that
Renault has the fourth
best engine (at best)
now – behind the new
Mercedes and Ferrari
units, plus last year's
Ferrari, running in the
back of the Toro Rosso
and the Sauber.

Renault at least looks as though it has acquired a solid and capable car, which is what you'd expect from a racing operation as slick as the one at Enstone, but a lack of performance is to be expected this year, thanks to giving up Mercedes power.

It will take time to build the Enstone operation back into a potential championship contender, which is why Renault's new racing director Frederic Vasseur is talking of the early days of this project as a rebuilding process.

The long-term future is starting to look brighter again, but don't expect miracles from the reformed Renault works team this season.

BEN ANDERSON

On the other hand, when you feel you may be close to perfection, there is always the possibility of a convergence in performance, leaving Mercedes in a position to be attacked.

That is motorsport boss Toto Wolff's concern, but he has no doubt all that those within the team have pulled their weight to keep Mercedes out in front.

"The priorities over the winter were to increase and extract performance out of the power unit and chassis, and to make it all fit together," said Wolff.

"Because the regulations were stable it became more difficult, the slope levelled out, but this is the right challenge for the organisation, the people, to extract the last bit of performance."

Mercedes certainly showed last week at Barcelona that no stone is being left unturned as it added parts to the car over days three and four, already a clear indication that it was striving for performance and set-up.

Contrast that to Ferrari, which, as Kimi Raikkonen revealed on Thursday, following his second day at the wheel, hasn't "really done an awful lot of set-up work".

The warning signs are ominous, so for now we will leave the final word to a man who would likely give anything to be in the race boots of Hamilton or Rosberg. It is too much to expect anyone from Mercedes to blow its own trumpet, but they will know deep down exactly what the car can do. So, in terms of offering an outside-looking-in perspective, and who will know exactly what a rival car is capable of, it's over to Fernando Alonso. The question was whether McLaren can win this year — but the two-time champion instead turned to Mercedes.

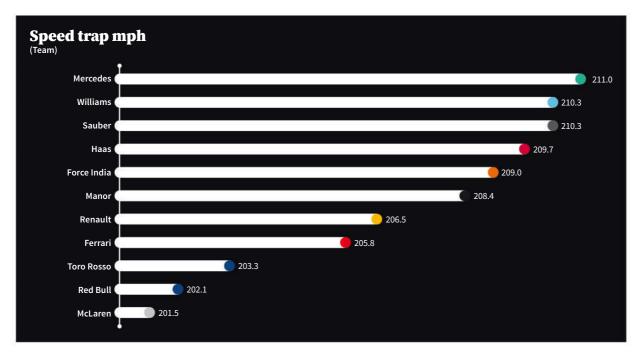
"I'd like to say yes, but the Mercedes domination has not finished," said Alonso. "They are very, very strong, and they are doing some interesting days of testing.

"With that amount of laps, it means you have very clear things, so when you add the potential they are stronger than ever, even more than the last two years."

With just one more test, scheduled to finish tomorrow (Friday), that's good reason, then, to be afraid.



TESTING DATA BARCELONA, FEBRUARY 22-25



Most laps completed, by Lewis Hamilton

Laps completed by Alonso on day four

Race distances worth of mileage completed by Mercedes

Fewest laps completed, by Jolyon Palmer

os	DRIVER	CAR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
1	Sebastian Vettel	Ferrari SF16-H	1m24.939s	1m22.810s	-	-
2	Nico Hulkenberg	Force India-Mercedes VJM09	-	-	1m23.110s	-
3	Kimi Raikkonen	Ferrari SF16-H	-	-	1m25.977s	1m23.477s
4	Daniel Ricciardo	Red Bull-Renault RB12	1m26.044s	1m23.525s	-	-
5	Sergio Perez	Force India-Mercedes VJM09	-	1m23.650s	-	-
6	DaniilKvyat	Red Bull-Renault RB12	-	-	1m26.497s	1m24.293s
7	Alfonso Celis	Force India-Mercedes VJM09	1m26.298s	-	-	1m24.840s
8	Nico Rosberg	Mercedes F1 W07	-	1m24.867s	1m26.084s	1m26.187s
9	Marcus Ericsson	Sauber-Ferrari C34	1m27.555s	1m25.237s	-	-
10	Kevin Magnussen	RenaultR.S.16	-	-	1m26.014s	1m25.263s
11	Max Verstappen	Toro Rosso-Ferrari STR11	-	1m26.539s	-	1m25.393s
12	Lewis Hamilton	Mercedes F1 W07	1m25.409s	-	1m26.421s	1m26.295s
13	Esteban Gutierrez	Haas-FerrariVF-16	-	1m25.524s	-	1m27.802s
14	Valtteri Bottas	Williams-Mercedes FW38	1m26.091s	1m25.648s	-	-
15	Romain Grosjean	Haas-FerrariVF-16	1m28.399s	-	1m25.874s	-
16	Pascal Wehrlein	Manor-Mercedes MTR05	1m28.292s	1m25.925s	-	-
17	Felipe Nasr	Sauber-Ferrari C34	-	-	1m26.392s	1m26.053s
18	Fernando Alonso	McLaren-Honda MP4-31	-	1m26.082s	-	notime
19	Jolyon Palmer	RenaultR.S.16	1m29.356s	1m26.189s	-	-
20	Carlos Sainz	Toro Rosso-Ferrari STR11	1m27.180s	-	1m26.239s	-
21	Felipe Massa	Williams-Mercedes FW38	-	-	1m26.712s	1m26.483s
22	Jenson Button	McLaren-Honda MP4-31	1m26.735s	-	1m26.919s	-
23	Rio Haryanto	Manor-Mercedes MTR05	-	-	1m28.249s	1m28.266s

Red flags Total laps completed Words written in autosport.com's live coverage Miles completed (Engine) Renault 2059 Honda 743 Ferrari '15 2542 Ferrari '16 1834 Mercedes 4741

Miles completed (Team)

1	Mercedes	1952
2	Toro Rosso	1293
3	Sauber	1250
4	Williams	1090
5	Red Bull	1067
6	Ferrari	1021
7	Renault	992
8	Force India	963
9	Haas	813
10	McLaren	743
11	Manor	735

Performance analysis

Our resident Formula 1 car designer digs deeper into the laptimes and produces what is, on current evidence, the competitive order

By Gary Anderson, technical expert

y @autosport

o team goes to a test without looking very closely at everyone else's laptimes, and from that they will try to calculate a baseline with the car weights equalised, and work out what their rivals' times would have been on the same tyre.

This is what I've done using the laptimes from the first Barcelona test. I don't have the same resources in terms of man hours and computing power as the teams, but I've created a reasonable guide to performance. For some teams it makes for positive reading, but for others it's clear there is work to be done.

To come up with the potential laptime each car could have achieved on equal fuel loads, I've looked at how many laps a car completed after setting its best lap and estimated the fuel-weight penalty based on that as 0.06 seconds per lap. For tyres, I've estimated a time difference of

o.6s per compound step to correct for grip. Different cars treat tyres differently, so the difference between compounds always varies from car to car, but this creates a good ballpark figure.

The 2016 medium-compound tyre is not the same as last year's, but we can still gain a reasonable impression of who has progressed the most by comparing times of drivers who have not switched teams to what they managed at last year's Spanish Grand Prix weekend.

Sauber is a good reference point, since it was using its 2015 car last week. Spain was the fifth race of last year, so Sauber's car will have developed as the season went on, but this is still a useful extra information point.

During my years on the F1 pitwall, you could never come back after a test feeling that you had a complete picture of what had happened. With four more days of testing to go, and a couple of weeks to the first race, lots can change.



ADJ	USTED TIMES \top	YRE AND FUEL-ADJI	JSTED TIMES FROM	I TEST ONE
POS	DRIVER	TEAM	TIME	GAP
1	Rosberg	Mercedes	1m23.907s	
2	Hulkenberg	Force India	1m24.250s	+0.343s
3	Vettel	Ferrari	1m24.430s	+0.523s
4	Hamilton	Mercedes	1m24.509s	+0.602s
5	Perez	Force India	1m24.790s	+0.883s
6	Raikkonen	Ferrari	1m25.097s	+1.190s
7	Ricciardo	Red Bull	1m25.145s	+1.238s
8	Verstappen	Toro Rosso	1m25.213s	+1.306s
9	Sainz	Toro Rosso	1m25.219s	+1.312s
10	Celis	Force India	1m25.260s	+1.353s
11	Magnussen	Renault	1m25.263s	+1.356s
12	Ericsson	Sauber (2015)	1m25.657s	+1.750s
13	Gutierrez	Haas	1m25.704s	+1.797s
14	Grosjean	Haas	1m25.814s	+1.907s
15	Bottas	Williams	1m25.828s	+1.921s
16	Kvyat	Red Bull	1m25.913s	+2.006s
17	Alonso	McLaren	1m26.082s	+2.175s
18	Palmer	Renault	1m26.189s	+2.282s
19	Wehrlein	Manor	1m26.345s	+2.438s
20	Nasr	Sauber (2015)	1m26.473s	+2.566s
21	Massa	Williams	1m26.783s	+2.876s
22	Button	McLaren	1m27.039s	+3.132s
23	Haryanto	Manor	1m28.729s	+4.822s



TEAM BY TEAM

1 MERCEDES

The car looks good both in terms of speed and reliability. So, based on this test, I'm afraid to say the season looks like another two-horse race.

The Mercedes power unit has also been improved and all the Mercedes users will benefit from this. Collectively, this will increase the potential for Mercedes domination because the works team will know that little bit more about how to get the most from the engine.

2 FORCE INDIA

Force India made up a lot of ground last season when it introduced the B-spec version of the 2015 car. The new chassis is a continuation of that very successful development path. Has Force India closed the gap to Mercedes to just over 0.3 seconds? Probably not, but I think it is going to be a lot closer than it was.

3 FERRARI

Last vear, Ferrari was on

average 0.8s away from Mercedes. Now it looks a bit closer, but I can't see it being able to mount a properly consistent championship challenge on current form. It's still not close enough.

4 RED BULL

Red Bull seems to be in the same place it was last year. So it's a case of nothing gained, nothing lost as yet, but it will be interesting to see what the picture looks like once the RB12 moves closer to Australian GP-spec during test two.

The hope is for some major steps forward when the influence of Mario Illien is felt on the Renault engine, but it's going to be mid-season before there's any chance of seeing this effect.

5 TORO ROSSO

The change from Renault to Ferrari power unit, even the 2015-specification one, can only be a positive. But the team didn't get the information required from Ferrari until late in the day, so I would expect there to be lots of room for improvement as the currently "compromised" chassis is updated to get the best from the power unit.

6 RENAULT

This is a holding year for Renault while it builds itself back up to a proper works team again. In its final years as Lotus, a lack of finances meant it was raided by other teams for a lot of good people – making up for that and upgrading to the latest equipment will take time. So, Renault just needs to be solid this season, and it looked no more than that in testing last week.

7 HAAS

Formula 1's newest team has surprised everyone. It's not easy to come into F1 and look like a midfielder at the first test, but that's exactly what Haas did. This can only give the team great motivation. The job will

"Ferrari looks a bit closer to Mercedes, but I can't see it being able to mount a championship challenge on current form. It's still not close enough"

only get tougher but, other than a front-wing failure on the first day, the car ran well.

8 WILLIAMS

Williams always keeps quiet in testing. If any team has the right to claim it's focusing on its own programme and be believed, this is the one.

But I would still like to see a bit more from it, since the Williams was one of only two cars to run slower than during the 2015 Spanish GP weekend. This is not a good omen, but we will have to wait and see what happens at the second test.

9 McLAREN

McLaren-Honda again seems to be struggling. The times were not very impressive and Alonso didn't really get running on the last day because of a coolant leak, but that is all part of the battle. If it were a small team you could understand that, but not a team of this standing. The might of McLaren and Honda should be setting the standards, but it isn't.

10 MANOR

Manor's car is a little bit out on a limb conceptually and I'm not quite sure why that decision has been made. But with the switch to Mercedes power units, and with Mercedes protege Pascal Wehrlein in the car, the future seems as bright for this small team as it has ever been.

Trackside view

So much for the laptimes and who was running which tyres and what fuel load. How do the cars look on track at Barcelona? Our man reports

By Ben Anderson, Grand Prix Editor

y @BenAndersonAuto

Mercedes

THE MERCEDES LOOKS TO BE ITS USUAL ASSURED self, just effortlessly gliding around the circuit. I got the distinct impression there is quite a bit more to come too once they really start winding up the car and engine. Neither Lewis Hamilton nor Nico Rosberg looked as though they were trying particularly hard as they clocked up neck-sapping levels of mileage on the W07, which was so obviously impressive in all departments: high-speed, low-speed, under braking, corner entry, traction and acceleration. It looked fast but also smooth and controlled, and that's on extremely long runs with high fuel loads. It will be fascinating to see how it looks when that weight comes out, and whether all the "innovation" Rosberg spoke about will be enough to keep Mercedes ahead of Ferrari.



Ferrari

INITIAL IMPRESSIONS OF THE NEW FERRARI ARE quite positive. I saw the car in action on day one, when Sebastian Vettel was on the medium tyre and not going all out, but the car looked fast and stable, and transitioned well from the left-hander at Turn 2 to the high-speed entry of Turn 3. The SF16-H is built

around a new aerodynamic concept and revised front suspension, which appears to have cured the understeer tendency of last year's Ferrari. Kimi Raikkonen admitted the team has yet to explore the potential of the new package, but it looks to have a very good base.



Red Bull

WE'VE COME TO EXPECT QUALITY CHASSIS DESIGN as a given from Red Bull, and the RB12 looked excellent, particularly at high speed. It was also noticeable how well the car launched itself out of the tight left-hander at Turn 5 – a place where both Red Bull and Toro Rosso struggled to put the power down in testing last season. The Renault engine still looks weak, but at least is showing none of the driveability difficulties that were so apparent this time last year.



Williams



THE FW38 LOOKED PRETTY DECENT THROUGH THE first three corners; Felipe Massa could lean quite heavily on the left-rear turning in to the first corner and the long right-hander at Turn 3. It didn't look absolutely the most responsive car on turn-in, but pretty solid, and perhaps it will come to life as Williams starts unlocking its potential. The drivers seem confident that the design team has addressed the low-speed weaknesses that held back the FW37, but the new car looks similar aerodynamically and was still quite stiff over the bumps.

Force India



I WAS VERY IMPRESSED BY THE FORCE INDIA VJM09, which looks to be a rewarding car to drive – fast and well poised. Nico Hulkenberg was really throwing it at the Turn 1 apex on Wednesday and still getting rear grip out of it. The B-spec VJM08 turned out to be an excellent car, so it's no surprise to see the team has evolved that specification to produce this one, which was good enough to make

Alfonso Celis Jr look very comfortable, despite his inexperience and unremarkable single-seater record. At the moment, it's tough to choose between Force India and Williams, but we won't know for sure until Williams empties its tanks – something that probably won't happen until the first race. I expect Williams will be a step better in high-speed, but Force India could be a real threat on tighter circuits with high kerbs.

McLaren



THE NEW McLAREN-HONDA AT LEAST SOUNDS faster than the old one. A trace of that old rough engine note is still audible off-throttle and under lateral load through Turn 3, but the overall sound is much cleaner, suggesting that Honda has found more power and better efficiency over the winter.

I don't think it will be enough to trouble Mercedes and Ferrari, but McLaren has reached the point where its chassis should be among the best out there, so it should be able to mix it properly in the midfield at least, rather than hanging off the back of it as it did for most of last year. That's a step in the right direction.

Renault

THE REFORMED RENAULT WORKS TEAM KNOWS what it's getting into by buying back into Enstone – a highly capable team of racers who know how to build good cars, given the resources. The RS16 is based on last year's Lotus E23, which proved to be an excellent car, just starved of development. It looks very neat and tidy on track, and the drivers reported good things about the driveability and

balance. That's encouraging, given how late the project came together and the compromises made at the rear of the car to accommodate the switch from Mercedes engines. That's the pinch point for Renault at the moment. The Renault power unit is noticeably weaker at the bottom end than the Mercedes and both the old and new-spec Ferrari units, so lacks punch off the corners.



Toro Rosso

THE TORO ROSSO STR10 WAS THE SURPRISE HIT OF 2015, and there was a feeling that this team could be a real threat with a better engine. Watching from trackside it's immediately apparent that last year's Ferrari engine is a decent step forward over the Renault power unit. I watched Carlos Sainz chase after Lewis Hamilton's Mercedes for a few laps on Wednesday, while both were running the medium tyre. Sainz gradually lost ground and didn't accelerate as well out of Turn 2, but otherwise the STR11 looks decent. Christian Horner reckons Toro Rosso will be ahead of Red Bull at the start of the season, but I think it could be quite close.



Manor

MANOR ALREADY LOOKS MILES MORE COMPETITIVE than it did last year, but that's hardly surprising given the tools the old regime had at its disposal. The new car is more stable under braking but looks a little conservative aerodynamically, and probably the least capable of all the new cars at high speed. Mercedes power is a big advantage, though, on which I imagine the MRT05 will rely heavily to make up the deficit in other areas.



Haas

HAAS SHOULD BE VERY PLEASED WITH THE WORK it's done on the VF-16, which seems very respectable. It immediately looked slightly better than the 2015 Sauber at high speed and seemed to be pretty consistent in Esteban Gutierrez's hands by the fourth day of running. He had a few nasty twitches coming out of Turn 2, but the base looks decent, and Haas will only get better as the team gets up to speed and uses its reasonable resources to develop the package.



McLaren-Honda: Not enough progress

There's work to be done for the wounded giant to get back to the front, despite a noticeable step forward over the winter

By Ben Anderson, Grand Prix Editor

@BenAndersonAuto

cLaren-Honda has undoubtedly made a better start to this pre-season than it did the last. The new MP4-31 completed 257 laps over four days of running in Barcelona last week, ending up 3.272 seconds off the ultimate pace set by Sebastian Vettel's Ferrari.

Considering Fernando Alonso and Jenson Button completed just 79 laps between them on the first four days of testing in 2015, lapping almost seven seconds off the pace at best, there has clearly

been a significant improvement.

But Formula 1 is not simply about progress. That's a given. If you don't progress, you don't survive. What truly matters is the rate of progress you make compared to your rivals. Develop faster than them and you will succeed; develop too slowly and you will be left behind, even though you are objectively better than before.

The pace of Honda's readaptation to F1 and the speed of its reactions in recovering the ground lost to that poor start in

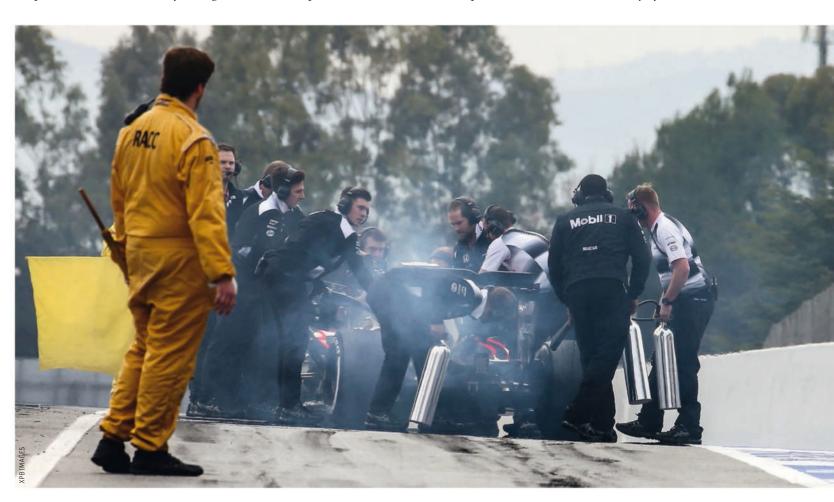
2015 have continually frustrated McLaren. Ferrari showed last year what can be done in relatively short order, transforming what was comfortably the worst engine in 2014 into the second best. It's early days, but Honda does not appear to have made progress to a similar order of magnitude in 2016.

The ERS is certainly better. Honda has redesigned the compressor and turbine that were compromising the ability of its MGU-H and turbo assembly to recover heat energy from the combustion process, but overall performance is still some way from where it needs to be.

McLaren-Honda was buried near the bottom of the speed traps, and two leaks (one hydraulic, the other coolant), which ruined the final day completely, supported suggestions that Honda has further reliability problems to sort out.

Honda has worked hard, but is that work enough? Has it reacted quickly enough to the harsh lessons of last season in order to whip itself properly into shape for the coming campaign?

The jury is still out.





Button's running comes to an early end after an issue



"Honestly, we don't have the expectations of where our standard is," said Honda's outgoing F1 chief Yasuhisa Arai. "It's too early. After testing we will go to Australia and find out our standard.

"You know that last year was a very, very difficult season, especially the winter testing. Comparing to last year, it's much better."

News that Arai would step down at the end of February at first glance suggested that there had at least been a seismic shift in Honda's approach to F1.

In appointing Yasuke Hasegawa to take over Arai's responsibilities for the F1 operation, Honda has promoted a guy with previous F1 experience, unlike Arai. Hasegawa was a systems engineer at BAR-Honda and rose to become engineering director of the previous Honda F1 project, which ran until the end of 2008.

He will also take on a streamlined role, focusing purely on F1, with none of the extra responsibilities for Japanese is 59 years old and next year will reach the mandatory retirement age for Honda workers. The structural change is far more important, whereby Hasegawa will focus solely on F1, under the supervision of Honda's new R&D president Yoshiyuki Matsumoto.

That's one person fully focused on F1 with another keeping an eye on things, instead of just one man dividing his time between three responsibilities. That can only accelerate the rate of development. Eventually.

These changes, though a welcome step in the right direction, could already have come too late to make a substantial difference to McLaren-Honda's chances of rising up the grid this season.

Arai has already settled the development direction for this year's engine, the basic specification of which was frozen at the end of February, so it will be difficult to make significant changes if Honda has headed down the wrong path over the winter.

There is also the fact that Arai

"The personnel changes at Honda could have come too late to help its '16 chances"

domestic motorsport and managing Honda's Sakura R&D facility that Arai had to balance with his F1 duties.

The hope is that this will improve communication and allow for faster reaction times to help address some of the cultural and structural issues that McLaren feels have compromised the project's rate of development to date.

The fact that Arai will step down is not really significant in itself. He

has helped choose his own successor, which may impact on the pace of progress. Hasegawa is described as a protege of Arai, having worked under him before Hasegawa's first adventure in F1 from 2002-08, and there will surely be a degree of deceleration during the transition period.

The burning question is how long can McLaren continue to wait for Honda to get on the pace, at all levels, before it really is too late?

O&A

FERNANDO ALONSO McLAREN-HONDA DRIVER



What are your first impressions of the new car?

It's good to be back and complete a good number of laps, which I missed last year. By race five or six we were still

discovering little things on the car that were hurting us a lot, so the first priority this winter was to make sure we went through the problems we had last year and put in place some solutions. We did that, I think, on the reliability side, and I am proud of the team and of the job everyone has done on this car.

Does the new engine have more power and better energy deployment?

Definitely, yes, but I had no doubts. The starting point of the power and the deficit we had last year compared to the top teams was too high. For us last year there was a lot of learning, a lot of pain, but we learned many things, and now with a completely new design of power unit we need a bit of time to understand it and exploit the potential.

Is it possible to win with this car?

I'd like to say yes, but the Mercedes domination has not finished. They are very, very strong, and they are doing some interesting days of testing. With that amount of laps it means you have very clear things, so when you add the potential they are stronger than ever, even more than the last two years. The target to have the best car, the best chassis, is reachable, maybe by the European races. Motivation is very high, but who knows? There is no big solution or crystal ball.



Technical secrets of F1 testing

Even in the third year of a rules cycle, the 10 new F1 cars that ran publicly for the first time in Spain last week featured plenty of interesting innovations

By Craig Scarborough, Technical Contributor



MERCEDES KNIFE-EDGE VANES

ALONGSIDE THE NEW S-DUCT NOSE AND subtle front-wing alterations, the most interesting aspect of the Mercedes F1 W07 is the new bargeboard vanes installed after the first day of testing.

Despite playing a critical role in directing airflow under and around the car, the bargeboards mounted low down ahead of the sidepods have been downsized over the years and have become increasingly complex to alter the airflow structures trailing off them.

As is the trend on the Mercedes this year, these parts have been dramatically altered from a large, curved panel to a series of knife edges and vanes comprising 15 elements.

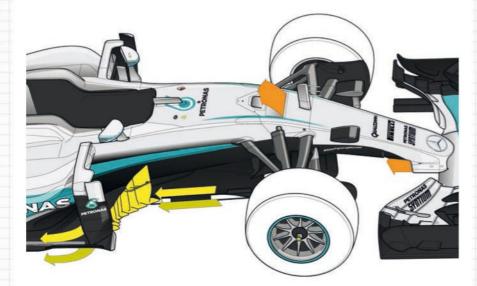
Mounted in the corner of the floor's leading edge, where the relatively straight airflow coming from the nose is being turned sideways to part around the sidepods, are nine knife edges.

Their radiused profile is used to both meet the floor's curvature regulations and to direct the airflow under it. This will send airflow in one of two directions, firstly out under the rolled lip on the side of the floor and also underneath it towards the diffuser.

The breaking up of a large bargeboard means the pressure distribution under the car can be tailored more easily by the multiple elements.

Mounted to these knife edges are six vertical vanes, which are working the airflow passing low around the sidepod undercuts. Much like a wing, the slots between the vanes help turn the airflow in a tighter curve.

We have seen slotted and multi-element set-ups in this area before, but not of this complexity. It serves to show the level of detail work now required to find gains within the current regulations and mature aero designs.



RED BULL INVERTED WINGLET



THE AREA UNDER THE RAISED FRONT OF THE chassis is ripe for development. Turning vanes and aero details work with the front wing to create the Y250 vortex, a strong airflow that spirals between the front wheel and chassis to keep the wheel's turbulence from upsetting the car's central bodywork.

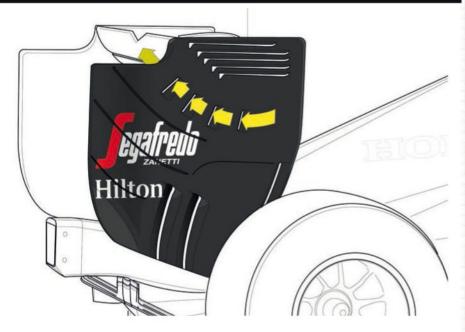
In its work on this area, Red Bull has taken ideas from both Brawn GP and Mercedes by adding a large upturned winglet on top of the T-tray splitter.

The gap between the splitter and the chassis above is unregulated as long as the aero bodywork doesn't extend too far sideways, so there's enough room to create a powerful aero effect here.

Brawn added a huge snowplough-like vane on its splitter in 2009, which was copied by Williams in '10. Mercedes has its subtler version of the bat-wing, a smaller inverted wing fitted high up and further forward.

Red Bull's inverted wing is mounted to a short strut projecting up from the splitter. The wide wing shape features a slot across the middle, and the harder-working tips are folded down to help create the diverging wake that works with the Y250 vortex.

McLAREN REAR-WING SLOTS



BY THE MIDDLE OF 2015, McLAREN ALREADY had all the key signature trends for 2016: a short, pointed nose, an S-duct, 'size-zero' rear end, and a lot rake in the set-up. So it's the details that define the new MP4-31, key among them being the rear-wing endplate.

As the rear wing contributes so highly to drag, anything to reduce this negative force will help top speed. With the team's Honda engine still not at the top of the league, work on the rear-wing details will somewhat offset the power deficit.

In McLaren's case, the slots in the endplate are where work is being done to reduce drag. Most of an F1 car's rear-wing drag is induced

by a powerful vortex forming at the wing tip, as the high-pressure air above the wing meets the lower-pressure regions to the side and below.

Reducing this pressure differential helps to cut drag. It will cost some wing performance, but it's a worthwhile compromise.

Already teams have louvres above the wing to direct air out from this area to equalise the pressure at the wing tip. Now McLaren has added a series of slots in the endplate below the wing to achieve the same effect in reverse.

Some teams already have one or two of these lower slots, but in F1 the trend is to multiply any good solution, so McLaren has added four such slots to increase the effect.

RENAULT NOSE

AS A SQUAD STILL SCALING UP ITS engineering team and reigniting its aero programme, Renault has produced a simple and neat-looking car in the RS16.

Although launched with a version of the 2015 nose, the development version it briefly tested late last year as Lotus has reappeared and is a very distinctive design.

Sitting conceptually between the narrow Mercedes nose and the wider Williams type, the narrow Renault nose features a slight thumb-tip on its end.

But most interesting is that the crosssection of the nose is near triangular. With the thumb-tip extending directly backwards as the tip of the triangle, this creates a slanted under-surface to guide air back up under the car, working with the wing mounting pylons as a guide vane.

Not surprisingly, the front turning vanes under the suspension are also altered with a new-shape vane and a flap extending between them



WILLIAMS REAR BODYWORK



THE WILLIAMS WAS LAUNCHED WITH A NEAT piece of bodywork-shaping at the rear, and the back area also increased in complexity.

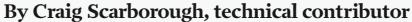
The FW38's more conventionally shaped sidepods gave the team the chance to play with the newly extended bodywork to help shape the flow over the back of the car.

Taking a similar Mercedes bodywork vane as a precedent, Williams has added a second layer of bodywork extending from above the gearbox area to loop around the tail of the Coke-bottle section towards the floor.

While Mercedes uses its vane to turn the airflow sideways, Williams points the vane down to create a downwash over the rear of the car. This makes the diffuser and wing work more effectively. So while the vane creates lift overall, more downforce is also created.

Sauber C35

Visual continuity with Sauber's 2015 car masks some detail development and a bigger performance step than might be expected





ROLLHOOP

This allows more airflow to pass around and under the rollhoop structure towards the rear wing. Inside the four struts supporting the inlet is a machined aluminium component that forms the structural part of the rollhoop. This year's set-up is a slightly exaggerated version of last year's design. Around the flat sides of the triangular inlet are scoops to feed the large cooler at the rear of the car.



FRONT WING/NOSE

The short nose is carried over with its thumb-tip to present the minimal surface area to the airflow. The front wing is also a carryover item, although this will be a focus of development after the team struggled to get some of the wing upgrades to work with the rest of the aero package last year.

COOLING

The revised cooling layout of the Ferrari power unit forces the placement of a large triangular cooler over the turbo. This is why all the cars with the 2016 Ferrari have similar engine cover shapes. Feeding this cooler are new side ducts around the rollhoop. Also, the sidepods are wrapped much more tightly around the radiator package, which is a key area of improvement. The sidepods slope much more noticeably towards the rear and are much tighter at the rear of the Coke-bottle shape. Improvements in this area aid the efficiency of the diffuser and rear-wing package.

TECHNICAL TEAM

Sauber recruited both Mark Smith and Elliot Dason-Barber last year. Technical director Smith has a broad base of experience at teams as diverse in budget and resources as Red Bull and Caterham. He arrived too late to have input into the basic car concept, but the aero philosophy shows signs of new thinking. While the car may not look too different, the methods used to create the bodywork should result in more performance.

VERDICT

Sauber could very well be strong in 2016. While the new car differs little visually from its predecessor, the new Ferrari power unit will help improve its performance. And despite the familiar appearance of the car, new staff and a new approach combined with the engine means this could be a bigger step than you might think. The car made its debut at the second test, delayed not by production problems but by testing being brought forward ahead of the planned completion date.

Capped by its budget rather than its technical facilities, Sauber developed well last year with several evolutions to the front wing, nose and sidepods. While not at the cutting edge of design, it had the key engineering concepts fitted to the package by the end of the year. The new car retains that look, but has revised aerodynamics wrapped around a significantly repackaged power unit and a revised cooling layout.





Mark Smith

By Lawrence Barretto, F1 Reporter



LAWRENCE BARRETTO: Felipe Nasr and Marcus Ericsson suggested last year that Sauber would go aggressive with its design for 2016. Has that been the case?

MARK SMITH: I don't think it's aggressive at all. The design is an evolution. We are trying to take a step aerodynamically as that is the biggest performance differentiator the team has. We tried to reduce the volume of the cooling system so the sidepods and bodywork can be smaller and more efficient. We changed our philosophy in terms of how we map the car.

LB: What changes can we expect to see on the new car?

MS: Aerodynamically, the change in direction means there are lots of things around the car that change in detail. But it's not like you will look at the car and see there is something overly aggressive or different. We won't be starting off with the front wing we ultimately want to run. We want to keep going with that until we reach a level of maturity that justifies making it. Some things won't be ready for the first race.

LB: When did you decide to change philosophy?

MS: During the weekend of the Hungarian Grand Prix. It's one of those things that does take quite a long time to reap the rewards from. Typically, it's a 12-month cycle. It's

an interesting path because it opens up different avenues for the aerodynamicists and within CFD the slots of opportunity to try things that work in a slightly different way. It's positive, but it's not flicking a switch. It will take time. That's why we don't have the front wing where we want it to be.

"There are some things that won't be ready for Oz"

LB: When will the front wing be ready?

MS: Probably not for the first third of the season. We also have to consider the 2017 regulations, because there will come a point when we are in the wind-tunnel with the '17 car and that will stop 2016 development. We can't as a team make a wing and throw it away two or three races later, which is why we are trying to dovetail as much as we can with 2017 regulations.

LB: How is Sauber dealing with that balance?

MS: It is governed by a few things, such as when Pirelli release tyres for the wind-tunnel. There's no point being ready to go and then waiting a month for the tyres. When those tyres are available will be when we will look at switching over. Until that time, we'll have to push as hard as we can with 2016.

LB: What influence have you had since joining the team in the middle of last season?

MS: The main influence that a technical director can have is the general direction — things like changing the way in which

we go about developing cars aerodynamically. There are far cleverer people than me doing the day-to-day work in all of those areas but I am looking at the bigger picture, the general direction. It's about trying to get everyone going in the same direction and occasionally giving that direction a gentle nudge. It's a bit frustrating that three or four months from now we'll be where we'd like to have been at the start of the season, but that's a result of circumstances and we just have to deal with it.

LB: What impact were you able to have on the C35?

MS: By the time I joined the team, we had already committed to a reasonable amount of layout in terms of the overall packaging of the car as quite a lot of it comes from the power unit. It's not like 20 years ago when it really was just something that went between the rear bulkhead and the front of the gearbox. It's a colossal thing in terms of the impact on the chassis with intercoolers, oil tanks, ERS and so on. The guys were already under way with doing that. I don't think we would have done anything differently. There was still the opportunity to squeeze things in terms of packaging and slightly change the way we go about our aero development. I'm reasonably happy with what I've been able to achieve in the time I've been here.

LB: Nasr suffered a lot with brake cooling last season. Does the new design provide a solution for that? MS: With the cooling, lots of analysis has been done and we have done what we can in terms of optimising things with CFD but like anything else, we need to get correlation on track to manage

the situation a bit better than we were able to last year.

LB: How useful was running the 2015 car at the first test?

MS: It's kind of a perverse luxury. Ideally, we would have been there with the new car but, in terms of schedule, that didn't work out because of date-change and so on. But with limited testing nowadays, whenever you go to the pre-season tests with new cars, there are so many things you need to work through — lots of other 'nice-to-do' stuff that you never get the chance to do. I think we'll get some quite useful information that will be applicable in 2016, so it's definitely worthwhile.

LB: Does the new car missing the first test hamper you?

MS: I don't think it's going to hurt us too much. Given a blank sheet of paper and no race-schedule changes, we would be at both tests but we're not. Rather than focusing too much energy worrying about it, we decided to extract as much as we can with the old car that is relevant to 2016. If we have a half-decent test with the new car, I think we'll be fine. **



2017 **REAR TYRES BIGGER DIFFUSER** Longer (from 3500mm to Width increased from 3250mm to 4050mm 5250mm) and taller (from 1250mm to 1550mm) **REAR WING** Wider (800mm to 950mm) and lower (from 950mm to 800mm) 2016

FORMULA1

How Formula 1 at last

DETAILS OF THE FASTER CARS PROMISED for the 2017 Formula 1 season have finally been agreed, but with several compromises.

The original plan was for the 2017 cars to be up to six seconds per lap quicker than their current equivalents by adopting wider front and rear wings, in conjunction with fatter tyres front and rear. That proposal was put forward by Red Bull around 18 months ago — arguably motivated by a desire to claw back its position of pre-eminence, drawing on its strength in terms of chassis design and aerodynamics, after losing competitiveness since the introduction of the current formula in 2014. But there was also a genuine desire to make cars more spectacular by adopting a more visually appealing look.

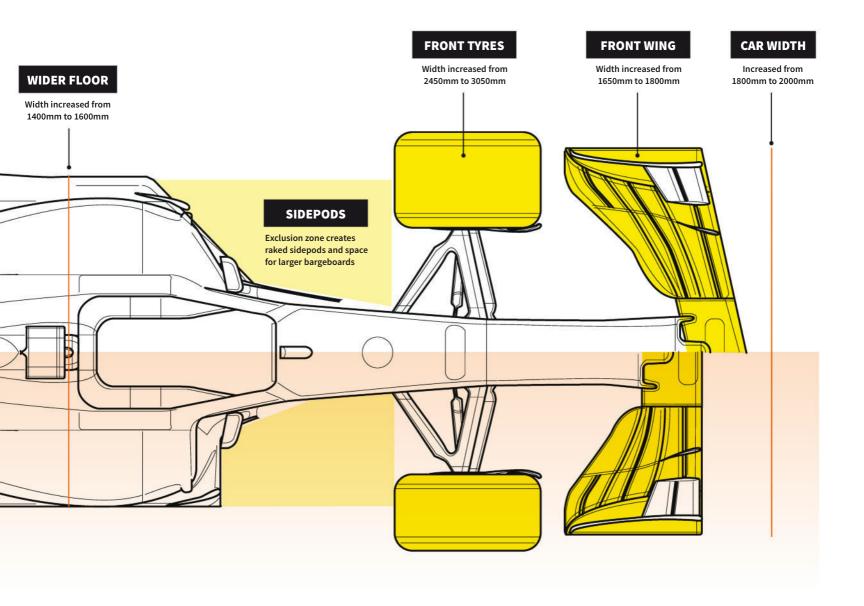
The proposition was initially debated at a technical level, then within the Strategy Group, resulting in a triumphal declaration last May. But, after extensive simulations, it became clear that the concept would need to be rethought.

Many of the concerns revolved around whether Pirelli's tyres could deal with the loads that would be placed upon them, particularly since the majority of the supposed six-second gain would come through increased cornering speeds. Pirelli stoutly defended the quality of its product, and insisted that it could deliver tyres capable of withstanding those forces, provided it could undertake a proper test programme that focused on track evaluation rather than computer simulations. Since the regulations deny Pirelli the opportunity to use a historic car, and no representative 2017 machinery would yet exist during the development timeframe, the debate reached an impasse.

This has still yet to be resolved and remains a troublesome issue, although there are moves afoot to allow Pirelli to use a V8-era Formula 1 machine, or even a GP2 car. In the absence of significant progress in the wider debate about the performance envelope, McLaren then made a halfway house proposal — for the new cars to be three seconds quicker rather than six.

In essence, the wider wings and tyres would be retained, but in mitigated form. The influence of the diffuser would also be curtailed.

The result was a 16-2 vote in favour in a meeting of the Strategy Group on February 23. Only Red Bull and Mercedes voted against it.



agreed 2017 car-concept plans

the laptime

target could

easily be

eclipsed"

In the F1 Commission, which required a majority of 66 per cent, 20 of the 26 votes were in favour of the compromise. So the watereddown proposal was duly adopted. While there remains some fine-tuning to be done, since the deadline has been extended to the end of April there is now enough time to ensure rigour.

Despite the the rules do front-wing one of the proposal was duly adopted. While there is now enough time to ensure rigour.

The changes in detail

The headline points of the new rules remain broadly true to the original proposal, with wider tyres and wings, and a larger diffuser, combining to generate faster laptime through increased cornering speeds.

But the stated intentions do not include increasing overtaking, and many of these changes reverse the work done by the Overtaking Working Group back in 2009. It therefore remains to be seen if the step up in performance from the new aerodynamic configuration and bigger tyres somehow transpires to facilitate overtaking.

Despite the relatively far-reaching changes, the rules do not mandate a reduction in front-wing complexity. This is a key factor in one of the perceived impediments to overtaking, namely the difficulty in staying close enough to

the car in front while cornering.

The fundamental change is the return of the car width to its pre-1998 dimension of two metres. In combination with the increase in tyre sizes — by 60mm at the front and 80mm at the rear — this will give the car more overall grip and lead to less lateral weight transfer, which robs the inside wheel of grip in corners.

As a trade-off for the increase in grip, though, these wider tyres

will create more drag down the straights.

The front wings will become 200mm wider, keeping the wing's alignment to the current front wheels the same, and the floor between the front and rear wheels will be wider, also by 200mm, while the diffuser will be longer, taller and slightly wider. Above this, the rear wing is

widened by 150mm and lowered, making it visually similar to the pre-2009 wings.

Although not a change that will have farreaching aerodynamic effects, both the front and rear wings, as well as the front of the sidepods, will have a swept-back shape. The theory here is to make the cars more visually interesting than the current, constrained shapes. Along these lines, the area allowed for bargeboards to the side of the cockpit is increased, and the front-wing endplates scaled back to simpler designs.

Overall, it means a return to the dimensions of F1 cars in the 1990s, albeit with the modern curvature and complexity we see today. As well as the basic dimensional rules, a number of smaller allowances for curvature and angles around the floor and suspension have been listed. Allied to those bigger changes, there is potential to produce even more aerodynamic performance and sensitivity.

There is clearly an opportunity to make a big step forward. It is possible that the three-second laptime target could easily be eclipsed by teams being aggressive with their interpretation.

IAN PARKES AND CRAIG SCARBOROUGH



HAAS BACK ON TRACK The Haas team was able to return to action last week at Barcelona after making a short-term fix to ensure there was no repeat of the front-wing failure it suffered on the first day of testing, although a permanent change will be made for the future. The team enjoyed a very successful first F1 test, setting times that suggested its ambition of scoring points in its first season, perhaps even its first race, and gunning for a place in the top eight of the championship could be achievable. Romain Grosjean and Esteban Gutierrez continue to test the Haas-Ferrari VF-16 in the second test this week ahead of the team's racing debut in Australia. Photograph by James Moy/XPB Images

MANUFACTURERS IN F1

Why VW is not keen on grand prix entry

THAT FORMULA 1 IS NOT ON Volkswagen Group's agenda is no surprise, particularly given the fallout of last year's diesel scandal.

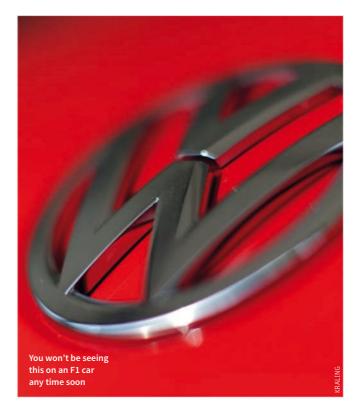
But comments made to *Autocar* by VW Group sports boss Wolfgang Durheimer suggest that F1 would not have blipped on VW's radar even without the emissions crisis. He cited the lack of regulatory stability as the primary reason, before questioning the commitment of F1's commercial owners. "Before you commit the money needed you must see five years of rules stability," he added.

Tellingly, VW has honoured all existing motorsport contracts — albeit with certain cutbacks — and remains committed to WEC, WRC, WRX, GT3 and Formula 3. This suggests that

motorsport is not frowned upon at VW. Indeed, Durheimer said that WEC's "technology is greater than that in F1, and levels of investment are therefore greater". Given that VW currently contests the WEC with both Audi and Porsche, his comments indicate economics are not the main concern.

Sources suggest that VW Group spends upwards of £300m annually on WEC, dwarfing Mercedes' net F1 spend after sponsorship and FOM revenues.

The decision means that of the top five global sellers (Toyota, VW, GM, Nissan/Renault and Hyundai/KIA), only Renault is represented on the current F1 grid — and two thirds of the alliance's sales are generated by Japanese brands.





FORMULA 1

F1's qualifying woes

THERE WAS LITTLE SURPRISE WHEN Bernie Ecclestone said that Formula 1's planned new qualifying system, revealed following a meeting of the Strategy Group and F1 Commission on Tuesday of last week, had been postponed.

It was clear that the plan to implement the format was nebulous, with many details to be worked out to the point where even those needing to implement the timing systems had not yet had the opportunity to study whether it was possible in time. According to Ecclestone, May's Spanish Grand Prix is the likely point for adoption of the new system — which was pushed for by the race promoters — thanks to the time it will take to create the required computer code for timing systems. If, indeed, it is adopted.

The format will maintain the current structure of dividing the session into three segments, but with drivers being eliminated every 90 seconds. Q1 lasts 16 minutes and after seven minutes the slowest is eliminated. Drivers then drop out every 90 seconds until there are only 15 of the 22 left. Q2 lasts 15 minutes, with elimination starting after six minutes. The top eight will fight it out in Q3, elimination starting after five minutes and supposedly setting up a two-driver fight for pole position in the final 90 seconds.

The plan is apparently for cars to have to stay on track throughout, which raises plenty of questions nobody was able to answer definitively. If each driver is only allowed to go out once on one set of tyres, the degradation rates of the Pirelli rubber mean everyone will set their times early on. A system designed to create more spectator excitement will actually render much of the qualifying running irrelevant.

Those involved with the process indicate that the promoters were key in requesting such a format. And having rejected the idea of adopting 'time ballast', whereby drivers have a penalty added to their laptimes based on previous race results as advocated by Ecclestone, to mix up the grids, there are still many details that would need to be ironed out to make this system workable.

If this system was to be made more elaborate, with laptimes effectively reset for each 90-second chunk, then you would have a qualifying structure that is hugely complex, difficult to follow, and would leave pole position to be fought out by two drivers on tyres a long way past their best. Given the drive to see cars going quicker, that makes little sense, and will make the usual climax to Q3 far less engaging. There are potential strategic variations, depending on whether or not cars have to go out immediately, but how those pan out depends on the detail.

Further information on the structure of the system will be finalised over the coming weeks, but, given that the existing qualifying system works well, it's puzzling that this change is being made. If, as Ecclestone has suggested, the objective is to mix up the grids then there are better ways to achieve that. If not, why create a system that could potentially make qualifying less interesting?

IN THE HEADLINES

HAAS YET TO AGREE COMMERCIAL TERMS

The Haas Formula 1 team has yet to agree a commercial deal with Formula One Management. An agreement is required to commercially bind the team to F1, making it eligible to receive revenues at the end of the season based on championship position.

LYNN STAYS ON AT WILLIAMS

GP2 racer Alex Lynn has been retained by Williams as a development driver for the 2016 Formula 1 season. He will dovetail a GP2 season with DAMS with his Williams work.

F1 DRIVER OF THE DAY AWARD CREATED

The F1 Commission has approved a new 'driver of the day' award to be voted for by fans online during each race.

The driver will be given the award straight after the race.

POSITIVE REACTION TO ULTRA-SOFT

The new ultra-soft Pirelli tyre compound, which will be used primarily for street circuits this year, drew approval from F1 drivers who used it during last week's first Barcelona test. Sebastian Vettel set the fastest time on it, and several drivers concluded it delivered the expected step in grip in a consistent and predictable manner.

STEVENS OFF TO WEC WITH MANOR

Will Stevens will follow his ex-Manor F1 bosses John Booth and Graeme Lowdon into the World Endurance Championship this year. He joins Tor Graves as one of two confirmed drivers of Manor Motorsport's ORECA-Nissan 05.

McLAREN PROTEGE HEADS TO GP3

McLaren Formula 1 team protege Nyck de Vries will switch to the GP3 Series with ART Grand Prix in 2016. The Dutch 21-year-old was third in Formula Renault 3.5 last year.

CELIS GIVES FORCE INDIA DEBUT

Recently signed development driver Alfonso Celis Jr gave the new Force India its debut in Spain last week, driving on two of the four days of the Barcelona test. He set the seventh fastest time overall.

CASTRONEVES TOPS PHOENIX TEST

Penske driver Helio Castroneves topped last week's two-day Phoenix IndyCar test. Having set the fastest lap on day one, he improved to a 190.849mph lap in the evening session on day two, putting him ahead of team-mate Simon Pagenaud, who was second fastest.

ROSSI JOINS ANDRETTI FOR INDYCAR

Alexander Rossi will make his IndyCar debut in 2016 after securing a drive with Andretti Autosport. The American, who started five F1 races for Manor last year, was set to make his test debut in the car at Sebring on Tuesday after a seat fitting last week (below).





BTC

INFINITI BTCC TEAM DROPS OUT FOR 2016

BRITISH TOURING CAR Championship team Support Our Paras Racing, which started last season as a works Infiniti squad, has withdrawn from the series with immediate effect.

The team, run by Derek Palmer Sr, began last year with two rear-wheel-drive Infiniti Q50 machines, but lost its works backing after only three rounds of the 2015 campaign. The team was staffed by injured servicemen.

Derek Palmer Jr and Richard Hawken began the season driving the cars, before Hawken split with the team after only two rounds. The second car was then driven by Martin Donnelly and Max Coates before the team lost its licence following the fifth meeting of the year at Croft when it was unable to field a second driver.

The team finished 17th of the 19 that contested the 2015 season.

The decision to withdraw was made by team principal Palmer Sr. It was taken after the targeted budget for 2016 was not forthcoming.

"Naturally it's a huge disappointment to the team, and the injured guys from the Parachute Regiment who prepared and operated the car," said Palmer Sr.

"We appreciate these are tough times financially for companies across the country, but that doesn't make our disappointment any less. We will now focus on returning to motorsport in a different series."

MATT JAMES



BLANCPAIN GT

Combined GT title to take overall precedence in 2016

THE OVERALL BLANCPAIN GT SERIES TITLE WILL become the most prestigious of the three championships to carry the name of the Swiss watchmaker, according to championship boss Stephane Ratel.

The Blancpain Endurance Series and the Blancpain Sprint Series will now respectively be called the BGTS Endurance and Sprint Cups. The rationale is to place a greater emphasis on the overall championship in a season when there will be greater crossover of competitors between the two series.

"The big title is now going to be the overall one, whereas previously no one has really cared about it," said Ratel. "All the main teams and drivers are going to be doing both." He stressed, however, that winning either the Sprint or Endurance Cup would "still be a big achievement".

An influx of endurance teams into the Sprint Cup follows the reduction of the number of rounds from seven to five and new rules that mandate that a team must have at least one car in each series if it is to compete for a share of the €150,000 prize fund on offer at each BGTS round.

That could result in an entry double the size of the 16 for last year's BSS finale at Zandvoort. Ratel won't commit to a firm number until entry forms are filed and fees are paid, but 30-plus cars is looking likely for the Sprint Cup.

GARY WATKINS

OBITUARY

John Horton 1948-2016

JOHN HORTON WORKED IN MOTORSPORT SINCE JOINING Dunlop's rally department in 1972, supplying Roger Clark with the tyres to win that year's RAC Rally. But it was his role as British Rally Championship manager and press officer to Rally GB and the British Grand Prix (as well as Turkey's F1 and WRC rounds) that put most of the 4000 names in his contact book.

Universally popular, Horton's wide-ranging promotional abilities allowed to organise a rally car going down Coronation Street and into Gotham City during the BAFTA/Shell-sponsored Great British Film Rally in 1990. Russ Swift two-wheeling a Montego into a parking space for a Rover advert in the late eighties and a Land Rover being winched to the top of the Cader Idris mountain were also ideas born out of his Sutton Coldfield office.

Recently retired, Horton's pace slowed little. Continuing to work on Rally GB and Rally Finland, he'd begun renovating pushbikes while maintaining his love of walking.

John passed away on Friday morning having suffered a recent heart attack. *Autosport* sends its deepest sympathies to his family and friends.

DAVID EVANS





BLANCPAIN GT

Blancpain adopts new penalty system

A ROLLING SYSTEM OF PENALTY POINTS for driving infractions will be introduced for the Blancpain GT Series this season as part of a push to improve on-track behaviour.

Drivers penalised or warned for a range of offences will be awarded one or more so-called 'behaviour warning points'. When they hit a set number of points ahead of a race, they will be given a grid-place penalty or a drive-through during the race.

Series boss Stephane Ratel described the new system, which formalises an unused clause in the sporting regulations, as part of an on-going drive to improve driving standards, and was a way of "spotting and penalising drivers who are causing problems".

Jacquie Groom, sporting director of BGTS organiser the Stephane Ratel Organisation, explained that the system was motivated by a desire to improve driving standards by creating a sanction for offences that can go unpenalised, as well as punishing persistent misbehaviour.

"A formal reprimand for an offence is effectively just a slap on the wrist," she said. "We can also have the situation where the stewards apportion blame to a driver for a collision, but because the car is out of the race they never get to take the penalty."

She drew a comparison with SROpromoted British GT, in which a reprimand comes with a licence penalty point. A formal reprimand, a black-and-white warning flag and a drive-through penalty will gain a driver one behaviour warning point. A pitlane speeding penalty will result in one or two points depending on its severity, and a stop-and-go penalty two points.

The points will be applicable to a driver, rather than the car. Should a driver hit three points ahead of an event, he or she will be given a five-place grid penalty. Four points will result in a 10-place penalty and five or more a minimum of a drive-through.

When a driver is penalised, they will have three behaviour warning points deducted from their tally. They will discard two BWPs from their score if they go through a race weekend without receiving any points.

Groom pointed out that, had the system been in force last season, it would only have resulted in a penalty on two occasions.

"The aim is not to give out more penalties, but to make everyone more responsible for their actions," she explained. "It's also about closing loopholes."

Groom insisted that the teams were in favour of the new system, but some appear to doubt its necessity.

Vincent Vosse, boss of the WRT Audi team, said: "We haven't had any big issues over the past couple of years, but if it makes things run smoother, then why not?"

GARY WATKINS

IN THE HEADLINES

LECLERC CONFIRMED AT ART FOR GP3

Charles Leclerc will move from the Formula 3 European Championship to complete ART Grand Prix's expanded four-car GP3 Series line-up. The 18-year-old joins McLaren junior Nyck de Vries, fellow F3 convert Alexander Albon and Honda protege Nirei Fukuzumi in the ART fold.

MARDENBOROUGH BACK TO FORMULA 3

Nissan protege Jann Mardenborough will return to Formula 3 this season in the Japanese Championship with B-Max. He will combine this with a Super GT campaign in the NDDP Racing Nissan GT-R GT3 in the GT300 class.

HUBERT JOINS VAN AMERSFOORT

Formula Renault Eurocup ace Anthoine Hubert is to step up to European F3. The 19-year-old Frenchman completes Van Amersfoort Racing's four-car line-up alongside Pedro Piquet, Harrison Newey and Callum Ilott.

ROSENQVIST HEADS TO INDY LIGHTS

Reigning Formula 3 European champion Felix Rosenqvist has switched to Indy Lights with Belardi Auto Racing. He will combine this with a Mercedes DTM reserve role and a season racing a Mercedes in the Blancpain Sprint Cup, where he will partner Tristan Vautier at Akka ASP.

ABBOTT JOINS POWER MAXED

Hunter Abbott will race a Power Maxed Racing Chevrolet Cruze in the British Touring Car Championship this year. He drove a Rob Austin Racing Audi A4 in the past two seasons.

TEAM HARD DOUBLES UP FOR BTCC

Team Hard will expand to run two cars in the British Touring Car Championship in 2016, and could switch from the Toyota Avensis model that it ran last season. Chris Smiley has been confirmed as one of its drivers.

DIXON JOINS GANASSI SEBRING LINE-UP

Chip Ganassi Racing's IndyCar champion Scott Dixon will join the team's Ford sportscar squad for the Sebring 12 Hours this month. He will share the Ford GT with Richard Westbrook and Ryan Briscoe.

WRT AUDI EXPANDS INTO TCR

Audi GT team WRT will expand into the TCR International Series with reigning champion Stefano Comini in 2016. It will field a pair of Volkswagen Golfs, the second for former Peugeot LMP1 tester Jean-Karl Vernay.

LOEB COMMITS TO WORLD RALLYCROSS

Nine-time World Rally champion Sebastien Loeb (below) has committed to the full 2016 World Rallycross Championship with the works Peugeot Hansen operation. He will go up against long-time WRC rival and 2014/15 WRX champion Petter Solberg,



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FEDBACK

Time to get tough on track limits

As the new F1 season approaches it is time to reflect. The FIA has got itself twisted around the little fingers of F1 drivers with the effect that driving standards within F1 and (by example) down the formulas are at times appalling.

How is pushing a competitor off the track, by 'taking the racing line', acceptable? Being allowed to drive completely off the track because 'it doesn't gain an advantage' is nonsense.

The best rules are the simple ones, here are mine: 1) Race organisers/FIA define the track limits along every metre of track. 2) All drivers are obliged at all times to be completely within the track limits. 3) Drivers who exceed track limits or who force another driver to exceed track limits will be penalised — commencing at the start of qualifying.

Phil Allen

Give young drivers a chance

I agree with Lawrence Barretto's column (Feb 18) but think that getting young



drivers in at the bottom is only half the problem, as they have nowhere to move up to if they prove themselves deserving of a better drive.

Two of the four potential racewinning drives are filled by Rosberg and Raikkonen — who have had their chance and proven not to be up to the challenge, while drivers like Bottas, Grosjean and Hulkenberg are stuck in the midfield.

A new rule should be introduced where if you are beaten in the points by your team-mate for two years in a row then you can't drive in F1 the following year. This will stop average drivers clogging up the top drives and make space for exciting new talent, as well as making an exciting sideshow towards the end of the year if a battle between team-mates is particularly close.

Rob Ambrose By email

Change at the top is needed

Re cockpit head protection etc. The drivers might as well remotely drive

If reader Ambrose were in charge of F1, Kimi (right) would be looking for a new job their cars from the pits — we have the technology, at least this way we will see their faces. Mountain biking is far more dangerous than Formula 1.

Now I hear of more changes in qualifying, what next? The time has come to change the people at the top. Slowly but surely they are killing F1. Power is the most dangerous drug — once you taste it you can't give it up.

Salvador Valiente By email

Tough new boss to fix Formula 1

Problem: F1 races poor, limited overtaking. Experts' solution: reduce aero, increase mechanical grip. Strategy group solution: fanny about with qualifying (the only bit that works well).

Main problem: F1 governance. My solution: get rid of lily-livered, self-interested numpties and replace with a visionary (not Bernie) dictator. Please will someone step forward, Ross?

Rob Cliff Rochester, Kent

Tyrrell's joy of six

Last week's archive photo shows a classic F1 development idea that never caught on, but at least Ken Tyrrell and Derek Gardner got their victory at Anderstorp courtesy of Jody Scheckter. And do my eyes deceive me, but is that a sprightly Stirling Moss vaulting one-handed over the pitwall?

Chris Russell Shropshire

HAVE YOUR SAY, GET IN TOUCH

Autosport editorial Bridge House 69 London Road Twickenham TW1 3SP

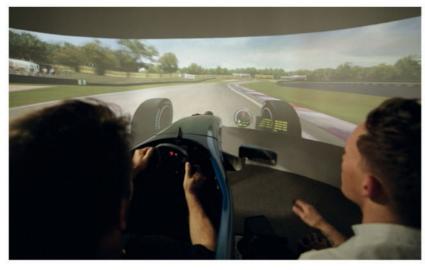








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If it ain't broke...

Nobody would dispute that F1 has some issues, but changing the qualifying format answers a question that hasn't been asked

By Ben Anderson, Grand Prix Editor

@BenAndersonAuto

"I'm all for mixing

things up, but this

change is unnecessary"

I DESPAIR OF FORMULA 1 SOMETIMES, I DESPAIR OF

its reasoning, of its logic, and of its collective sanity.

We are now becoming used to regular tirades against the state of F1 from its commercial chief, but what does Bernie Ecclestone really have to gain from continually criticising the product that makes him so wealthy?

I'm not going to suggest F1 is perfect. It's a commercial basket case, and many people are clearly unhappy with perceived contrivances regarding tyres, drag-reduction systems and the like, which they argue stunt its pure sporting appeal.

There are constant moans about noise, about pay drivers, about the speed of the cars, about the challenge of driving them, about the quality of the racing, about the fact that one team is dominating, and about the fact that many smaller teams struggle to survive against manufacturer might.

And TV viewing figures are dropping, which is naturally giving the powerbrokers sweaty palms.

Tomorrow, the World Motor Sport Council is expected to ratify the answer to all these great ills: a tweak to qualifying...

How typical of F1, amid the wrangling about its identity and future direction, to decide to meddle with what I would contend is the one element of the current sporting format that no one has questioned.

I'm all for mixing things up in F1 to introduce elements of

unpredictability, but this latest change is simply unnecessary.

I found single-lap qualifying quite enjoyable, but it was biased massively against cars running early in the session. The current format (introduced in 2006) works well, because of the jeopardy of the knockout element.

Clearly, F1 has realised that people like this dynamic, so has tried to introduce more 'knocking out' during each session.

The trouble is, I get the distinct impression that no one has really thought it through properly. Details such as whether cars must complete each session on one set of tyres and whether or not they can refuel are missing, and as ever it's in such detail that the devil does his work on F1's bright ideas.

The first portion of each stage of qualifying should remain fairly similar to before, with all drivers heading out at some stage to establish an order. On a basic level, knocking out the slowest driver every 90 seconds thereafter during each segment should be more exciting to watch, except - the way I see it – the 90s intervals will only hurt the slower cars while offering greater flexibility to the faster ones.

If refuelling and tyre changes are allowed, the faster cars will

be able to set quick times early on, then wait in their garages until the need (if it arises) to head back out. If you are 'on the bubble' and in danger of going out at any moment, 90 seconds will not be enough to get in and out of the pits to alter your fate.

That is, unless you mandate that everyone must use one set of tyres and be fuelled for the whole session. At least that way you stand a chance of a quick car burning too much rubber early on, then struggling to react as it tumbles down the order. But this would also lead to lots of go-slow driving, as drivers try to protect their tyres for a counterattack. And it still hands the tactical advantage to the faster cars, which tend to look after their tyres better in the first place and won't need to pump in consecutive quick laps to remain in contention.

That's before we get into watching F1 cars being driven slowly during the one session of a grand prix weekend in which fans expect to see them being driven to their limit. Lest we forget, deliberately slow driving is central to the argument against the current 'tyre-management' era of F1...

Multiple drivers trying to avoid the chop at the end of Q1

and Q2, and the multi-car denouement of the pole position battle as time runs out, will also be lost under these proposals.

The reason why the old format works well is because

within an hour, and allows drivers to finish a lap once the time runs out. The excitement is in who drops out as the fastest times come in at the end, or who gets it wrong and cracks under pressure. The new format will move the goalposts every 90 seconds and rob drivers of the chance to complete flying laps.

The aim here is to mix up the grid, because there's the anecdotal belief that this makes for great racing. But reversed grids or slapping time penalties on the most successful drivers (as Ecclestone originally wanted) are considered a step too far.

The simplest way to achieve mixed-up grids and spice up the races would be to abolish qualifying altogether and set the grid by reversing championship order — that would force the quickest cars to work their way through the field at every race.

But such a move would hamper the fastest teams, which wield power in F1's strategy meetings, so we get more fiddling at the margins of the sport's problems, and a solution that has the potential to do more harm than good.

Constant change is one of the enduring beauties of F1, but sometimes it is important to remember that if something isn't broken there is no need to fix it. #

31



What took you so long?

After years of getting close, Australian Ford hero Mark Winterbottom finally secured his maiden V8 Supercars title success in 2015

By Mitchell Adam, International Editor

梦 @DrMitchellAdam

he elephant in any article about Mark
Winterbottom's first V8 Supercars
title is Jamie Whincup. So let's cover
it nice and early. Since joining Triple
Eight in 2006, Whincup has redefined
success in Australian touring car
racing, taking six titles and winning
the Bathurst 1000 four times.
"That Triple Eight car, when

Whincup signed, it was him and I that were going for that seat," Winterbottom recalls.

"So things could have been completely different. I could have been at that team, and he could have been at FPR, there was a bit going on at the time... I've won one championship, he's won six, but I'm still happy that I chose the decision that I made, and that I stayed with this team since."

Winterbottom and Whincup were rising stars a decade ago, the former signed by the factory Ford Performance Racing after two strong first years with Larkham Motor Sport. At the same time, Whincup joined Triple Eight, having rebuilt his career with Tasman Motorsport after being axed by Garry Rogers at the end of his 2003 rookie campaign and spending '04 on the sidelines.

Whincup won the Bathurst 1000 with Craig Lowndes in 2006 and '07, then made it a hat-trick and claimed his first title in '08. Winterbottom had to wait until Bathurst 2013 for his first slice of glory on either of those fronts.

A regular race winner, Winterbottom finished in

the top five in the standings each year, but FPR had still to secure that big breakthrough result. The criticism levelled at the team — rather than drivers like Winterbottom — was that it could not be good enough for long enough to win Bathurst or a title. That changed when he beat Whincup by 0.5 seconds to conquer Mount Panorama for the first time.

"We'd won a lot of races, but it was always, 'They're going to choke,'" Winterbottom concedes.

"When people say it, whether you believe it or not, you do read things. And that's the team element, 62 people. A hint of doubt can be the difference between winning and losing.

"So at Bathurst in '13, we went head to head and beat them, and Bathurst '14 was just really relaxed and it was a different vibe. It definitely helps getting that monkey off the back.

"And I think with the championship now as well, the team has belief that it can win it. People can say what they want, but history shows that the team that couldn't get the big results has now won three of the biggest things in the past three years."

Even without those 'big results', he readily acknowledges how the team has changed since he first arrived as a 24-year-old. Then, Winterbottom was Ford's next star. The manufacturer backed him as a karting champion into Formula Ford, which paved the way for a dominant Development Series season in 2003, and ultimately a factory ride.

Now a V8 Supercars champion, he will probably go down as Ford's last homegrown hero. In the traditional Fordversus-Holden era, Winterbottom, Whincup, Will Davison and James Courtney were billed as the Blue Oval's big hopes between 2006 and '08. Davison and then Courtney moved to the Holden Racing Team in 2009 and '11, and Whincup's Triple Eight switched to Holden in between, but Winterbottom stuck around.

At the end of 2014, Ford slashed its backing and Ford Performance Racing became Prodrive Racing Australia – the team now only linked in name to David Richards'

operation — before all support ended at the end of '15, despite Winterbottom's title. Prodrive's arrival in 2003 and Ford's massive budget created a juggernaut, but for years troubles outweighed results.

In 2006, FPR accounted for two of 15 Falcons on the 32-car grid. Today, it runs four cars (and

two in the Development Series) with the two-car DJR Team Penske the only other Ford squad.

"The first day I walked in the door, the cars were really, really good, but there was just a little bit of reliability in them that was playing up," Winterbottom recalls.

"It was very much the Ford factory team, all blue. There were people everywhere and the factory was huge. Now we've expanded with the number of cars but the personnel has probably stayed quite similar.

"The way the team operates is a lot different. It's a lot more efficient and it's very much a young operation."

Winterbottom's run of championship results with FPR read third, fifth, second, fifth, third, third, third, fourth and third – far from paltry returns – before he secured that »

"We'd won a lot of races but it was always, 'They're going to choke'. Now it's a different vibe"

2015 title. He admits some were "missed opportunities".

"You work hard and every time you come close, it can work two ways for you," he says. "You can think, 'How can I make that little step more?' Or 'Why do I keep not winning this thing?'

"You always hope that you can win it, but there are no guarantees. Some guys are in it for a short time, some guys are in it for a long time and you might get 15 to 18 years in the sport. And you are always getting closer to the end number and not the start number."

While Winterbottom has had the continuity of 10 seasons of driving Ford Falcons from a workshop in Melbourne's northern suburbs, he has experienced personnel changes, including having a different race engineer for the past four campaigns. Given the size of the teams and the nature of V8 Supercars, that relationship is not too far removed from a NASCAR driver's rapport with a crew chief.

"You are always working, but often things are changing," he says. "You might feel like you're just starting to hit your straps going into Christmas, and come back in January and you've got a new bloke to work with again.

"So starting every new year, you go, 'OK, what strengths have you got, how do I have to relay things to you?', and build that relationship. If you tell your engineer exactly what you want and in a way that he understands it, then he can deliver it back to you in the best way. But each engineer has a different approach and a different way of interpreting what you are telling them.

"So when you have four engineers in four years... One guy was a racer as well as a mechanical engineer, so he sort of got it when I said, 'I do this to compensate for that.'

"But then the next guy was a true mechanical engineer, so I had to break it down into numbers and explain it to him.

"For 12 years confidence

didn't equal results. You're

just waiting for something

out of your control"

You can never explain the same scenario to people in the same way you would explain it to others. It's hard — you have to have a relationship and know what the engineer wants from you and how you can best give him that info.

"In our series, the cars are all good, the teams

are all good, the drivers are all very good, and you're trying to look for those one-per-centers, and that communication can be the factor."

When Winterbottom's 2014 engineer moved to Triple Eight to work with Lowndes, data engineer Jason Gray stepped into the position. The switch coincided with the introduction of the PRA-developed FG X Falcon. Winterbottom felt early on that it could be the car to end his title drought.

"I thought at the Australian Grand Prix [non-points support races in March], 'We're on here,'" he says. "The car was very good, and I thought we had a good chance.

"You are always confident in yourself and the team that you can do the job, but 12 years previously has shown that confidence hasn't equalled results. You think you can win it,





and think the car's good, but you are just waiting for something out of your control to potentially happen. But it didn't last year, and that was the difference."

The FG X incorporated a major set-up philosophy overhaul and Winterbottom admits, "I don't know what the FGX did for us and what the new geometry did; it all went into one."

But it worked. "You can actually tune the car and be quite aggressive and make changes and get feedback," he explains. In 2014, if we started the weekend poorly, we really struggled to make gains. We couldn't really hit it. Where now, we can rock up on Friday and be average, and then go to the top on Saturday morning in practice."

A weakness on low-speed circuits didn't take long to appear, with Winterbottom qualifying no higher than 10th at the season opener around Adelaide's streets, leaving seventh in the points.

"It was good at high-speed tracks straight away and quite poor at the street circuits," he recalls. The pre-season test at Sydney Motorsport Park was quite good, Symmons Plains was OK, the Grand Prix was very good.

"But in Adelaide the car was average, it was really hard to drive and pretty

ugly. We got outqualified by David Reynolds in the [older] FG. I knew straight away that we could win races at specific tracks, but that our bad days needed to be good."

Winterbottom picked up a pair of wins at both Barbagallo Raceway and Winton, and low-speed work paid off when he won both races on the Townsville street circuit. It came amid a run in which Winterbottom and team-mates Chaz Mostert and Reynolds won 15 out of 18 races.

"If we had gone to Townsville with the car we had in Adelaide, we would have been nowhere," Winterbottom says. We made massive gains in three months, really quickly, and that's where some people went, 'Oh, the FGX just handles itself.' By then we had a lot of different set-ups, and understood the car and it was quite quick. We got on top of it."

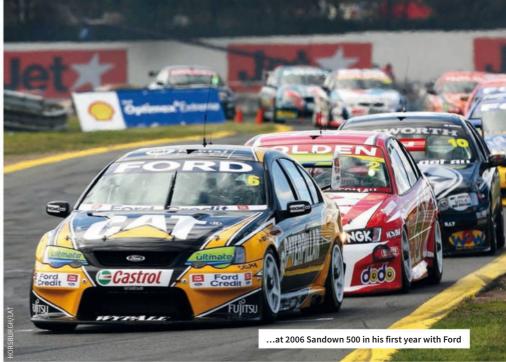
Victory in the first of the three endurance races, the Sandown 500, with Steve Owen put Winterbottom 198 points clear of Mostert and 423 up on eventual runner-up Lowndes, and proved to be his last win of the season.

Mostert crashed heavily in qualifying at Bathurst, ending his year, as Lowndes won that race and then two at Phillip Island to keep the title for the Homebush season finale, starting 179 points behind Winterbottom with 300 available.

After finishing second at Bathurst, Winterbottom endured a tough Gold Coast weekend, then a lean run compared to Prodrive's earlier success.

The same old talk resurfaced. Would the ghosts of FPR return to somehow lose an unloseable title? Winterbottom says that taking pole for the final race at Phillip Island, in which he finished fourth, proved a settler. "I thought getting pole, that was probably the big thing, having a quick car and »











V8 SUPERCARS/MARK WINTERBOTTOM

being clear of the pack," he recalls. "To put pressure on the other guys as well.

"That was probably the bit that really stamped our confidence back, and also sort of quieted the haters a bit. There were a few people writing, 'When's this team going to do this, or that.'

"To get pole, you can write what you want, but we're on pole position. It was a really good confidence boost."

He headed to the finale in his native Sydney and stamped his authority on the weekend with another pole, and fifth and third in Saturday's races secured the title with one day to spare. "It was nice to win it and be quick, not just driving around for numbers and points — we were still being aggressive with set-up," he says.

"Winning the title on the Saturday was cool, but it's kind of a weird celebration. I hopped out of the car that night, went and saw our corporate guests and hung out with the fans who were waiting around, did the interviews and all of that sort of stuff.

"And by the time I got to bed, it was 11 o'clock or something, and you go to bed thinking, 'That's awesome, I've just won the championship, but my car understeered at Turn 10' — thinking about all of the things that were going to help the next day.

"It was weird to win a championship like that and then go again the next day and race, but then at the same time it's nice to wake up on Sunday morning, all of the stress was gone and you could just go and enjoy the car for what it is.



"The six months before that, you were racing to win the championship, but now it was just doing the sport you loved for fun. It was a cool way to wake up."

During those years between arriving in V8 Supercars and waking up as champion, did Winterbottom ever daydream about racing in an era without the Whincup and Triple Eight alliance?

"Not really," he says. "That team and Jamie in particular have dominated, but I'm glad we're in this era, because you want to beat the best. They are very good and, year in year out, can raise the bar. We can jump them at times, and it's only a matter of time before they bounce back seriously hard, and they jump you again.

"I'm glad that we have raced head to head with them because when you do win, it's massively more rewarding. The '13 Bathurst and last year's championship was great, to beat them fair and square."

Now, it's time for a new mission. Defending that title starts this weekend in Adelaide, and it was straight down to business when he reported for duty in late January.

"I went to the workshop and sat with the engineers and like a true, typical driver I was like, 'This is crap in the car, this isn't good, I don't like this, I don't like that,'" he jokes. "And they were like, 'Here we go, he's back.' Our engineers are probably sick of me already after the first couple of weeks asking if they can fix this and that.

"But I feel really good, like I could just go racing. You're not as tight, as probably what you have been, so you feel really good and focused, ready to get this year started." **



It's Sambabottom!

THE BIGGEST DOWNER to emerge during Autosport's chat with Mark Winterbottom is that the start of his title defence this weekend clashes with the Brazilian Stock Car Series' annual two-driver race at Curitiba.

As a guest co-driver, Winterbottom finished fourth in 2014 with Sergio Jimenez, and then second last year with eventual champion Marcos Gomes.

"I'm really disappointed about that," he says of the clash. "I love that series. It would be cool to do it again.

"They are really, really good cars to drive, lots of grip, paddle-shift and lots of technology."
Compared to
his overpowered,
undergripped
Falcon, the Brazilian
machinery
represents a change.
"They are a bit down

"I love it.
A good
lap puts
you P1; an
average
lap is P20"

on power compared to ours, but they have massive amounts of grip," Winterbottom says. "They only run at about 70 per cent throttle, with the regulations, and when you use push-to-pass it goes to 100. At full throttle they are probably pretty close to ours and if they were allowed to run at full noise, they would probably be as quick."

What felt more familiar in South America was the close competition.

"There's like 40 cars, so it's a strong category," he enthuses.

"It reminds me of ours – it's really competitive. I think the top 10 was separated by a tenth at Interlagos, so it's really tight. A good lap puts you P1 and an average lap puts you PTwentysomething."

While he notes that a lack of TV coverage holds the domestic series back,

second in 2015's Curitiba enduro AUTOTRAC Winterbottom was surprised by the reaction to an Australian driver. "They all watch V8 Supercars, it's cool," he says. "When I got there last year, they were all talking about the Grand Prix, because they all watched it on GPTV a week earlier.

THE MISSING LINKS



2007

Fifth in the championship, but the year will always be defined by the Bathurst race, when he "speared off the track" at The Chase in greasy conditions while leading on lap 148 of 161.



2008

"We dominated the first half and then finished off really weak," Winterbottom says of, realistically, his first title crack. "Triple Eight jumped us and we had a few issues. I thought we could have won."



2010

Headed to Homebush the rank outsider to Courtney and Whincup, led late on Saturday, but crashed on slicks amid a downpour. Courtney and Whincup did the same behind him; hypothetical win would've been interesting.



2012

Another strong FPR campaign saw Winterbottom head to Bathurst just 32 points behind Whincup. But after finishing 11th with tyre problems, he dropped to 188 behind victor Whincup, who never looked back.



2014

"We were very good and then there was a rule change mid-year about tyre pressure," Winterbottom says. "We lost our way big time, went from being 250 points up to losing the championship heavily."

"The team told me to go out and sign some stuff, and I'm like, 'No-one will know who I am – I can't even speak Portuguese!'

"And then all of these people came up saying, 'Well done at the Grand Prix, it was good you beat Chaz [Mostert]', and they knew all of the names like [James] Courtney and [Jamie] Whincup as well. It was kind of bizarre!"





Indeed, Johnson

Johnson equals Earnhardt's record

NASCAR SPRINT CUP ATLANTA (USA) FEBRUARY 28 ROUND 2/36

WITH 322 LAPS COMPLETED AT THE Atlanta Motor Speedway, it seemed inevitable that the second NASCAR Sprint Cup race of the 2016 season would be instantly forgotten by TV viewers, spectators and, maybe even, the drivers.

But Ryan Newman guaranteed that an unremarkable race would have a nailbiting and compelling finish when his left-rear tyre failed with three laps to go, and the race was forced into overtime.

Until then, the thousands of fans packed into the grandstands on a bright, sunny Sunday afternoon in north-west Georgia had witnessed a dreary spectacle.

The first caution didn't arrive until lap 209 - 133 more than the longest green-flag stretch throughout 2015 - and there were just eight lead changes. But Newman's tyre failure woke the crowd, and provided a much-needed twist.

Jimmie Johnson was the only one who could have done without the interference, as he closed in on a second straight victory at Atlanta.

The six-time champion had produced a tactical masterclass to snatch the lead from the dominant Kevin Harvick with 40 laps left when he pitted earlier than his rivals from third place. They opted against heading him off and it proved to be a costly mistake.

When Harvick and second-placed Martin Truex Jr emerged from their stops nine laps later they found they were 14 seconds behind Johnson, who had performed the undercut perfectly.

Harvick chased hard, and whittled the gap down to six seconds, but the Hendrick Motorsports driver remained in control. He had the race won until Newman intervened...

Harvick, eager to snatch victory, spun his tyres too much when the green flag dropped. Before he knew it he was down in sixth, leaving Dale Earnhardt Jr and Kyle Busch behind Johnson. Earnhardt chased after Hendrick Motorsports team-mate Johnson

and closed him down metre by metre round the final bend, bringing the two Chevrolets almost level. But it was not enough — Johnson reached the

line just in time and clung on to win by 0.06s, equalling the 76 wins of the late Dale Earnhardt.

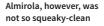
"It's such an honour," he said. "I remembered on my victory lap and had to come down and throw three fingers out of the window to respect the man [famous for running car #3]."

After starting last due to failing the post-qualifying inspection, Kyle Busch completed the top three ahead of his brother Kurt, who fell out of contention after leading most of the first 63 laps.

Kurt had dominated before Matt Kenseth flew past into the lead, but Kenseth's challenge ended when he was penalised for an improper fuelling charge 54 laps later. From there, Harvick inherited the lead and look destined to win for the first time at Atlanta, until Johnson outsmarted him.

Meanwhile, Kyle Busch won the Xfinity Series race ahead of Kyle Larson. The Joe Gibbs Racing star was being hunted down in the dying laps, but he held off Larson and Erik Jones.

In the Truck Series race, John Hunter Nemechek beat Cameron Hayley to victory by 0.3s after a late caution.



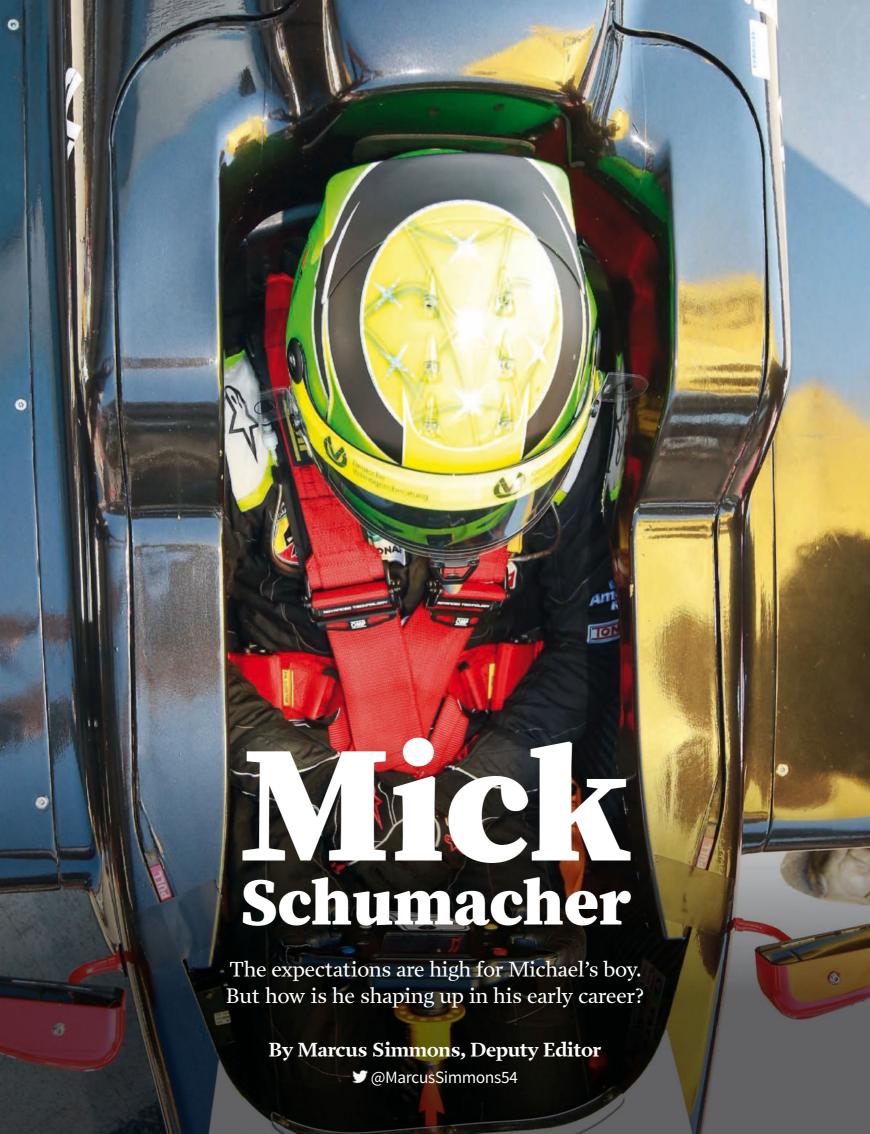


RESULTS

1 Jimmie Johnson (Chevrolet SS), 330 laps in 3h15m38s; 2 Dale Earnhardt Jr (Chevy), +0.557s; 3 Kyle Busch (Toyota Camry); 4 Kurt Busch (Chevy); 5 Carl Edwards (Toyota); 6 Kevin Harvick (Chevy); 7 Martin Truex Jr (Toyota); 8 Chase Elliott (Chevy); 9 Brad Keselowski (Ford Fusion); 10 Ricky Stenhouse Jr (Ford).

Chase grid 1 Denny Hamlin, 1 win/70 points;

2 Johnson, 1/70; 3 Kyle Busch, 0/78; 4 Truex, 0/75; 5 Harvick, 0/74; 6 Edwards, 0/73; 7 Kurt Busch, 0/69; 8 Joey Logano, 0/64; 9 Austin Dillon, 0/63; 10 Aric Almirola, 0/55; 11 Keselowski, 0/54; 12 Matt Kenseth, 0/51; 13 Stenhouse, 0/50; 14 Kyle Larson, 0/49; 15 Ryan Newman. 0/48: 16 Kasey Kahne. 0/46.





"Mick doesn't give a damn

about the press. He does

what he wants to do"

he Indian covers band is in full swing, belting out a stream of the kind of inoffensive wedding-rock fare you get at social occasions the world over. It's the post-season party for the MRF Challenge, which earlier that day had its final round on the track just up the bumpy, dusty, insane-traffic road from central Chennai. A bunch of mainly

European and Latin American youngsters are veering around the floor, backslapping and manhugging each other. Among them is 16-year-old Mick Schumacher, being jostled about by his mates and peers, trying not to spill his drink.

"Look at him — he's just like a normal young kid who wants to enjoy himself. It's great to see him having fun," says a veteran motorsport observer. Moments later Peter Kaiser — the long-time right-hand man to the Schumacher family — emerges from the throng and taps his watch in a 'ready-to-go?' motion. Mick acquiesces and seems to have left the building, but within

moments the band has invited all the drivers up on stage for an ill-advised and discordant singalong, and back into the fray lurches their young German mate.

Observing is as close as we can get to

Schumacher at the moment. It's understandable because, with the German tabloid media as renowned for their excesses as their British counterparts, the family and their management want to protect him — especially in this period of doubt concerning his seven-time world champion father's medical prognosis. We don't want to put him on the spot by asking how his dad is; the only relevant questions about Michael are how he might have inspired and helped his son over the years in karts. But, for now, we have to respect the Schumacher clan's wishes.

Even so, we can watch him on the track at close quarters, and talk to those who've worked with him...

"He's a fantastic young boy," asserts Frits van Amersfoort, whose Van Amersfoort Racing team ran Schumacher in last year's German Formula 4 Championship, his rookie season in car racing. "The team loved him. He's a really nice human being."

VAR's first contact with Schumacher came after he'd finished runner-up in the 2014 German Junior Karting series. "We gave the DMSB [German motorsport's governing body] the prize of

a free simulator test for the guy who was second in the German championship," adds van Amersfoort. "That October I got a call from Peter Kaiser to say that Mick was interested in doing the simulator test, and of course I was happily surprised.

"Mick came on a Saturday, he was really surprised by my engineering force, especially by Rik [Vernooij, who was then running Max Verstappen in F₃], and he was really enthusiastic so we started talking."

The partnership started in fairytale fashion, with Schumacher winning the reversed-grid race of the 2015 opening round at Oschersleben under the glare of the media spotlight. But here's the thing: he had only qualified 19th before battling through to ninth to earn his reversed-grid front-row spot. Through the early half of the season it seemed that he found it tough to put it on the line in qualifying, but was a pretty good racer. Indeed, he didn't crack the top 10 in qualifying until the Nurburgring in August, but from then on made it seven times out of eight. A total of 11 points finishes gave him 10th in the championship.

OK, as van Amersfoort says, "through the year he did a lot of

testing", but on the other hand some drivers were also competing in other championships. "Mick is not the guy who steps in a race car and is blindingly fast from the beginning," he adds, "but the good thing is

that when you give him the time he will get there. The first race weekend was a lucky shot, getting that reversed-grid race, but he did it [stayed calm] and it was really fun to see this. He's cool in his head — the only thing he lacked was experience."

How did he handle the attention? "Mick doesn't really — or at least we couldn't see it — feel the pressure from the press," says van Amersfoort. "He's so much in clear air, and that's one reason why they live in Switzerland. He doesn't give a damn about it — he does what he wants to do. The pressure is on the people around him."

By the end of last year, it was apparent that Schumacher was on his way to Prema Powerteam for his second season in F4. While van Amersfoort says, "I really think he's a championship contender", Prema chief Rene Rosin plays down any such expectation. "Like always, everybody is fighting for the top," he says. "The main thing is to get him into the best position to perform, but we will take things race by race."

It's early days at Prema for Schumacher, who speaks Italian >>>



F4/MICK SCHUMACHER

as well as English (peppered with numerous 'for sures'), but he has already tested with the team at Monza, Mugello and Barcelona. "He's very friendly with everybody," adds Rosin, "just like a normal guy really."

But what sort of a driver is he? "He's a smooth guy, very technical, very precise — really dedicated 100 per cent to what he's doing," says Rosin. All aspects of those impressions are backed up by those involved in Schumacher's MRF Challenge outing. Indeed, series ambassador and ex-Formula 1 racer Narain Karthikeyan suggests that Schumacher's style would better suit an F3 car. "He tends to carry a lot of speed to the apex," says Karthikeyan, who these days races in Japan's Super Formula series. "On new tyres, it was obvious visibly that he was carrying more to the apex than other drivers."

Schumacher had arrived in India earlier in the week, Karthikeyan taking him around the bumpy, challenging circuit before bringing him to the pit garage. "He went to the car, and was looking at the floor of the car and asking some really technical questions, which I thought was quite mature for his age," says Karthikeyan. "He actually drove with the anti-rollbar disconnected because he likes not such a sharp front. That was just the characteristics of the tyre and his driving style — it suited him better, and that was probably the bumpiest track he'll ever drive in his life!"

Karthikeyan was also impressed that, on a circuit that's hard to overtake on, Schumacher "is one of the guys who tried a move. He made a lunge — he went off, but at least he tried." That was to the detriment of Tatiana Calderon, who he took off twice in the same race. "I've no idea what he was thinking," a puzzled Calderon said after the race. "The first collision, he was way back and he wouldn't even have made the corner. I turned in and felt something hit me. The second, we were side by side and he never really made the corner and touched my left front."

Realistically, it's a sign of a driver learning his craft. The moves were bungled, but in one engineer's view it was less a case of too ambitious than of not being decisive enough in his manoeuvres. "His racecraft impressed me at least as much as his speed," says 2013-14 MRF champion Rupert Svendsen-Cook, who was at Chennai as manager-coach to Indian racer Tarun Reddy. "He's not at all shy to go for a move; really committed.

"On a circuit like that, you really saw who was on it and who wasn't. This is probably the last of the generation of cars with a sequential gearbox that requires you to heel-and-toe. I thought

it might show up drivers like Schumacher and Harrison Newey [son of Red Bull tech chief Adrian], who are used to flappy paddles from F4, but in all fairness his gearchanges were crisp and he looked very confident."

Certainly, as he has with VAR and Prema, Schumacher made a great impression with the MRF team. "People probably have this perception of 'sons of', but to me Mick is just a racing driver, no different to anybody else," says series coordinator David Lowe.

"He's very diligent in everything he does, and that includes taking the time to get to know not just the engineers but also the mechanics," continues Lowe. "When he's out of the car he wants to help the mechanics to an extent I've rarely seen, and I think that's brilliant. The only other person I've seen like that is Nico Rosberg, when he was with us in Macau [Lowe formerly engineered at the Carlin Motorsport F3 team] and he took the spanners out and helped them put a new corner on."

Is this an influence of his father, who was very hands-on and was himself a capable mechanic? "It must be," says Lowe. "He very much wants to be his own person, but these people have influences. Harri Newey goes around looking at all the wings and bodywork lines and you think, 'I wonder where that came from!'"

It's easy to be cynical about a kid who wants to follow in his dad's footsteps in sport, and Schumacher has unquestionably been given an easier start to his life than many. But we should balance that against the horror he must live with of witnessing his father's terrible accident, when aged just 14. No one would wish that on anyone, and by all accounts he has grown into a remarkably well-rounded lad. "All the people around him are nice," says van Amersfoort. "His mother is a lovely lady, so is Sabine [Kehm, manager] — they all work hard for Mick but also acknowledge the team. I feel really shit that he's gone [to Prema]. I can't hide my disappointment!"

But is he good enough? Svendsen-Cook also saw him in the Barcelona F4 test in December, and says: "He was the standout with all the top drivers from the German and Italian teams there. From the first laps he looked another level to his competition."

"He has the right genes and the right approach," offers Karthikeyan. "But to say whether he can do, say, F1... it's just too early, to be honest. All the fast guys from the crop of the drivers, are they good enough? Maybe. I don't know. But he's a nice young man, very mature in his approach and methodical. If there's a chance of anyone going to the top, he's probably one who'll have a good career."



Schumacher took a victory at Oschersleben to start 2015 in style



When Schumacher ruled in Formula 'King'

TWENTY-SEVEN YEARS before his son, Michael Schumacher made his car-racing debut in 1988, driving in Germany's inaugural Formula Koenig series. Aged 19, he dominated the season, taking nine wins out of 10 races, and made a big impression on Werner Aichinger, who initially ran the series on behalf of founder and raceseat manufacturer Richard Koenig before taking over the rights to the category in '90.

The FKoenig cars were based on Italy's Formula Panda series, and were made by the emerging Tatuus company and powered by one-litre Fiat Panda engines. Schumacher was on the grid for race one, at Hockenheim.

"A young man
[Schumacher] came with a
person who was a bit like a
father to him, Juergen Dilk,"
says Aichinger. "His dad was

running the kart track [at Kerpen] and his mum made the sausages, so Mr Dilk helped Michael - he loved the guy and he loved the sport. But there was one problem: there was no money. So Richard and his CEO, Gerd Hofmann, found someone to buy a car for him: it was a Lamborghini dealer in Ludwigshafen called Gustav Hoecker, and it was two weeks before the start of the series. A team - Gewinnus Motorsport - built the car and they had just one test before the season. They carried the car in the truck, and Michael could sleep and eat there."

Schumacher's efforts took him into a parallel Formula Ford 1600 programme with an Eufra Racing Van Diemen, winning races in the German and European series, and he also came to the attention of F3 team boss Willi Weber.

"Willi was with me and we

were standing there looking up at the podium," says Aichinger. "And I said, 'This guy will be a great driver.' And Willi said, 'OK I will be the manager of him.' That was the beginning of 'Mr 20 Per Cent'! But no one else would give money to Michael and without Willi he could not have gone that way."

Two decades later,
Aichinger encountered
Schumacher again when
he was asked by Germany's
DMSB governing body to be
paddock organiser for the IDM
Superbike Championship.
"At that time Mr Schumacher
used to ride," he says, "and,
sometimes, fall off his bike.
I had a lot of time to talk to
him and ask, "Why are you
doing this?" 'I'm having fun!'
'Is Corinna [Schumacher's
wife] happy?' 'No she isn't!'

Aichinger can't help laughing: "Michael is one of the highlights of my life!"



The long road back for the BRC

Dropping the British Rally Championship for last season was tough for series bosses, but now the category is standing firmly on two feet after being forced to its knees just 18 months ago

By Jack Benyon, Motorsport News National Rallying Editor

Rally Championship was one of the most fiercely contested series in the world and considered, by some, to be on a par with the World Rally Championship.

Drivers such as Jimmy McRae, Russell Brookes and Gwyndaf Evans spent years in the championship, much like Jason Plato and Matt Neal do in the British Touring Car Championship.

It was a destination series as much as a proving ground. Back then the BRC had everything a rally championship needs.

Group B — before it was banned — and then Group A cars ran at the front through the era, a real test for man and machine.

n the halcyon days of the 1980s, the British

A series on its knees

A quarter of a century later, things looked very different. By the end of 2014, British rallying had reached a new low. The series was running two-wheel-drive Citroen DS 3 R3s with control tyres. The formula worked for bringing on young drivers, but there was nothing for the seasoned veteran who fancied a blast through Clocaenog in a four-wheel-drive rocketship. Or even a young driver ready to step up to quicker machinery.

Fewer than 20 BRC regulars meant the series was in real trouble. In fact, the series was in crisis. What should it be? Who should it cater for? The championship was lost in 'no man's land'. British Motorsport's governing body, the MSA felt it was in need of refreshment.

Step in Ben Taylor. The current head of MSA commercial arm IMS, Taylor was in charge of the MSA Academy in 2013 and dealing with some of the drivers involved in the BRC.

"I went to the MSA chief executive at the time, Colin Hilton," explains Taylor. "I said instead of just doing a tender document for the new championship, just waiting to see who comes in and has the most money to offer, why doesn't the MSA do a piece of work to find out what the championship should be, what it should be doing and what it should look like. That provides a vision to judge the tender process against.

"Colin agreed and in the course of 2013 I spoke to a lot of people around the sport, and at the end of 2013 I did a paper for the MSA chief executive and said, 'This is what I think it needs to be.' That informed the tender document that was issued very early in 2014."

This was a key ideology change in the running of the BRC. Taylor was succeeding in persuading IMS and the MSA >>



BRC/THE FULL STORY

FIVE OF THE BEST BRC CHAMPIONS



ARI VATANEN, 1976/1980

Vatanen announced himself onto the British scene in 1976, steering his Ford Escort Mk2 (with works backing) to the title alongside future Prodrive boss David Richards.



HANNU MIKKOLA, 1978

Any rally fans who remember Mikkola in full flight in an Audi are privileged indeed, but many forget about his late-'70s BRC success in an Escort Mk2.



STIG BLOMQVIST, 1983

It feels like Stig has been around as long as rallying has existed, but he didn't take his first major title until the early '80s despite wins in a Saab in the previous decade.



COLIN McRAE, 1991/1992

McRae made a spectacular entrance onto the British scene in the late '80s in a Vauxhall Nova, and after the Scot joined Prodrive in 1991 he won the title twice.



RICHARD BURNS, 1993

Having spent a year learning the Subaru Legacy in 1992, Burnsie won every event he finished in the BRC in 1993 to take the title.





to define what the new BRC would look like, and not allowing outside parties to have an influence. Bringing that sort of decision in-house allowed the organisers to create the series from a blank sheet of paper.

The submissions for the tender were not what the MSA wanted and didn't meet its vision, as Taylor explains.

"At that time I was still working for the MSA," he says. "I was on the panel to assess the tender and, when we reviewed them, none of them cried out as a winner. Having not awarded the tender to anybody, I put a different hat on, if you like, because three weeks earlier I had taken over the role of managing director of IMS. As if trying to get up to speed with Rally GB wasn't enough of a challenge, I thought what I need to do in my spare time is to restructure the MSA British Rally Championship. I said I think IMS can take this on.

"I believed there was a future in the BRC, but it's a different future to the tenders we'd received and for the good of the sport I thought I'd like to take that on. I had to persuade Alan Gow [MSA chairman] and then Rob Jones — who was by then acting chief executive of the MSA — that this was the right thing to do."

One step backwards

That's when the series' biggest decision was made: no BRC in 2015. Imagine the English Premier League taking a year off but the Champions League continuing to run. That decision was informed by Jones and Gow based on the fact that Taylor had to prioritise Rally GB. There simply wasn't enough time to deal with one of the most difficult-to-run and prestigious events on the World Rally calendar as well as designing a new championship from scratch.

"It wasn't a decision I necessarily agreed with at the time,"

says Taylor. "I was worried that if you remove something, something fills the void that's left or sometimes you can find people don't miss what was there in the first place. If you look back at foot-and-mouth in 2001, when people weren't able to go rallying, we lost a

"DMACK offers arguably the best junior prize in British rally history"

lot of people from the sport that year. They said, 'We're not doing this so we'll do something else. The other downside is that everything was up for grabs, whi'ch means that nothing was in place. There were no events, no suppliers, competitors, teams, TV deals, no regulations, no nothing. It can be a great advantage but it means an awful lot of work to be put together from scratch."

It wouldn't be fair to say that little was done in 2015 in terms of the new championship, but it certainly took a back seat thanks to Taylor's GB commitments. The MSA was incredibly busy in rallying circles, as spectator casualties on the Jim Clark Rally — a round of the 2014 BRC — meant a Scottish government review and a close call for stage rallying in the UK. It was made extremely clear to the MSA by the Forestry Commission and its insurers that if the MSA didn't sign up to the recommendations of the review set up by the Scottish government, then rallies wouldn't be going back into the forests in the UK. And, even if they could, insurance premiums would be too high. Needless to say, it signed up, and the Rally Future initiative has created a revolution in rally safety.

The 'vision' takes shape

The real work on the 2016 BRC started at the beginning of last year. Rally Scotland organiser and Mull Rally clerk of the course Iain Campbell was brought on board as a consultant in January 2015 in one of the key moves of the new series, and he's since become the championship manager. In February, a working meeting added to the vision of the new series. With Taylor freed up post-Rally GB and a dedicated figurehead identified, the wheels were well and truly set in motion.

But what does 'the vision' that Taylor talked so much about really mean?

In 2016, the BRC has taken an about-turn. For the first time since 2011, four-wheel-drive cars will return and, for the first time since 2005, cars quicker and more advanced than 2006-11 Group N-spec vehicles will feature. R5, S2000 and RRC cars will be up front, bringing the series in line with WRC sub-category WRC2 and, more significantly, the Irish Tarmac Championship and European Rally Championship. For the first time since the early 2000s, you can compete in three of Europe's leading rally championships in cars that are very tight in terms of what you can do to them. The specification rules are stringent, which keeps competition close. There's no doubt that the chop-andchange nature of championship options available has boosted entries and encouraged people to pick up R5 cars. Theoretically, you can do bit-part European and British campaigns with a car competitive at the front in both. With the series previously running the DS 3 – distinctly the third rung on the hierarchy of current FIA-homologated rally cars — the step up for drivers is going to be chalk-and-cheese. The R5 cars have the same 1.6-litre engine as World Rally Cars — albeit with a smaller restrictor and a five-speed 'box instead of six - but a lot of the parts are shared. In the WRC we've seen an R5 car driven by a crew on their game beat a middling WRC car. The difference isn't as big as you may think.

The 2016 BRC opens with the Mid Wales Stages this Saturday (March 5). As we went to press there were 20 of the top-class cars on the entry list. Compare that to 2014, when there were 16 entries across all classes registered to scored points. R5 cars are regulated by the FIA at £180,000, meaning in one class alone over £3,000,000-worth of cars will enter Myherin, the first stage of the series this year. "If we got 22 WRC2 cars before GB, that would be absolutely fantastic," says

Campbell. "Everyone is getting excited. There's people from America commenting on BRC, which shows the reach the championship has got.

"I'm not going to tell you that this has all been planned — we set our goals and what we expected for this year

and they have already been blown apart."

An emphasis on the future

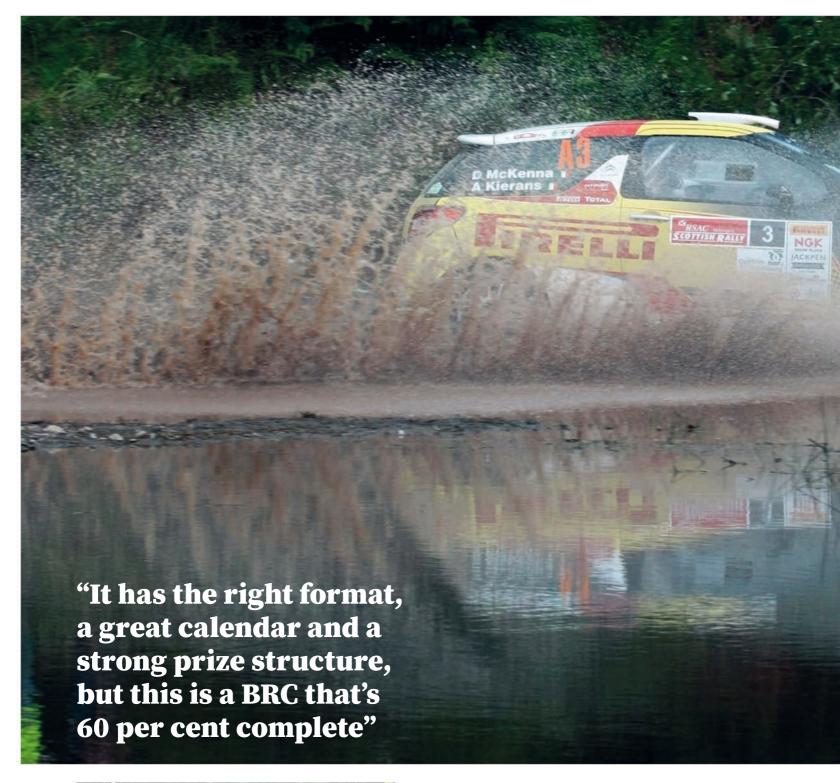
A good marker of the strength of a national championship is how many international entries it has. The BRC has three entries from Australia and others from Norway, Finland, Belgium, the US, Sweden, Italy and more. There's a real multi-national flavour.

One thing IMS did want to do is to encourage youth. The junior category is backed by tyre manufacturer DMACK and the prize for the winner is a subsidised entry into the Drive DMACK Trophy, which supports the World Rally Championship and is the place of choice for young drivers to go and test their skills. In turn, the prize for winning Drive DMACK is a fully funded season in WRC2 with DMACK's own team, which means, for British drivers, the establishment of a lower rung on the ladder to the world championship. It has been labelled by some as one of — if not the — best junior prizes in British rally history.

Also on offer are classes for the NR4 (Group N cars), R3, R-GT and a national rally cup for non-homologated cars. Although entries have been slow to pick up outside of BRC1 (R5, S2000 and RRC) and the junior category, there will still be 48 registered competitors for Mid Wales.

The annual interruption of Rally GB means a flurry of developments over the Christmas holiday period, and this is where the championship exploded. News in November of a new calendar excited competitors with two extremely popular rallies added: the Nicky Grist Stages, a mixed-surface event based in Wales, and the historic Rally Isle of Man (traditionally known as the Manx Rally).

"The Nicky Grist was a conversation that Nicky and Ben [Taylor] had together," says Campbell. "We'd always had >>>





continual discussions with the Manx and there was a reason why it wasn't included in the first calendar and that was nothing to do with the Manx, and all to do with where we thought Rally GB was going to land on the WRC calendar. We thought they would be too close together and that's why it wasn't there in the first place. The second version of the calendar we've got is quite something."

Getting the package right

So, the series has the right format, a great calendar and a strong prize structure. That's before you throw in a comprehensive TV deal. The series will feature on Channel 4 (30 minutes) and BT Sport (one hour) after each round, presented by Colin Clark, famous for his antics on WRC Live radio.

"The TV deal is more about perception than anything else," explains Taylor. "It made people sit up and say, 'That's absolutely great.' A TV deal on its own isn't enough to bring



competitors out — competitors were already signing up before they found out what the TV deal was."

This year is shaping up to be a corker, and the work has already started for 2017. This year is about the competitor; the calendar, TV and prizes. What needs to come now is the commercial side and that's well in hand. The project needs to be viable for IMS to keep it running and that will require a title sponsor and some work on the events moving forward. This is a BRC that's 60 per cent complete.

The worry for 2017 is that who will replace Elfyn Evans and Tom Cave if they move back up to World Championship level. And while the Junior prize is good for driver progression, obviously it removes a driver of great talent who otherwise might have stayed for another year. That said, 20 R5 entries right now is nothing short of incredible. We can't know what will happen beyond this season, but 2016 is one of the biggest ever in British rallying. It's going to be a rollercoaster ride. **



Why is Elfyn Evans in a national series?

THE MOST INTRIGUING entry in the revived British Rally Championship is the son of 1996 champion Gwyndaf Evans. Elfyn has spent the last two seasons in the World Championship with M-Sport, but found himself out of the seat at the end of 2015 when team boss Malcolm Wilson favoured inexperienced Frenchman Eric Camilli and veteran Mads Ostberg.

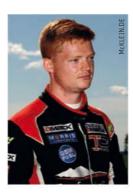
Since then, Evans has campaigned the new Ford Fiesta R5 in the WRC2 class, chalking up victories on the Monte Carlo Rally, despite two punctures, and in Sweden, against a host of local aces.

He'll compete with the DMACK British Rally Team in the BRC with new co-driver Craig Parry, and the Welshman believes seat time outweighs any negative effect of doing the championship.

"The opportunity was there to do it," explains Evans, 28. "I'll be perfectly honest, it was the case of doing the BRC to keep driving, to keep in the seat. You get forgotten about quickly sat at home.

"I'm sure I'm going to enjoy it. There are some fantastic stages, great rallies, so I'm really going to focus on having some fun as well."

There have been some whispers that a potential loss in this year's



"Cave has promised he won't make life easy for the title favourite"

championship could prove detrimental to Evans's career, but for now the 2011 BRC runner-up is focused on winning every rally he enters, regardless of what championship it's in, and there's no doubt that his focus remains on returning to a WRC seat he feels he was unfairly removed from.

Something Evans does provide is a benchmark for competing crews. This is the same driver who finished second on the Tour de Corse last year, and is a proven WRC competitor who finished seventh in the 2015 standings. Drivers entering the BRC are going to get a realistic look at

where they lie in terms of pace, and how much work they need to do to get to Evans's level. A major facet of a national championship is that it breeds talent to step up to the next level.

A challenge for the title could come from several different places. The first is Evans's fellow Welshman Tom Cave, who finished runner-up in the WRCsupporting Drive DMACK Trophy for the past two years, and has an identical Fiesta R5 Evo to the one that Evans will campaign. The 24-year-old has promised he won't make life easy for the championship favourite. and a Michelin tyre deal could help him, given the French tyre is generally accepted as the best.

The last person to win a four-wheel-drive BRC championship was David Bogie in 2011, and he'll return in '16. The Scot has worked hard to score a rare Skoda Fabia R5 and, despite lacking the two years of WRC competition under Evans's belt, his knowledge of the rallies will undoubtedly see him running at the front.

Keith Cronin (Citroen DS 3 R5) is a three-time champion and will also be in the mix, as well as Peugeot 208 T16 driver Euan Thorburn, the 2014 Scottish champion.

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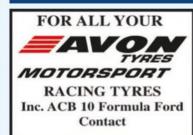
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Jaguar Land Rover closes in on Silverstone purchase

THE JAGUAR LAND ROVER GROUP COULD SOON buy Silverstone in a move that would help secure the future of the British Grand Prix.

Silverstone owner the British Racing Drivers' Club has confirmed that it is in talks with the Indian-owned group about a buyout. A proposal was presented to members last week and BRDC president Derek Warwick says it was received positively.

"The deal is definitely not done yet, but we are well down the road," the ex-Formula 1 driver and world sportscar champion told Autosport's sister publication Motorsport News. "There's still a lot of work to do to get the deal to where both sides are happy, and we told the members to get a flavour of what they thought of the deal. The response was favourable, so we will now set

up an EGM for the members to vote and give the Board a mandate to proceed with the deal and continue with the negotiations with JLR."

A JLR spokesperson said: "Jaguar Land Rover regularly evaluates opportunities to support its long-term and sustainable growth in the UK.

"As part of this, we are exploring potential options at Silverstone with the British Racing Drivers' Club, but it is too soon to share details at this stage. All discussions remain confidential."

The BRDC took over the Silverstone lease in 1952 and bought the circuit in 1971. In recent years it has invested in many developments, including the new layout first used for the British GP in 2010, but further upgrades require more funding.

SALE SAGA

July 2015

Jaguar Land Rover is understood to have asked property consultant Cushman & Wakefield to undertake a valuation of the Silverstone site

September 30

Silverstone is allowed to defer its hosting fee payment believed to be £16 million for the 2015 British Grand Prix by a year at the behest of Bernie Ecclestone

October 8

Managing director Patrick Allen insists Silverstone will host the British GP for the duration of the remainder of its contract, until 2026

December 3

As news emerges of JLR's request to have the site valued, the BRDC confirms no offer has been made by JLR

January 21 2016

Ahead of the release of official figures, Allen reveals that Silverstone made a profit on the 2015 British GP

January 28

In light of the success of the 2015 GP, BRDC president Derek Warwick tells Autosport that the club feels no pressure to sell Silverstone

February 25

A potential deal to sell Silverstone to JLR is met with positivity by BRDC members, with negotiations between the parties 'well down the road'

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RRDC F4

Ahmed joins Douglas in F4

MSA FORMULA RACE WINNER ENAAM AHMED will switch to the BRDC Formula 4 Championship this season with Douglas Motorsport.

The 16-year-old's move was confirmed after he tested with the Douglas squad at Silverstone last week.

"I've had a couple of tests with different teams, and I really like the way Wayne [Douglas] and his team operate," said Ahmed. "I'm so pleased to have finally signed a deal with such a great team.

"The new BRDC F4 car is awesome. It's so fast and has more aero than other existing F4 cars, and it seems to suit my driving style more.

"We haven't done much, but in the limited running we have done we've been straight on the pace."

Douglas Motorsport boss Wayne Douglas added: "We're delighted to have him — he's a really good signing

for us. Several bigger teams have tried to sign him, so it's a bit of giantkilling that we've got him. He's now the third world karting champion we've run after Matty Graham and Charlie Eastwood.

"He was fast at Silverstone last week and we will be testing at least once a week now until the season starts."

Ahmed will partner Australian Thomas Randle in Douglas's two-car line-up. "We've got two good pedallers," added Douglas. "We've won [Autumn Trophy] races with this car and know how to set it up."

Ahmed's management team — led by tin-top and GT ace Phil Glew — is also trying to arrange a deal for him in FIA-spec F4 championships. Ahmed won races in the Koiranen-run SMP F4 series last season as well as winning the organisation's test-session-based Junior Winter Challenge in December.

FORMULA RENAULT

Scott targets Eurocup honours in second season

HARRISON SCOTT HAS SET his sights on winning the Formula Renault Eurocup title having secured a second season in the category with AV Formula.

The 19-year-old finished 12th in the championship last season with the Spanish team, taking a podium at Silverstone and finishing the campaign as the rookie champion.

Scott had tested with the rival ART Junior Team, and also explored opportunities domestically in BRDC Formula 4, as well as in the US and Japan, but feels that his decision to remain with AVF has been a shrewd one. "AVF was the team that I raced with last year and I was really happy with how the season went," he told Autosport. "We did try a test with ART but I'm happy to be staying put in a team that I get on well with."

Scott insisted it was that continuity that would help him to challenge for the title.

"I know how the car is set up and how it works, which is a big advantage," he said. "It puts me that step ahead for the coming year.

"A lot of winners come through in their second year.

"I'm feeling confident. I'm comfortable in the team and I know I have a strong chance to win the title."

FF1600

MURRAY IN NATIONAL FF1600 COMEBACK

FORMULA FORD
Festival winner Niall
Murray will return to
single-seaters this
season in the National
Formula Ford 1600
Championship.

The reigning SEAT Supercup Ireland champion will race for Bernard Dolan Motorsport, driving his 2013 Festival-winning Van Diemen RF99.

Murray said the attraction of a Road to Indy place for the champion played a part in his decision to move into the category.

"I'm delighted to have a programme in place to go back to the UK for 2016," he said. "It will probably be the most competitive season of the British Formula Ford 1600 championship, with about five potential champions already announced. With the new prize of a chance of a funded season in the USA for 2017, it really adds an extra spice to things."

Murray will be joined by Ginetta Junior Ireland champion Jordan Dempsey in the series this year. Dempsey will drive for his father's Team MCP, with his deal meaning that all three of Motorsport Ireland's Young Race Driver of the Year finalists will race against each other.

Award winner Jake Byrne and Dempsey's fellow finalist James Roe have also signed up.



LEINSTER TROPHY

BOSS Ireland gets Leinster Trophy

THE BOSS IRELAND CATEGORY WILL BE awarded Mondello Park's historic Leinster Trophy for the first time this season.

For the past two years the Trophy has been for Formula Ford 1600 but just 10 cars took part last season, causing the Leinster Motor Club to look at other categories for its September 18 event.

BOSS is open to any single-seaters, and attracts the fastest cars in Ireland.

"The Leinster Trophy is awarded based

on the classes who apply for it," said the LMC's Trevor Gray. "We had applications from Formula Sheane and BOSS this year and it was a tough one [to decide].

"With the BOSS application they were talking about getting a Jordan F1 car to do demo laps. Although BOSS races can be processional, they are nice noisy cars.

"We took a risk as they will promote the sport and try to build up the event, rather than saying it has to be a great race."



BRITISH GT/BRITCAR

Fannin joins new team to race Aston

BRITISH GT RACER JODY Fannin will drive new team PFL Motorsport's Aston Martin this season.

The 22-year-old, who won the GT4 title in 2012, switches from TF Sport, with which he scored two podiums in '15.

The Aston Martin Racing Evolution Academy driver will be joined in PFL's Vantage GT3 by disabled Volkswagen Racing Cup graduate Pete Littler.

"Obviously I'm delighted to be back in British GT with a fresh challenge," he said.

"AMR have helped locate potential drives for me and that's how it came about. The experience I gained driving the Vantage GT3 last year will help in 2016, as PFL are new to British GT."

Fannin will also contest the British Endurance Championship this season, alongside quad-bike champion Chris Murphy.

The pair will pilot a new Vantage GT4 in the eightround series, which starts at Silverstone on March 26.

Toyota GT86 series set to launch A NEW ONE-MAKE SERIES FOR THE TOYOTA drivers rather than who can tune the GT86 is being launched this season. cars best," said organiser Patrick Mortell, The series will run alongside the 750 Motor who also coordinates the club's MR2 Club's Roadsports and Club Enduro categories Championship. "This year we are calling it the GT86 Prologue Series, running it this year, but a standalone grid is planned in alongside the 750MC Roadsports and Club the next couple of years. "The idea is to have something similar to Enduro. It won't run as a class - we will give the MR2 Championship, where it's about the out an award for the highest-placed GT86."

IN BRIEF



AUSSIES LEAD FIRST MSA FORMULA TEST

Australians Luis Leeds and Zane Goddard ended the year's first official MSA Formula test day, at Brands Hatch last week, at the top of the times. Red Bull-backed Arden driver Leeds was just 0.03s faster than Double R's Goddard, while Jamun Racing's Jamie Caroline was third, despite missing most of the afternoon after an off.

PLANT TO TACKLE CLIOS IN RIVETT'S CAR

Former Alfa Romeo champion Paul Plant will race in the Renault UK Clio Cup this season with WDE Motorsport in association with newcomer Vanquish Motorsport. Plant will race at Brands Hatch in multiple-champion Paul Rivett's car, although it's currently uncertain if he will complete the full season. "We will be prepping and running the car," said WDE boss Rivett, who is yet to reveal his plans for this season. "At the moment, he is starting the season with us and will be seeing how he gets on."

GLANVILL WINS JUNIOR SALOON DRIVE

Teenager Emily Glanvill has won a fully funded drive in the Junior Saloon Car Championship this season. She won the JSCC/Teenage Cancer Trust Scholarship after being chosen at a Silverstone selection day last month. The process involved a media test, fitness challenge and a driving assessment, before the final three – Glanvill, Luke Browning and Angus Dudley – were interviewed.

BRSCC TO TAKE CONTROL OF FIESTAS

The BRSCC has taken the organisation of its Fiesta Championship in-house for this season. The series had been run by Kevin Shortis's Ford Racing UK company but will now join the Fiesta Junior category as being run by the club, after concerns over grid numbers.

CENTURY FINALISES SECOND GT ENTRY

Aleksander Schjerpen (below) will drive the second Century Motorsport Ginetta G55 GT4 in British GT this year. This will be the Norwegian's third season with the team but his first as lead driver, and he will be joined by Caterham R300 Superlight graduate Sean Byrne.





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In praise of 'run what ya brung'

By Marcus Pye, the voice of club racing



FORMULE LIBRE - LITERALLY 'FREE FORMULA' OR, AS

our American friends dubbed it, 'run what ya brung' — was a popular racing category when I was a lad. The notion of few rules gave amateur throttle-jockeys with grand ideas the opportunity to compete against bigger fish in whatever their pockets allowed. The Jaybrand [racewear] championship, based at Silverstone, focused those with outmoded (hence cheap) F5000, F2, Atlantic single-seaters and big sportscars, giving them somewhere to play regularly.

Back then, a typical meeting probably comprised six to eight races, but the Libre finales were popular when they attracted strong entries, maybe ahead of a major international at the track for which ambitious Walter Mittys could qualify provided they were not hopelessly out of their depth. Nowadays astute organisers such as the 750 Motor Club and Castle Combe Racing Club regularly offer an Allcomers race as a discounted second start for entrants on other grids, or a programme-filler to help pay the overheads at packed fixtures.

I've long enjoyed seeing such encounters at clubbies, particularly when a promising driver in a smaller-capacity car outdrives a rival in something bigger (perhaps much bigger) and narrowly wins a spectator-pleasing battle in which both are lapping in very similar times. This could be the basic tenet of a new form of grassroots racing, as put to me last week by long-time colleague and friend of *Autosport* Derek Redfern following a reunion lunch with advertising legend Mike Trew.

The concept is very simple, indeed the only technical rule — to meet a fundamental MSA safety stipulation — would be separate fields for open and closed-wheel cars. Beyond that, entrants would be split into groups according to their laptimes at a given circuit. On Brands Hatch's Indy track, for instance,

sets might be determined by a driver's abilty to meet target times of 46, 48, 50 or 52 seconds, etc.

Target Time Racing [as Derek 'branded' it] would require novice competitors to set their own goals, then race to match them against rivals of a similar 'standard' with the object of developing speed and consistency. This is designed to engender close racing, with the proviso that if you have nominated 50 seconds as your target but dip beneath it between lights and chequer, that result would be nullified. Having 'broken-out' (as in mixed drag racing) you would graduate to the 48-second bracket for subsequent races as a feather in your cap.

This brings an aspirational element to the proceedings, and there is spice to add. Once you have proven yourself capable of running a step up the ladder, you would be able to improve the car — by uprating the engine (perhaps by changing the ECU), bolting on wider wheels, slick tyres or wings — to broaden your experience and enjoyment. I envisage that such a strictly non-championship promotion could open the marketplace for lower-value cars and enable family members or friends to get involved. Two or more drivers of different abilities could share a car.

We've seen some great innovations in recent seasons, notably the MSV Track Day Challenge, which encourages customers who enjoy driving on circuits to do it competitively. Widen the net to embrace pure racing cars and there are potentially hundreds more licence holders — including club karters who know that switching to pro car classes is way beyond their budgets — who could come to know the joys of the sport as many remember it before preparation teams became the norm and costs spiralled. Keep it amateur, keep it cheap, watch it thrive. Discuss. **



M3 CUP CARS TRIALLED

Seven newly built BMW E46 coupes ran at Donington on Sunday, giving a taste of the 750 Motor Club's inaugural Tegiwa M3 Cup, which kicks off there on March 19-20.

Club competition chief Giles Groombridge is confident that as many as 20 of the cars will go head to head this season.



MERLYN MK2 REJOINS FJ SCHOOL

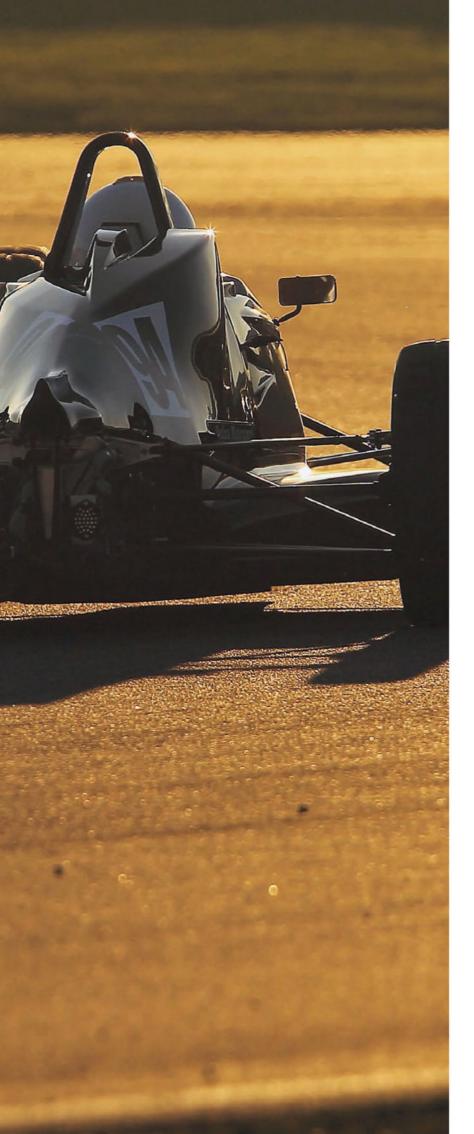
The earliest Merlyn racing car, sole survivor of five front-engined FJuniors that established Selwyn Hayward's successful marque, will race anew having wowed FJHRA members on the HSCC's stand at last weekend's Race Retro show. Brother Clive Hayward, who has long kept the torch aglow, assisted with the rebuild.



BIG ENTRY FOR TASMAN REVIVAL

Ken Smith and Alfredo Costanzo, both F5000 winners in the 1970s, head a 28-car entry for the Tasman Revival class at the Classic Festival of Motorsport at Phillip Island on March 11-13. New Zealander Smith (pictured above in his '76 Rothmans International race-winning season) drives a Lola T332, Costanzo a McLaren M10B.





W

here is the British or Irish IndyCar star of the 2020s racing this season? In karts? A Formula 4 series? Already over in the States? Or will you find them on a UK club-racing bill in a wingless single-seater with a 1960s engine and treaded tyres?

Win either the BRSCC National, Scottish or Super Series Formula Ford 1600 title this year and you go into a shootout against 14 other champions from worldwide grassroots series for \$200,000 towards USF2000 — rung one on a Mazda Road to Indy ladder whose champions' scholarships can take you all the way to the Indianapolis 500. That's still a very long shot for any UK FF1600 racer, but now technically possible.

Road to Indy was the headliner in a string of good-news Kent-engined FFord stories in 2015. A proper UK-wide national series was back. Festival entries were up. Ralph Firman was producing an all-new car. Teams had huge interest in 2016 seats.

But now... "It's not like people have been banging the doors down," admits one team boss, and others are troubled that there "isn't much new blood" or disappointed that talk of "the world and his wife wanting to do FF1600" proved deceptive.

FF1600 is still arguably in better shape starting 2016 than for over two decades. Under Graham and Heather Brunton's guidance, the Dario Franchitti-endorsed Scottish championship has become *the* first single-seater step for karters north of the border. FF0rd never really lost that status in Ireland, and all three 2015 Motorsport Ireland Young Driver of the Year finalists will be in National FF1600 — winner Jake Byrne (last year's Northern Irish FF1600 champion) along with James Roe and Jordan Dempsey. Byrne's Bernard Dolan Motorsport team-mate will be 2013 Festival winner Niall Murray. Cliff Dempsey Racing has re-signed 2014 Festival winner James Raven to join Skip Barber racer Chase Owen — an American heading to the UK to try to win a US scholarship prize. Walter Hayes winner and 2008 National champion Graham Carroll and EcoBoost era FF0rd race-winner Luke Williams will be among those in

"Sceptics outside FF1600 note that its core elements are unchanged since 1967"

Firman's new machines, while 2013 BARC Formula Renault champion Chris Middlehurst is eschewing GT ambitions for another crack at FF1600 after his 2011 titles.

Still, the 'lack-of-new-blood' concerns are understandable since so many of the above already had FF1600 in their veins, either through past success or family ties. Roe's uncle Michael won the 1978 Festival, while Jordan Dempsey's father Morgan is an ex-FF1600 star and cousin of three-time WHT winner Peter Dempsey. The FF1600 message has gone beyond preaching to the converted, but more to restoring the faith of the lapsed rather than reaching new disciples. Sceptics outside FF1600's fervently enthusiastic paddocks note that its core technical elements are unchanged since 1967, and that cuts it adrift in a world of slicks, wings and paddleshifts.

"We really need to shake off that 'unfashionable' sticker," admits Oldfield Motorsport boss James Oldfield, who ran Stuart Gough to the 2014 National title in a 1992-vintage Van Diemen and is now upgrading to the latest machinery for karter James Scott-Murphy. "People think because you spend under £40,000 on it, it's not proper. There are guys who'll win Formula Renault championships in Europe who'd struggle to do well in FFord because the quality is so high." >>>



Cliff Dempsey, a long-time FRenault team boss too, is adamant that FF1600 "is the best training ground you could put a racing driver in. But people keep passing it by to go and spend £200,000 on something else. Then in a few years they've spent all their money and it's all over. If they did a year or two in Kents first, they might be better prepared and go further."

Most in FF1600 accept that many of its young guns are only there because F4-type budgets are beyond them. Middlehurst, a 2013 McLaren *Autosport* BRDC Award finalist, BRDC Rising Star and BRDC F4 race winner, agrees with Dempsey that FF1600 should be a bigger presence on karters' radars.

"You learn how mechanical grip works, and how to change suspension because that's what you're reliant on," he says. "You learn to carry speed rather than just slamming on the brakes then

going again. And you learn about car control because you haven't got that aero grip to glue the car to the floor. It gives you a lot of knowledge that does transfer."

Those on a linear path up the FIA single-seater ladder might not need those

sort of lessons but, for the significant majority whose careers are likely to take more varied turns, FF1600 makes you "a very well-rounded racing driver and more adaptable", reckons multiple category champion Ed Moore.

"You'll learn about racecraft and how to drive racing cars properly — changing gear with a gearstick and needing to heel-and-toe. I know these days you can get to Formula 1 without such basic skills, but it's good to have them."

A comprehensive FF1600 season with a top team costs £30,000-£40,000. Running your own car could get that budget below £20,000. That puts it within range for families such as the Cowleys, whose classic 'dad-and-lad' collaboration between father Ian and son Matt took the latter to last year's National Pre-'90 title. They chose FF1600 over Super One karting largely because it was cheaper. Unless Cowley Jr secures a scholarship

or benefactor, the budget to progress will be beyond them, but FF1600 at least gives him a chance — and, in Ian's words, "if you want to just keep going in it, it's a fantastic club series". FF1600 thriving gives lesser-funded karters such as Cowley some single-seater hope at a time when Middlehurst fears many "end up giving up because they think they'll need a quarter of a million for even an entry-level series".

But the budget gulf above FF1600 hurts it. The category could do with some star graduates turning heads higher up to show its worth — such as when Matt Howson emerged from Star of the Midlands FF1600 in 2001 and outqualified his already-quite-famous Manor Motorsport FRenault UK Winter Series team-mate Lewis Hamilton first time out. But if FF1600's stars are only there because they have little money, they struggle to

move on and therefore can't advertise it — 2014 Scottish FF1600 champion Ciaran Haggerty was a BRDC F4 frontrunner last season, but on a shoestring budget even with Ecurie Ecosse help. Reigning National FF1600

"The budget gulf above FF1600 hurts it – it needs some star graduates"

champion Jonny McMullan has returned to his previous cash-strapped state now that his year of Motorsport Ireland backing is over, and may not race in 2016.

Moore argues that the financial disparity "isn't FF1600's fault, it's the sport's fault" and down to "an ethos of greed and stupidity" at higher levels. National FF1600 coordinator Ian Smith is desperate to see a UK equivalent of the Road to Indy, while his Super Series counterpart James Beckett says he's been angling to create one to no avail so far. In the meantime, he pledges that "we'll do everything we can to make our winner prepared to go to America, whether it's by arranging simulator time or Q&A sessions with Jonathan Palmer so they're prepared for interviews".

But it's not just a case of a united FF1600 world being let down by the iniquities above. There are internal tensions too.









Cliff Dempsey feels the way interest wilted over the winter after a promising start was down to "half-hearted" promotion of the Mazda link by the two English-based series.

"If the prize disappears because Mazda doesn't think the series are promoted properly, that would be such a shame," he warns, while others echo the theme that the championships need to be given a more "professional" air.

Beckett counters: "To move it to the next level, competitors have really got to step up to the plate and support it, and allow the promoters to take it in the right direction and give it that professionalism. People are used to the TOCA paddock, having the artic trucks in a line and a bowl of fruit and a palm tree. FFord is not that for everyone, but if you want to be a professional series you've got to look like it and help organisers to do that."

Beckett admits that FF1600's varied competitor demographic makes that hard, as he tries to strike a balance between bigger teams demanding increased scrutineering rigour or slicker presentations, and clubmen keen to head home post-race.

"There isn't any other category in the world with that cross-section from absolute racing beginner to those at the front who could easily win in America next year," he says. "And then you've got the people who've done all that before and want to come back and beat everyone again."

Calendars have also caused frustration among teams. Delays in finalising the Super Series put pressure on one-man-band Beckett. Scheduling his opener as an F4 support at Snetterton despite having to cancel an equivalent event due to low entries last year raised eyebrows, while his series' roots in his Champion of Brands revival means a calendar very heavy on trips to Kent.

Last year's National calendar mixed classic circuits in the middle of the country (Silverstone, Donington Park) and regional FF1600 heartlands with strong local competitor bases such as Oulton Park, Castle Combe and Knockhill. The 2016 version dismayed some: Combe, Knockhill and Silverstone National out (so no WHT warm-up chance); Rockingham, Croft (neither of which have generated a decent FF1600 grid this century) and Zandvoort in. The Dutch trip is a tie-up with major European FF1600 series, but left several teams up in arms

over potential costs. Smith and Beckett argue they're limited by respective organising clubs the BRSCC and MSVR, and Smith also defends the Rockingham and Croft moves on the grounds that varying circuits is healthy for a national series. But with FF1600 having depended so much on regional support, it's a gamble — and Oldfield says "they've got it badly wrong".

Calendars and scrutineering standards were two key items on the agenda of a recent meeting between a group of leading FF1600 team bosses keen to put a united view to organisers in the hope of a smoother 2017. The technical regulations may be a battleground too, with a split between those who fear cost increases as parts get scarce, and those who argue it's the absolute stability of the rules that has kept FF1600 affordable. The latter faction won out in a recent debate over whether alloy brake calipers should be permitted.

FF1600 hits its 50th anniversary next year, and nearly half that time has now been spent outside the mainstream -23 years having passed since the advent of the Zetec engine that was supposed to supersede it. But Kent marches on, outliving not just Zetec but Duratec and EcoBoost FF0rd too.

"If you were starting from scratch now, of course you'd use a modern engine," admits Moore. "But why are there 120 Formula Fords out at the Walter Hayes? Because it works."

Most junior single-seater categories are at the mercy of a single organiser or manufacturer. FF1600 is driven by a massive community, one often at each other's metaphorical throats, but only because they care. In Beckett's words "the absolute belief in the category keeps it going, and no other category in the world deserves it so much". Its participants may disagree over calendars, calipers and more, but they all agree on that.

But in 2016, with such a big opportunity to cement its status as the legitimate junior single-seater category its prime movers want it to be, the FF1600 fraternity needs to collaborate.

"If you win the Festival or the Walter Hayes your name goes down with the greats, and the championships have these great prizes," says Oldfield. "We need to make sure everyone keeps working together on promoting that in a positive manner. If we get complacent, we can very quickly go backwards."

WHAT'S ON



From cockpit to commentary

QUALIFIED DOCTOR. JUNIOR single-seater champion. Respected Formula 1 underdog. McLaren test driver. BBC scriptwriter.

What?

The career path may seem to have taken a turn for the unlikely, but, as Jonathan Palmer talks *Autosport* through his journey from McLaren test driver to a member of the BBC team covering F1 at the start of the 1990s, it becomes clear that his determination to make something happen, a theme that runs throughout his multi-faceted career, yielded something unexpected.

"As my F1 career was clearly over, I had to look at the future," he explains. "I enjoyed the media side and wanted to keep up my public profile. I wrote to the BBC and said I wanted to help with the commentary. I had a schedule for covering the 1990 season and I gave them a script for the first thing on qualifying tyres.

"I felt that with all of my experience I could make quite a contribution. I felt that the grand prix programmes were missing a lot of background information that really would help viewers understand what was going on more, and so I felt there was a role to be fulfilled in being a pitlane interviewer and providing some explanation on a whole range of topics."

The BBC told Palmer there was no budget to bring him on, but he was given a shot anyway, then was swiftly elevated to become a regular member of the team. He became the pitlane interviewer and played a part in the BBC expanding the depth of its coverage.

Post-media career, Palmer turned his attention to projects such as FPA



Short explanatory segments and pitlane interviews became Palmer's forte. The lowdown on qualifying tyres was followed by explanations of understeer and oversteer; topics that might seem simple to those within the sport but can easily be alien concepts to casual viewers.

He was also able to bring a fresh insight to the pitlane reporter role.

"It's quite different being on the other side of the fence," he says. "Actually, as a pitlane commentator it's quite tricky being an ex-driver as it's a funny feeling when you go up to other drivers.

"Everybody on the media side knows you don't always have people on the other side eager to give you time, particularly when they've just had a breakdown or something like that.

"But on the other hand, at least when you've done the job as a driver, they know you understand what it feels like and I think one is generally better at asking better questions.

"You have a better understanding about their feelings, what happened

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box

and avoid asking the sort of banal questions that can happen with people that haven't got a clue what's going on."

When James Hunt, sharing commentary duties with Murray Walker, passed away in mid-1993, the BBC naturally turned to Palmer and he began a three-and-a-half year stint alongside Walker.

"The first grand prix I did was at Magny Cours and it was a complete blur," he remembers. "It was massively more pressured and hard work too, but after a period of time I got more and more comfortable with it and I really enjoyed that."

When the BBC lost the rights to broadcast F1 at the end of the 1996 season, Palmer's TV career ended. But he had the small consolation of a multi-million-pound, fledgling mini-empire to focus his attentions on, founding Formula Palmer Audi in 1998, opening Bedford Autodrome a year later — and everything else that followed in the years since.

SCOTT MITCHELL



HOT ON THE WEB THIS WEEK

You Tibe IT'S RALLYCROSS ON ICE

Search for: Loeb Takes On a New Racing Challenge

This week, Sebastien Loeb announced that he has signed up to compete in the full 2016 World Rallycross Championship with the works Peugeot Hansen squad. Here the nine-time world rally champ gets in a little practice on a frozen lake in Sweden with his new team-mate, Timmy Hansen.



INTERNATIONAL MOTORSPORT

NASCAR SPRINT CUP

Rd 3/36 Las Vegas, Nevada, USA March 6

Another 1.5-mile oval test lies in wait for the NASCAR field, which heads West to Las Vegas. Jimmie Johnson's 76th victory last time out at Atlanta might have been a tactical masterclass, but he will be hard pushed to outfox 2015 Las Vegas victor Kevin Harvick for a second weekend in a row.

WATCH ON TV

Live: Premier Sports, Sunday 2000

V8 SUPERCARS

Rd 1/15 Adelaide, South Australia March 5-6

The V8 Supercars championship roars back into life in Adelaide, with a triple helping of live coverage for those of you with an appetite for getting up early. After clinching his first title last year, Mark Winterbottom returns with Prodrive.

WATCH ON TV

Live: BT Sport 1 Race 1 Saturday 0300 Race 2 Saturday 0530 Race 3 Sunday 0430

PIRELLI WORLD CHALLENGE

Rd 1/11 Austin, Texas, USA March 5-6

A headline slot awaits the Pirelli World Challenge, which kicks off again at the Circuit of the Americas. Reigning champion Johnny O'Connell returns in his Cadillac ATS-V.R, as does James Davison after a successful first season as a Nissan factory driver. McLaren's Alvaro Parente is also likely to mount a strong challenge, having switched to the PWC for 2016 following his GT Open success last year.

V8 STOCK CARS

Rd 1/12 Curitiba, Brazil March 6

Brazil's premier motor racing series launches its season with its traditional showcase two-driver 'enduro' race. Reigning champion Marcos Gomes lines up with Antonio Pizzonia – himself a V8 race winner - alongside him. Other big names include Augusto Farfus (with Rubens Barrichello). Antonio Felix da Costa (Allam Khodair), Nelson Piquet Jr (Atila Abreu) and Laurens Vanthoor (Ricardo Zonta)





THE ARCHIVE

The mood is downbeat before the start of the 1982 San Marino Grand Prix, a race notorious not least for a rancorous boycott related to the FISA-FOCA war. It's sobering to note how many of the drivers (in the melee we identify Prost, Winkelhock, Villeneuve, de Cesaris, Giacomelli, Paletti, Pironi, Jarier, Alboreto, Henton, Salazar, Warwick and Fabi) are no longer with us.

LAT Photographic

T O P FIVE

ICONIC F1 LIVERIES

Everybody has their favourite Formula 1 livery. But what makes a truly great colour scheme? As well as being pleasing to the eye, the paint job must encapsulate the brand in a way that fits in with the shape of the car. The five we have selected are beautiful and achieved truly iconic status in grand prix racing, combining visual elegance with longevity and success. That's what makes them the great sponsorship liveries seen in F1.



JOHN PLAYER SPECIAL LOTUS

John Player Special didn't just describe the Lotus colours from 1972-78 and 1982-86, at times it became the car. For several seasons, the Lotus cars were dubbed John Player Specials and the blackand-gold livery become recognisable the world over. Emerson Fittipaldi, Nigel Mansell, Ayrton Senna, Mario Andretti and Ronnie Peterson were among the drivers who thrived in these colours, which were even mimicked by the Lotus F1 team in recent years as a nod to the past. To this day, three decades since a JPS livery last ran in a grand prix, it remains arguably the most beloved colour scheme in F1.

MARLBORO McLAREN



The words Marlboro and McLaren go together better than any others in Formula 1. From 1974-96, the distinctive red-andwhite colours enjoyed success in F1, winning championships with Emerson Fittipaldi, James Hunt, Niki Lauda, Alain Prost and

Ayrton Senna. So inexorably linked did team and sponsor become that it was jarring when the McLarens competed in West silver in 1997.

MARTINI BRABHAM

Usually it's the white-based Martini liveries that stick in the mind in motorsport (think of the Lancia Group C cars or the Ford Focus rally cars of the Colin McRae era). But while Brabham ran in that trim, it was the red version used in '76 that had the most visual impact. Arguably, it was one of the few times the Ferraris were rendered not the most striking red cars on the grid.



ROTHMANS WILLIAMS

The Rothmans colour scheme carried by Williams from 1994-97 was arguably the last of the great tobacco-sponsor liveries. It was certainly vastly superior to the piecemeal Winfield red-and-white Williams livery that followed it. A rare fusion of the commercial and artistic, the Rothmans machines were arguably the most beautiful realisation of this era of corporate sponsorship.

UNITED COLOURS OF BENETTON From 1986-90, the Benetton team ran variations of its red, blue, green and yellow colours, culminating in a bold, brash and unmissable colour scheme that was only dropped when the team landed sponsorship from Camel. While not subtle, it was certainly memorable and gave the team a distinctive look during a period when it was establishing itself in F1's top four.



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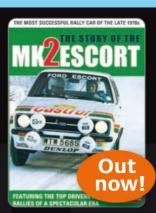


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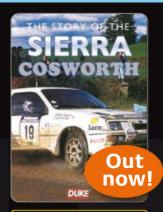
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BUILDING A DREAM TEAM MAY

sound like the 'bubble' Lewis Hamilton famously talked about surrounding himself in a few years ago. But it's actually about so much more than just having friends and family there to support you.

If you're climbing through the ranks of any discipline, it stands to reason that you could well find yourself switching teams every now and then, or even each season. The personnel surrounding you can literally change with the seasons.

Preparation, as we try to drill home in every issue of *Autosport* Performance, is key. And that starts with the team around you, whether it's your driver coach, engineer, a simulator expert or the person sharing your garage.

Naturally, different people will have different ways of operating. But how you choose to work those people, not just work with them, can make all the difference. Attitude is half the battle, the rest is pulling the strings so you're controlling the show. That goes for relationships old and new.

Thanks go to our partners SCHROTH, Walero and Position One and our expert contributors, old and new, for their invaluable help on this issue. I hope you find their



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ROB WILSON

"Team-mates don't really exist"

The world-renowned driver coach explains how your dream team includes the other driver in the garage

DRIVER'S EYE VIEW

Citroen's World Rally Championship event winner talks through what he's learned about dealing with pressure

McLAREN'S MODEL PRO
Oliver Turvey

How the Brit has come from an underfunded single-seater career to paid racer and McLaren F1 development whizz

14 SIMULATOR SECRETS
How to understand car set-up

In modern motorsport understanding your car is key. Our simulator partner Position One can help

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Grand Prix Racewear

The Silverstone-based kit behemoth goes above and beyond to make sure your gear is right for you

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The Renault development driver and Formula Renault 3.5 champion explains the secret to nailing the Corby circuit

GETTING STARTED

Car racing needn't be prohibitively expensive – these categories offer a cheap way into competitive action





MASTERCLASS WITH ROB WILSON

THE WORLD-RENOWNED DRIVER COACH EXPLAINS WHY THERE'S REALLY NO SUCH THING AS A TEAM-MATE THESE DAYS

very situation is different, but the concept of team-mates where one will run as a wingman while the other wins is largely an illusion.

When you're growing up, you see the term 'team-mate' and assume they are genuinely working as a team. It's not until you start to become involved in racing that you realise a team-mate is often your biggest rival. A lot of the collaboration is forced, though it means different things in different teams.

When Jim Clark was asked in 1967 what it was like being Graham Hill's team-mate at Lotus, he said, 'No, Graham is my team-mate.' We know that Nelson Piquet would not have Ayrton Senna in the Brabham team. The idea that a team-mate really means he's your enemy is one that's been alive and well for a long time. Denny Hulme didn't always confide everything to Jody Scheckter about which gears he should be running at different circuits. It's nothing new.

And relationships can change. After Bruce McLaren slipped his Cooper down the inside of Jack Brabham's in, I think, the 1961 Lady Wigram Trophy in New Zealand, Bruce felt the relationship altered with that move. There is always that element of "I want to do better than the other guy", which leads to those defining moments.

Gilles Villeneuve was a well-behaved team-mate with Scheckter in 1979, but when Didier Pironi got on the wrong side of Villeneuve there was war. It's a very fragile thing. And it's not just Formula 1. In sportscars there are cases where your team-mate brings in the car and says "Everything is fine", then you get to the end of the pitlane and the brake pedal has the same amount of feeling as the clutch pedal, and nobody mentioned it...

There's an inherent rivalry, and the selfish streak can take over at any point. Arturo Merzario, driving for Ferrari in the 1973 Nurburgring 1000Km, overtook lead driver



wasn't tired at all, felt fine, drove off down the pitlane and went on to win the race.

The 1981 Brazilian Grand Prix result is quite famous for Carlos Reutemann's refusal to concede victory to team-mate Alan Jones, much to Jones's annoyance. Reutemann's logic, however, was that at the previous race (Long Beach) he had dutifully followed Jones into second place when he felt he could easily have passed him. After the race, Carlos felt slighted that Jones hadn't acknowledged or thanked him.

I did some races with Tim Harvey, who is a good driver and charming, but JR Ewing from *Dallas* is his hero and he

telemetry at Benetton. Unfortunately, it seems a lot of people take that attitude.

When you get two drivers in a single-seater team or a sportscar team, for instance, both drivers are often responsible for a lot of the budget. So they will think "I am here for myself, I paid for this". Because the bosses of a team are in line with that sponsorship, they do not always have the same authority over drivers who have made it possible for the team to run. Both bring money rather than be paid, so that makes the collaboration a marriage of convenience and comes down to the individuals concerned.

You should want a fast team-mate, otherwise you won't develop. That's a good thing if you haven't got the wit to work it out for yourself. These days, because everyone has access to data, they are forced to have their laps looked at by the other guy in the team. That can help people get very, very close. In the pre-data days it was harder to do that. But I don't like a team-mate being your greatest enemy – I genuinely like the idea of drivers working together.

Sometimes you'll have equal drivers, and, as long as the other doesn't behave like a superstar, you hope their intentions are the same as yours. I would often give a team-mate everything, and may the best driver win. If you're a proper racing driver, the car will only be able to go so fast anyway.

I would never want to calculate a way of making their performance worse. I'm sure that happens, but it's harder to hide what gear you're using, what revs you change at, and so on, because all the data is there now.

So do the best job you can. It's not about hiding what you can to get one over on your team-mate, but doing something you know they can't.

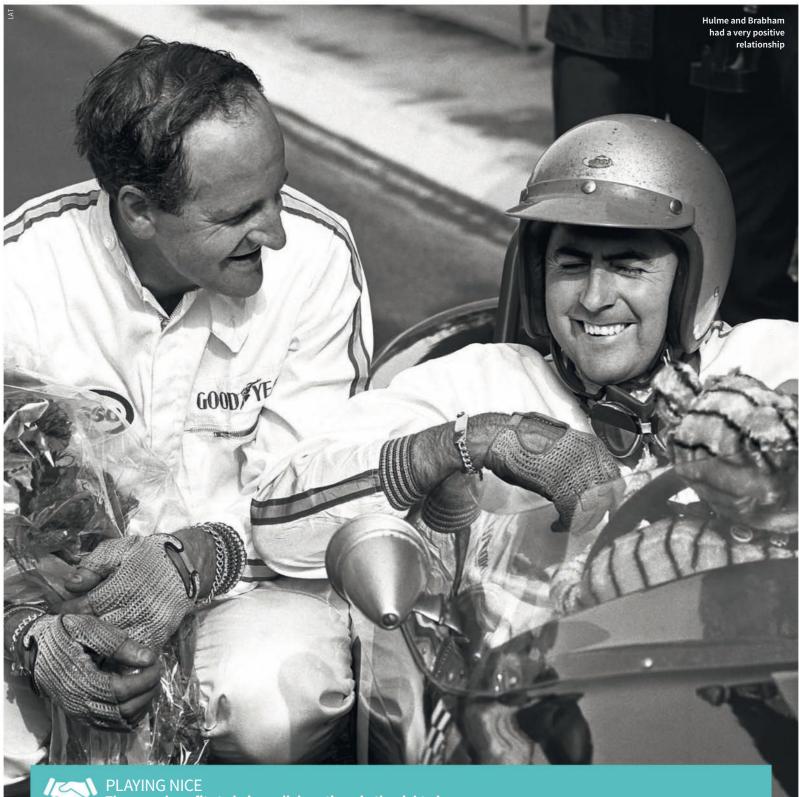
"You should want a fast team-mate otherwise you won't develop. I don't like team-mates being great enemies, I like working together"

Jacky Ickx and, after repeated instructions, finally fell back behind him, then hit Ickx's car and, after ignoring 'pit' orders, eventually came in and had to be forced out of the driving seat while clenching the steering wheel to hand over to Carlos Pace!

In 1970, during a single-driver 500km race at Imola, Porsche 917 team-mates Pedro Rodriguez and Brian Redman were competing. Rodriguez retired after a crunch. Later, when Redman made his scheduled fuel stop, Pedro, fully suited and helmeted, walked up to Brian and told him that he (Redman) seemed tired and so Rodriguez would complete the race. Redman replied he

would do anything he could to go one up on something. I saw it with some humour and affection, almost! In one race, squirming around on wet tyres and with a misted-up screen, I brought it in and left him on wet tyres even though it was drying. He was back in within a lap. That wasn't malicious; it was just poor judgement! But it didn't help us. Nevertheless we did win the Oulton Park Gold Cup, so how bad could that be?

The new thing appears to be to keep as much information from your team-mate as you possibly can. You always want to have the upper hand. I think Johnny Herbert was not allowed to see Michael Schumacher's





There are benefits to being collaborative - in the right place

asked to slow down to allow Mike Hawthorn to overtake him to It's something that's not talked about much now, but they have an awfully long history of that. This is an example of true

of the team and it's not something that was invented by Ross Brawn just to help Michael Schumacher.

had a more cooperative team-mate, who was also a very good

a number of gentleman drivers I know will say, "I don't want to be the fastest driver in the team, I want a top driver so I can learn

and I can win."
With a lot of drivers I have raced

would give them every amount of drive, work with them, so they can drive faster and not make mistakes.

coaching. The advantage is they do a better job, so on average you have a better chance of a result.

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INSIDE LINE

WITH KRIS MEEKE

THE WORLD RALLY CHAMPIONSHIP EVENT WINNER TALKS ABOUT THE PRESSURE OF A TOP-LINE CAREER ALWAYS UNDER SCRUTINY

CAREER Highlights

5th WRC with Citroen 1 win, 3 podiums

7th WRC with Citroen 2014 4 podiums

Two WRC events 2013 with Citroen

2009

2011 Six WRC events with Mini

2010 3rd Intercontinental Rally Challenge with Peugeot 1 win, 3 podiums

> Intercontinental Rally Challenge champion with Peugeot 4 wins, 6 podiums

European Rally Championship one-off with Peugeot 1 podium

2008-07 Sporadic events,

thought I knew a bit about pressure and psychology a few years ago. Turns out, I didn't. Last year, I learned plenty. I had taken my first ever win in the World Rally Championship in Argentina, but then a few rallies later my career was on the line again. How was that? How had things changed so dramatically?

Last season, a bit like the one before that, was all about the highs and lows, the success and the perceived failure. I say perceived because much of the pressure coming my way came from the outside. Once the media got hold of the story that my seat was in question, that was it: I was driving for my future and every time I had a difficult stage, that was the question at the finish. It was irritating that one comment opened it up to the media to question my every turn. And when you're being questioned all the time, it's difficult to fulfill that potential. It gets to a point where you have to dig deep to get out of that hole.

But was that worse than the years before when I was desperate to get into a team, or when the Mini deal went south? No. Not getting the opportunity would have been way worse. Last year, I was giving the ball a kick... even if there was plenty of pressure. I have a pretty good way of dealing with that. I get in the car, I do my best, I get out of the car and I go home to my family. I'm fortunate in that we have a young family, my wife doesn't come to events, so

help my mental approach. What I like is to have a few guys from home, people from my background, who talk my language. Having them with me on an event means I can get to the end of the day, sit down and forget the pressure by talking about normal stuff and by putting the day into perspective.

My approach is probably quite different to some of the younger guys'; when you're a young, single fella you're pretty selfish and wrapped up in what you want to do; everything revolves around you. I don't think that necessarily makes you a better driver. I'm still hugely single-minded in my drive to be world champion, but I can see the bigger picture and that helps when you're working in a team.

One of the biggest psychological boosts any driver can get is a long-term contract. I only found that out at the end of last season, when Citroen signed me for three years. Starting Monte Carlo and Sweden this year, the feeling I had was completely different. I felt accepted. Before that, I was on a one-year deal and people were questioning me.

There's a lot of psychology in this sport and, inevitably, within the team as well. The pressure was definitely getting to me last year, but for the last five rallies, I said, "Forget it, I'm just going to get on with it." But even when you say that, there's still a nagging feeling, "Have I really forgotten it? the whole thing and just needed to get on with it.

"I told myself, 'I'm just going to get on with it'. But there was still a nagging feeling. I was overthinking the whole thing"

work. When I go home, the children simply don't give you a chance to think about what might have been going on for the last few days. Last year, that was a great release for me. It was the same in Argentina. When I get it right, I'm not about the hullabaloo or sticking the chest out and having people tell me how great it is. I get out, go home and

> myself with psychologists or

I didn't want to talk strategy with anybody on the first two events of this year. Maybe because I'm a bit more mature and have a bit more experience, I just feel this need for a strategy can be counterproductive. I find it frustrating to have people keep telling me I have to drive quickly, set good times and be at the finish with plenty of points.

At the end of the day, this isn't a precise science. It's poetry. You wouldn't sit a poet down and tell him what to write. You wouldn't sit a musician down and tell them which notes go where. Try to do that and you'll get a poem and a piece of music, but they won't be classics.

I honestly feel we reaped the rewards of not overplaying the strategy in Monte and Sweden. OK, the results don't reflect that, but we were fighting to win both rallies and I know how hard I was pushing to be in that position.

I've got to the place I've always wanted to be and now I must make the most of it. I want to be world champion, but what does success mean? When I won the IRC in 2009 I woke up the next morning and thought, "Oh, OK, that's the title. What next?" There's an emptiness to success. It's hugely satisfying, but this sport's still about the thrill of the chase.

Like I said, it's easy to overthink this thing...

OLIVER TURVEY

THE THINKING MAN'S DRIVER

OLIVER TURVEY IS IN HIS SEVENTH YEAR WORKING FOR McLAREN, IS A LE MANS 24 HOURS CLASS WINNER, IS BEATING HIS CHAMPION FORMULA E TEAM-MATE AND IS A WORKS HONDA DRIVER IN SUPER GT. NOT BAD FOR A DRIVER WHO STARTED IN CARS WITH NOTHING...



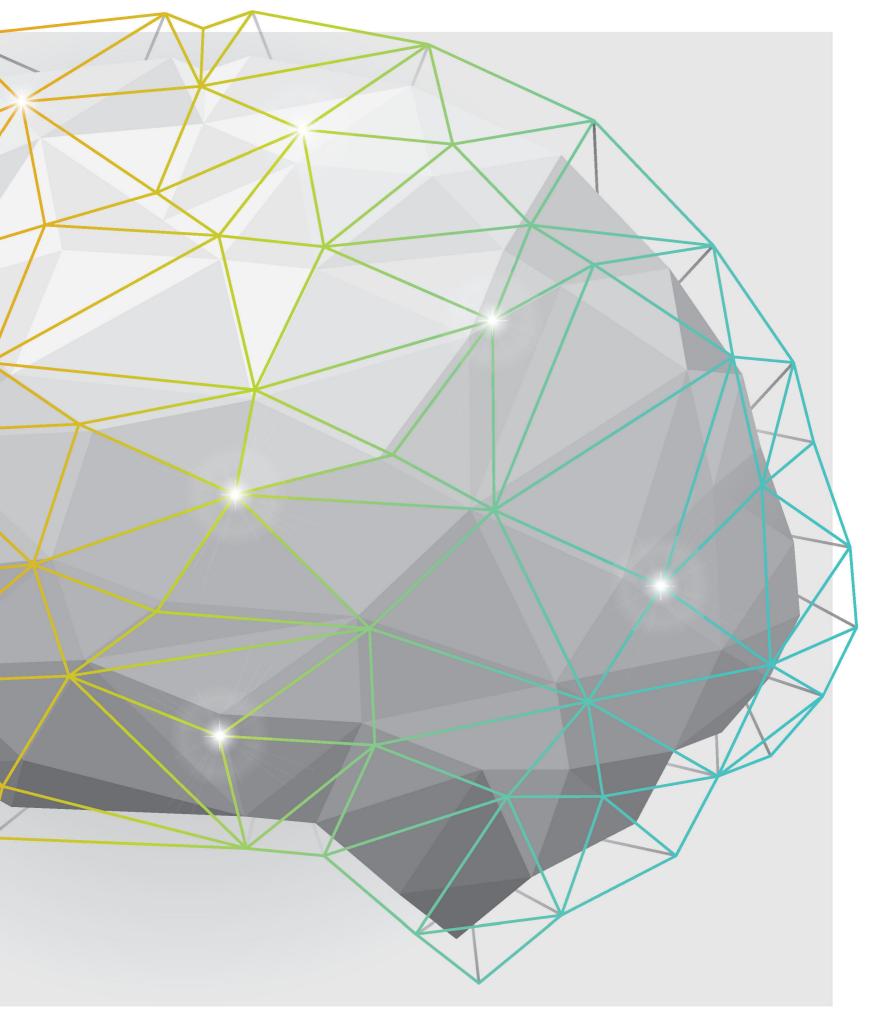
A ONE-MAN BRAINS TRUST

Motorsport is extremely expensive and my family did everything they could for me in karting, but we didn't have the budget of a lot of people. Because of this my parents wanted me to do well in education and, although karting meant I missed a certain time away from school, I always worked hard and got good grades. So although they didn't want me missing too much, because I did well they didn't mind!

We never had the money to progress in single-seaters, and it was quite difficult to find the budget – a career in motorsport requires a lot of support. My dream was always to be a racing driver, but I got advised by someone to try to get into Cambridge University. I saw having an engineering background as a back-up that could potentially help my racing, and even though the chances of making it as a racing driver were slim it would help improve my understanding of engineering.

I got a place at Cambridge, and it's been more useful than I thought! It's helped with my understanding of set-up and developing cars, and it has allowed me to work quite closely with the engineers and understand their thought process. The cars are getting more and more complex, certainly in F1. They still require driver feedback and working out where to look in the data, because there is so much – McLaren certainly rely on that. That's something that helped get me my role there, because I'm unique in having my race experience and my engineering background. It's also helped me develop myself as a test driver as McLaren and to be leading the test and development work on the simulator.

It helps in a number of ways, in terms of making sure you communicate what you're feeling to the engineer in a right way. A lot of engineers don't have racing experience, but it helps if you can give them directions when they ask you more in-depth questions about what you are feeling and what you want. It helps me to work closer, and lead them in what I want from the car. I think they find it useful!



IMPRESSING McLAREN

I won the McLaren *Autosport* BRDC Award in 2006 and had my prize test in the McLaren Formula 1 car at the end of '09, and that led to me joining the team. The run was at Jerez, and it was a young-driver test. Gary Paffett was driving most of the days, and then I got my prize test as part of it. It went pretty well – I was already quite quick and close to Gary after a couple of runs. They were impressed with that and I went to the factory and did some simulator tests. They have quite an evaluation for different set-ups and that went well. So I got the role of test driver for the following year. I was quite fortunate because Pedro de la Rosa was also a test driver, but he left to go and race for Sauber and I effectively took his days! I ended up working in the simulator with Gary, and I was also racing in the GP2 Series.

At the time, Pedro had been there for seven or eight years and was very well respected, and Gary had been there quite a few years as well. But quite quickly I was able to build up the experience and trust of the team. For a few years I worked with Gary, and we agreed on many things. There were a few years where I wasn't racing so much, so I took more responsibility. Now Gary has left and I'm leading the simulator and test-development programme. It's good to be part of that.

LEADING THE (DEVELOPMENT) LINE

My role is test driver. It's to support the race team in any work they need. I've been very fortunate to drive the car most years, but, because of the limited testing in Formula 1 now, it's getting less and less. If I get one day I'm quite lucky! The race drivers want to drive as much as possible.

My work is mainly on the simulator at McLaren. We test a lot, and it's run in a similar way – you go through test items like you do at a track. You can run through more, and the changes are made quite quickly. We do work on aero, chassis, suspension, powertrain, tyres, everything. Everything they want to try or make comes through the sim first, and you get a big overview of the whole car development. I do a lot of work on race set-up before race weekends and even supporting teams on the Friday. A lot of the teams run sims on Fridays before GPs – quite



"When you're used to the simulator you can drive consistently. You can make very small changes to the car and you can feel them"

often I'm there and working on the set-up with race engineers, wherever they are. Normally, the testing is done after FP1 and before the next one, because the race engineers might have something they want to try. They don't get many runs but we can run three or four different options on the sim, pick the best one and they can try it on the track.

It's actually hard to be good in a simulator. Certainly,

it takes time to get used to it and some of the feedback is a bit different to the car – the cues are a bit different. When you're used to it, you can drive consistent laptimes. You can make very small changes to the car and you can feel them. You can see it in the laptime if you're consistent enough. It's about trying to drive the same way, to be quick but consistent and give the engineer the chance to see if the changes they are trying make a difference.





THE PROFESSIONAL RACING DRIVER



LE MANS

SUMMARY An LMP1 opportunity at the French classic is, understandably, Turvey's ultimate aim, but it's a realistic one based on his performances at the Circuit de la Sarthe. After a reliability-hit debut in 2013, he spearheaded the Jota team's fightback to victory in the 2014 edition – he was a last-minute call-up when Marc Gene had to replace the injured Loic Duval at Audi. Turvey returned for a third straight year in 2015, helping the team to second.

TURVEY SAYS: I found an opportunity to race with Jota at the end of 2012 and it was completely by chance. I heard they were looking for a driver and was interested in racing at Le Mans in LMP2. I met with them and got on well with the team – they had a good attitude to racing and were professional. It seemed like a good place to be - it suits me and my style. I think you develop your concentration as a test driver - certainly eight hours in a simulator makes a three-hour stint not seem so bad!



SUPER GT

SUMMARY Thanks to his link to Honda through McLaren, Turvey made his Japanese racing debut last season in Super GT's premier GT500 class, campaigning a Honda NSX Concept-GT for the new Drago Modulo Honda Racing Team. The series was generally controlled by drivers in rival Lexus and Nissan machinery. Turvey and team-mate Takashi Kogure finished 12th in the points despite finishing in the top eight in all bar two of the races.

TURVEY SAYS: I always had an eye on trying to race there, and when McLaren announced they would partner with Honda I pushed quite hard! They introduced me to the guys at Honda, and I had a test there that went well. It got me a drive in Super GT it's a very professional series. It's not really promoted outside Japan but we get 50,000 at every race! It's massive in Japan. All the drivers are professional. It's a very high level out there. There are some superexperienced guys and it's a good place to be racing.



FORMULA E

SUMMARY Turvey's starring LMP2 efforts played a part in his call-up to the NEXTEV Formula E team for the season-one London finale. And, after scoring points on his debut, it led to a full drive for season two. Despite lining up alongside champion Nelson Piquet Jr, Turvey has been the lead driver, notching the best qualifying and race results for the team while wrestling with the recalcitrant NEXTEV TCR001. The team called the decision to sign him "a no-brainer".

TURVEY SAYS: When I got the call from NEXTEV TCR out of the blue to do the race in London, it was a great opportunity. It led to the full second season and I think last year was a big step for me as a driver - to be a professional racing driver. It has a high level of driver but also a chance to be paid to race. Becoming a world champion is what I want to do that's why I'm racing in Formula E. It would be an amazing achievement. It's a great series and I am hoping to continue in it.

[']04

THE SECOND AND THIRD CHANCES

I raced on a very small budget in Formula BMW in 2004 and won a race. The following year I joined late when a driver in the team left, and I was invited back for one race with Team SWR, run by Trevor Powell. We ran out of fuel when I was on for a podium. He felt so guilty he invited me back for the next race! The following season he had a team sponsor and his driver left after six races. I'd been at university and hadn't

Iriven anything for about six months. I went to Brands for the fourth round of 10, and won my first race back and took second in the championship.

THE CAR DEBUT

When it came to car racing, my dad said he didn't have the money so he couldn't put any into it. I completely understood. He's supported me massively through my career and I wouldn't be where I am without him. Martin set up Zip Formula, and basically wanted one of his kart drivers to step up to it. I was turning 16 before mid-season, so Martin did us a very good deal to race that. He helped me into that. That was a smaller-budget series and allowed me to race for a year.

THE FIR My parents d somebody for

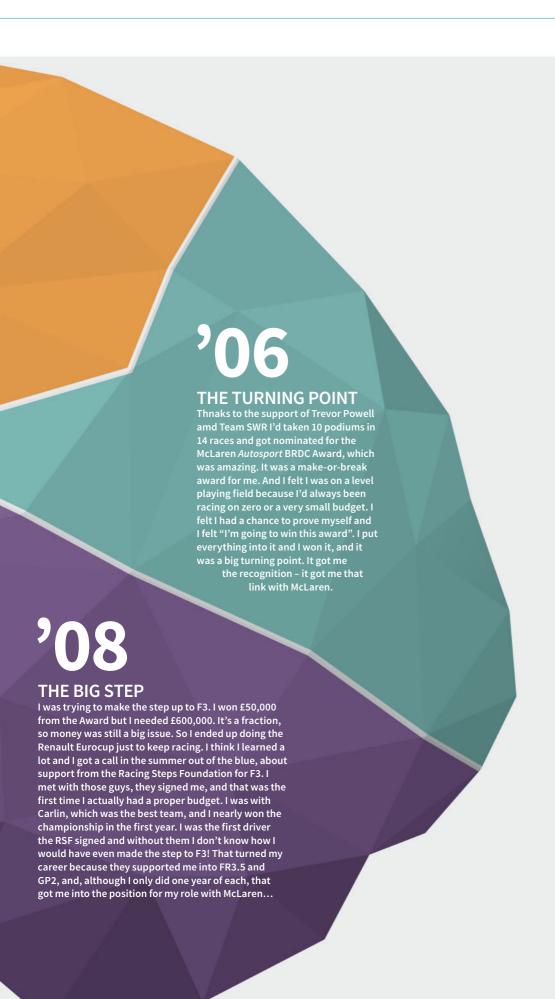
THE FIRST STEPS

My parents didn't have the money. Dad got somebody for my first year in karting, but we never bought a kart! I was supported by a lot of people in karting - the Edgar family, the same engine tuner, kart manufacturers and I was very loyal to everyone who helped me. I raced for Martin Hines in karts in the Young Guns team - he was very good to us - and I won two British championships. I never raced in Europe. I didn't have new tyres all the time - we did it on a very sensible budget.

"I'd been at university and hadn't driven anything for about six months. I went to Brands for the fourth round of 10. I won the first race back..."

Turvey on the 2006 Formula BMW season

JOURNEY'S
JOURNALEM





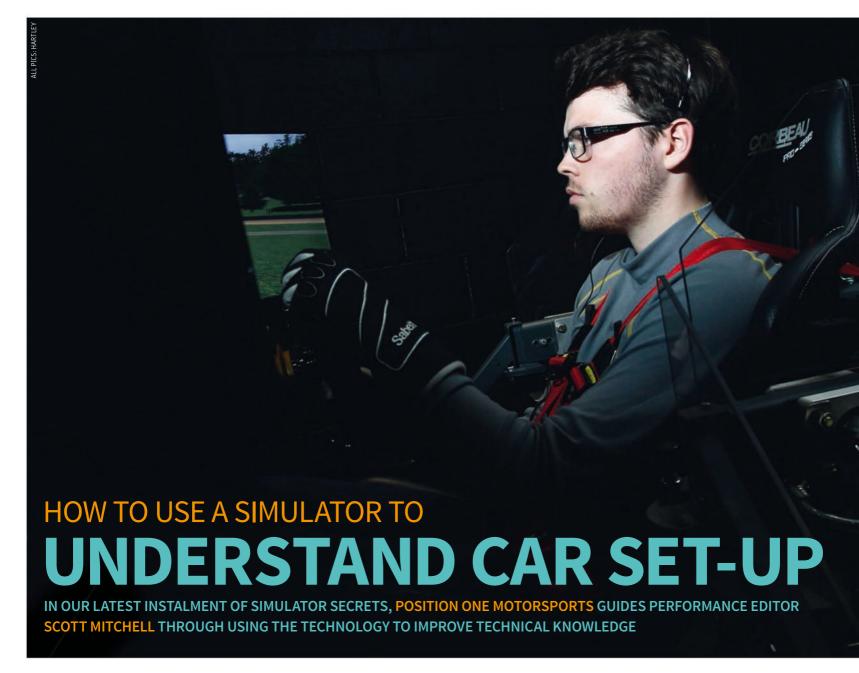
It's a specific skill and it is hard, but after some time you get used to it, and I am quite analytical in my driving and can be quite consistent. It's the way I always drive.

Certainly, McLaren were the first ones to give me an opportunity to be a professional driver. They have been very good to me, they have been loyal to me and I've been loyal to them. It's a good team to part of and I've learned a lot and hopefully they've benefited from me. We work well together, I know them very well – you learn a lot working with the engineers and drivers. The drivers have to trust what you're doing because you're doing race set-up evaluation for them. They expect you to be quick and consistent. I've always had the trust in the work I've done and that's definitely part of it. Not getting the opportunity to race in F1, I was very happy to have the chance to be a test driver for a team like McLaren.

THE FUTURE

Since I raced at Le Mans, I've wanted to race there every year. After winning LMP2 and standing on that podium, you want to make that next step and win overall. One of my targets is to do that. I'm in a good position, as test driver with McLaren-Honda and racing in Super GT with Honda, and also with the Formula E deal. If there were an opportunity to race in LMP1 you'd have to weigh up what was possible elsewhere. I wouldn't move unless it's the right opportunity. I've been racing 20 years and worked hard to get to where I am, to make a career out of my hobby, and make my way up the ladder without any money. I'm very grateful to have a career now in the sport and I want to develop it and be loyal to the people who helped me - that's what's got me where I am.

It's been really tough. There have been a number of points when I thought I wouldn't be able to keep racing -I owe a lot to a lot of people. I've had to to work hard to make the most of all the opportunities I've had. It's difficult without the money, but I'm very proud to be a professional driver and get paid to race. My calendar is pretty full-on! I love it and I wouldn't do anything else.



ny professional driver will tell you that a basic understanding of set-up is important. Not everybody will wind up in a scenario whereby they are leading the development of a car, of course, but being able to identify what your issue is behind the wheel and what options there are to help fix it will always stand you in good stead. That goes for a driver in a professional team liaising with their engineer as much as it does club racers who are literally on their own.

So, after our first trip to Position One (November 26 issue), we're back for a lesson in using simulators to help with car set-up. Once again we're in the Porsche Supercup car at Monza, so I don't waste time relearning a track/car model. Years of karting mean I have a solid base – I know what kind of vehicle dynamic suits my driving style – but set-up expands into a whole new world with cars. Looking at the programme for the day, I'm reasonably assured in what to expect from an increase in rear wing. What difference fiddling with front and rear anti-roll bars, or rear ride-height, will make is a little more daunting.

Position One chief and Gulf Racing team manager Matt Beers is overseeing this test, while Supercup frontrunner (and soon-to-be World Endurance Championship debutant) Ben Barker resumes his role as driver coach. I'm told what changes are being made beforehand, but not what to expect. My feedback comes first, then Barker explains what he experienced and, like always with these tests, equates them to reality.

The purpose of this is twofold. First, it means I have to focus more on what I'm feeling from the car – "It's quicker" or "It's slower" doesn't cut it and "It feels better" or "It feels worse" is only marginally better. Second, I will improve my understanding of how a set-up change can affect a car's behaviour, with a good point of reference for how applicable these lessons are in terms of real life. After all, what use would a simulator be if we made myriad changes that made me better virtually but wouldn't make a lick of difference in a real car?

The table of notes details the set-up changes we ran through, best laptimes and run averages, and the feedback post-session.

The main lessons seem obvious but the effect is significant. Our run plan is akin to the sort of changes that would be expected of a typical test, and in four hours (from arrival to departure, including a break for lunch!) we have 60 laps of data to hand from six significant runs. For reference, that's a larger total lap count than two

practice sessions on a Porsche Supercup weekend at Monza – and in that series you only get one anyway.

In addition to racking up mileage, we can get immediate validation of the changes from the driver's feedback and a debrief (that doesn't even need me to get out of the simulator). Plus, it's easy to equate these changes to reality with Barker on hand, so there's a warm fuzzy feeling of validation when he says: "That's the sort of thing you'd expect to find on the sim."

More importantly for a driver lacking in experience, for whom simulators offer the best opportunity to learn, it's a great way to rattle through a number of set-up changes while endeavouring to understand their impact. I'm not going to turn up at Monza anytime soon and tell Lechner Racing to bolt this set-up on and watch me take pole, but at least I know in this environment why I had much greater success after certain changes. More bite, balance and braking stability tallies with what I've always sought from a car – understeer is no friend of mine – but before this test, if you'd said to me, "Ah, so you prefer a stiffer rear end to a softer front", my response would have been as sophisticated as a blank smile.

Another conclusion drawn from this experience is based on the best laptimes in each set-up. I did not get



CHARTING CHANGES

BEN BARKER talks through how to relate set-up tweaks on the simulator to reality

The rear-wing change should lead to slightly better braking and stability. In a Cup car, the wing has little influence on performance due to the lack of general aerodynamic effect. On the a big difference, which is an

Going softer on the front anti-roll bar generally helps with front-end grip, helping you into the apex when front tyres are starting to go off apparent on sim and is close to, but not as prominent as, reality.

Reducing the rear ride 03 height induces more understeer but makes the car a little better on the brakes. Rake changes, in this case biggest change in 'feeling'. Sitting the rear lower helps with stability, but can take



the sim, I tend to feel that change so much.

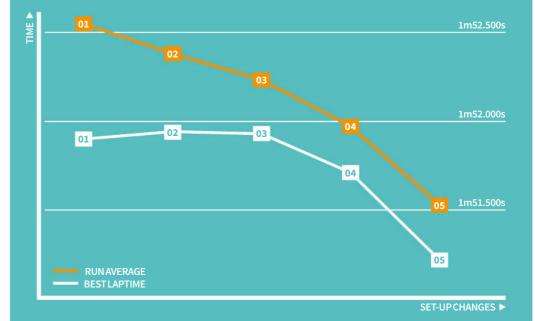
More camber on front tends to give the car using less of the tyre's contact area. The feeling is similar on the sim compared to reality.

anti-roll bar generally helps by directing more positive response to the front on change of direction. The change in feeling is fairly prominent in reality and needed mostly to take away some mid-corner is an effective change, mostly providing better front-end grip on power-down.

SELF-IMPROVEMENT

By applying each set-up change in turn, and being coached through each to help adapt driving style as appropriate, real laptime improvements are made.

EXAMPLE	SET-UP CHANGES	BEST LAPTIME	RUNAVERAGE
1	Rearwing (+2)	1m51.902s	1m52.549s
2	Front anti-roll bar (-70)	1m51.940s	1m52.381s
3	Rearride-height (-10mm)	1m51.933s	1m52.234s
4	Camber (-1.0)	1m51.716s	1m51.974s
5	Rearanti-rollbar (+70)	1m51.223s	1m51.531s

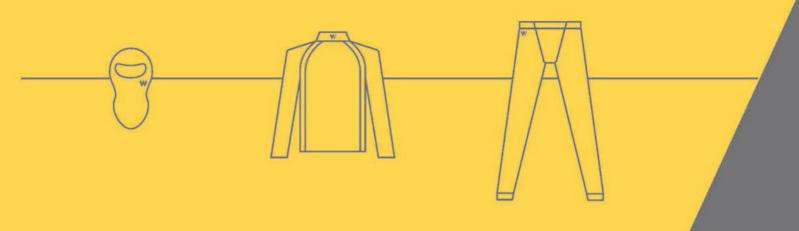


on with the understeer-inducing rear ride-height change, yet went slightly faster than before. This was thanks to Barker's in-session coaching over the radio, which helped guide me through tweaking my driving style – it was harder to get a laptime (as the drop in consistency shows!) but the ultimate pace was pretty decent. The importance of being able to adapt your driving to get the most out of a set-up that isn't perfect shouldn't be understated.

Working through the set-up changes, we keep or discard certain tweaks as appropriate. We retain the increase in rear wing and the softer front anti-roll bar. A little negative camber helps, and all that gets kicked up a notch when we stiffen the rear anti-roll bar. After small changes yield small benefits, suddenly there's a big jump in laptime gain and consistency. I like this final set-up a lot. While I'd prefer to keep pounding round and improving after finding half a second on my best lap, the test is over and the objective very much achieved.







Walero race underwear has moved the game by palpably increasing both physical comfort and helping to control body temperature.

Calum Lockie - British GT Champion, 4 x Britcar Champion

Brilliant product, I need to get some more!

Mike Wilds - 50 years in Racing World Champion and 12 x British Champion

I was very impressed with your base layers. They're extremely comfortable on the body. When you're strapped in the rally car with your race suit on, you don't actually notice you're wearing it. I'd recommend Walero to anyone looking to buy new race wear for the season ahead.

Tom Cave 2016 British Rally Championship

NASA approved temperature regulation reacts quickly to reduce perspiration by up to 30% when the heat is on, and delivers warmth when it's not. Antimicrobial technology keeps you fresh and superior tailoring helps you maintain concentration.

Introducing Walero. Race ready advanced base layers.

Get The Edge







GRAND PRIX RACEWEAR

it for purpose, or even the right fit?

GET KITTED OUT

THE RACEWEAR EMPORIUM IS THE ULTIMATE ADVICE GURU WHEN IT COMES TO PICKING THE RIGHT RACEWEAR. SO WHERE BETTER TO GO FOR SOME TIPS?

It is easier than ever to avoid trying something before you buy and resorting to a quick-and-easy online purchase. Those who do immediately overlook the value in ensuring that the racewear you need – whether it's a pair of race gloves or race boots - is both comfortable and does the job it's supposed to. Saving time or a bit of money to get the crash helmet you're looking at online delivered to your door in a couple of days is a poor trade when you're using it for the first time and realise it's a bit too tight or doesn't quite sit right.

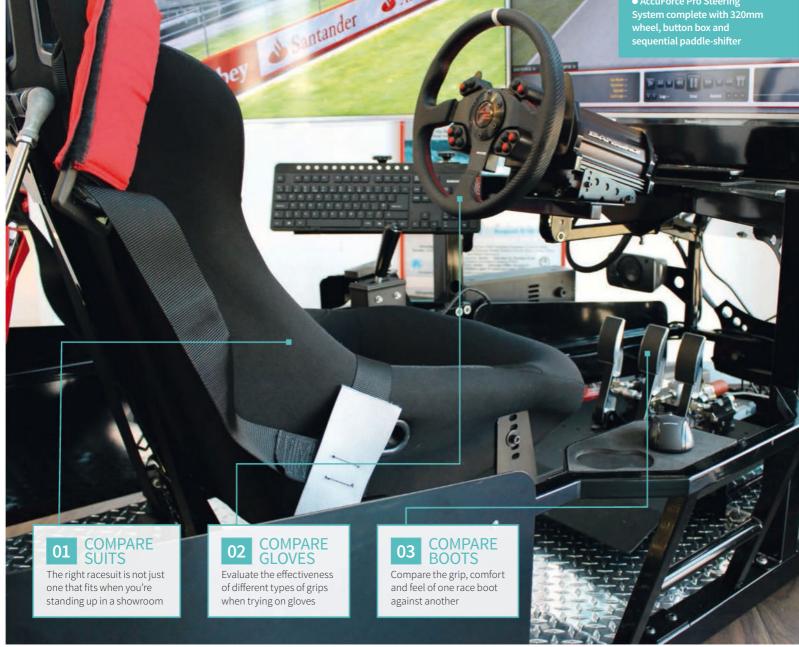
Grand Prix Racewear, the kit emporium, stands out in the internet age of window shopping and quickfire buying by combining its online directory with a very real presence at its Silverstone base. And it's not the usual try-before-you-buy experience...

Getting the right size is one thing, but even that is not as simple as throwing on a racesuit or boots and walking awkwardly around a showroom. Even tougher are more specific products such as helmets or frontal-head restraints. So GPR invested in a full-motion, triple-screen simulator to give you the chance to properly sample their wares to ensure you get the right product before you buy.

SIMULATOR STATS

Simxperience full-motion simulator with rear traction loss

- monitors with electric adjustment for monitors and pedal box
- with pedal-pressure adjustment. Throttle-travel adjustment and clutch adjustment
- SimVibe software and four for physics-based vibrations at each corner
- AccuForce Pro Steering sequential paddle-shifter



LAST CHANCE BEFORE THE SEASON STARTS

FRONTAL-HEAD RESTRAINTS

WHAT YOU NEED TO KNOW

Since the start of 2016, FHRs have become mandatory for anyone competing in stage rallying, circuit racing and sprint and hillclimb events. There are some exceptions, as below:

STAGE RALLY EVENTS

Historic CAT 1 (earlier than 1968)

CIRCUIT RACE EVENTS

Period defined (earlier than 1977)

SPRINT AND HILLCLIMB EVENTS

Roadgoing category and period defined (earlier than 1977)

FIVE KEY QUESTIONS TO ASK

- DO I NEED TO CHANGE MY HELMET?
- IS THE FHR I AM INTERESTED IN FIA-HOMOLOGATED?
- CAN I FIT HELMET-TETHER ANCHORAGES MYSELF?
- ARE THE HELMET-TETHER ANCHORS HOMOLOGATED?
- ARE THE FHR TETHERS HOMOLOGATED?



HOW GPR CAN HELP YOU

GET YOU THE RIGHT SIZE...

GPR only stocks medium and large in both the SCHROTH and Stand 21 range. Size is more about comfort than functionality. Go with the size that feels the best once in position – you could find different devices fit but only one works practically. Sizing for SCHROTH and Stand 21 designs are based on neck size or shirt-collar size - 38 to 47cm (15" to 18.5") medium and over 46cm (18"+) for large versions. GPR has never found anyone who needs a small size.



GET YOU THE RIGHT ANGLE..

There are varying angles available from 10° / 20° / 30° and 40°. As a general rule, anyone running a regular aftermarket race seat such as the Sparco PRO2000 or Corbeau Revenge would typically get a 20° angle, however, larger stature drivers may be better suited to a 30°. Single-seaters and cars such as the Radical SR3 would typically be a 30°. Some rally seats are very upright and would typically call for a 10° while anything F1 spec would almost certainly be a 40°.



GET YOU THE RIGHT FIT (AND FITTINGS)

GPR has race seats set up with harnesses to simulate the fit. That, coupled with the advice and fitting service, means you can be confident you have the right kit when the time comes to get in the car and race. If you have a helmet that is already compatible and you require HANS post anchors to be fitted to it, GPR can also supply and fit the HANS posts while you wait. And remember: there is no 'one-size-fitsall' solution to get the best-fitting HANS device.



TOP TIP VALIDITY OF PRODUCT

Seats and harnesses are 'lifed' products in terms of homologation validity periods





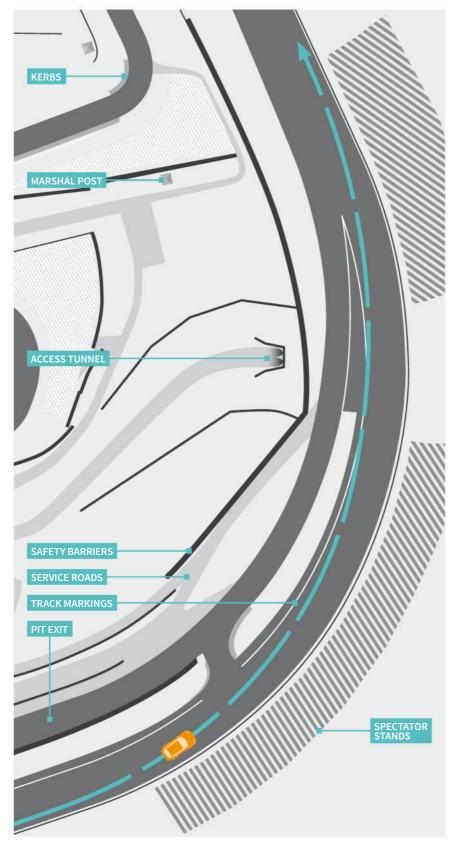
website www.gprdirect.com



ROCKINGHAM WITH OLIVER ROWLAND

THE RENAULT F1 DEVELOPMENT DRIVER HAS PLENTY OF ADVICE, THANKS TO LOTS OF COACHING AT THE CORBY VENUE





The first turn is quite easily flat, and just about flat in the wet as well. The challenge is to make sure you minimise scrubbing off speed by being careful with the steering input. In terms of positioning the car on the banking, a lot really depends on what you're comfortable with. I prefer to be reasonably low, while some drivers are more comfortable even further down on the flatter part of the track nearer the white line

DEALING WITH THE BANKING

With a maximum bank angle of seven degrees, Turn 1 - but it's enough to give you something to think about...

KEY CORNER

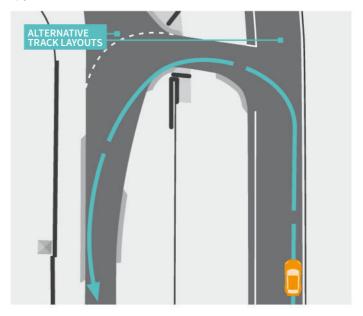
IDEENE 02 Turn 2

There are not many prominent markers for your braking, apart from a couple of 150m boards that don't stand out much from the fence. The entry is quite difficult, because you're moving down the track and braking at an angle and downhill. It's very easy to lock up. Although braking late is important, there is a dip in the corner, so you don't want to be holding the brake in the corner, as there is a lot of grip for the car to take in the middle. There is also a barrier sticking out. You're always very aware of it, so you need to build up your confidence at this corner.



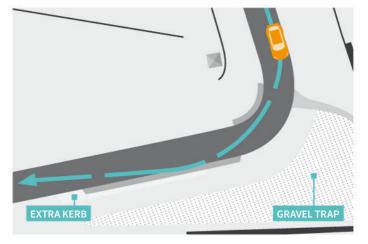
This is the best overtaking place at Rockingham. I miss the first apex and then On the exit, you really want to stay off the exit kerb because it's quite aggressive. - it's not somewhere you'd go intentionally unless you're on the limit in a

Note: A wide line can pay dividends at the start...



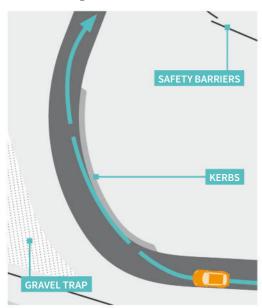
YENTWOOD 03 Turn 3

On the exit of Deene, you start moving across the track from the right to the left to get the car positioned. It's easy to be lulled into not making use of all of the track, because the edge of the track is just grass. There's not much opportunity to make up time here so you need to use all of the space. You also don't want to brake too late. Come off the brakes to get the balance in the middle. It's really important to use all of the exit. If you go only halfway out the car will bottom on the kerb, so you need to get the car all the way over.



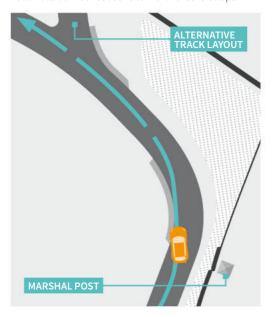
04 CHAPMAN CURVE

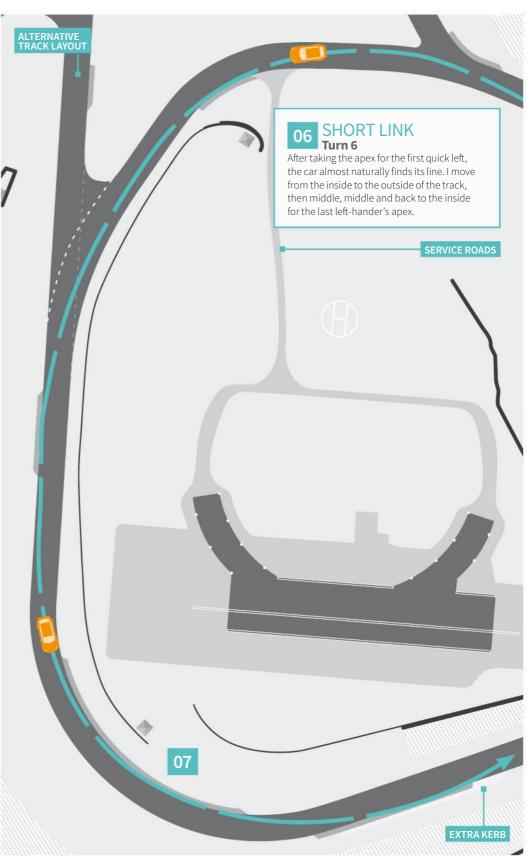
You're truly climbing up a brow now. In a light single-seater, you brake and turn in at the same time. That can bring the car on its nose as the weight comes up and over the front. To reduce this effect, bring the braking back by 10 per cent to manipulate the car's weight and get the back settled. Again, it's important to use all the track. By going right up to the edge on turn-in, moving over the last 20cm, the car will grip better. The exit of the corner prepares you for the next three lefts. But bringing the braking back 10 per cent not only helps track position on the exit, but gets the car balanced. Gains made by braking late will be outweighed by braking earlier and having the car ready for the coming lefts. By making gentler changes, you won't be at the point where all the weight has transferred over the front.



05 PIF PAF Turn 5

Speed through the Pif Paf stems from preparation in the corner before and keeping the car balanced. If you run wide, granted there's no wall, but you're going to go off at speed and have a big spin. This corner requires big balls and to do it right you have to be the bravest of the brave. I have a slight lift, and get the front-left wheel onto the apex kerb. Build confidence at this corner over several laps.





07 GRACELANDS

Gracelands comes up quite quickly. Part of the corner is blind because you're sitting low in a single-seater, so you have to be brave. There are no prizes for braking late, as you'll only lose out from upsetting the balance and losing track position. Wait when coming off the brakes, lift and let the car settle. The car will want to oversteer here. Take the apex early, and then you need to be really brave and

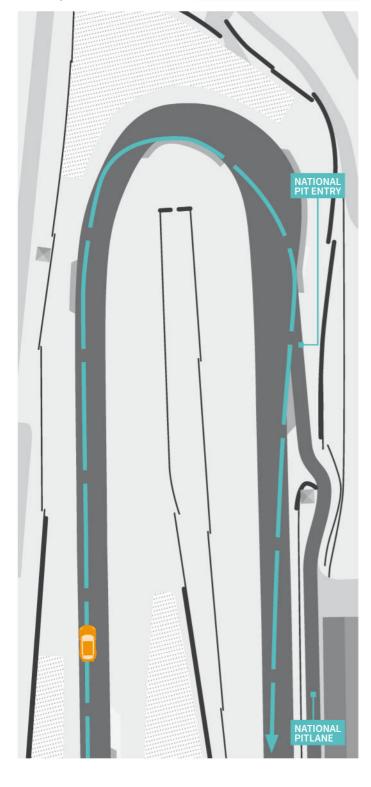
get back on full throttle as early as possible. The bravery is required on the exit. So it's a difficult balance between needing to brake late, but also keeping the car settled, and being really committed on the exit. You can't see the exit until you're half to three quarters of the way through the corner. As with Turn 3, let the car run all the way out – if you don't, the car will bottom out.

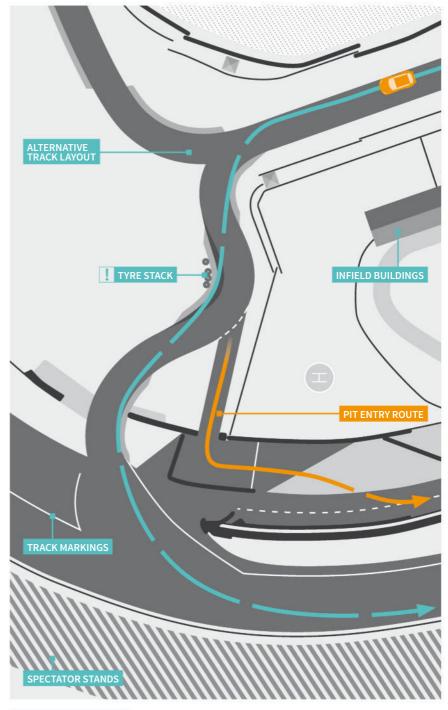
08 TARZAN Turn 9

There are numerous ways of driving it. You can turn in early but get a bad exit and compromise time there. Or take a slower entry in order to have a good exit, but you'll have lost a similar amount of time on the entry. It's important to build confidence, and it's also easy to lock up as you're turning and braking at the same time. On the exit, there is run-off and you gain a lot by using that piece of road. Your approach will determine whether you actually end up using that wide piece of road on the exit.

OVERTAKING OPPORTUNITY

Tarzan is the other overtaking point. You can divebomb people from a long way back. on the outside. It is difficult to brake hard on the outside and cover someone off. From by driving to the apex rather





KEY CORNERS

BROOK/TURN 4 Turns 10,11,12

In a single-seater, you're in fourth or fifth gear on the approach. It's one of those where, by the $time\ you\ have\ changed\ up\ to\ fifth,\ it's\ time\ to\ go$ back down again and this is a bit pointless, so you may want to hold it on the limiter in fourth. Depending on the wind and track conditions, you might want to use fifth.

It's difficult braking here, because the car feels like it wants to lock up its rears, and in the wet it's extremely difficult. The next section of three corners all go together so, again, there are different ways to negotiate them.

On the apex, you want to drive up onto the inside kerb but not onto the sausages that are there. I do that for the first two. My technique

is to compromise on the first left, then the right and then nail the final third of the chicane, which is the most important as it leads onto the pit straight.

It's difficult to manage the exit, where you're accelerating hard and turning from the flat onto the banking. It's quite an aggressive change. If you get it wrong, it's not like there's run-off you're going to bite the wall.

On the second part of the chicane, I hold the car to the right of the road, and then open it for the last third. The more powerful the car, the more challenging it would be accelerating onto the banking, as you would still be feeding in the power by the time you got up towards the wall.

PRODUCT SHOWCASE

CARTEK

CARTEK produces a range of custom-designed Power Control Panels (PCPs) as well as off-the-shelf units that are specifically designed for GT, rally and historic racing cars. These products integrate electrical power distribution and dashboard switches in one, self-contained panel. By incorporating power-switching electronics with over-current protection and intelligent functionality, these units remove the need for multiple switches, relays, fuses and circuit breakers, thereby greatly simplifying the wiring, saving weight and maximising reliability.

The fully customisable nature of these Power Control Panels allows CARTEK to configure systems to customers' exact requirements. Customers can choose the number of channels, channel functions, button colours and switch panel shape, graphics and mountings.

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- Fuel pumps (ECU control with manual override)
- Wiper motor with park-signal input
- Status LED for each channel
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FOR MORE INFORMATION AND PRICES PLEASE GO TO

www.cartekmotorsport.com

KEY INFORMATION

- Fully electronic with no moving parts
- Replaces multiple switches, fuses, relays and circuit-breakers
- Any number of channels, maximum 16





WALERO

We have hit the ground running in 2016 with the announcement that we have signed a merchandising and distribution-rights agreement with Corbeau Seats for online and in-store purchase in the UK. Corbeau is a well-established and respected name in motorsport, having been producing high-quality race seats for over 50 years, so we are in good hands.

The Autosport International show at the NEC in Birmingham proved to be a great success. It gave us the opportunity to meet new customers and to promote our brand. We were delighted to welcome our ambassadors Calum Lockie, Mike Wilds, Ben Barker and Lewis Plato onto our stand to discuss the benefits of the Walero range and to meet many of their fans who had come along to support them.

As we head towards the racing season, our ambassador Lewis Plato has announced that he will contest the Porsche Carrera Cup GB Championship, and Ben Barker will be joining the Gulf Racing World Endurance Championship team. It goes without saying that we wish them a safe and successful year.

development and promoting our brand and we look forward to announcing our international ambassadors

For us, we are committed to our ongoing product



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VALETPRO

ValetPRO has launched its first paint cleaner, Purple Passion, a gloss-enhancing cleanser that's been over a year in development and the first ever offered by the British firm.

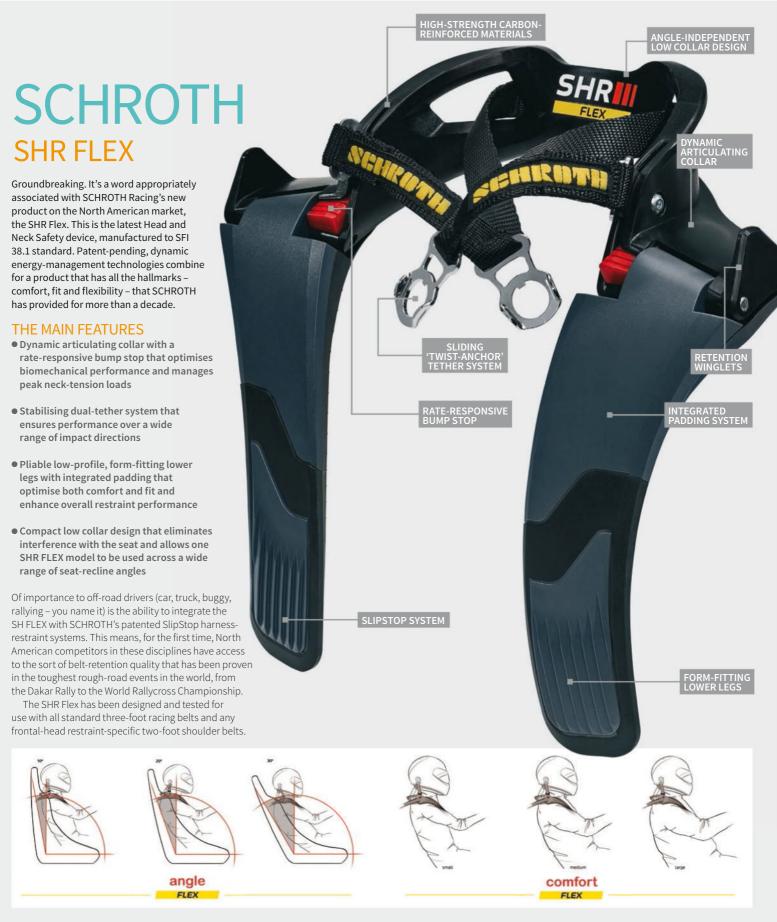
Purple Passion is a 'preparation' product, to be used prior to waxing with either a dual or rotary-action polisher or by hand. Once applied, the purple, cream-based cleanser removes light marring and oxidisation from all painted surfaces in addition to removing contaminants such as tar spots, rubber from tyres and bonded dirt, which are not cleaned off during the normal washing process.

It contains Carnauba wax, whose gloss-amplifying properties ensure that paintwork has genuine depth and 'pops' in natural light. It also provides the perfect canvas for applying a durable car wax. In fact, Purple Passion greatly improves the bonding surface of painted surfaces so protective wax coatings can last longer.

PRICE: £12.99



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ONE-HIT WONDER

CLUB RACING AT COMBE

THE WILTSHIRE VENUE, ONE OF THE UK NATIONAL SCENE'S **FAVOURITES. BOASTS ENGLAND'S ONLY SINGLE-CIRCUIT** CHAMPIONSHIPS AND OFFERS CLOSE, AFFORDABLE RACING

f you've ever done any karting, you'll know there is a wealth of club racing on offer. The same is true in car racing, but not in quite the same way. The UK's national scene is vibrant and varied but, as a general rule, is based around multi-venue championships. Castle Combe is England's exception, much like the main venues of the other home nations (for example, Knockhill in Scotland).

One-club racing might seem limiting at first glance but

there's much more than meets the eye. Combe describes its home championships - catering for Formula Ford 1600, GTs, Saloons and Sports Racing Series – as "an ideal opportunity to learn race-meeting etiquette and hone racecraft". It's difficult to disagree. Combe is a great place for people with not a lot of budget to learn the ropes in Kents, or Volkswagen Golfs, or a self-built sports prototype. It's cool club racing at an ace circuit, up against very good opposition – a natural consequence for one-circuit drivers is they become

specialists. In FF1600, the top National championship drivers struggled to crack the expertise of the Combe regulars when the series descended upon Wiltshire last year.

Aside from the racing benefits of competing at one venue, there are operational and logistical advantages, namely reducing the cost of transportation and keeping testing to a minimum. Consistency tends to breed stronger grids too when drivers know what they are getting.



FORMULA FORD 1600

ABOUT Caters for four classes of Kent-engined machinery – Post-'95; '90-'95; Pre-'90 and Pre-'82.

COSTS No championship registration fee. Entry for normal championship rounds is £230, the televised Motors TV Raceday meeting is £240 and the August Bank Holiday double-header £345.

ROUNDS Eight across seven meetings (worst dropped from final score)

RACES 15 laps MSA LICENCE TYPE National B





ABOUT Three classes, which in turn have sub-divisions. The fastest class caters for Special Saloons, Sports, GTs, Touring, GT4 cars and Silhouettes, while the likes of Caterhams, Westfields and similar kit car derivatives compete unless they have a 'bike engine. The next class is for Modified Saloon, Sports, GTs and Touring Cars originally built for road use, with the engine (which may be modified), gearbox and drivetrain in their original locations. Engines must be based on that of the original road car, but may be modified. Bikeengined cars compete in their own class irrespective of make, model or engine size.

COSTS No championship registration fee. Entry for normal rounds is £230, the televised Motors TV Raceday meeting is £240 and the August Bank Holiday doubleheader is £345.

ROUNDS Eight across seven meetings RACES 15 laps **MSA LICENCE TYPE** National B

SALOONS

ABOUT Eligible for two-wheeldrive production saloons from the 21st century and split into four classes based on engine capacity. It will feature a non-championship away round at Donington Park this year.

COSTS No championship registration fee. Entry for normal rounds is £230, the televised Motors TV Raceday meeting is £240 and the August Bank Holiday double-header is £345.

ROUNDS Eight across seven meetings RACES 15 laps

MSA LICENCE TYPE National B



SPORTS RACING SERIES

ABOUT Exclusively for Sports Racing Cars and Sports Prototypes, for example Radicals, Lolas and Jades. There are three classes: over two-litre; 1401cc-2000cc; and up to 1400cc.

COSTS No championship registration fee as it's a series. Three doubleheaders (including the August Bank Holiday meeting) at £345, and two £230 single-race meetings.

ROUNDS Eight across five meetings RACES 20 minutes MSA LICENCE TYPE National B





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