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**“Let me say just one thing: they hurt me and, moreover, it was unnecessary”**

**JAIME ALGUERSUARI IS STILL SMARTING OVER BEING DROPPED BY RED BULL/TORO ROSSO - ESPECIALLY AS HE'D ALREADY TURNED DOWN ANOTHER DRIVE**

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As we went to press, this was the projected minimum temperature for Karlstad during this week's Swedish Rally. Brrrrrr!

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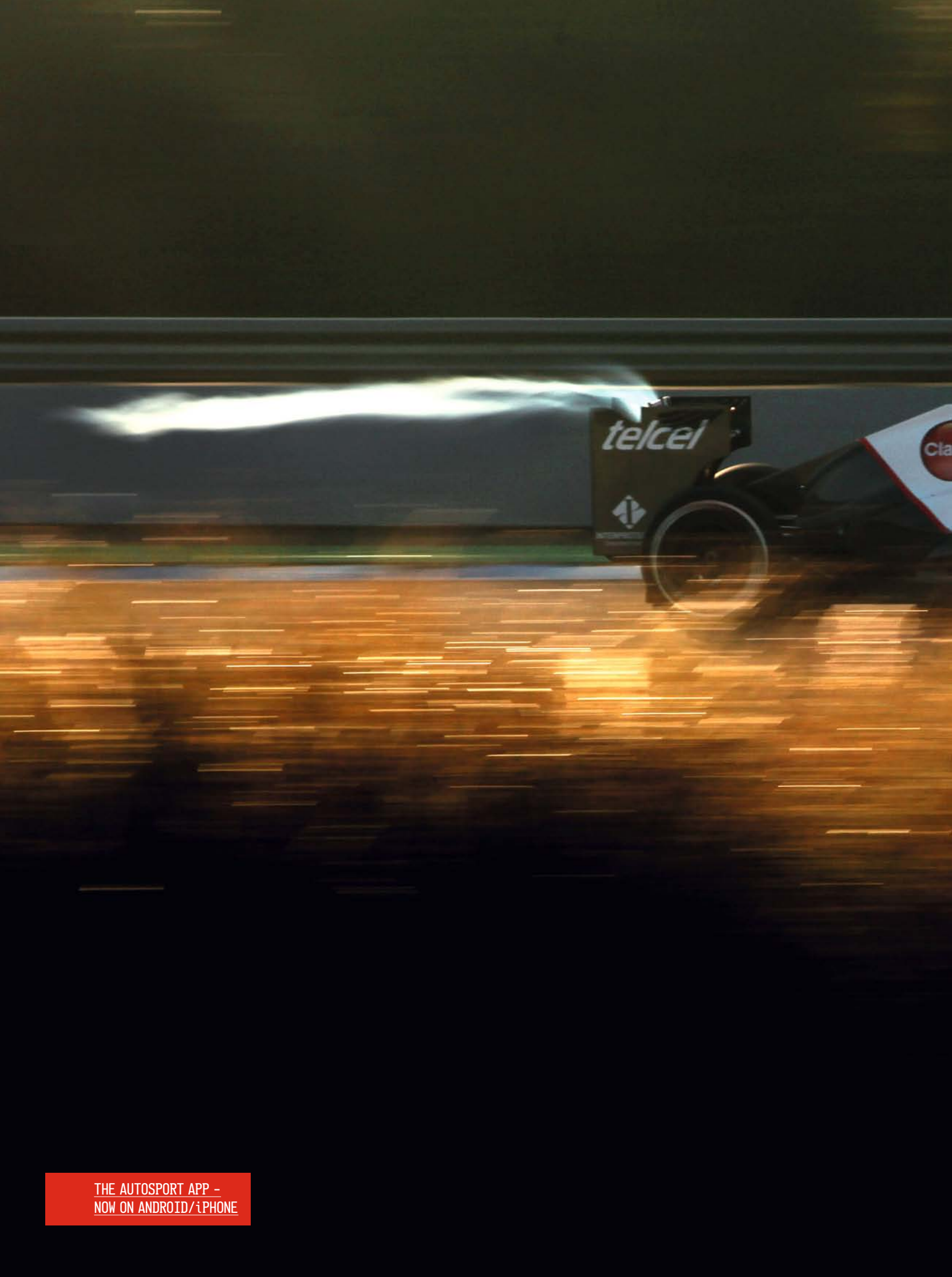
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**F1**

### Sauber blazes a trail in Spanish winter sun

Sauber unveiled its black-and-white C31 at Jerez earlier this week and Kamui Kobayashi immediately got down to business in the Ferrari-powered machine that he and team-mate Sergio Perez hope will give the Swiss team a shot at midfield glory. For details of the first nine F1 launches of the winter turn to page 8.

Pic: Hone/LAT



New Red Bull was the last car to hit the track



First public showing of the 2012 Caterham



Massa started work in radical Ferrari



Raikkonen led the early going at Jerez

# F1 teams set for exhaust rumpus

FIA directive ripe for interpretation war as tech boffins limber up to push the boundaries. By EDD STRAW

Leading Formula 1 teams are to probe the limits of what is permitted under new exhaust regulations, potentially escalating a simmering rules row.

The rules governing the position of the exit of the tailpipes are tightly worded, but FIA technical delegate Charlie Whiting has seen fit to issue a directive stating that any parts designed to appropriate exhaust gases for primarily aerodynamic purposes will not be permitted. This could include wing

profiles or cones designed to suck in the exhaust gases as they exit the tailpipes and feed them elsewhere.

But with such a technical directive being a matter of interpretation, it is expected that some teams will push the limits of what is legal over the coming month of testing – without violating the letter of the technical regulations.

Lotus technical director James Allison told AUTOSPORT: “The dilemma for us is that there is an element of subjectivity in the

exhaust rules. You could draw up a car to the rule that would produce a geometry that Charlie would find unsatisfactory, because you would clearly be using the exhaust for generating the downforce in an overt way. He has made it clear that he doesn't want to see that happen.

“This leaves everyone with a dilemma. I'm sure that there will be a range of interpretations as to where that line of acceptability is and a bit of argy-bargy. The teams will be jostling to test Charlie's limit.”

Most teams are expected to wait until the later test sessions before they run their more-aggressive designs, which would use the same exhaust systems but different aerodynamic parts, in the hope that they can continue to use them in the early races of the season. While such concepts will not be able to give the same downforce benefit as last year's exhaust-blown diffusers, they could offer a significant improvement in laptime.

Red Bull technical chief Adrian

2012 LAUNCH SPECIAL

Our in-depth launch coverage starts on P10



Red Bull P10



Williams P14



Caterham P18



Williams broke cover as testing started



Di Resta kicked test off for Force India



STR plans aggressive development in tests



Kobayashi got first taste of new Sauber

McLaren is only car without step nose



**AUTOSPORT SAYS...**

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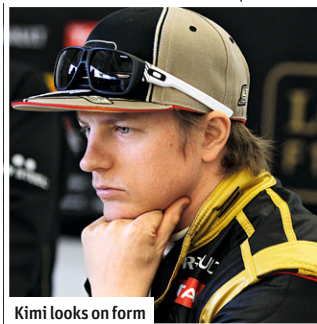
**W**hen the new-look 2012 Formula 1 cars first broke cover, it was the unsightly 'platypus' noses that attracted the most attention. Having seen the cars up close from trackside, it's surprisingly easy to get used to this most unusual silhouette to the point where some of the cars actually look pretty striking. Chances are, given a few hours of watching on television, most people are going to feel the same to the point where the McLaren is the one that jarring!

Drawing conclusions from testing – beyond those merely aesthetic – is notoriously dangerous, but from the early running at Jerez several things were clear. Firstly, Kimi Raikkonen is still quick. He was clearly leaning on the car from early on and was easily the most exciting driver to watch during the first day, showing that he was eager to get on with it, despite the main priority of his programme being data collection and validation.

That doesn't mean that the Lotus/Raikkonen combination is necessarily going to be winning races, merely that the Finn was on it immediately and looks like he means business. That's good news for F1.

Secondly, there is still a little room for innovation even within the tight confines of the F1 rulebook. While the use of exhaust gases won't be anywhere near as big an advantage as it was with a fully-optimised blown diffuser, there is still something to be gained there.

Inevitably, that means it's a big talking point... as well as a trigger for plenty of arguments.



Kimi looks on form

**"There will be a bit of argy-bargy. The teams will jostle to test the limit"**  
Lotus's James Allison

Newey downplayed the possibility of teams probing the limits. "There's always a chance that somebody will come up with something that is right on the border and will be subject to interpretation," he said.

It is believed that a number of potential design concepts have been submitted to Whiting for approval, with several then rejected. When such designs are rejected, they are usually submitted to all teams. It is understood that among those possibilities are a design that

uses rear brake ducts to channel the exhaust gases.

Whiting was expected to attend the latter stages of this week's Jerez test as AUTOSPORT closed for press.

But with most teams having various versions of their exhaust and aero packages available, even if all cars are given the all-clear there is no guarantee that a rules row will not flare up in the build-up to the season-opening Australian Grand Prix on March 18.

**DAY 1 TEST TIMES**

1	Kimi Raikkonen	Lotus	1m19.670s
2	Paul di Resta	Force India	1m19.772s
3	Nico Rosberg	Mercedes*	1m20.219s
4	Mark Webber	Red Bull	1m20.496s
5	Daniel Ricciardo	Toro Rosso	1m20.694s
6	Michael Schumacher	Mercedes*	1m20.794s
7	Kamui Kobayashi	Sauber	1m21.353s
8	Jenson Button	McLaren	1m21.530s
9	Felipe Massa	Ferrari	1m22.815s
10	Heikki Kovalainen	Caterham	1m23.178s
11	Pastor Maldonado	Williams	1m23.371s
12	Pedro de la Rosa	HRT*	1m23.676s

\* 2011 car



Toro Rosso P22



Lotus P24



Force India P28



Sauber P32



McLaren P34



Ferrari P42

# Champion's challenger: the car they're all chasing

## RED BULL-RENAULT RB8



**GARY ANDERSON:** This is the standard bearer against which everyone will be judging themselves, the million-dollar question being: 'have we done enough?' When the regulations stay more or less the same, the biggest decision for even a winning team is: do you build an evolution of last year's car with all the shortcomings addressed or do you start with a clean sheet of paper and risk making a few different mistakes along the way?

I'd suggest that Red Bull has done a bit of both. The packaging of the car looks just that little bit more restrictive, allowing them to bring the Coke-bottle area in earlier, moving the largest cross sectional area of the car further forward. This will encourage better airflow between the rear wheels, which will help the performance of the diffuser, rear wing and beam wing.

### FRONT WING

This is one of the most complex designs in the pitlane, with the raised sections where the downforce-producing components meet the central, FIA-defined area. Along with the raised area just before the endplates, both of these curved sections induce a vortex, the inboard one going through to the underfloor and the outboard one going inside the front tyre. Both these help the overall performance of the underfloor.

### NOSE

The nose detail is the area that has had most attention, and rightly so. It has introduced its own version of the 'Ugly Duckling': where the nose joins the chassis section, it has a horizontal duct that possibly feeds part of the car that needs cooling, perhaps the KERS battery pack. But even more exciting would be another version of the f-duct – perhaps like the front wing that Mercedes tried last year? Ask anyone at Red Bull and they will say it's for driver cooling. Yeah, right! Wonder what they will do when it rains? This duct eliminates the step that we have seen on the Ferrari and, if it's a successful concept, other teams will struggle to introduce anything like it this year.



### REAR END

The rear section of the car is very well detailed where the suspension legs come through the bodywork, and the packaging around the gearbox is, to say the least, compact. All this helps improve the airflow through the rear section, improving the efficiency of the rear downforce-producing components and reducing the car's overall drag – basically a win-win situation. The exhaust outlet is in a fairly basic position; it looks like it's blowing at the underside of the lower beam wing, I don't really see it doing any harm in this area. Then again, last year was about making it work for you, so I'd have expected something a little more controversial from a team like Red Bull.



### TURNING VANE

Under the sides of the chassis, behind the front wheels, there is a large turning vane or forward bargeboard. This is there to help scavenge the airflow out from underneath the front section of the chassis and the more efficiently this can be done the more effective the front-wing performance will be. It will also help to induce better airflow to the leading edge of the sidepod.

### CONCLUSION

Has it done enough? Only time will tell. In reality, its main challengers from last season – McLaren and Ferrari – have been playing silly buggers with their press-release cars, so it's been difficult to get a true picture of where they stand. However, some of the smaller teams look like they have done a good job, and Mercedes has still to show us its creation, so Red Bull's competition may just come from a bigger group of cars than last season.

# Newey's secret vision

Everyone knows that Red Bull's Adrian Newey is an F1 design master, but there's more to his success than being a great aerodynamicist, as *EDD STRAW* explains

It's a Formula 1 cliché to call Adrian Newey a genius. In a way, the word misses the point. Genius suggests some effortless, inherent ability that has produced a quarter-of-a-century of groundbreaking grand prix cars. The Red Bull RB8 is the latest product of his 'genius' but frankly Newey's brilliance doesn't simply lie in being a great aerodynamicist. He is clearly that, but what he has achieved at Red Bull shows that there is far more to its chief technical officer than that. He is a visionary, but not just when it comes to airflow over a racing car.

To understand the real reason why Newey has become one of the most influential car designers in motor racing history, you have to look back at his early days. When he was at Southampton University, his thesis was on the subject of ground effects and when he made his first step into Formula 1, with the Fittipaldi team in 1980, it was as an aerodynamicist. This was a very calculated move. He already had a keen interest in racing cars and a

desire to work in F1, but remarkably he had recognised that aerodynamics were becoming increasingly influential in a car's performance. To him, the current state of F1, where aero is everything, was foreseeable. His aerodynamic brilliance is rooted in realising that before he even worked in the sport.

After his brief stint with Fittipaldi, it was a while before he was able to return firmly to the realm of aerodynamics, but he proved that he had a firm grasp of every aspect of engineering. He race-engineered Johnny Cecotto to European F2 wins and the likes of Mario Andretti in IndyCars before March made the remarkably far-sighted decision to appoint him as technical director of its revived F1 team ahead of 1988.

There he began work on the groundbreaking aero concept that would lay the foundations for the all-conquering Williams machinery of the 1990s. Drivers Ivan Capelli and Mauricio Gugelmin regularly complained of a lack of space in the cockpit, another sign that Newey

"In a paternal way I would like to see this team continue to have success in the future"

**Adrian Newey**

considered all other factors subordinate to the performance gains to be had from aerodynamics.

He has described winning the championship with Red Bull as the culmination of what he started during those days at March/Leyton House, where his cars came very close to winning a grand prix against the might of McLaren and Ferrari, and that played a huge part in him taking on the challenge of joining Red Bull in its early days. Red Bull is his baby and that's why no matter how much money Ferrari waves at him, he's hardly likely

Webber puts RB8 through its early paces at Jerez



Newey cut his F1 teeth with effective 1988 March



## NEWHEY'S FORMULA 1 TIMELINE

For a quarter of a century, Adrian Newey has been at the forefront of F1 design. Here are some of his landmark cars:

**MARCH 881** The car that started the Newey ball rolling, the ground-breaking aerodynamic packaging of the 881 allowed March to be the fastest normally-aspirated outfit at times during 1988.

**WILLIAMS FW14** The Williams FW14, which made its debut in 1991, was the culmination of Newey's Leyton House/March aero concept. It became the all-conquering FW14B in 1992.

**WILLIAMS FW15C (BELOW)** The peak of the technological era in F1 that Alain Prost used to canter to the title in 1993. Active-ride platform and Newey's refined aero concept gave it a big edge.



**McLAREN MP4-13 (BELOW)** Amid a major rule change, Newey laid the template for 1998's F1 cars with the narrow-track MP4-13 that won both the drivers' and constructors' crowns.



**RED BULL RB5** Only the double diffuser harnessed by Brawn, which Newey maintains should have been illegal, prevented this car from winning the title. Set the tone for current aero thinking.



**RED BULL RB7 (ABOVE)** Only missed out on one pole position and dominated the championship after raising the aerodynamic stakes to a new level during 2011.

to up sticks to Maranello.

So that brings us to the Red Bull RB8. Newey describes it as the fourth generation of 2009's RB5 – the “great grandson” of the car that made the team into a winner in Formula 1. It's inconceivable that the RB8 will not deliver victories, even if last year's dominance will be difficult to match.

Inevitably, Newey sees Red Bull as an ongoing work in progress and will not be satisfied until everything is perfect.

“It is still a relatively young team and it has come a long way in a very short period,” he says. “We had a great deal of success over the past two or three years but we still occasionally show our youth. We still occasionally make mistakes, which hopefully is like the swan that looks graceful on top but with a lot of action going on underneath.”

The team has been created in his image and, once again, his ability to see the long-term direction of the sport has allowed him to create an outfit capable of designing and validating upgrades that, by and

large, work just as the team expects them to when bolted onto the car. In an era defined by minimal testing, that is vital prerequisite. It's a strategy that team such as Ferrari and Williams are still cottoning on to.

Of course, the true validation of Newey's genius will be if the team can continue to thrive once he is no longer involved. That day will surely come – he has always said that he wants to spend at least some of his professional career outside F1. If Red Bull can continue to be a force in grand prix racing once he walks away, that would be the ultimate triumph.

“I'm very proud of what we have achieved with this team,” says Newey. “In a paternal way, I would like to see it continue to have that success in the future.”

It's often said there are no magic bullets in F1. To describe Newey as a genius who guarantees victories is to vastly underestimate his talents. When he has the metaphorical gun in his hand, he makes the gun, not the bullet, do the work. ☺

# A car that *must* turn around Williams' faded fortunes

## WILLIAMS-RENAULT FW34



### GARY ANDERSON:

Williams is a team that's probably under more pressure than anyone else and it needs to show a step change in its performance

from the first grand prix. The team is now using the Renault engine so as one part of the jigsaw that should be positive, the rest is then down to the new technical structure and how it all knits together.



### SUSPENSION

The front suspension is fairly conventional, with an upper and lower wishbone and track. With a pushrod-operated suspension system, the link angles will be set to help re-align the airflow coming off the front wing trailing edge to optimise it for the underfloor.

### NOSE STEP

The nose-to-chassis detail is very similar to Ferrari's in that it's just a step. Because of the very high front to the nose, the car has long wing-mounting pillars, which are mounted well back on the wing profile and have a very long chord section acting like a flow-straightener for the air going under the front of the chassis. The front wing itself is a three-element component plus a few other bits and pieces. While most teams are trying to induce a powerful vortex at the inner end of the front-wing flaps, Williams doesn't seem to be heading that way. This vortex is very important for getting the maximum performance from the underfloor and without it I think the car will be short of overall downforce. The wing endplate detail and the raised section on the outboard end of the wing main plane are there to help with turning the airflow around the outer side of the front tyre – any flow going inside the tyre needs to be as clean as possible. Turbulent flow going into the underfloor is bad for performance.



### EXHAUST AND DIFFUSER OUTLETS

The exhaust outlets are neatly tucked into the top profile of the sidepods and appear to be pointing at the rear beam wing. Getting this flow correct will help the beam wing's performance. But, as the outlets are so far forward the gain will be minimal. The diffuser is fairly simple in that it just meets the regulation requirements. The trailing-edge gurney flap runs along most of the trailing edge, which helps the performance of the underfloor by making the diffuser think the trailing edge is higher. The large section between the inner splitters could be suspect to airflow separation and if this happens it will affect a large percentage of the diffuser's performance, making the car nervous in fast corners. I imagine the rear wing will be one of last year's components and I'm sure we'll see many developments in this area as teams discover the handling characteristics of their new toys.



### SIDEPODS

The front outer corner of the sidepod has a reasonably deep undercut. The vertical turning vanes in this area are there to help the flow around the corner of the sidepod and reduce any separation. They also reduce the effect the turbulent airflow behind the front tyre has on the underfloor. The bargeboards in this area are there to help scavenge the airflow from underneath the front of the chassis. If working correctly, these can be very powerful and improve the performance of the underfloor. The sidepods and Coke bottle are very neat and tidy. By the look of the driveshaft angles, Williams has retained its very small and low gearbox concept from 2011, which incorporates the now customary pullrod rear suspension. Looking at the suspension linkage, it appears to have a very high percentage of anti-lift to help control the car under braking.



Gillan knows it's laptimes and points that truly count

# Planning Williams' revival

After the lows of 2011, the new Williams-Renault FW34 is the product of a new technical team. Chief operations engineer Mark Gillan speaks to *EDD STRAW*

**Last year was all about analysing the team's problems and starting to solve them. Can we consider the performance of the FW34 to be the barometer of that process?**

There is only one metric that counts and that's how many points you've got at the end of the season. It's not a light-switch that you turn on, it's a lengthy process. I want to see continuous improvement throughout the season and points are a fair barometer of the impact of the changes.

**This is not just about the design of the car, but also about the development strategy, isn't it?**

Exactly. Last year, we tended to attack it with lots of parts, some of them not hugely different, so we were struggling to see the impact at the track. This year, we have a very different process in terms of update packages so that the impact is bigger.

**This is a time of year where people talk about objectives. Where do you want this team to be on and off track**

**at the end of this season?**

It's simple. We need to show continuous improvement through the season. We aim to be getting into Q3 and finishing in the points and showing clear, continuous progression through the season. This is not just in points terms, but on the race team side how we deal with the factory. It's improving through the season, scoring points and getting into Q3.

**What were the key weaknesses of the 2011 car that you've addressed?**

Generally, almost all areas had to be improved. The car was reasonably heavy, we had reliability issues, we had parts consistency problems, and things such as the increased cooling in the hotter climates that led to a reasonable amount of aero performance degradation. These are areas that we have aimed to improve.

**The exhaust-blown diffuser was a weakness for Williams, partly because of the Cosworth engines you were running. Is the ban a bit**

**of an advantage for you?**

It wasn't solely down to the engine supplier. We were late to the party in terms of blowing, so some of that lies at our feet. You never lose the knowledge that you gain, so it was very important that we got on top of it and understood it, which we did. It was a key learning process to understand the limitations of the current regulations and how to implement any workarounds.

**Is there a wider benefit to the switch to Renault powerplants than just having a better engine?**

It's a championship-winning powerplant and gives us quite a bit more flexibility, particularly on things like the running temperatures for the water and the oil and also the mapping capabilities. That's in addition to very low degradation across the engine's life in terms of power. It gives us more flexibility in the operation of the car and the aerodynamic packaging of the bodywork.

**What approach did you take to gearbox and KERS designs?**

Both the gearbox and the KERS are evolutions of last year's [Williams-designed systems]. The aim there is to ensure performance and reliability. We struggled with car reliability at the start of last year and that is something we were very keen to get on top of. We have done a lot of endurance running on the dyno ahead of the running at the track. The KERS is our system but we've shared as much information as Renault requires and we listen to any feedback that comes our way.

**Pastor Maldonado and Bruno Senna are good drivers, but they are relatively inexperienced so that has to be considered a weakness. What effect does that have on the way you work?**

With three [including reserve driver Valtteri Bottas] reasonably inexperienced drivers, we are making better use of the simulator, particularly moving towards understanding new circuits and how to best optimise the car. From my side, we are aiming to integrate the drivers more fully into the team and make sure that we work closer through the season and bring them into the design optimisation process.

**After all the changes, is this a year of consolidation and validation to ensure you have a platform to get the team back to the front?**

It's very exciting times in terms of rebuilding the team. We want to be in a strong position when the regulations change in 2014. So for that, 2012 is a critical year. ❄

Williams needs to avoid falling any further back



PICS: DUNBAR; HONE/LAT; GILHAM/GETTY

# Now it's time to get *really* serious

## CATERHAM-RENAULT CT01



**GARY ANDERSON:** When does a new team become a resident team? I think it's in year three, because in year one you're getting the organisation all set up, in year two you're a bit shell-shocked by the amount of work involved in running the team at the races and designing a new car for the season ahead, and then in year three you should have everything under a bit more control. This is year three for the newly-named Caterham team and I would say it's a season when it needs to move forward. Technical director Mark Smith is one of the best in the business, and he is a very well organised and highly-experienced engineer. Under his watch the team is capable of producing a very good car.



### REAR END

Caterham is using the Renault engine and 2011 Red Bull gearbox package and that, together with the Red Bull/Renault KERS, makes up a large percentage of the car. It will also define the layout of things such as rear suspension. Having this package from a championship-winning car is a major coup as it will allow the team to focus on the aerodynamic packaging.



### SIDEPODS

The sidepods drop away nicely from the leading-edge area into a neat, simple Coke-bottle area. All this looks quite efficient, and the exhaust outlet is quite well forward in the area that is defined by the FIA. But I'm not sure how they get away with the cooling-exit louvres that are covering the tailpipe. Perhaps there's a piece of bodywork under the tailpipe to make this comply with the regulations.

### NOSE STEP

When we first saw the pictures of the Caterham it was very quickly classified as an ugly duckling, but as other cars have come out it has grown on me. The nose meets the regulations and, with the central blend between the raised outer sections, it's not so bad (although that doesn't mean it's nice!). The front wing is fairly simple and by no means has the complex flow structures that we are seeing on other cars. The endplates mainly consist of a large turning vane without any slot gaps, and I think this shows this area is not working as hard as on some other cars. I'm sure we'll see development in this bolt-on area.



### CONCLUSION

Whether this car will move Caterham into the midfield, or just close the gap, we will only know when we get to the Australian Grand Prix. I'm sure there will be many late nights during testing and a bit of head-scratching going on, but it does look better than last year's package. Having said that, I would say that the team needs to push the limits a bit further everywhere if it's to get the performance needed to score points on merit – that is, without relying on freak conditions or problems for other cars.

# Time to become a midfield general

Beating Marussia and HRT will not be enough for Caterham as it enters its third year. Instead, the focus is on the rebranded team's graduation into the Q2 midfield pack. Is it realistic? *By EDD STRAW*

**Y**ou don't enjoy new-boy privileges for long. Caterham (nee Lotus) is now in its third year in Formula 1 and it's time to start getting results. Last year it flirted with the back of the midfield; this year there's no excuse not to be in the thick of the fight.

Chief technical officer Mike Gascoyne certainly sees it that way, because two key weaknesses have been wiped out. Caterham is no longer KERS-less, courtesy of a Red Bull 2012 unit, while the effective banishment of exhaust-blown diffusers has eliminated that disadvantage.

"That's a fair comment," says Gascoyne when it's put to him that those changes should guarantee Caterham is in the midfield – provided its Renault-engined CT01 design hasn't gone seriously awry. "If you take into account the diffuser and KERS, that would put you very much in that midfield group and that's where we want to be.

"In Brazil at the end of last year, Heikki Kovalainen made a cracking start and was up to 13th but in the next five laps they just pressed the KERS and drove past him out of the last corner. Once they did that, he was as fast as them. By the end of last year, we had reached the point where KERS was becoming essential."

This is no empty excuse. When the team made its debut in 2010, it was whole seconds off the midfield pack. By the end of last year, the single-lap speed deficit was measured in a decreasing number of tenths and the lack of KERS represented an ever-larger proportion of that disadvantage. This hurt in

qualifying in particular, where you get a double bite of the extra 80 horses by using it to get up to speed on the run to the line at the start of the lap.

So there's a very good reason why this season has to be considered a watershed in the team's aspirations to become a big player. While in 2011 it couldn't deliver the anticipated success, crucially it did secure 10th in the constructors' championship. Harnessed with the same result a year earlier, this qualified it for 'historic' money and a total windfall worth over £16 million. But while the balance sheet was delighted, the lack of a point – or visit to Q2 on merit – hurt.

Perhaps the reality of just how big a task it is to build up a grand prix team from scratch didn't hit home until 2011. Certainly, the lesson of managing expectations has been learned.

"The aim is to score points and race with the bottom half of the grid," says Gascoyne. "We've got to be picking off people regularly and getting into Q2."

So what has changed that makes last year's optimism this year's realism?

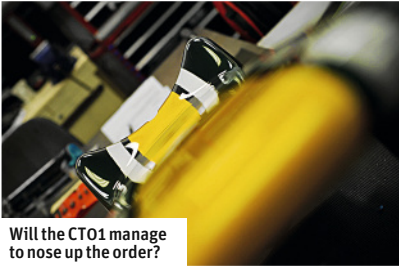
Firstly, Caterham is now in the second year of a car-development cycle. Its 2010 machine was mainly a focal point around which to construct the team. Its all-new successor was conceived as the basis for development for the rest of the current rules era, and the car now embarking on its test campaign is the second phase of that process.

The design team has also been bolstered. Long-time Gascoyne lieutenant Mark Smith joined last year as technical director, while facilities have improved with access to the Williams windtunnel, for example, boosting research-and-development capability. This is now a mature, established F1 team and should be ready to stand on its own two feet. It also has the proven Red Bull-Renault gearbox/engine/KERS combination that should allow it to focus its resources on aerodynamics, the real key to moving up the grid in F1.

"We now have that stability," says Gascoyne. "We have more experienced people and have settled into a new way of working. Under Mark, we have established a design office that can



The CT01 has KERS but can it score points?



Will the CT01 manage to nose up the order?



Lotus raced midfield in Brazil, then slid back

match any of the established teams in terms of experience and numbers. That you can see from the progress and the finesse in the design of the car?"

Despite that, Caterham still has to be regarded as a small F1 team. Gascoyne cites Toro Rosso and Force India as being of comparative size and beating them is the next step in its growth.

The acquisition of the ex-Arrows site in Leafield is a big step, as well as recognition that there is no longer the need to be located in the back and beyond of Norfolk to justify the use of the Lotus name. The bulk of the relocation is expected to be completed during the August factory shutdown, and represents the next step in the team's evolution. To back that up, what Caterham needs is to make good on its midfield pretensions.

"We are not the new boys now," says Gascoyne. "We want a solid season racing with them [Force India, Toro Rosso, Williams and Sauber] and then we will build on that for the future. That will require more investment, more sponsorship, but that will come in as our performance goes up."

The bottom line is that it's time to deliver. Team owner Tony Fernandes said last July in an interview with AUTOSPORT that 2012 was all about being on Q2 pace regularly. He's made it clear that if the team doesn't do the job, heads will roll... including his own.

"Next year, if we don't get into Q2 then I will have to step down because money will not have been well-spent," he said last year.

As chairman of Queens Park Rangers football club, he's shown that he's willing to pull the trigger if he feels it's necessary – and isn't afraid of pointing the gun at himself.

That sums it up. New-boy goodwill only lasts so long. ❧



Gascoyne: 'we now have stability'

# Grabbing the chance to improve by the horns

TORO ROSSO-FERRARI STR7



**GARY ANDERSON:** Toro Rosso is now a team that is standing on its own two feet. Yes we can still see a family resemblance to its mother team, Red Bull, and I believe that will continue for many years to come because you cannot work as closely as these two teams did for a lot of the thought pattern not to rub off. I'm impressed with its new car and it shows a lot of forward thinking; it's great to see the small teams producing cars that will make the big teams sit up and take note.



## FRONT WING

The front wing uses the majority of the plan-view area allowed in the regulations and the main assembly is a three-element design with a fairly short-cord main plane and longer cord flaps. The only problem with this is that when there's any airflow-separation problems they can affect a higher percentage of the downforce the actual wing is producing, making the assembly less consistent. The endplates themselves consist of three vertical turning vanes, with all of the turning moment induced by the outer surfaces. Again this area can be prone to separation problems and this style of turning vane could be more critical than some of the other designs we've seen.

## NOSE-MOUNTED TURNING VANES

On each side of the nose, just behind the wing mounting pillar, there are large vertical turning vanes. These vanes fit onto the lower outer corners of the nose, which has a fairly large blend radius and doesn't really lend itself to this addition. I think these items, which will help scavenge the airflow from under the front of the nose, have been found to give a positive result fairly late in windtunnel testing and have been added to a surface that was intended to be sympathetic to the airflow rather than attempting to realigning it.



**AIRBOX**

The airbox intake is one of the smallest I've seen for a long time and the separation from the headrest area is more than the other teams. This has allowed Toro Rosso to have a cooling duct in this area, which will be used for cooling the hydraulics and the gearbox. Having a small intake can reduce engine performance at slow speed, as it doesn't allow as much air in, but it will mean there will be less airflow spillage at high car speed, reducing any problems with turbulence affecting the rear wing.



**SIDEPOD**

The sidepod inlet and undercut sidepod follows the trend set by Toro Rosso last year. It's visually the most dramatic and has been christened a double-floor arrangement. The aim is to connect the rear Coke-bottle area to the front of the car in the best way possible. The only compromise is the mechanical packaging of the cooling system and the fact that the double floor will raise the centre of gravity of these components, but everything on the packaging of an F1 car is a compromise and only Toro Rosso will know if the aerodynamic returns overpower the mechanical losses. The Coke-bottle area itself is very neat and the bodywork treatment around the gearbox sides has vertical intake louvres after the sidepod exits. I'm not sure what these would do other than duct some airflow through to the middle of the rear-diffuser trailing edge. As STR uses the Ferrari engine and gearbox package it has also incorporated the new-for-2012 Ferrari pullrod rear suspension set-up.



# Raikkonen's new racer revealed

The Lotus E20 is the car with which former champion Kimi Raikkonen hopes to restore his reputation. *GARY ANDERSON* gets under its skin

## LOTUS-RENAULT E20

### NOSE STEP

The nose-to-chassis interface is very like what most cars will have, but because Lotus has kept the nose line falling away to the front section it doesn't have such a flat look. Either it looks a little neater or I'm getting used to this very strange look.

### FRONT WING

This is very similar to last year's end-of-season version. As Renault, it was the team that started the three-dimensional wing element concept where the outer ends of the elements would twist over and vertically join the wing endplate foot section. Lotus moved away from that idea, but now the first two elements are again using that concept, plus the vertical parts of the endplates are employed as turning vanes. There are still small slot gaps to allow airflow through into the critical flow areas, but it has become a very complicated airflow regime and might not be as robust in turbulence as the original one. I'm sure we'll see many versions as the season progresses.



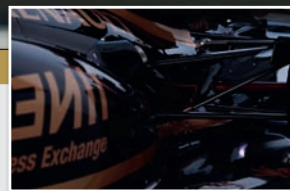
### FLOOR

There is a rather large splitter joining the T-tray area to the underneath of the chassis. This separates the airflow in this area and, in reality, divides the airflow to the leading edge of the car's underfloor into two halves. I'm not sure how effective this will be when the car is in yaw mid-corner, or if there is a slight crosswind or a bit of turbulence. It would be easy for any of these scenarios to induce airflow separation, robbing the under floor of some much-needed airflow.



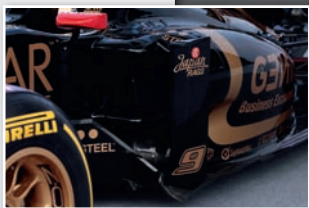
#### EXHAUST

The sidepod blends into the Coke bottle area very neatly and is packaged very tightly to the gearbox to maximise the airflow through this area. However, the exhaust pipe exits look a bit of an add-on and none of the covering panel work blends in with the original bodyline. I'm sure this area will change as testing progresses and most teams will end up following whoever seems to have the best location for the exhaust outlet.



#### SIDEPOD

The radiator inlets are, to say the least, very large. It's very difficult to produce downforce from airflow that's used to cool the car and with radiator ducts this size a lot of airflow is being wasted. The complete area around the sidepod leading edge and radiator intake lacks detail and the undercut on the sidepod leading edge is not as pronounced as others. Perhaps this is because Renault, as it was known, had exhaust pipes exiting in this area, so the detail may have been different.



#### SUSPENSION

Front suspension is a pushrod-operated, double-wishbone assembly. The links are all aerodynamic profiles, which are set to help realign the airflow coming off the trailing edge of the front, improving the efficiency of the underfloor leading edge. Rear suspension is pullrod.



**L**ast year started so well for Renault, but ultimately its campaign faded badly into scrapping for the odd point here and there and it only just held on to fifth in the constructors' championship. In 2012, the former world champion outfit is reborn as Lotus and is bidding to re-establish itself as a podium threat, or perhaps even a contender for a first victory in over three years. EDD STRAW spoke to Lotus technical director James Allison about the new car and the coming season.

# LOTUS REPOST

## REBUILDING MOMENTUM

After a dismal 2009 season, things turned around dramatically the following year under new technical director Allison, with Robert Kubica fighting for podiums. He might even have won at Monaco that year, but last season that momentum was lost. The target this year is to recapture that upward mobility, which was lost during the second half of 2011.

"That's a fair summary," admits Allison. "You work in isolation and don't know what everybody else is doing so I find it impossible ever to be anything other than anxious that we're doing a good enough job!"



Kubica starred at Monaco in 2010

That's healthy – if you're not anxious you are in danger of being complacent. But I'm very happy that we have done a very tidy car that's a decent start for the season. I hope it proves to be sensibly competitive."

## BLOWN-DIFFUSER BOON

The effective outlawing of exhaust-blown diffusers thanks to tight rules regulating the tailpipes is, on balance, a positive thing for Lotus. But that doesn't mean it's a free pass for the team to take a step forward without some very clever design work.

"On one level, it's definitely a positive because if the rules had stayed as they were, we would have had to jump on to a bandwagon that was already substantially underway with everyone else," says Allison. "It would have been a job to catch up. Resetting the rules was decided mid-summer last year and levelled the playing



# TION

field for everyone, but while the initial decision was made early on, it was argued about into November for the final outcome. That's made it a challenge, to say the least."

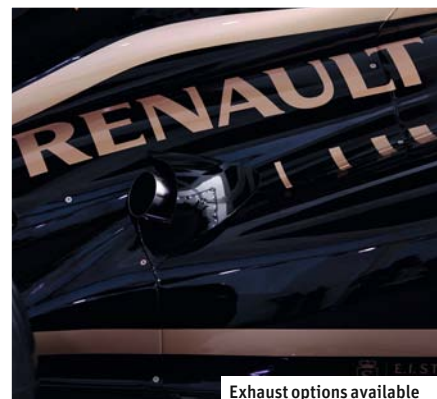
Rear-end aero is still crucial



## EXHAUST DEVELOPMENT

Lotus has two different versions of the same exhaust-design concept to try during testing. Allison expects this to be an area of car design that will become a battleground.

Allison says: "We have got two versions. They are not concept A and concept B, but different iterations of the same concept. We have got some variance but we are not planning on a change of concept. However, if someone comes out with a geometry that we didn't think Charlie [Whiting] would wear, but he appears to be, that would make us have to invent a new approach."



Exhaust options available

## SACRIFICING THE END OF 2011

Tough times at end of '11



Once the FIA had backtracked on the ban on tricky off-throttle engine maps that allowed teams to gain huge downforce benefits after the Silverstone debacle, the then-Renault team realised that it just had to ride out the season. A rear-facing exhaust was trialled, but with little time to optimise it and a rule change coming, the Renault R31 carried on as it was. While the poor results in the closing stages of 2011 were concerning, this fact means that it would be wrong to assume this was some indicator of a decline that will continue into 2012. Not that what happened late last year should be considered an advantage.

"There is only a good side of any coin if it gives you a gain relative to the other teams," says Allison. "Yes, we decided not to invest effort into last year's car to fundamentally change its direction because that would have been unproductive. That was the right thing to do in isolation, but doesn't confer on us any special advantage relative to other teams that didn't face the dilemma. There isn't some harvest to be reaped now."

## NO MAGIC BULLETS

Last year's forward-facing exhausts were a great idea and well implemented, even though they ultimately held back the team. This year's car is more conventional, but not through any fear of going out on a limb. It's worth noting that conventional is not a negative, particularly when the regulations are now so restrictive.

"There is nothing on this year's car that is as 'out-there' as last year's exhaust but that's not because we've been stung by last year's experience, recoiled and taken a different approach," says Allison. "If we had an idea that we were as pleased with

## RETURN OF RAIKKONEN

A huge amount depends on Kimi Raikkonen proving he can still be the stellar driver he once was on his return after two ultimately disappointing years in rallying. With GP2 champion Romain Grosjean alongside him, it's a partnership that has created a real buzz at Enstone.

"It's very exciting," says Allison. "Kimi's class was evident from the opening laps of the test that he did for us [in the 2010 car] a few weeks ago. It's very clear that his appetite is extremely strong and we know that we have a pedaller who is going to keep us honest. You can't hide with a good driver as they always reveal the performance to be had from the car.

"When Romain jumped into the car on a couple of Fridays at the end of last year he was immediately competitive compared to our race drivers so we have got a decent driver line-up."



Team now has former world champ

as we were when we conceived the forward exhaust, we would have put it on the car in a heartbeat. But we haven't come up with a concept like that this year."

Forward exhausts were often trouble



# Advanced guard marching to the beat

## FORCE INDIA- MERCEDES VJM05



One of the most impressive things for me at the Force India car launch was having a chat with technical director Andrew Green. Along with Mark Smith, now technical director of

Caterham, and me, Andrew was one of the team of three designers responsible for the Jordan 191. We all go back a long way and I'm very proud of both of them in their achievements over the years.

Andrew is now in charge of a team of probably 100 people and his manner and focus is very impressive. He explained to me the design philosophy for the new car and how they had to change their thinking to achieve it. Looking at the car now, I believe I can see exactly what he was talking about. If you can get that within a small team like Force India then the sky is the limit. Among the first four cars I saw – Caterham (internet pictures only), McLaren (at its launch), Ferrari (internet pictures) and Force India (launch) – without doubt Force India's car is the most advanced over what each team used in the final grand prix in Brazil last year.

### DIFFUSER

Diffuser-wise, in contrast to McLaren and Ferrari, the launch car had one on it so in reality it was a complete car. The diffuser regulations have been tightened up over the past couple of years so there is not a lot that can be done (legally) in this area, so I'm not sure what McLaren and Ferrari are up to. What Force India has is a neat and tidy solution to a component that will be developed once the on-track aero characteristics of the car are identified.

### EXHAUST

The new exhaust location dictated by the FIA means that the potential of any performance improvement from this component is vastly reduced, so Force India has gone for a position that is a little nondescript. I have no doubt other teams will find different solutions and I'm sure Force India will do a lot of research in this area and we'll see some developments as pre-season testing progresses.

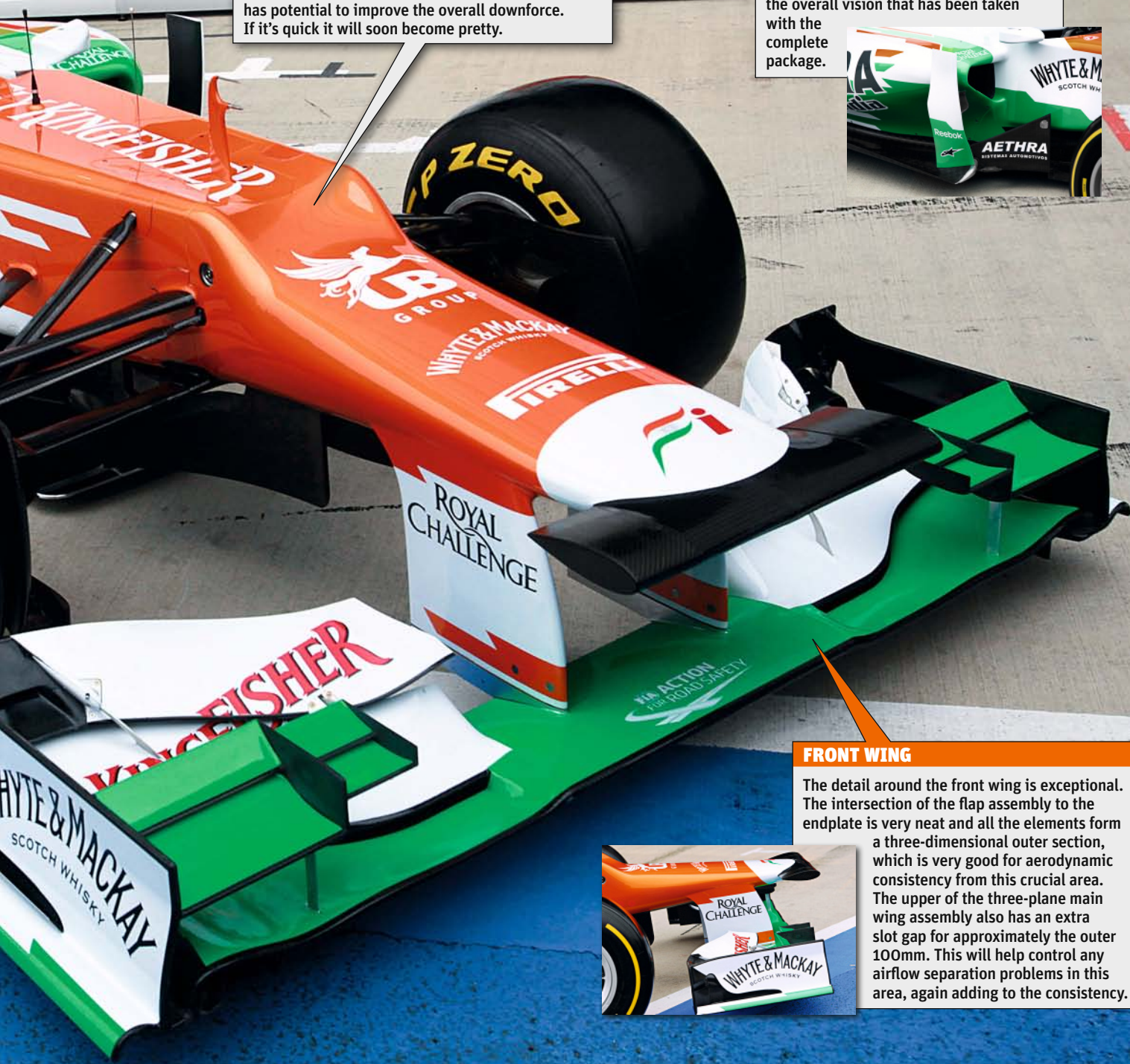


### AERO CONCEPT

The complete front-end, including the front wing, bargeboard area, sidepod leading edge and sidepod undercut, forms one aerodynamic system. This car really does look like all those bits are connected up and will all work as one efficient unit. It's what every aerodynamicist and design engineer dreams about. Take the sidepods as an example: the radiator is well placed and, compared with the McLaren (which uses the same engine in a much smaller and neater package), Force India has the experience not to do anything silly in that area that would compromise cooling. But it also knows that airflow used for cooling is wasted as far as creating downforce is concerned, so this concept really shows the overall vision that has been taken with the complete package.

### NOSE STEP

The intersection between the nose and the chassis is similar to Caterham's in that the flattish nose gives it that ugly-duckling look. The regulation change to try to get lower noses missed the point and I think teams will always push the limits as long as the rewards justify it, and getting the chassis under-section higher in this area has potential to improve the overall downforce. If it's quick it will soon become pretty.



### FRONT WING

The detail around the front wing is exceptional. The intersection of the flap assembly to the endplate is very neat and all the elements form a three-dimensional outer section, which is very good for aerodynamic consistency from this crucial area. The upper of the three-plane main wing assembly also has an extra slot gap for approximately the outer 100mm. This will help control any airflow separation problems in this area, again adding to the consistency.



# How high can Force India fly?

Force India has become adept at maximising what it has, but just how much scope is there to go further? *MARK GLENDENNING* looks at what the team needs to take the next step



**N**othing about Force India's arrival in Formula 1 suggested that it would become the template for smaller teams.

The immediate history of the franchise that it was taking over did little to inspire confidence, with the team having gone through spells as Midland and Spyker in fairly quick succession since the demise of Jordan. And the emergence of a flamboyant owner who had the air of looking for a party, just as the rest of the paddock was clearing away the streamers, gave little cause to believe that the team would be any longer lived. Even the name 'Force India' sounded short-term.

In the four and a bit years that have passed since, Vijay Mallya has proven otherwise. From the back of the grid, his team has developed, adapted when necessary – restructuring its entire leadership group in 2008, establishing technical ties with McLaren to take care of the powertrain and also to tap into its expertise – and the result has been relentless forward progress.

The team has improved upon its

previous championship position every year to date, and if it achieves its stated target of fifth in 2012, it will do so again. And paradoxically, it will face a problem familiar to anyone who has taken a knife to a gunfight: where can it find the firepower to mix it with Red Bull, McLaren, Ferrari and Mercedes?

Technical director Andrew Green admits that for all of Force India's achievements to far, there is only so much further it can go in its current guise.

"I think there is a glass ceiling," he says. "Having worked with the big teams – I've spent a lot of time with Red Bull – I know the size of the team does make a huge difference to the development rate of the car. And that's what we struggle with.

"The big teams can develop at a faster rate, so they will always move ahead. We've got a team that is tightly-knit, but our development rate is lower. So we have to make decisions about what we can and what we can't do. And it's those decisions that I am making on a daily basis, weekly basis, monthly basis, and I'm making

compromises all the time.

"We make our bed, and we have to go and lie in it. The other [bigger] teams get more options. And it's that additional resource that means that they get to the front quicker."

The one lesson from Force India's short history is that it's a team with ambitions that extend beyond perennial promises to 'catch the midfield', and a plan to make those ambitions bear fruit. There's a case to be made that its driver line-up of Paul di Resta and Nico Hulkenberg is the strongest on the grid after McLaren's, and Green says this is proof of Mallya's intentions.

"Dr Mallya's principle is that we'll have the best drivers that we can get," adds Green. "It's great to hear that message from the top, because what you really hate is to try to produce the best car you can, and then know that there's a guy in it who is not extracting 100 per cent. It's gut-wrenching. I'm quite sure that we will see the performance of the car on the track [this year]. There will be no question marks whatsoever."



Di Resta whirls VJM05 around Silverstone



Di Resta and Hulkenberg – a very strong line-up

Longer-term though, even having two drivers capable of getting everything out of the car isn't going to be enough to bridge the gap to the leading teams. Force India is very clear in its ambitions to take that final step. The answer to the problem of how to challenge the big teams is simple – Force India must itself become a big team. This will require expansion in terms of both personnel and facilities, as well as a plan for how to adapt internally to the scaling-up process with as few growing pains as possible.

“We’re talking to the board now, with Sahara [the team’s new co-owner] coming on board,” Green says. “They’ve got ambitions to break through that glass ceiling, and it’s up to us as the management team to give them direction and show them what they need to do and where they need to spend their money. There are some really exciting plans being put down for this team, and hopefully we’ll have some announcements in the next few months that will show the commitment from the owners that they do want to move forward.



Lightsabre? May the Force India be with you



Squad has plans to join 'the big teams'

“They’re not happy with fifth. None of us is happy with fifth. Everyone is out there trying to win, and we’re exactly the same. And they’re the same as we are – they want to win, they want to move into that Premier League. We’re a Championship team at the moment, effectively – and there’s a big gulf between a Championship team and a Premier League team. We need to start bridging that gap, and it’s a long-term plan, and it’s going to take a few years. But if they’re willing to invest in the team, then I think we can deliver, and we can break through that ceiling and move into that Premier League.”

Force India going wheel to wheel with Red Bull, weekend after weekend? For all the strides that the team has taken up to this point, you could still be forgiven for thinking that it sounds far-fetched. But then again, Green likes his football analogies – and five years ago Manchester City finished the 2007-08 season a distant ninth, exactly where Force India ended in the '09 F1 rankings. And now the Sky Blues are flying high at the top of the table... ❄

# The Swiss seem to be stuck in neutral

## SAUBER-FERRARI C31



**GARY ANDERSON:** Sauber is a team that's sort of stuck in the middle of not knowing who it is or where it's going. Originally, as Sauber, this team was an efficient and compact operation. Then

the might of BMW came in and expansion was the name of the game. When the big teams wouldn't let BMW win it ran away with its tail between its legs, leaving Peter Sauber to try to downsize again to a manageable level. The new car on face value at least doesn't look like a step forward from last year's car; if anything it looks a bit more clunky.

### SUSPENSION

Sauber uses the Ferrari engine and gearbox package. As Ferrari has now gone to a pullrod rear suspension, Sauber has followed suit. Doing this helps reduce the airflow blockage on top of the gearbox and also lowers the centre of gravity of the rear of the car. Both of these offer small advantages, but every small advantage adds up and in the end if there are enough of them you have a big advantage.

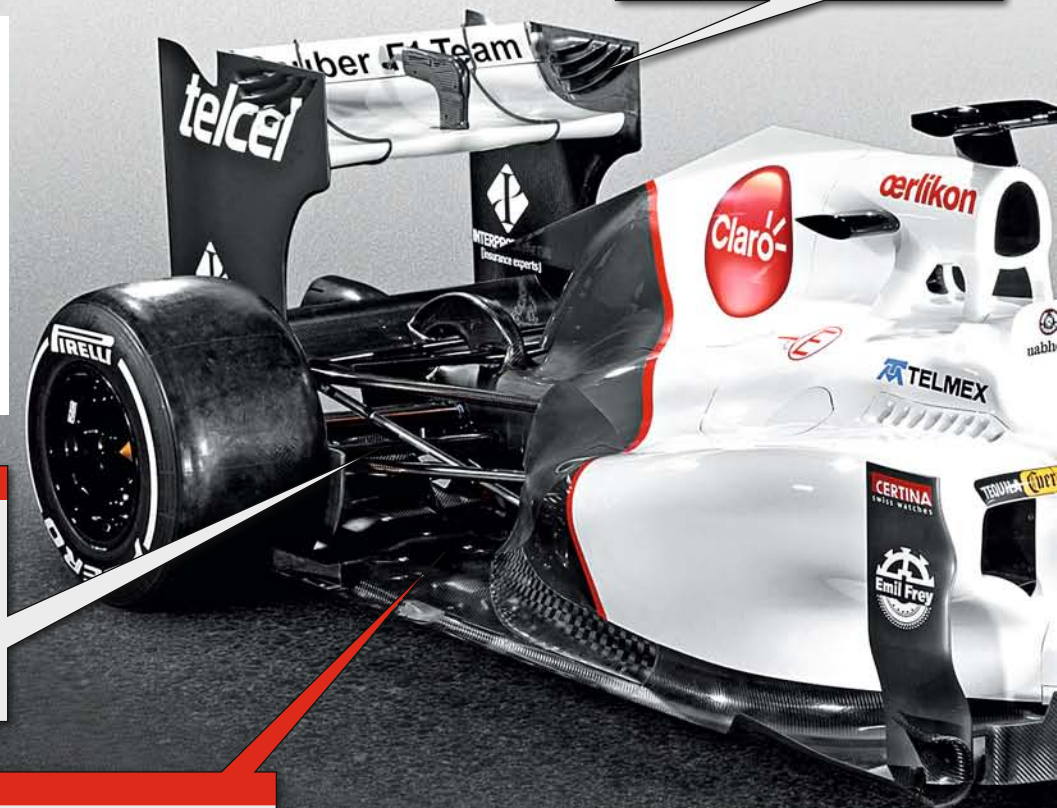
### DIFFUSER

The diffuser is maximum width and maximum height as the regulations require. It has three splitters each side to control the direction of the airflow and manage any low-ride-height airflow separation. On the trailing edge of the upper surface there's a small turning vane with a slot gap, which works the same as a right-angled gurney flap and makes the diffuser think it's bigger than it really is, thus increasing its performance. Reading through the regulations for 2012, I don't think there are any grey areas left to interpretation, but we'll have to see what McLaren and Ferrari show up with as their launch cars did not have a diffuser fitted.



### REAR WING

The rear-wing design is primarily a concept to maximise the drag reduction when the DRS is in operation. Basically, when the slot gap is opened the short upper flap rotates around its trailing edge and the airflow on the highly-curved main-plane undersurface can't stay attached, so the complete unit stalls, reducing the drag and increasing the top speed. The louvres in the endplates and the cutaway upper-rear corner are for drag reduction and overall make the rear-wing package a more efficient component.



### SIDEPODS

The sidepods are a bit more bulbous than last year's version and they turn in very quickly to the Coke-bottle area. This quick change of direction can lead to airflow separating on the body surfaces, especially the inside sidepod when the car is mid-corner. If this happens it can lead to a loss of rear downforce, which is the last thing the driver wants when the car is fully loaded up and on the limit of adhesion.



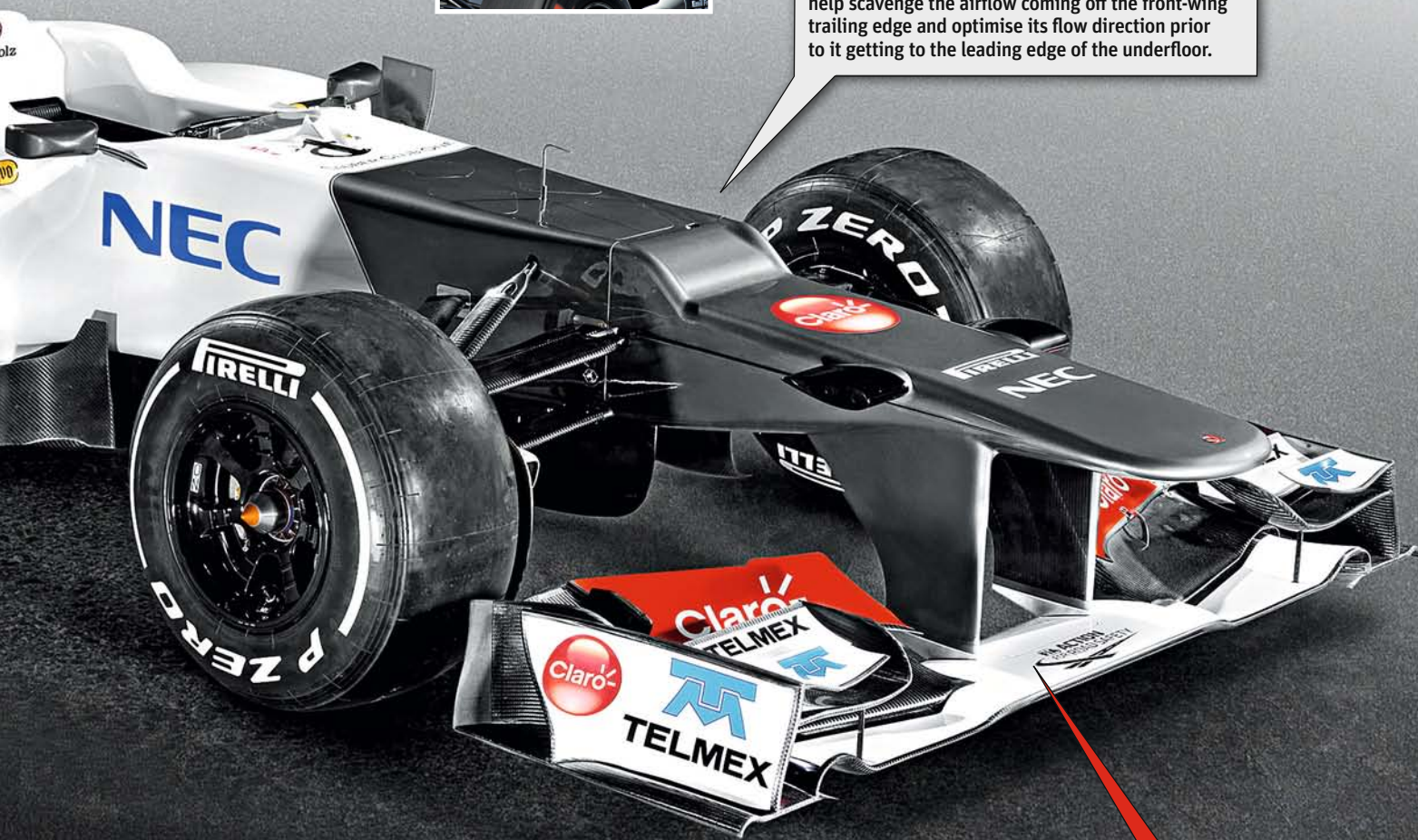
**AIRBOX**

The area including the rollover bar and engine-airbox intake sits on four legs, reducing the turbulence that can be created inside the airbox intake as the airflow spills off the driver's helmet and headrest area. If this detail is not optimised it can affect the engine performance. The separation of the intake and the top of the driver's helmet also improves the airflow to the rear wing by keeping the flow attached to the outer surface of the engine cover.



**NOSE STEP**

The nose-to-chassis interface is very similar to Ferrari in that it doesn't dip down between the upper outer edges of the chassis. This looks a bit like a barn door, but in reality it probably doesn't really do much harm. As with most of the other cars, it's there to allow the underside of the chassis to be higher, which will allow increased airflow under the chassis to improve the performance of the underfloor. The large turning vanes under the chassis in this area are there to help scavenge the airflow coming off the front-wing trailing edge and optimise its flow direction prior to it getting to the leading edge of the underfloor.



**FRONT WING**

The front wing is more or less the same as Sauber finished the 2011 season with. It consists of a three-element main wing, with an extra short slot gap on the outboard end of the rear flap. The ends of the flaps turn vertically to where they join the foot of the endplate, which will give good control over the area of the front wing that can suffer from airflow separation. The endplates themselves have a very wide footplate to reduce airflow spillage going underneath them and thus reducing the performance of the front wing. But this area can make the car very pitch-sensitive, and if this happens the rear end can feel very nervous under braking. All the bits are in the right places, but I don't see it as a step forward from last year.

# Looks elegant, but that's not enough

## McLAREN-MERCEDES MP4-27



**GARY ANDERSON:** Last week's press launch of the McLaren MP4-27 was the first that I've attended for many years and I have to say what a fine piece of engineering I saw... the McLaren Technology Centre, that is. The building blows me away and I only saw the reception area! It's a far cry from my times at McLaren in the late 1970s: 17 David Road, Colnbrook would fit

into the canteen of the MTC five times over! Inside the factory, in the midst of an all-nighter, we would get the Marlboro 50cc monkey bikes out and see who could go fastest, which led to some strange bike and body-shaped imprints on the stationery-cupboard door, which was on the outside of the fastest corner. I suggested to someone at the launch that the reception area at MTC would make a fantastic kart track. Wonder what Ron Dennis would make of that...

### BASIC START

McLaren was adamant that this was the initial test car. While a very neat and tidy package, it doesn't seem to have anything up its sleeve. The launch diffuser was a dummy component, so we might see something there, although the final spec probably won't be seen until the first race, in Melbourne.



### EXHAUSTS

The exhaust exits upward and inward, roughly blowing at the undersurface of the rear wing. But it is housed on what can only be called a rather large growth on the surface of the sidepod – it's just after the beginning of the area that is called the Coke bottle. They've done a really nice job of packaging the rear end of the Coke-bottle area, neatly around the gearbox and rear-crash structure, and having this 'growth' where it is seems to defeat the objective of getting good-quality airflow through to the rear end of the car.



### SIDEPODS

The top of the sidepod and radiator-inlet area has gone back to a more-normal shape. Last year's lowered inner section was to allow better airflow over the top of the sidepods, but it meant that to achieve the cooling required the radiator inlet was larger than a more-conventional design. This year's radiator inlet is more of a letterbox-style, but the upper surface of the sidepod-undercut area is still fairly horizontal. With the airflow accelerating around this undercut area it's possible to get some downforce from this surface, but having it horizontal means that any difference in pressures is cancelled out by the upper surface of the actual floor itself.



### FRONT END

The nose, front of chassis and front wing appear basically the same as last year. It doesn't have the Red Bull-style 'horns' on the top of the chassis, so the car is more aesthetically pleasing than some. But it does mean that the undersurface of the chassis is lower than it could potentially be. This reduces the mass airflow coming between the front wheels. If more mass flow were available, future developments on areas such as the bargeboards could yield better results. Having committed to this specification, developments in this area will be tough.



### IN CONCLUSION

Only time will tell if what McLaren ends up with in qualifying for the Australian Grand Prix is enough to give the team the start to the season it has lacked over the past few years. But from what I saw, there will be a few head-scratching sessions coming up in Woking before Lewis Hamilton or Jenson Button can think of coming away from Melbourne with 25 points in the bag.

# Spearing straight down the middle

McLaren knew it needed new ideas on its car, but has shied away from radicalism. *By JONATHAN NOBLE*



**R**evolution or evolution? It's the most-overused cliché of the Formula 1 launch season, yet it remains the first thing that comes to mind when the covers come off a new challenger.

Does a team simply refine what it already has in a bid to guarantee steady progress? Or does it abandon an old design that may not have been working and seek a totally different approach.

For McLaren, 2012 has brought with it a bit of both. Outwardly its MP4-27 looks similar (for now at least) to its predecessor, yet under the skin there has been a total rework. It's not 'revolution', but neither is it 'evolution'.

Such an approach is not really a surprise, after the harsh lessons of last year, when McLaren discovered first-hand how narrow the line is between pushing the envelope of the car just right to get a performance advantage, and going too far and falling off the edge into a heap of trouble.

Fresh from having pulled a fast one over its rivals in 2010, when its f-duct proved to be the technical innovation of the season, McLaren headed into '11

eager to once again deliver something that would help put it on its way to world title glory.

That time it was a revolutionary exhaust system. But it proved to be a step too far, for it was not fast and it was not reliable. It failed to bring the performance step the team had hoped for, and everyone within McLaren were bracing themselves for a tough start to the campaign.

In the end, McLaren ditched its exhaust, built its own version of the Red Bull-inspired blown diffuser ("copied" is how Red Bull tech chief Adrian Newey refers to it), and the rest was history. The McLaren proved to be Sebastian Vettel's main threat, but it was not enough to stop the German roaring away to his second world title.

That McLaren was able to bounce back from what team principal Martin Whitmarsh called an "abysmal" winter-testing effort to fight for victory early in the campaign – and even have a car that was sometimes quicker in the races than the Red Bull – was testament to the engineering strength in depth at Woking.



**Paddy Lowe:**  
technical director



**Sam Michael:**  
sporting director

But there was always that lingering feeling that, if the pre-season build-up had been a good one, and if McLaren had started on a par with Red Bull, then perhaps its development path would have been enough to push it all the way to the title rather than always having to play catch-up.

That's why so much effort was put into ensuring that the MP4-27 was a goer from its very first test at Jerez in Spain earlier this week. The team is confident that the lessons have been learned from last year, and the platform it has given itself now should ensure a better build-up to the campaign.

"We don't think we're going to have a repeat of last winter," says Whitmarsh.

If a revolution is going to come – and the team is openly talking about new wings, floor and bodywork for the final test at Barcelona – then it should only happen when it has a car it is comfortable with; one it understands, and that works in tune with the new Pirelli rubber being unleashed this year.

As director of engineering Tim Goss explains: "We've set ourselves very, very tough and ambitious targets,



and we fully intend to reach those by the first race to deliver a championship-winning car.”

Yet, while there is a confidence that the changes McLaren has made to its car will deliver a performance step, there remains much uncertainty about one aspect of the new generation of cars: the exhausts.

Blown diffusers have been written out of the script, and teams are now pretty limited in where they can place the exhaust exits, with new regulations effectively making it impossible for the diffuser to be influenced by hot gases. But much effort is being made in trying to get those gases blowing on other parts of the car – such as brake ducts, suspension or rear wings – to try to regain some of the benefits of blowing.

On the one hand, the banning of the blown diffuser should be good news for McLaren, because it was the one area where it was widely accepted that Red Bull was well ahead of the opposition – the RB7 was created around the concept. You could also argue that perhaps McLaren’s own performance in 2011 owed much to it getting a ▶



Four men who can't wait to turn some laps

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McLaren MP4-27: is it a Red Bull RB8-beater?

◀ better handle on the blown diffuser than a lot of other teams.

Just remember what happened at the British Grand Prix, the one race of the 2011 campaign in which teams were not allowed to run their blown diffusers as optimised as they wanted. Ferrari won, Red Bull fought for the podium and McLaren struggled – offering a hint about the relative merits of their blown/non-blown-diffuser components.

But technical director Paddy Lowe believes it was still a useful experience: “We were hit particularly hard at that point, which for me was a measure that we’d done a good job in the area. In fact, we’d put our effort into the area that was generating most performance. But that was an interesting sign of what was the unblown performance of a car, and we’ve taken lessons from that and built on that.”

Goss suggests that not too much should be read into the ‘non-blown’ Silverstone form regarding the overall package for 2012. Last year, McLaren knew that blown diffusers were the key to performance, so its whole concept was based around that. This time,

**“While DRS counts most in qualifying, ultimately you have to win the race”**

**Tim Goss**

speed is going to come from other areas that have become the new focus.

“You optimise around a certain package and we thought we were particularly good at achieving performance from the exhaust system and blowing the diffuser last year,” he says. “We paid prices for that in terms of the base performance of the car. But we knew that and accepted it, and ultimately last year it produced the quickest car.”

“This year we’ve taken those gains back and worked harder on them and pushed that area harder. So we hope to get back a lot of what we lost.”

McLaren stars Jenson Button and Lewis Hamilton will also hope that the MP4-27 is a car that gives more confidence to push to the edge than last year’s – which was found wanting compared to the total faith Sebastian Vettel had in the Red Bull RB7.

As Hamilton explains: “Last year we obviously had a lot of weight and a lot of downforce coming from the rear of the car. We were always struggling to balance it with trying to get enough front in. But I think this year it will be the other way round: we’ll probably have too much front and be trying to find more rear.” ▶



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New McLaren has the looks; does it pack speed?



MP4-26 was a strong contender on Sundays



Hamilton and Button with testers Paffett (left) and Turvey



**Mark Hughes**

GRAND PRIX EDITOR

**I**n the big picture, the 2012 fortunes of Jenson Button and Lewis Hamilton will be defined by the competitiveness of the MP4-27. But each also has challenges internally – most obviously Lewis.

Last year was the first time since Hamilton started racing that a team-mate has ever beaten him over a season and you can guarantee that he will be smarting like hell. His ups and downs of 2011 are well enough documented to not need repetition, but his driving lacked the consistency of performance of previous years. He didn't always get the best from the Pirellis, and often took more out of them than his team-mate when the challenge was to keep the temperatures in check. Hamilton knows very well that he needs to rediscover a focus that was inconsistent at times last year, but knowing that and being able to do it aren't necessarily the same thing.

In one sense Button just needs to continue doing what he's been doing – working wonderfully well with the team, not getting distracted by the things Hamilton can do with a car that he can't, but instead just building on what he does supremely well.

With the car balanced just as he likes it he's every bit as fast as Hamilton, but he has a narrower band of handling traits that work for him. Last year's car allowed him to stay in that band perhaps more successfully than any other F1 car of his career – and he duly delivered a fantastic season. But will the relinquishing of blown exhausts and all the rear downforce that goes with them narrow those set-up options back down again?

**“With the car balanced as he likes it, Button is every bit as fast as Hamilton”**



Can either add a second title?



Neil Oatley: director of design and development



Tim Goss: director of engineering

◀ There is another important area of balance for McLaren. The foundation of Vettel's 2011 title was built upon throwing everything into getting pole position, blasting away at the start and opening up a two or three-second lead before DRS kicked in, and then controlling the race from the front.

Time and again McLaren just missed out on pole. Then, despite having a quicker car on Sundays, it struggled to overhaul Vettel. A prime example was Hamilton's chase of Vettel at Barcelona. McLaren reacted to Red Bull's approach last year by tweaking its rear-wing DRS strategy mid-season to bring it more speed in qualifying, even if it wasn't so good for the race.

Yet the team is intent on not just going out and shadowing Red Bull – it wants to do things its own way.

You can see that in the MP4-27 nose design. McLaren has opted against the Red Bull-style nose-valley bulges that hide the front-suspension mounts. Instead it has maintained its low-nose concept to such an extent that the stepped-platypus lines seen on other cars are unnecessary.

So too McLaren's philosophy remains on having the quickest car on a Sunday – which, after all, is the day that really matters.

“We're learning,” says Goss. “We know the importance of DRS and, while it counts most in qualifying, ultimately you have to win the race.

Producing the best race car is what we've concentrated on. We proved last year that we're particularly good on race pace, and again that's our philosophy and our approach.

“There's not a lot you can do between qualifying and the race,” adds Goss. “But one thing we focus on very heavily, and again have concentrated on this year, is just the tyre wear and tyre-thermal performance, and that's about the race performance.

“While I say we concentrate hard on race performance, it didn't go unnoticed that Sebastian Vettel put the car on pole an awful lot of times and pulled the gap before DRS was employed. We are aware of it and we have attempted to deal with it again.”

McLaren has a style based on the solid foundations of engineering. It has stuck with it through thick and thin, and there is little chance of the team ever changing the way it goes racing.

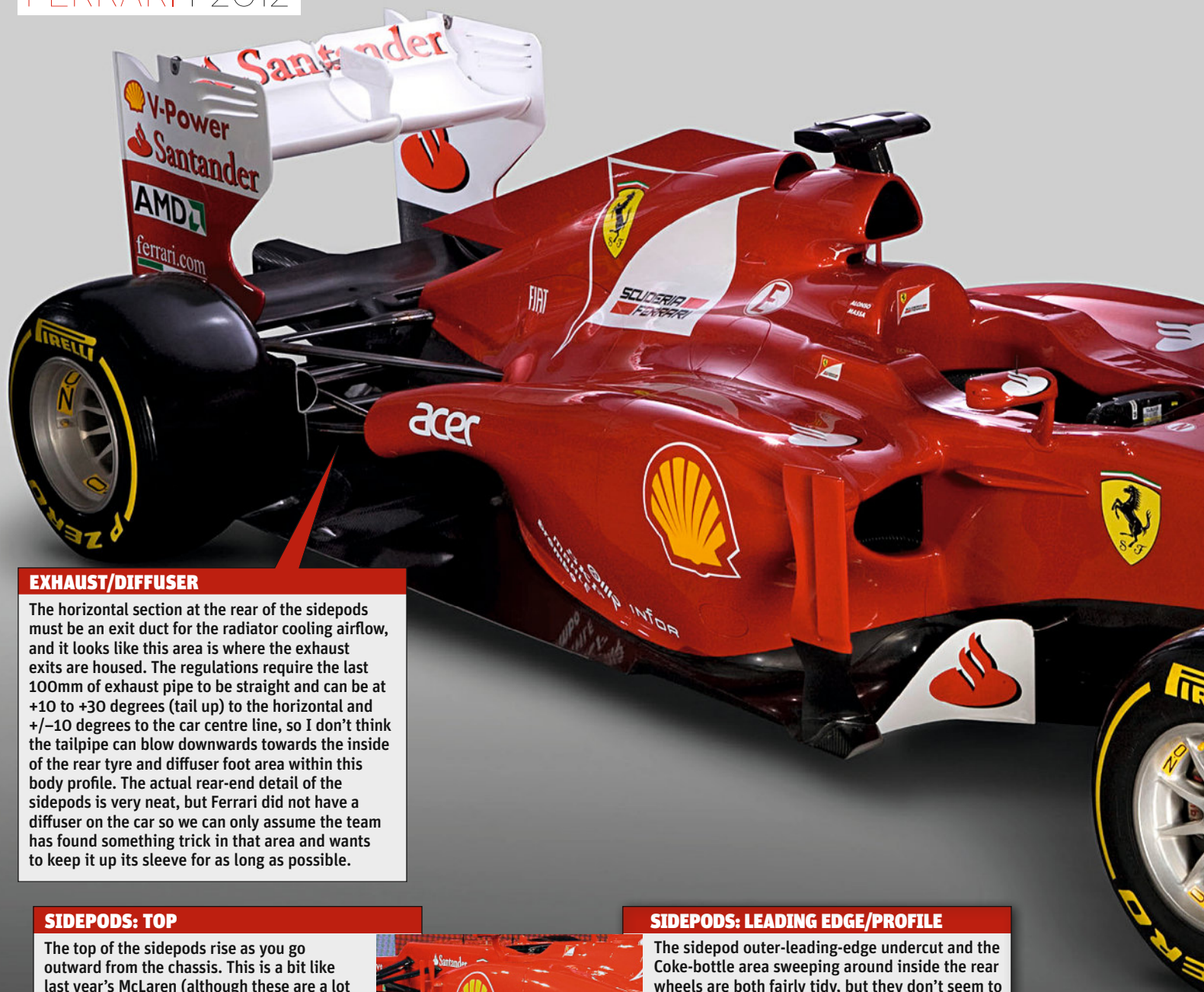
It is an approach that has paid off in allowing McLaren to fight for the championship regularly over recent years. Yet the history books would suggest, with just one title double to its name since 1991, that maybe something more is needed for it to make that final step away from what ex-boss Ron Dennis once famously suggested was the first of the losers.

They always say a little revolution is not such a bad thing. Is McLaren about to prove us wrong? ❧

# Italian art needs a renaissance

Ferrari has been saying for a long time that its new car was going to be ugly and aggressive. Well, it certainly got the ugly bit right. *By GARY ANDERSON*

FERRARI F2012

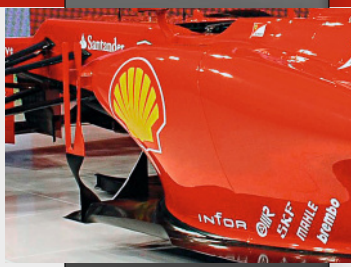


## EXHAUST/DIFFUSER

The horizontal section at the rear of the sidepods must be an exit duct for the radiator cooling airflow, and it looks like this area is where the exhaust exits are housed. The regulations require the last 100mm of exhaust pipe to be straight and can be at +10 to +30 degrees (tail up) to the horizontal and +/-10 degrees to the car centre line, so I don't think the tailpipe can blow downwards towards the inside of the rear tyre and diffuser foot area within this body profile. The actual rear-end detail of the sidepods is very neat, but Ferrari did not have a diffuser on the car so we can only assume the team has found something trick in that area and wants to keep it up its sleeve for as long as possible.

## SIDEPODS: TOP

The top of the sidepods rise as you go outward from the chassis. This is a bit like last year's McLaren (although these are a lot more blended), but taking airflow over the top of the sidepod potentially increases lift in this area, so it can have a negative effect. With a better sidepod undercut, the Coke bottle would have got its required feed around the side, which would have helped the performance of the front of the car.



## SIDEPODS: LEADING EDGE/PROFILE

The sidepod outer-leading-edge undercut and the Coke-bottle area sweeping around inside the rear wheels are both fairly tidy, but they don't seem to meet up. The sidepod profile just below the Shell sticker comes out to almost the outer edge of the floor, meaning that the Coke-bottle area is not trying to pull its airflow through from the undercut sidepod leading edge. Getting all this to work as one aerodynamic system vastly improves the performance of the complete car.

**SUSPENSION**

Ferrari has used the philosophy that if a pullrod suspension is better on the rear of the car, then it must also be better on the front. But the packaging required with a high chassis means that the loads in the suspension assembly are now very different. The top wishbone will be subjected to massive compression loads and the lower wishbone will be carrying all the lateral compression forces when the car is going around a corner.

With a pushrod system, some of the load was counteracted by the tension load put into the lower wishbone from the pushrod.

**Pros:** more room for bigger and better aerodynamic turning vanes mounted on the bottom of the brake duct; because of the pullrod angle, there may be better control of the airflow coming off the trailing edge of the front wing to help realign it with the underfloor; less aerodynamic blockage; slight lowering of the centre of gravity.

**Cons:** increased loads in the suspension links and upper area of the chassis.

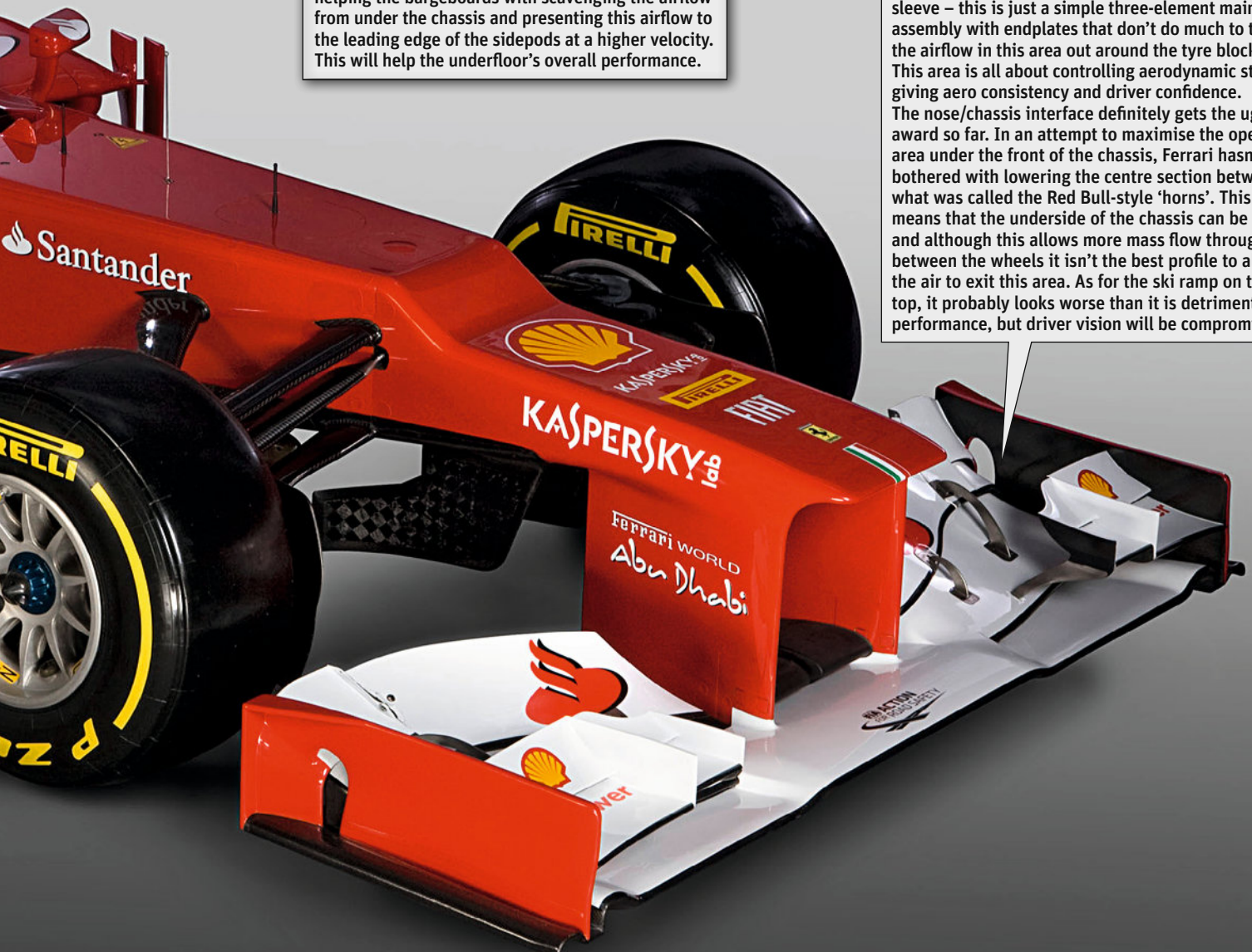


**AREA AHEAD OF SIDEPODS**

The area incorporating the radiator intake and sidepod leading edge is quite tidy. It doesn't have the bat wings that some predicted; in fact, it goes the opposite way with the sidepod outer wall being further forward. This should help the leading edge of the underfloor be better aligned with the airflow coming from under the front of the chassis, which should help its overall performance. The T-tray area under the driver's legs is longer than most, again helping the bargeboards with scavenging the airflow from under the chassis and presenting this airflow to the leading edge of the sidepods at a higher velocity. This will help the underfloor's overall performance.

**FRONT END**

The front wing is very similar to Ferrari's 2011 end-of-season version, but as it's a bolt-on item I'm fairly sure there's something else up the team's sleeve – this is just a simple three-element main assembly with endplates that don't do much to turn the airflow in this area out around the tyre blockage. This area is all about controlling aerodynamic stall, giving aero consistency and driver confidence. The nose/chassis interface definitely gets the ugly award so far. In an attempt to maximise the open area under the front of the chassis, Ferrari hasn't bothered with lowering the centre section between what was called the Red Bull-style 'horns'. This means that the underside of the chassis can be flat, and although this allows more mass flow through between the wheels it isn't the best profile to allow the air to exit this area. As for the ski ramp on the top, it probably looks worse than it is detrimental to performance, but driver vision will be compromised.





# FIERCER FERRARI'S MAKE- OR-BREAK RACER

A more radical approach is what Ferrari's new tech team believes can take the fight to Red Bull. *MARK HUGHES* takes a closer look

**T**he F2012 is the embodiment of Ferrari's new technical broom. Whether it's better or merely different we'll only begin to see in the weeks ahead as the new cars take to the test tracks, but what is clear when looking at the new F2012 is that the process of re-evaluation has been deep and intense.

From tip to toe, from its pullrod front suspension to its slimmed-down gearbox, new features abound. They don't necessarily mean much in isolation, but they are the manifestation of what the team admits was a lot of brainstorming, a lot of soul-searching. A team of Ferrari's status cannot endure the sort of season it just had without a huge build-up of

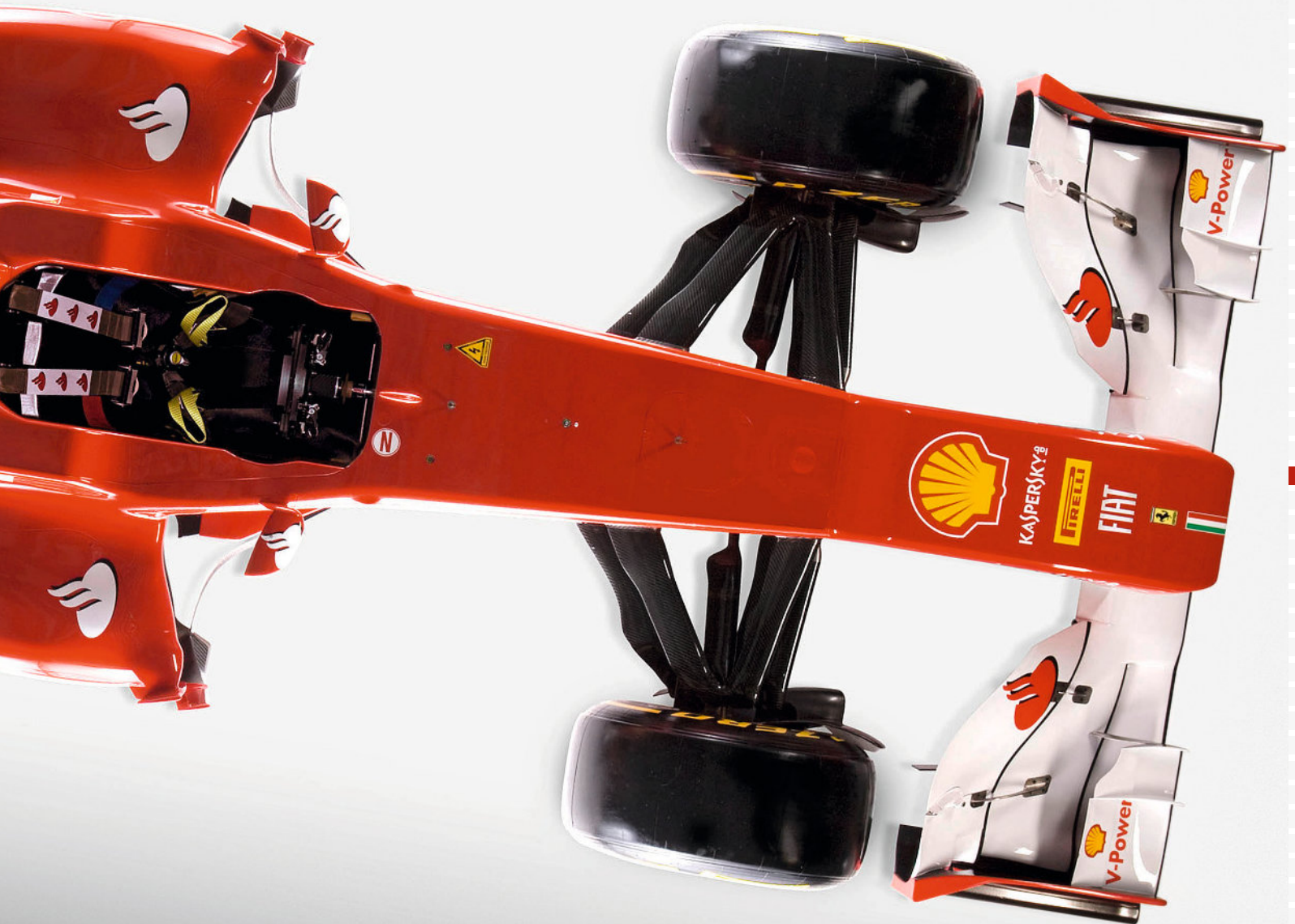
pressure — and those in charge must react to that internal pressure.

So it was that back in May team principal Stefano Domenicali had the unpleasant task of asking technical director Aldo Costa — 16-year veteran of the team and in charge of design for the previous six seasons — for his resignation. This was despite all the race victories, the parts played in all the championship glories. This was now and the pressure upon the team, and especially upon Domenicali from Ferrari president Luca di Montezemolo, was immense.

In Costa's place was promoted Pat Fry, and whether that turns out to have been a good move or a bad one will only be answered by history. But

the appointment of the ex-McLaren engineer to the position was very much in keeping with the mood of the moment, of a team asking itself some tough questions — out of necessity.

Ironically, that ever-present pressure — to match the achievements of the team during the Todt/Brawn/Schumacher era, the most successful partnership in the sport's history — may well have been what had led Costa to a certain conservatism of approach. This car appears to be a reaction to that. Last year Fry said: "There are a lot of very clever people here, a lot of creative people. It's just a question of giving them the structure and direction to use their talent." It appears they've been given their head on this car.



Ferrari: more aggressive for 2012

The ugly nose, a by-product of new nose-height regulation, tends to divert attention from features that are almost certainly more significant.

Whereas last year Ferrari hung onto the pushrod rear suspension when all around were switching to pullrod, this year it's made the change wholesale, front and rear. It therefore becomes the first pullrod-suspended F1 car for a decade. Chief of aero Nic Tombazis says this was for "mainly aero reasons. It took us quite a lot of work from the structural, design office and vehicle-dynamics departments to regain all the mechanical characteristics we wanted the suspension to have. I believe we have achieved that, but we also think we have found an aerodynamic

advantage from this solution."

It's not that a pullrod solution is inherently better aerodynamically; it just depends upon what Ferrari is trying to achieve with the airflow further back – and from the sidepods to the totally repackaged shrink-wrapped rear end it's clear the team has really pushed the boat out on trying to reclaim as much of the rear downforce lost to the exhaust regulations as possible.

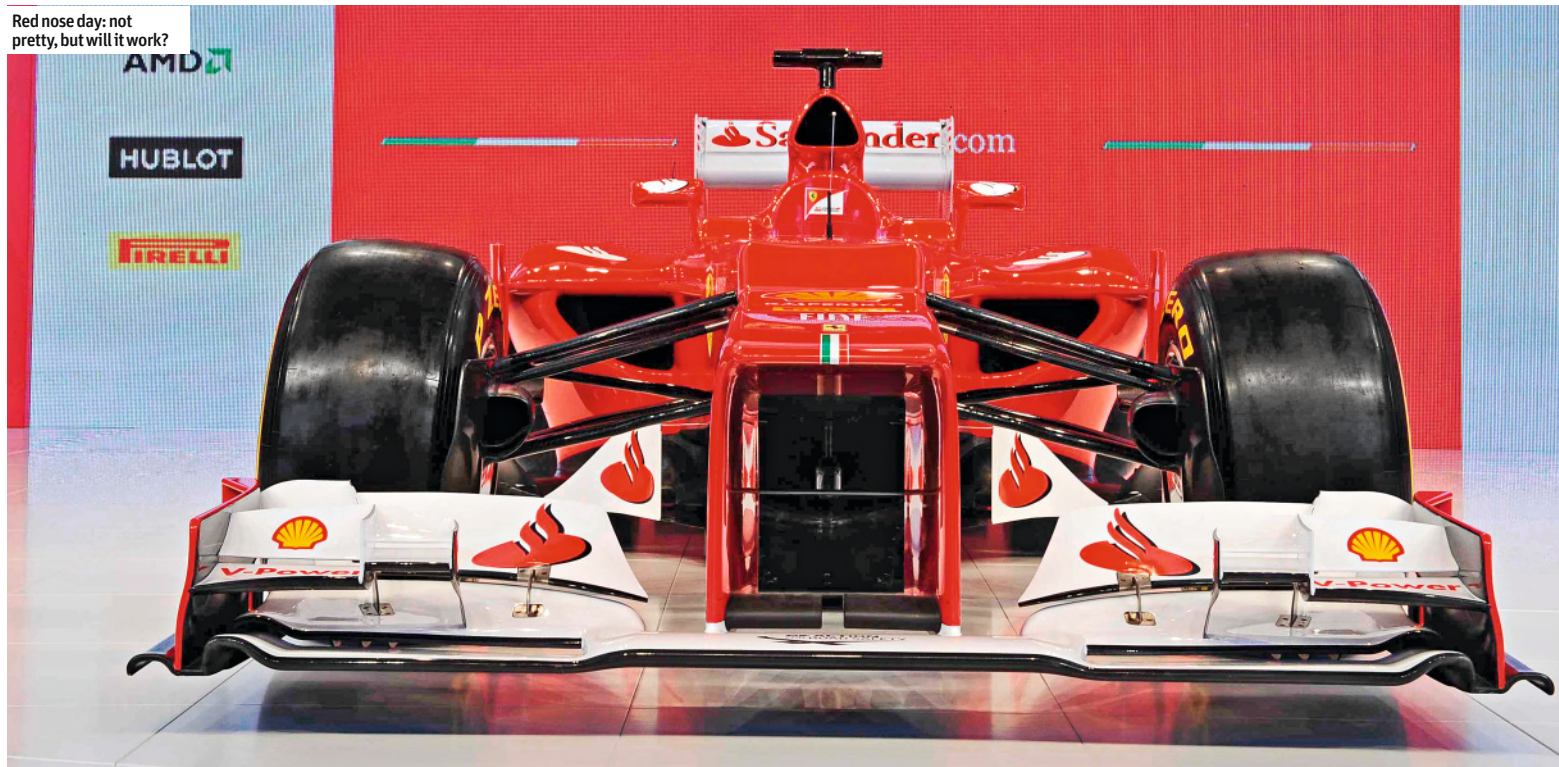
A rethink on how to accommodate the side-impact crash demands has allowed the pods to begin further back, giving the airflow coming off the front wheels more space in which to get reattached to the body before it's then turned by vertical vanes just ahead of the pods. Compared to last year's car,

the lower part of the sidepods is much shorter, even if the upper section actually carries further back. It appears to be inviting the airflow to follow the contours of this sculpted gouge, to keep it attached to what is a much more extreme Coke-bottle contour than the old car's.

"Yes, the layout [here] is quite extreme," says engine chief Luca Marmorini, "and this for the engine is quite a challenge."

"The narrow Coke panel has been possible through repacking of chassis and engine," says Tombazis, "and also from a gearbox that has been completely reviewed and made narrower." On top of that gearbox sits extra radiator capacity, helping to ▶

Red nose day: not pretty, but will it work?



◀ minimise the surface area of those within the sidepods, a feature taken from the 2011 McLaren and Williams.

There's definitely more of a Red Bull style of extremity in the nether regions, helped also by the switch to pullrod rear suspension. The Red Bull influence was seen at the end of last year on the front of the car as the team introduced a very RB7-like front wing that clearly had a significant measure of high-load flexibility built into its structure.

The team has continued with this line of development on the new car. But there has been no take-up of Red Bull's more-extreme KERS solution. The Ferrari/Magneti Marelli unit remains tucked neatly away beneath the fuel tank within the car survival cell. A lot of work has been expended on reducing its weight, the 2011 version believed to have been heavier than the equivalent Mercedes component.

Marmorini admits extensive testing of various exhaust layouts is still ongoing. The car as launched features an exhaust that appears to point down to the inner shoulder of the rear tyre, despite regulations requiring the pipe to be angled upwards by between 10 and 30 degrees. The team is awaiting a precise response from the FIA on a query of interpretation it has made. Just like the 'reactive-ride' front-suspension geometry it was intending to use, but which was banned a couple of weeks ago, it illustrates a more-aggressive approach to the rulebook than while conceiving the 2011 car.

"We have a responsibility to win from the very beginning of the year," says Domenicali, the choice of terms

**"It's as if there's a feeling of 'no more Mr Nice Guy' about Ferrari's approach"**



reflecting the pressure everyone there is under. "We have to fight for the title," says Fernando Alonso. "Nothing less will do."

Take all this and piece it together with the team's recent withdrawal from FOTA, and it's as if there's a feeling of 'no more Mr Nice Guy' about the approach to 2012, as if the pressure to deliver has transcended the team's obligation to play its part in getting a better deal from the commercial-rights holder for all the teams.

With hindsight, agreeing two years ago to the FOTA initiative of an in-season test ban removed the potency of Ferrari's in-house test track while, unbeknown to the team, the simulation game was being moved

on massively by McLaren and Red Bull, something that only came fully to light when Fry left McLaren for Ferrari just over a year ago. Software-simulation specialist Neil Martin – a former colleague of Fry's at McLaren – was recruited from Red Bull at around the same time as Fry, and in the past few weeks there have been further acquisitions of staff from McLaren. No stone is being left unturned in what is a crucial season for the team.

Another key recruitment has been that of Hirohide Hamashima, formerly of Bridgestone. A recurrent weakness of Ferrari F1 cars of recent years has been the inability to get their front tyres up to temperature in qualifying. It's a trait that has its upsides in certain circumstances, but in the blown-diffuser/Pirelli combination of last year those circumstances arose less often, and more usually the car was simply too gentle on the rubber. More than any of the visible surfaces of the car, what will be vitally important this year will be how that trait has been addressed, and Hamashima's tyre knowledge will be invaluable.

There is though the distinct possibility that the outlawing of blown diffusers has brought the technical regulations back towards Ferrari. Fry last year said: "You're more likely to be able to get more out of blown diffusers with the engine mapping if you have a car with good tyre warm-up. So for us to make that step with our current philosophy is a little bit difficult. We can run the engine that way but the car stability doesn't like it – we would miss the corner. Head straight on! I believe



Maranello snow meant Grand Cherokees for boys

that's why McLaren gained more from [blown diffusers] than us. McLaren used to be in exactly the same loop as we are now and when I was there we spent the winter of 2007-08 getting out of that loop. How much that was worth then, I'm not sure. But it definitely put them in a better place to take advantage of blown diffusers later on."

So has Fry spent the winter of 2011-12 pursuing a similar programme of changing the set-up parameters, to give a car that works its front tyres a little harder? Or has the abolition of exhaust-blown diffusers made such a programme unnecessary? Or a bit of both? Whatever, it's difficult to see how the banning of a technology that Ferrari could never fully exploit as being anything other than positive for the team.

The quest for improvement is there in all areas, not merely design. Although the team was overall the third quickest last year on pitstops, that's no more acceptable than having only the third-quickest car. "There are some areas we've looked at which we think can bring us an improvement," says Fry, "and we hope we can get our average pitstop down by 0.4s or even 0.5s." Similarly, although the car was arguably the best off the line by the end of last year, further work has been made, in particular in adapting the systems to the more-restrictive clutch regulations.

All this and the more-aggressive approach may yet keep the immediate post-Brawn/Todt management in place, even though it will have suffered some key casualties along the way. It's good for the sport when Ferrari



**"McLaren used to be in the same loop as we are now"**

**Tech chief Pat Fry**

is competitive, good for the fans when as great a driver as Alonso has a competitive enough tool to take on Red Bull and McLaren.

So will the F2012 be good enough to do that, and in the process relieve some of the stresses within? "The car is a bit of a step from where we've been," says Fry, "and certainly we've taken a few more risks on the basic car layout. But I don't think you're ever going to be completely happy at this stage. Happy is winning the first race and winning the championship. A lot of effort has gone in, and it's nice to see the fruit of everyone's hard work over the past six months. But when you have a winning car it makes everyone's life a bit easier." ❧

**AUTOSPORT SAYS..**

**EDD STRAW**  
F1 EDITOR

edd.straw  
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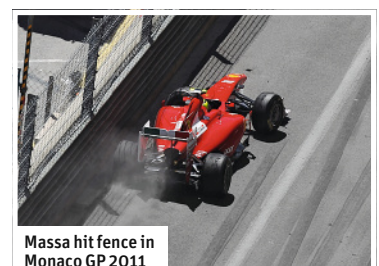
This is a huge year for Ferrari, yet there is one stop that has not been pulled out – the one marked 'second driver'.

For two years, Felipe Massa's performances have not been up to scratch even as a support act to Fernando Alonso. In the worst-case scenario, that of a drivers' and constructors' championship lost by a few points, it will be Massa that has cost them. He drove extremely well in 2008, but it's not 2008 anymore. The elephant in the room is his terrible accident at the Hungaroring in '09, after which he has not been able to deliver the same level of performance. He's sporadically fast, but inconsistent and, for all the complaints about tyres, the fact is that in '10 he had a disappointing season (the Hockenheim moral win apart) while Bridgestone-shod, and in '11 he couldn't do it on Pirellis. There's nothing to suggest any of that will change in '12.

Which begs the question: why is he still there? Ferrari committed to making a major technical change last year, yet some of the money spent turning the car from pretty good into what it hopes will be outstanding could be squandered if Massa continues to toil ineffectively.

Given the struggles he has had, Ferrari's conspicuous backing of him makes it very clear that he has to deliver. If Massa doesn't perform, Luca di Montezemolo can say that they supported him, gave him every chance to thrive and, if he isn't quite the driver he once was because of the accident he suffered in a Ferrari, he will hardly have been discarded with undue haste.

Massa can't afford to struggle again in 2012, not just for his but for Ferrari's sake. In some ways he's just as important a driver as Alonso, because of what his performances could cost the Prancing Horse.



Massa hit fence in Monaco GP 2011

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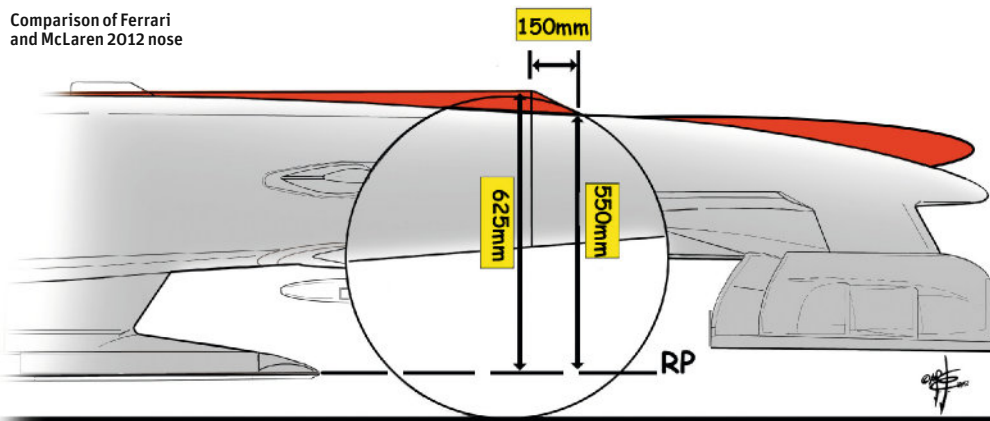
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# THIS WEEK IN F1

Comparison of Ferrari and McLaren 2012 nose



## McLAREN GAMBLES ON LOW CHASSIS

McLaren's new MP4-27 is the only car from the likely frontrunning Formula 1 teams not to feature the 'platypus' nose this year.

Although Mercedes has yet to reveal its new challenger, the rest of the top eight teams in last year's world championship all feature the shelf, which has been created through new regulations forcing the nose section of the car to be 75mm lower than the front of the chassis.

The new McLaren does not feature the step because the front of its chassis is lower than its rivals'. Although this compromises the airflow under the car, it is not necessarily an indicator that McLaren's design concept is wrong.

Lotus technical director James Allison told



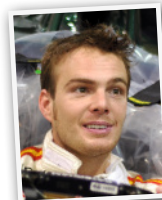
McLaren has low chassis

AUTOSPORT: "There are loads of ways of skinning a cat with an F1 car. I would have guessed that the majority of teams would have a stepped nose, but there is far from one solution, so it doesn't surprise me that there is more than one approach."

**P34 LAUNCH OF McLAREN MP4-27**

## VAN DER GARDE IS CATERHAM RESERVE

GP2 race winner Giedo van der Garde has been confirmed as Caterham's reserve for the 2012 season. The Dutchman was scheduled to have his first run in the car at Jerez today (Thursday), having not tested F1 machinery since November 2008, when he drove for Renault. Van der Garde, 26, will participate in some Friday practice sessions during the season.



# 25

Number of sets of tyres available per car for this week's Jerez F1 test



Since the test two weeks ago I have less worries about the whole thing than I had before. It was interesting to drive and get that feeling back a little bit



Kimi Raikkonen on his feelings about returning to Formula 1 following his first test last month

NK shone in Indian GP



## KARTHIKEYAN CONFIRMED

Narain Karthikeyan will partner Pedro de la Rosa at HRT this year in a deal confirmed last Friday. The Indian started eight races for the squad last season and credited his performance in his home grand prix as key to landing the backing required for the drive. The ex-Jordan driver is not testing the team's old car this week, but is scheduled to return to the cockpit at the Barcelona test from February 21, when HRT is hoping to run its new car.

## TECH CHIEFS LEAVE HRT..

HRT technical director Jacky Eeckelaert has left the team after it decided not to give him a new contract when his existing one expired at the end of January. The Belgian was charged with overseeing work on the 2012 car last October. Chief designer Jean-Claude Martens is now responsible for the new car, including the passing of the FIA-mandated crash tests.

## ...AND SAUBER TOO

James Key has quit his post as Sauber technical director. Key, who joined the team in April 2010 and oversaw the process of downsizing in the wake of BMW selling it, is believed to have resigned amid concerns about Sauber not being able to invest as heavily as he wanted in development work. Key has taken a new role in the UK, believed to be with the motorsport division of Lotus Cars.

Key bolts for pastures new





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6	8th July	Daytona Milton Keynes	International Extra
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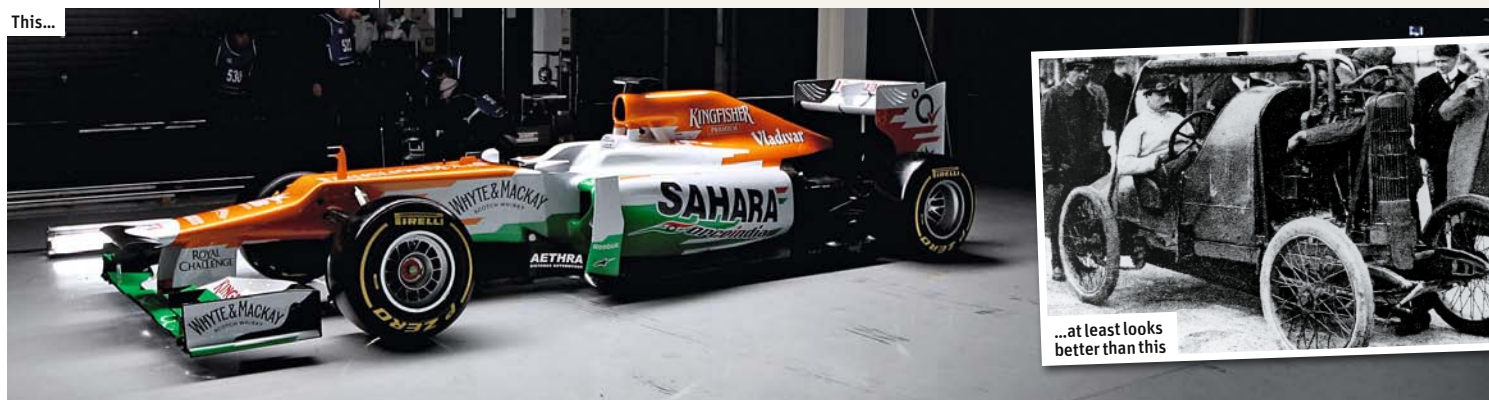




# MPH Mark Hughes

AUTOSPORT grand prix editor

This...



Even if you need the strongest of beer goggles to find this year's F1 cars attractive, they're not the ugliest racing machinery of all time. But, like the 1910 breed, they've been forced upon us by regulations

The 2012 Force India and 1910 voiturette Lion-Peugeot are the result of how the constant tension between regulations on one hand and the drive for performance on the other can cause an abomination to force itself through the cracks.

Actually the VJM05 is one of the better-looking 'stepped-nose' 2012 cars, but those duck bills don't look pretty no matter how much you blur your eyes.

Reducing the maximum nose height 75mm was done in the interests of safety and, had the regulation bulkhead height been lowered too, there would have been no aesthetic violation. But team engineers objected as it would have meant insufficient gap between the top and bottom wishbones to give the required suspension geometries. The bigger that gap, the greater degree of camber change can be built into the suspension. Given that the front Pirelli needs a lot of camber, restricting that wishbone gap was a non-starter.

So we have that step between the

maximum height of the two zones, and when this is combined with the desire of the aerodynamicists to have a big space beneath the nose to create a low-pressure area – to induce the airflow to accelerate into the vacuum, thereby increasing downforce – we find them using all the permitted bulkhead height. Therefore we get the ugly bodywork step.

But McLaren, among others, has shown that it's not necessary to opt for the ugly solution. It has opted not to take full advantage of the bulkhead maximum height, and instead a 'snow-plough' moulding just behind the nose's tip works the air to try to overcome the lack of space beneath the low nose. You can bet it hasn't been done on a whim, that countless CFD hours have been spent on making the comparison, and that McLaren must therefore believe its solution is at least as aerodynamically effective as the stepped-nose one, even if more intricate.

Keeping the bulkhead and nose low limits the height of the top

wishbone, but that is compensated by how much lower the bottom wishbone can be, so that the gap between the two is no worse than on the stepped-nose cars. Besides which, the centre of gravity of the whole construction will be lower. A lot hangs on whether that snow-plough device works. For the sake of the aesthetics of the sport, it would be great if McLaren's method shows itself to be superior – or equal – to the stepped-nose cars.

That hideous 1910 Lion-Peugeot came about through a regulation limiting the cylinder bore in the voiturette category. But there was no regulation limiting the engine stroke – hence the ludicrously high engine, a bonnet that had to be peered around and an exhaust that went over the driver's head. It was very competitive, even though it tended to roll over when cornered too hard. But there was surely a feeling of relief that year when the season's major voiturette race was won not by the freakish French car but the much more elegant and conventional Hispano-Suiza. ☼

...at least looks better than this

PICTURE: THOMPSON/GETTY, MUSEE-PEUGEOT

“McLaren has shown the ugly solution isn't necessary”



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# Who needs a BIG 2012?

There are many drivers, motorsport figures and championships that need a strong season this year. *AUTOSPORT* reveals who needs to raise their game

## Lewis Hamilton

McLaren F1 star needs to bounce back after inconsistent 2011

Whatever happens, 2012 could prove to be the most crucial year of the 27-year-old's career to date. His McLaren contract expires at the end of the campaign and his re-signing will be an inescapable storyline until he puts pen to paper.

Whether he stays with the Woking team or moves to a rival will depend largely on the effectiveness of the McLaren MP4-27. If it's not up to scratch, expect fireworks and more flirtation with rival teams. And if it is, the question is whether Hamilton will be the man to lead McLaren's title push.

Last year was a curate's

egg of a season. There were some tremendous highs – three wins stand out – but far too many on- and off-track lows. Whether he can cut out the blunders, which were at times astonishingly cack-handed, and avoid getting himself into trouble off track will have a big say in his future.

Hamilton unquestionably considers himself worthy of becoming a multiple world champion. And there's no question that if he harnesses his ability he can be. The first half of this season will tell us a lot about the likely path of his career.

*Edd Straw*



## Mark Webber

Red Bull number two has to improve to keep his seat for 2013

In recent times, every season has been hailed as Mark Webber's last in Formula 1 and it's true that there was a brief period after losing the world title in Abu Dhabi in 2010 when he contemplated walking away. But the bottom line is that he remains part of the best team in F1 and has every chance to earn yet another one-year deal... provided he ups his game from last year.

On paper, Webber's 2011 season was pretty dreadful. In reality, it was likely the case of a very good grand prix driver being made to look poor by a brilliant

one in Sebastian Vettel. He's far from the only driver to suffer this fate and it's fair to say that the small deficit to Vettel in terms of raw speed often translated to a big deficit come a race's end.

Despite that, he was still a capable support act and scored heavily to put the constructors' crown beyond doubt for Red Bull. Likely, he will at least do the same this year, but he needs to do better than that if new Scuderia Toro Rosso pairing Jean-Eric Vergne and Daniel Ricciardo perform as Red Bull hopes.

*Edd Straw*



... and the Aussie must stand tall this season

Webber's 2011 season was not consistent...



## Stefano Domenicali

Ferrari expects a title challenge, and the team manager is in the firing line

After three barren years of no championship titles at Ferrari, Stefano Domenicali is aware that the 2012 season is an important one for both him and his team.

The disappointments of last season, on the back of what happened in Abu Dhabi in 2010, were such that the team principal had no choice but to make big changes. His actions prompted a technical reshuffle – and he cast aside long-serving technical chief Aldo Costa so Pat Fry could expand his role and engineer a much-needed overhaul.

The result has been a different mindset at Ferrari – with Fry bringing in new staff and working practices to address the areas inside Maranello in which he felt it was not delivering as it should.

Fry's changes should manifest themselves with a better car this season, but it also means that

Domenicali has no excuse if the improvements do not come. This, after all, is his plan.

Ferrari is an outfit that does not accept failure. So if Domenicali's action-plan works, he can take all the credit. If it fails – and Ferrari does not fight for the title – then it is inevitable the fingers will be pointing at one man.

*Edd Straw*



Domenicali: one last chance at Ferrari

## Jean Todt

The FIA president has to keep a lot of awkward balls in the air this year

Todt (l) must work with Ecclestone and others



The uncertain future of the WRC. The impact of Peugeot's departure from the nascent WEC. The collapse of FOTA and the pressing need to negotiate a new Concorde Agreement in F1. Add to this weak FIA GT and World Touring Car Championships and it's obvious that this is a big year for FIA boss Jean Todt.

In Todt's previous roles at Peugeot Sport and Ferrari, he demonstrated an amazing talent to build a team around him that was capable of delivering to the highest level.

But the stakes are different now. While the FIA will gain from the

resolution of all the issues outlined above, it's motorsport as a whole that will be the real winner. The question is: can he turn his single-mindedness – some may even say belligerence – into resolving these issues for the common good? His handling of the WRC commercial rights farrago drew the first criticism of his presidency, and he needs to be seen to act in a more transparent way when dealing with the multitude of problems.

There may be no immediate risk to his position, but this year will play a huge part in defining his legacy.

*Andrew van de Burgt*

## Mikko Hirvonen

This could be the Finn's only chance to take on Loeb in the same team



Hirvonen needs to beat Loeb at Citroen

Some say Mikko Hirvonen's time has been and gone. A point away from World Rally title glory in 2009 was as close as he would ever come to the title.

Not necessarily.

Hirvonen's biggest obstacle is Sebastien Loeb – as it has been for the rest of the WRC regulars since 2004 – but now Hirvonen's situation is complicated by the fact that he's sharing Loeb's Citroen team. Or is it?

Loeb has gone on the record and made plain his desire not to see team orders favouring him before its sensible to do so. In short, Loeb wants to fight for the title and he sees Hirvonen as one of his main threats.

So, Mikko, get on it. The sun is shining and the time has come to make some hay.

In the DS3 WRC, he's got a world champion car and a far better resourced team around him than he had at Ford, so now Hirvonen just has to do what he does best: drive fast. And make sure that fast is faster than Loeb.

He has to be utterly certain to beat the Frenchman in Sweden and then on as many gravel rallies as he can. If Citroen wants to back its man for title number nine, the Finn has to make it as difficult for them as he can. If he fails, perennial number two status beckons.

David Evans

## Mini World Rally Team

It has a quick car, but will it have a rally programme to help fly the flag?

While the immediate future of the Mini World Rally Team hangs in the balance after an acrimonious few months between car builder Prodrive and the BMW Group in Munich, there's no doubting the speed of the John Cooper Works WRC.

This season started in the best imaginable fashion, with Dani Sordo finishing second on the Monte Carlo Rally. Beating Sebastien Loeb on that event was a dream too far, but second was a sensational result.

However, the car needs to be sorted for the loose. All three of the podiums the Mini has scored from the seven WRC rounds it has contested so far have come on sealed surfaces and, as yet, the car hasn't really demonstrated the same prowess on the dirt.

Meeke: locked out of Mini seat



The potential of the Countryman-based World Rally Car is as clear as it is so-far untapped. A win in the immediate future is unlikely, but Sordo's speed and a mishap or two elsewhere could leave the door open in Germany or France later in the season. And that could just be the lever required to make it all happen.

One short-term fix would be to get Kris Meeke back in the car pronto...

David Evans

Mini WRC has a bright future in the right hands



Bird and Bianchi both need big years



## Sam Bird and Jules Bianchi

Up-and-coming drivers are aiming to regain career momentum

Sam Bird and Jules Bianchi vied for rookie of the year honours in GP2 in 2010 while team-mates at ART Grand Prix. But by the end of their second season in the category, neither had met their lofty ambitions. Over those two seasons they managed one win apiece, with Bianchi finishing P3 in the championship both times and Bird taking fifth and sixth.

In 2012, their paths appear to be crossing again, with both likely to end up racing in Formula Renault 3.5. Ferrari Academy driver Bianchi has also landed the best third-driver seat in

Formula 1 with Force India, and the Silverstone-based team has promised him at least nine outings on Fridays at grands prix during the season. It's a little short of the 14 sessions given to Nico Hulkenberg in 2011, but surpasses the eight Paul di Resta had the year before.

For Bianchi, making an impact on F1 weekends will be the top priority. Bird's F1 reserve-driver role at Mercedes doesn't come with in-season track time, so success in the junior category will be more crucial for the Brit.

Glenn Freeman

Bianchi needs to make a different sort of impact



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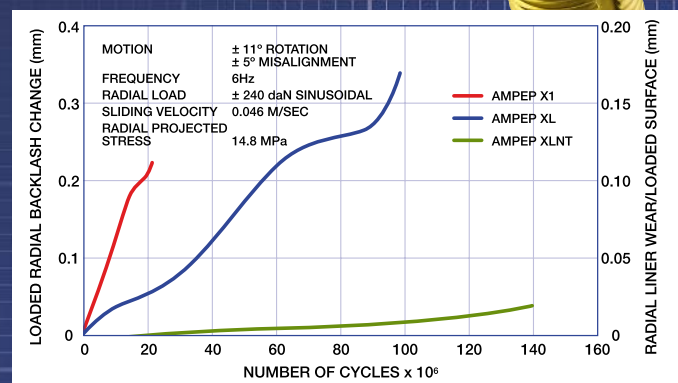
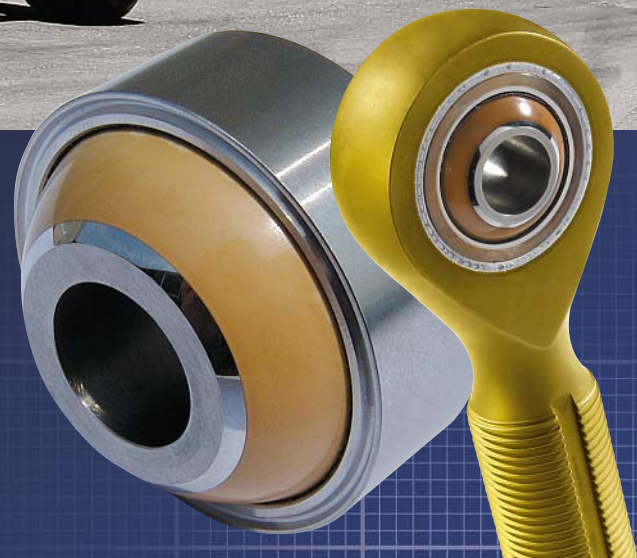
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## Juan Pablo Montoya

Ex-F1 racer has to crack ovals to secure NASCAR future



JPM must get his act together in '12

Now entering his sixth NASCAR Sprint Cup season since his McLaren F1 split, last year was a big disappointment for the Earnhardt Ganassi Racing axis. Montoya might have out-pointed 2010 Daytona 500-winning team-mate Jamie McMurray last year, but 21st in the points isn't what the Chipster is looking for from his superstar Colombian.

Since his switch to stock cars, Montoya has won twice from 181 starts, both coming on road courses. His lack of an oval victory in stock cars continues to plague him, and his qualification for the Chase for the Championship in 2009 now looks like

a bit of a freak occurrence rather than him cracking NASCAR's code.

Former Hendrick engineer Chris Heroy is Montoya's new crew chief, after long-time ally Brian Pattie was replaced mid-2011 by Jim Pohlman, and much will depend on how quickly they gel and what Heroy can achieve.

Ganassi isn't afraid to hire or fire personnel if things aren't working – he jettisoned senior staff members Steve Hmiel and Tony Glover last year. And while JPM isn't on the verge of joining them, he needs some big results in 2012 to make sure of that big-buck, multi-year contract extension.

*Charles Bradley*

## Kurt & Kyle Busch

Fiery NASCAR pair needs to cool down and avoid trouble

The Busch brothers have often been cast as the bad boys of NASCAR, but they plumbed new depths in 2011. Elder sibling Kurt was vociferous in his complaints about his Penske-run Dodge at the start of the season, but it was his potty-mouthed outburst at Homestead to pit reporter Dr Jerry Punch and a TV cameraman, caught on a bystander's mobile phone, that got him sacked. The former Cup champion's comeback with James Finch's aptly-named Phoenix team will be monitored closely – not least because he's running out of owners to offend.

Younger brother Kyle, nicknamed 'Shrub', also grew out of control in 2011. His retaliation wrecking of Ron Hornaday under a yellow-flag period in a Texas Truck race didn't quite cost him his top drive with Joe Gibbs Racing in Cup, but it came close.

Coming just a week after Dan Wheldon's death in an IndyCar race at Las Vegas, his timing couldn't have been worse.

Renowned for bouts of petulance, Busch was given a major dressing down from Gibbs, the former Superbowl-winning coach, and sponsor Mars. One more twig out of line this year, and it will be P45 time, so he'd better turn over a new leaf.

*Charles Bradley*



Kurt (l) and Kyle need to chill out...

## Randy Bernard/IndyCar

With a new car and fresh staff, US single-seater series' future faces a key season



Bernard: new blood



A lot hinges on DW12 car this year

American single-seater racing has been through more 'make or break' seasons over the past 20 years than it cares to remember. It's a stretch to say that 2012 will determine whether IndyCar lives or dies, but it's fair to say that it will set the tone for the three or four years that follow.

IndyCar CEO Randy Bernard has been aggressive in his efforts to reinvigorate the series, and he's also been realistic enough to identify and scrap the initiatives that didn't work. You won't see a split round at Texas this year, or a \$5m prize at the finale.

What you will see is a radical new car, the arrival of two new engine

manufacturers, a field that continues to benefit from the current regime's policy to cull from the bottom up, and a calendar that reflects demand.

Behind the scenes, the series will be hoping to spare itself the blushes of 2011 with the removal of Brian Barnhart from his position in race control in favour of former ALMS man Beaux Barfield. If all this doesn't give the series a boost, then what will?

The elephant in the room is Dan Wheldon's death and, at the absolute least, many will be looking to IndyCar for evidence that the series learned lessons from the Las Vegas tragedy.

*Mark Glendenning*

## World Touring Car Championship

Global tin-top contest still struggling to step up

The World Touring Car Championship has perennially been just an extra manufacturer or two away from being good, but it desperately needs to step up from its 2011 level.

A championship built around cars that are conceivably slower than some of those driven to the circuit needs something else to pique interest, and the massive gulf in quality between the works Chevrolets and the rest last year did little to help on that front.

An unstable calendar further muddied the water. The Brazilian race's planned move from Curitiba to Interlagos was scrapped, the Argentina race was dropped because the track wasn't ready, Morocco was cancelled,

and the Chinese event was moved from Guangdong to Tianma, a small circuit outside Shanghai. Even the good news often came with a caveat – the move to Suzuka was tainted by the WTCC's use of a drastically shortened circuit layout. (Bizarrely, the support events used the full Grand Prix configuration).

Series promoter Marcello Lotti remains passionate about taking production-based touring cars onto the world stage, and on paper the arrival of Honda, Ford (albeit run by former BTCC team Arena) and the addition of Sears Point look promising. But at some point, the championship needs to demonstrate its viability.

*Mark Glendenning*



The WTCC needs to spread the love in '12

**Sebastien Loeb currently rules the WRC roost, but there is young talent on its way up. DAVID EVANS picks out 10 of the best**



Novikov: Youthful exuberance

**C**an you remember a time before Sebastien Loeb. Before one man won 68 rounds of the World Rally Championship? Or eight straight world titles? Ten years ago, the then-28-year-old Frenchman scored his first WRC win. Loeb dominated the next decade – who can follow that?

In short, nobody. Loeb's a freak, a phenomenon. He is the most talented driver in the history of the sport, but he's also plied his trade in an era generally felt to be weak on frontliners. Now, the next generation is coming. So here's AUTOSPORT's guide to the men who will be ruling these pages in 10 years, when Loeb and his statistics are history. A magical history, mind.

Irishman Fisher has a nose for pace



**KEVIN ABBRING**

**AGE:** 23  
**NATIONALITY:** Dutch  
**HIGHLIGHT TO DATE:** Two JWRC rally wins  
**CURRENTLY:** Part of VW Junior Programme

Backed from an early age by the Dutch federation, Abbring showed well in three seasons of JWRC. He won two rounds despite not having a pukka Super 1600 car (Renault Clio R3). Citroen picked him up to dominate the French Gravel series last year, before he was

plucked by VW and finished an exceptional 12th on his four-wheel-drive debut in a Skoda on last year's Rally GB. Abbring was the driver who made the most of his time on the FIA Institute Young Driver Excellence Academy last season, taking the Driver of the Academy award.



**CRAIG BREEN**

**AGE:** 21  
**NATIONALITY:** Irish  
**HIGHLIGHT TO DATE:** 2011 WRC Academy win  
**CURRENTLY:** SWRC

Son of former Irish national champion Ray Breen, Craig has made rapid progress since he started rallying in 2007 (while still competing in karting). In 2009, Breen was comfortably the quickest man in a Fiesta R2, winning the British, Irish and International Fiesta SportTrophies. A year later and he'd made the transition

to a Super 2000 Fiesta and celebrated winning his first BRC win on the Ulster. Last season delivered his most dramatic success, when he took the WRC Academy with fastest time on the season's final stage. He's followed that with the perfect start to '12: a sensible Monte Carlo Rally SWRC victory.



**RALLYING'S NEXT**



Freed from university, Fisher is now focused on rallying. He was regularly among the pacesetters in the FIA Academy last season and led numerous rounds. Hasn't forgotten his Emerald Isle roots and pops back to show great speed on home roads. Is running a front-drive Fiesta, but has already demonstrated great four-wheel-drive pace by finishing on the podium on three BRC rounds in 2010 and then eighth overall in a Fiesta S2000 on Rally of Scotland.

**ALASTAIR FISHER**

**AGE:** 23  
**NATIONALITY:** British  
**HIGHLIGHT TO DATE:** Third in 2011 WRC Academy  
**CURRENTLY:** WRC Academy



**EVGENY NOVIKOV**

**AGE:** 21  
**NATIONALITY:** Russian  
**HIGHLIGHT TO DATE:** Fifth on 2012 Monte Carlo  
**CURRENTLY:** Ford driver in WRC



Unbelievable speed and commitment (he almost sent a Citroen C4 into space after an unflinching approach to one of Finland's most ski-jump-like yumps in 2010) and when he learns to combine the two, he will be world champion. The question is whether the world

contains sufficient capacity for iron smelting to keep this fella in cars. Cut completely from the Colin McRae cloth, Novikov has no fear. His fifth place on the Monte Carlo last month was his most mature drive ever and he'll need more of those this year.

**ANDREAS MIKKELSEN**

**AGE:** 22  
**NATIONALITY:** Norwegian  
**HIGHLIGHT TO DATE:** 2011 IRC champion  
**CURRENTLY:** Skoda UK driver in IRC



Undoubtedly world champion material, he's the youngest driver to score WRC points when he finished fifth in Sweden in 2008 aged 18. His world fell apart slightly when his father's cash ran out at the end of that year, forcing him back to a Subaru cup car for 2009. He was controversially

signed by Skoda UK for 2011 and crashed on the first corner of his first IRC round for the team, but found brilliant form later in the year to win the title. As well as defending his IRC title, he also works with the VW Junior Programme this season.

Increasingly seen as the successor to Sebastien Loeb at Citroen. He might not be French, but neither is the Paris firm's team principal (Yves Matton is Belgian too). There's no hint of favouritism here, as Neuville is worthy of his place in Citroen's satellite team – and he earned his stripes as the only Peugeot driver capable of carrying the fight to Skoda in last season's IRC. Showed great speed to edge Mikkelsen in a Sanremo thriller last season and now needs to make the most of the opportunity ahead of him this year (and not crash on day one like he did in Monte Carlo).



**THIERRY NEUVILLE**

**AGE:** 23  
**NATIONALITY:** Belgian  
**HIGHLIGHT TO DATE:** Corsica/Sanremo IRC wins  
**CURRENTLY:** Citroen driver in WRC

Mikkelsen yumped to IRC title glory in 2011



PICS: WWW.MCKLEIN.DE



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Former Pirelli Star Driver and multiple Kiwi champion, Paddon has plenty of experience of driving production four-wheel-drive cars, but this will be his first season in a Super 2000 motor (he drives a Skoda). He dominated the PWRC last year, despite limited experience at the highest level and has an exceptional work ethic both in and out of the car. He has also shown a great ability to learn, finding his form very, very quickly on asphalt despite rarely having driven on anything but dirt in his formative years. Has moved from NZ to Spain to make it happen this year.

**HAYDEN PADDON**

**AGE:** 24  
**NATIONALITY:** New Zealand  
**HIGHLIGHT TO DATE:** 2011 PWRC Champion  
**CURRENTLY:** SWRC



**OTT TANAK**

**AGE:** 24  
**NATIONALITY:** Estonian  
**HIGHLIGHT TO DATE:** Sixth on 2011 Rally GB  
**CURRENTLY:** Ford driver in WRC

Tanak has shown the same kind of speed his mentor Markko Martin became well known for during his time in the WRC. Unlike Martin, Tanak also developed a reputation as a bit of a crasher. Handed the dream ticket of being a funded Ford

driver in the WRC, the combined efforts of Martin and Malcolm Wilson will bring out the best of the former Pirelli Star Driver. In a similar position to Neuville at Citroen: the heir apparent. Now's the time to make it happen.



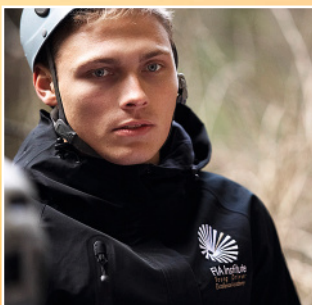
Is Tanak Ford's WRC man of the future?



Wiegand landed 2011 Rally GB gig in 'VW' Skoda

**PONTUS TIDEMAND**

**AGE:** 21  
**NATIONALITY:** Swedish  
**HIGHLIGHT TO DATE:** 2011 Swedish Champion  
**CURRENTLY:** Mixed events in Skoda Fabia S2000



Having the irrepressible Henning Solberg as a stepdad is a huge blessing – not least because the Norwegian loaned Pontus his Ford Fiesta S2000 to win four Swedish Championship rounds and the title last season. Tidemand is not short on good advice for this year, having signed up with the same management that runs Andreas Mikkelsen and becoming part of the FIA Institute Young Driver Excellence Academy.

**SEPP WIEGAND**

**AGE:** 21  
**NATIONALITY:** German  
**HIGHLIGHT TO DATE:** VW driver on 2011 Rally GB  
**CURRENTLY:** IRC



After starting out in a domestic Suzuki one-make series in '09, he moved into the latter rounds of last year's WRC Academy, taking fourth in France. That was enough to grab Volkswagen's attention and he

drove the firm's Skoda Fabia S2000 on Rally GB but was forced to retire when his co-driver fell ill. Will contest this year's IRC with backing from Skoda Germany, with results carefully monitored in Hannover.

**WHAT OF THE BRITS?**

Beyond Alastair Fisher, there are a host of other British drivers who were on the verge of AUTOSPORT's big 10.

BRC champion David Bogie lifted his game last season, while Elfyn Evans acquitted himself with aplomb in his first year of four-wheel drive. Marty

McCormack was another star to shine in last season's BRC, with the Northern Irishman winning his home BRC round in a two-wheel-drive Citroen.

Mull's John MacCrone is chasing the budget for a WRC Academy assault and certainly has the pace to run at the front

of that field. Further down the order, Chris Ingram and Cameron Davies are the cream of the Formula 1000 series and both have been rallying for longer than they've had acne.

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**MIS**  
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**INTERNATIONAL RACES & RESULTS**  
**TOYOTA RACING SERIES**  
 Hampton Downs (NZ), Rd 4/5

- QUICK RESULTS**  
 → Race 1 **Mitch Evans**  
 → Race 2 **Raffaele Marciello**  
 → Race 3 **Nick Cassidy**  
 → Points leader **Cassidy**

**RACE RATING** Fighting comeback from Evans in finale the star turn of the Hampton round  
 ★★☆☆☆

**REPORT**  
**WORLD OF SPORT**

TOYOTA RACING SERIES HAMPTON DOWNS (NZ), FEBRUARY 4-5, RD 4/5

# Cassidy trumps Evans comeback



Cassidy led final from the lights

**NICK CASSIDY TOOK A** strong grip on the Toyota Racing Series as he beat returning GP3 race winner Mitch Evans to take the New Zealand Motor Cup at Hampton Downs. Reigning champion Evans was in town to prepare for the defence of his New Zealand Grand Prix title at Manfeild this weekend, and he won the opening race

easily from pole, spurred on by a recent boot camp in Australia with his mentor Mark Webber. "I didn't get a perfect start and had a bit of wheelspin off the line, but once we were through the first corner things settled down into a comfortable pace," Evans said. Cassidy qualified just 0.020s slower, but was

shouldered aside by Dutchman Hannes van Asseldonk at the start and took third ahead of Austrian Lucas Auer – who made it a clean sweep of the top four for Giles Motorsport. Raffaele Marciello was next up ahead of British Formula Renault racers Jordan King and Josh Hill. Marciello controlled the reversed-grid second race to take his first TRS win, the Italian helped in no small part by a first-corner pile-up that eliminated Evans, Nathanael Berthon, Sheban Siddiqi and Hill, who called it the biggest shunt of his career. Auer and King filled the podium ahead of van Asseldonk and Cassidy. A great start in the final was the catalyst for

Cassidy's win, although he also did a great job on the restarts after two safety car periods. "All weekend I've really been able to master the starts; I'm really pleased with how it's come together," he said. Evans lost places at the start, but cut through to second and got within 0.5s of Cassidy at times, but was never able to mount a serious passing attempt. Van Asseldonk completed the podium, chased by Hill, Auer, Berthon, King and Marciello. Cassidy top-scored over the weekend to extend his points lead with one round to go, although it's now van Asseldonk who is second after Damon Leitch suffered a horror weekend that included a mechanical

problem in qualifying, a race-two penalty and a crash in the finale. King, fifth in the points behind compatriot Hill, felt his placings did not reflect his race pace after qualifying sixth. ● Bernard Carpinter

**RESULTS**  
**Race 1 Mitch Evans**, 15 laps in 15m25.128s; 2 Hannes van Asseldonk, +2.649s; 3 Nick Cassidy; 4 Lucas Auer; 5 Raffaele Marciello; 6 Jordan King. **Race 2 Marciello**, 15 laps in 17m10.140s; 2 Auer, +3.204s; 3 King; 4 van Asseldonk; 5 Cassidy; 6 Jono Lester. **Race 3 Cassidy**, 20 laps in 24m07.685s; 2 Evans, +1.281s; 3 van Asseldonk; 4 Josh Hill; 5 Auer; 6 Nathanael Berthon. **Points** 1 Cassidy, 730; 2 van Asseldonk, 604; 3 Damon Leitch, 571; 4 Hill, 520; 5 King, 516; 6 Marciello, 460.



GP3 man Evans won on TRS return



CURRENT STANDINGS

- 1 Sebastian Vettel ◇ 31,442
- 2 Mark Webber ◇ 21,777
- 3 Jenson Button ◇ 19,745
- 4 Lewis Hamilton ◇ 19,305
- 5 Fernando Alonso ◇ 18,663

Ranking the world's best drivers.....

**WHAT HAPPENED THIS WEEK**

Although no events counted for points this week, there could be changes afoot when Rally Sweden gets under way on Friday. Race for 2012 leader Sebastien Loeb (7) needs a win to prevent a points drop, while a podium for Petter Solberg (60) would move him up.

To see the full list, visit [castroldriverrankings.com](http://castroldriverrankings.com)

LE MANS

# Toyota chance for Davidson...

Peugeot refugee closing in on deal to join Japanese make's Le Mans programme. *By GARY WATKINS*



Davidson was left jobless by Peugeot

Anthony Davidson is closing on a Le Mans 24 Hours drive with Toyota following former employer Peugeot's withdrawal from sportscar racing.

The 32-year-old Briton, who joined Peugeot's race line-up in 2010, is odds-on for a drive in the second Toyota TS030 at Le Mans in June, AUTOSPORT has learned. He looks almost certain to join Toyota Super GT driver Hiroaki Ishiura and former Toro Rosso Formula 1 driver Sebastien Buemi in the car for the 24 Hours.

A spokesman for Toyota

Motorsport GmbH, which is masterminding the manufacturer's return to Le Mans after an absence of 12 years, would not comment on the likelihood of Davidson joining its line-up. He also explained that Ishiura had yet to sign a contract, despite being nominated in the second car when the Le Mans entry list was published last week.

"We are not far from having our line-up in place," he said, "but we haven't firmed up contracts yet."

Davidson was unavailable for comment as we went to press.

His deal with Toyota is likely only to encompass Le Mans and the Fuji round of the FIA World Endurance Championship in October. The manufacturer has no plans at this stage to field multiple cars at other WEC races this season (see below).

Davidson is known to have been contacted by Toyota before the final race of last year, but negotiations did not proceed because he was in the middle of a two-year deal with Peugeot. The company is understood to have renewed its interest almost as soon as Peugeot's

pull-out was announced.

Speaking to AUTOSPORT straight after the axe fell on Peugeot's 908 project in the middle of last month, he said: "I won the most races in the Intercontinental Le Mans Cup [the forerunner of the WEC] and felt that I had a real momentum to my sportscar career. I was looking forward to the new season and having a proper shot at a world title.

"That's why this is so disappointing. I'm positive I'll be back, but it will be difficult to get a full programme in place so late on."

WORLD ENDURANCE

## ...as team expands race schedule

**TOYOTA IS EXPANDING ITS ASSAULT** on the new FIA World Endurance Championship to a minimum of six of the eight rounds.

The move by the Japanese manufacturer to increase its programme from the three or four races originally planned follows pressure from the WEC promoter, the Automobile Club de l'Ouest. In the wake of Peugeot's withdrawal from sportscar racing last month, the ACO needed a second manufacturer to sign up for the LMP1 class in order

for the world title to be awarded.

The sporting regulations are to be changed as part of the compromise deal with Toyota. One car rather than two from each manufacturer will score points and only the best six scores will count towards the championship.

A Toyota Motorsport GmbH spokesman said: "As a full-time entrant we are required to participate in six races, and we are expecting to do that number. At this stage the only race we are confirming

we won't go to is Sebring [the WEC opener next month], but we can't confirm the rest of the schedule with the exception of Spa and Le Mans."

Toyota is planning to run just one car in the majority of the WEC races it attends this year. It has two entries for Le Mans and could also run two at its home track of Fuji, which the WEC visits on October 14.

The Chinese round of the WEC is moving from Zhuhai to Shanghai, home of the country's grand prix. The six-hour takes place on October 27.



TS030 will run at least six races

LE MANS

## Twin assault for Pescarolo team

### SPORTSCAR LEGEND HENRI

Pescarolo is abandoning his own LMP1 contender in favour of a two-pronged Le Mans 24 Hours attack with a new car built around the Aston Martin AMR-One chassis and the Japanese Dome coupe.

Pescarolo Team will field the Aston-based car, to be powered by a Judd V8 engine, in the FIA World Endurance Championship, which includes Le Mans. He has also concluded a deal with Dome to

field a revised version of the four-year-old S102 coupe at the 24 Hours and at the Spa WEC round.

Pescarolo explained that he had struck a deal with Prodrive-run Aston Martin Racing to buy two AMR-One monocoques and a supply of suspension components.

"Our car [the Pescarolo 01] was built in 2007 and the tub would not allow us to do what we wanted with the aerodynamics," he said. "The Aston monocoque has a high nose

and we are confident that there's nothing wrong with it.

"The problems with that car were the engine and the aerodynamics. When you see our car, you will not recognise it. The only body parts we will keep will be the rear wing and part of the diffuser."

The new car, which will be known as the Pescarolo 03, will be driven by team returnee Jean-Christophe Boullion, plus Emmanuel Collard and Julien Jousse. It will not be ready until after next month's opening WEC round at Sebring, at which Pescarolo is seeking dispensation to run last year's Judd V10-engined car.

Pescarolo will run the Dome on behalf of its builder, which has decided to bring its coupe back to Le Mans after an absence of three years. It is reworking the chassis it ran in 2008 into the S102.5, which will be powered by a 3.4-litre Judd V8 in place of its original V10.

Former Peugeot drivers Sebastien Bourdais and Nicolas Minassian have already been signed to drive the car. The third driver for Le Mans will be Japanese.



Artist's impression of new Dome S102.5

## AUTOSPORT SAYS...

**GARY WATKINS**  
INTERNATIONAL  
EDITOR-AT-LARGE



I'm not sure how long Anthony Davidson had to wait for a phone call from Toyota on that fateful day on January 18. All I know is that the Japanese manufacturer didn't inform him of Peugeot's sports-car pull-out. That honour fell to a quick-off-the-mark colleague here at AUTOSPORT.

Peugeot's failure to inform its drivers of its decision before the wider world was downright scandalous. Even more scandalous would have been the prospect of Davidson sitting on the sidelines in 2012.

The cheeky-chappy Brit came of age as a sportscar racer last year and was the stand-out driver at Peugeot to my mind. He's just the right age to blossom in his chosen discipline, and he's not distracted by aspirations to race funny-looking single-seaters in the US. So why wouldn't Toyota jump straight on the blower with an offer for the coming season?

The good news for those of us who believe that Davidson is the next Allan McNish is that he almost certainly will be racing for a manufacturer team at the Le Mans 24 Hours this year. The bad news is that he won't be completing a full season with the prospect of becoming a world champion at the end of it.

Had Davidson been crowned FIA World

Endurance Champion with Peugeot, it would have sealed his reputation as one of the best sportscar racers of his generation.

Davidson is out of Peugeot



LE MANS



Audi's R18 in 2012 testing action

## Four R18s for Le Mans 2012

### THE AUDI FACTORY IS TO MOUNT

its largest assault on the Le Mans 24 Hours since 1999.

The Joest-run Audi squad has upgraded from three to four cars so that it can run two of its hybrid R18s and two conventional turbodiesel versions.

Joest technical director Ralf Juttner explained that it was essential to have two of each on the grid. "If you have just one of a certain kind of car, there is always the possibility that one will turn bad," he said.

"We see the potential of the new technology, but also the potential of the standard car."

The new diesel-electric R18 is due to make its debut in round two of the FIA World Endurance Championship at Spa in May.

LE MANS

## Jarvis in Audi at LM24

### AUDI DTM DRIVER OLIVER

Jarvis is aiming to become a fixture on the German manufacturer's Le Mans 24 Hours squad after landing a seat for this year's race.

The 28-year-old Briton was one of four drivers listed against the quartet of Audi R18s entered for the 24 Hours when the entry list was revealed last week.



OJ raced Kolles Audi in '10

It will be the first time he has raced for the Joest-run factory team.

Jarvis, whose previous Le Mans start came with a Kolles-run privateer Audi R10 TDI in 2010, said: "I'm not looking at this as a

one-year deal; I'm hoping I will be racing at Le Mans for many years to come.

"Sportscar racing is becoming bigger and better with the introduction of the FIA World Endurance Championship. I hope to be part of that future."

Jarvis would not be drawn on Audi's plans for him for the rest of the season. It remains unclear if he will be part of a DTM line-up that is being reduced from nine to seven cars in 2012. He had four seasons in the series and has taken three podium finishes during that time.

Should he continue in the DTM, Jarvis would be unable to take part in the Le Mans Test Day or contest the Spa World Endurance Championship round in May. That would mean the Sebring 12 Hours would be the only race he could undertake before the 24 Hours.

## REMEMBER WHEN...

JUNE 9/10 1979



...Dome first raced at the Le Mans 24 Hours? The Japanese constructor, back with Pescarolo this year, entered a pair of Cosworth-engined Zero RL prototypes in 1979 for a roster of drivers including Gordon Spice.

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Graham Rahal in Ganassi/Honda car

INDYCAR

# Scramble to solve engine failures

## INDYCAR ENGINE SUPPLIERS

Honda and Chevrolet are still analysing the spate of failures that interrupted testing at Sebring last week.

Honda Performance Development has confirmed that it had three failures over the three days of running with Chip Ganassi Racing, AJ Foyt Racing and Dale Coyne Racing, while Chevrolet is known to have ended its test early due to engine problems.

HPD technical director Roger Griffiths said: "We know what failed, but we don't know why it failed."

Asked if there could be a common link between HPD's and Chevrolet's problems, Griffiths said: "The only common part is the electronics. Right now we can't say it is the electronics, but it is one of the theories

because we're both at the stage where we are beginning to push a bit harder."

Chevrolet and its development partner Ilmor Engineering had yet to comment on its failures as AUTOSPORT closed for press.

Lotus suffered no failures with its new V6 produced by Engine Developments. It is understood to have been running its powerplant more conservatively than its rivals at this stage.

The three manufacturers are racing to finalise the specification of their powerplants. They have two weeks – owing to the 30-day cutoff point before the series opener at St Petersburg on March 25 – to homologate their engines for the season.

Meanwhile, Lotus has revealed that it is ready to increase the number of cars it can

supply for St Petersburg from five to six.

This follows its failure to meet the rule that states that each of the three IndyCar engine manufacturers must be in a position to service 40 per cent of the field.

Lotus motorsport boss Claudio Berro said: "We had discussions with the other manufacturers and IndyCar at Sebring last week. We are ready to make a big push with our suppliers so we can achieve a sixth engine for St Petersburg."

Berro said that the likely destination of the sixth engine lease would be HVM Racing, which is still aiming to run two cars in 2012, or Michael Shank Racing, which has yet to secure an engine partner. The Conquest, Carpenter and Fisher Hartman teams also remain without engine deals.

INDYCAR

## 'Hinch' backs Barrichello

### INDYCAR ROOKIE OF THE YEAR

James Hinchcliffe believes that Formula 1 veteran Rubens Barrichello will adapt quickly to IndyCar if he decides to switch to the series full-time this year.

Prospects of the Brazilian switching to the US were boosted last week when he opted to remain at Sebring for an additional morning of testing with KV Racing, taking him to a total of 334 miles across two and a half days.

Barrichello has admitted that he is taking the idea of an IndyCar move seriously, and Hinchcliffe believes that the 39-year-old would be a great addition to the series.

"I think he'd fit in very well in

IndyCar," the Andretti Autosport newcomer told AUTOSPORT. "He's got a terrific personality, and he's still bloody quick – he was very, very quick at Sebring, and we'd be a richer series to have him.

"There's a good rapport among everybody in IndyCar, and it may be the right place for him right now," added the Canadian. "I think he could use something a little more upbeat, and this just might be the perfect environment for him."

Barrichello has also softened on his pledge never to race on ovals.

"I could run on the road tracks; I could run [the] Indy [500]," he told the official series website. "There are so many options available."



Barrichello ran well at Sebring



## Roger Dowson

1944-2012

### LONG-TIME BTCC ENTRANT

Roger Dowson has died at 67 after a battle with cancer.

His eponymous team was perhaps best-known for masterminding Mazda's entry into the BTCC, first with a 323F in 1992 and then the Xedos 6 in 1993, but his involvement in the series stretched back into the 1970s.

Dowson helped set up Gerry Marshall Racing to run Triumph Dolomite Sprints in 1978, before establishing Roger Dowson Engineering in '82. The team developed the Group A MG Metro Turbo and also ran Ford Sierra RS500s.

PICS: JAKOB EBREY, HORSBURGH/LAT, LAT SOUTH

## IN BRIEF

### No more Chev in the BTCC



### CHEVY AND RML QUIT BTCC

Chevrolet and works team RML have withdrawn from the British Touring Car Championship in order to focus on defending their world tin-top titles. The team won the 2010 BTCC with Jason Plato.

### HONDA SET FOR WTCC...

Honda is to enter the World Touring Car Championship with a pair of Civics run by long-time collaborator JAS Motorsport. It plans to contest a handful of races later this year ahead of a full programme in 2013.

### ...AS ARENA SETS UP CAMPAIGN

Ex-BTCC squad Arena Motorsport has confirmed its 2012 WTCC entry with a pair of Ford Focuses. Tom Chilton remains with the team and is joined by reigning BTCC Independents' champion James Nash, who raced a Triple Eight Vauxhall last season.

### WTCC HEADING TO SLOVAKIA

A round in Slovakia will replace the cancelled Argentinian event on this year's WTCC calendar. The series will visit the Slovakia Ring, located just outside capital city Bratislava, on April 29.

### PARENTE IN HEXIS McLAREN

McLaren test and development driver Alvaro Parente has been placed with Hexis Racing's MP4-12C for the FIA GT1 World Championship alongside Hexis regulars Frederic Makowiecki and Stef Dusseldorp and GT3 graduate Gregoire Demoustier.

### PINO TRIVELLATO

Long-time Formula 3 entrant Jacopo 'Pino' Trivellato has died at the age of 76. The Italian's team ran Riccardo Patrese to the 1976 European F3 title and claimed the '76-78 Italian crowns with Patrese, Elio de Angelis and Siegfried Stohr respectively.

### MARINO SIGNS FOR DELTAWING

Sportscar racer Marino Franchitti is the first driver on board for DeltaWing's Le Mans campaign. The radical car is set for a full-scale windtunnel test later this month, with a track test to follow 'soon after'.

Franchitti gets Wings



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Carlin cars led the way in 2011

BRITISH F3

# Carlin issues rallying call to series rivals

British F3 powerhouse tells potential rivals not to be daunted by recent domination

**T**he boss of the top team in the British Formula 3 International Series has called on potential rivals not to be scared off by his squad's domination.

Carlin chief Trevor Carlin has five racers on board for 2012, but so far only one other team, Fortec Motorsports, has been able to confirm drivers.

"We've seen other teams and packages beat us before," said Carlin, "and it will happen again."

"For whatever reason, the other teams dropped the ball [in recent seasons], maybe started trying too hard to take a step forward [through blind alleys on development]. The secret to our success is constant development, but not changing anything until proven better. So our 2011 car was very similar to our 2008 car."

"The other teams just need self-confidence. It is possible to beat us, but we just spend our money wisely. It's not rocket



Carlin: We can be beaten in F3

science, and we still work in a very similar way to when we started in 1997."

The final drivers to be confirmed for Carlin's quintet of Dallara-Volkswagens are Malaysian Jazeman Jaafar, who remains at the team, and Brazilian Pietro Fantin, who switches from Hitech Racing. They join Spanish Formula Renault star Carlos Sainz Jr and Britons Jack Harvey and Harry Tincknell.

Carlin pinpoints this year, with the new generation of chassis, as one in which his squad is ripe for being beaten. The previous era of cars started in 2008, when

T-Sport's Sergio Perez ran Carlin's drivers close for the title, while in '05 Carlin-run Alvaro Parente drove an undeveloped car to victory. The team's James Courtney lost the first title of the 2002-04 chassis era.

"This is the year when a standard Dallara could win the championship," said Carlin. "When Alvaro won it, that was the most standard F3 car we ever ran. We had no time to do anything because the deal was so late. He won it by being the best out there."

"We're looking forward to some strong competition from drivers at other teams. If we're so 'unbeatable' imagine how good they'd look if they beat us, or even if they compete with us." ● British F3's National Class, for 2008-11 chassis, has eliminated some aerodynamic devices to keep costs down. Series veteran Hywel Lloyd has stepped down from racing and has pledged to run two or three cars in the class.

## IN BRIEF



Sato joins RLL for '12

### SATO CONFIRMED AT RAHAL

Takuma Sato has been confirmed at Rahal Letterman Lanigan for the upcoming IndyCar season. The ex-F1 racer has spent the previous two years with KV Racing.

### EXTRA ANDRETTI CAR UNLIKELY

Andretti Autosport is looking increasingly unlikely to run a fourth car for the 2012 IndyCar season, according to driver James Hinchcliffe. "As each day goes by, the chances go down for another full-time effort," he told AUTOSPORT.

### KRAL SIGNS FOR ADDAX

Josef Kral will complete Addax's GP2 line-up for the 2012 season. The Czech driver, who finished 15th last year with Arden, joins Johnny Cecotto Jr.

### GP2/GP3 ON SKY

Sky Sports will broadcast all GP2 and GP3 races in 2012. The network also plans to include analysis and discussion of the two feeder series in its weekly magazine show.

### BRUNDLE GP3 SWITCH

Alex Brundle will switch to GP3 with Carlin for 2012. The Brit will dovetail his debut season with a European Le Mans Series sportscar programme with Nissan.

### DANICA SORTED FOR DAYTONA

Danica Patrick has secured a place in the Daytona 500 following a tie-up between Stewart Haas and Tommy Baldwin Racing. Patrick will use the guaranteed spot earned by the Baldwin squad due to its top-35 finish in last year's owners' points.



Patrick will race in the 500

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**WRC**  
**MIKKO'S FINNSKOG**  
 Citroën's Mikko Hirvonen won Saturday's Rally Finnskog as the final part of his pre-Rally Sweden test. The Finn is gunning for three Swedish wins in a row.

**WRC**

# Prodrive/Mini solution found

New deal between preparation squad and manufacturer safeguards brand presence in the WRC. By DAVID EVANS

**P**rodrive and Mini appear to have found a resolution to a long-running row that had threatened the future of the team in the World Rally Championship.

While being careful not to commit itself to the WRC, Mini confirmed that the John Cooper Works WRC will be homologated until the end of 2018 – with a new collaboration agreed with Prodrive to develop the car until then.

Prodrive founder David Richards



Sordo (middle) remains on board

said: "I wholeheartedly believe this is a better deal for us. Finally, we have resolution to the long-term security of Mini in the WRC."

## WHAT DOES IT MEAN?

To comply with the FIA's homologation criteria, Motorsport Italia will field two cars – for Armindo Araujo and Paulo Nobre – under a new team name of WRC Team Mini Portugal on all rounds of this year's series. This customer-based outfit is registered for the manufacturers' championship, giving BMW the green light to sanction a new homologation of the car from March 1.

Mini stated that its cooperation with Prodrive has been placed on a new footing, adding the Banbury firm will now run a "works-supported private team". Prodrive is expected to change the Mini World Rally Championship team name.

## WHICH DRIVERS FOR WHICH EVENTS?

Dani Sordo remains at the heart of the Prodrive programme for this season, but Richards says today's news has boosted Kris Meeke's chances of an early return to the car.

"Our goal is to have Kris back in a car as soon as we can," said Richards. "We will now sit down and go through our programme and in conjunction with BMW and Mini decide on which events we will go to with Dani and Kris for the remainder of this year. This is far more positive now because instead of doing a programme of events that were not properly funded, we will be back now to events where we are fully competitive with a properly funded budget on each one."

## THE FUTURE

The Mini-Prodrive cooperation will be reviewed in September, with Richards stating that a full

programme in the 2013 WRC remains its objective.

Mini's Dr Kay Segler said: "I am delighted that the future of Mini in the WRC has been secured on a long-term basis. We remain convinced that the sport of rallying is perfectly suited to our brand."

In the immediate future, Mini will contest this week's Rally Sweden, but beyond that nothing has been confirmed for the Prodrive team, with the programme under discussion at Tuesday's WRC Commission meeting. What is most likely is that Sordo and possibly Meeke will compete in Mini's key markets, on events such as Portugal, Germany, France, Spain and GB. Running a smaller programme will potentially free up resource for developing the car rather than flying to the other side of the world for events such as Rally New Zealand.

**WRC**

# Qualifying Stage set for Rally Sweden debut

Sebastien Loeb will make World Rally Championship history today (Thursday) by becoming the first driver to post a qualifying time in a round of the series.

Under new-for-2012 regulations, World Rally Car drivers on loose-surface rounds of the WRC will have two practice runs at the shakedown before their one-shot effort

at what will be known as the Qualifying Stage. Start order at qualifying will be decided by championship positions, with the fastest driver then selecting his place on the road at the ceremonial start in Karlstad this evening.

The main reason for the change in regulation has been to end the tactical

approach taken by drivers to avoid running first on the road on the loose. Loeb said: "Now I will only have myself to blame if I end up being poorly placed on the road."

Rally Sweden manager Bertil Klarins added: "Qualifying will be really important on this event. If it snows heavily being first on the road can be quite a disadvantage."



Qualifying will set running order

WRC

# Rallies told: sort own TV rights

## TALKS SURROUNDING THE

promoter crisis in the World Rally Championship are set to continue during Rally Sweden after Tuesday's FIA WRC commission meeting failed to deliver any clarity on the situation.

It had been hoped that the meeting of all stakeholders in Paris would bring some potential for a route forward from last week's news that negotiations between the FIA and Autosport had broken down, which left the WRC with no global promoter and no chance of securing season-long regular international television coverage.

As AUTOSPORT closed for press, Rally Sweden organisers remained locked in negotiations to try to



WRC has reached crisis point over TV

secure distribution of television pictures to Britain and the rest of the world. With one deadline already missed, an insider admitted there was little chance of a solution.

With the potential Autosport deal finished, WRC stakeholders are angry at what's being viewed as a lack of leadership from the FIA. Last month, Jean Todt said: "We are very optimistic that we are able to find proper solutions before Sweden."

Now, however, the rights to television footage from individual

events have been handed to the rallies themselves, with the onus placed on them to find an outlet for what one senior source kindly referred to as: "Not exactly the hottest ticket in town."

Ford's Gerard Quinn said: "When Ford made its commitment to the WRC, we were told a promoter would be found. At the launch of the 2010 WRC in Paris, Jean Todt stood up and talked about the WRC rivalling Formula 1. We seem to be quite a long way from both of those now."

## AUTOSPORT SAYS...

**DAVID EVANS**  
RALLIES EDITOR

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**W**here's the optimism now? I suspect it's all gone.

At a press conference in Valence last month regarding the WRC's lack of a promoter, Jean Todt said: "We [the FIA] are very optimistic that we are able to find proper solutions before the Swedish Rally."

Hmm. Not really panned out that way, has it? Instead we're in the shocking situation of having the individual events in control of their own television rights, leaving us without any kind of co-ordinated international coverage of the World Rally Championship – and them with the job of trying to sell the unsellable.

Three months ago North One Sport stood on the verge of something great with the WRC via its three-year roadmap that included a motorsport media revolution. And now? Forget watching it on your mobile telephone, there's no guarantee it'll be on TV from one round to the next. Unbelievable.

And then, out of the darkness comes Henning (pictured). An unlikely saviour of my soul last Sunday, but Solberg Sr did just that. Petter's big brother is a thoroughly likeable fella; one of the good guys. And watching him thrash an antique Mitsubishi through the Norwegian trees on YouTube at the weekend made me smile.

This is what our sport is all about.

The time has come to sort out this mess. The FIA must do whatever it takes, the WRC simply can't be left to flounder at the whim and potential

agenda of each organiser. Rally Sweden is one of the most spectacular rounds of the WRC; we can't let our heroes go unnoticed.

At least Henning's still smiling



## IN BRIEF



Makinen (r) drove Neuville

this weekend. The Scot joins P-G Andersson at Proton for Rally Sweden having tested the Satria-Neo S2000 in the snow for the first time on Monday. Andersson beat Skoda factory driver Andreas Mikkelsen to S2000 success on Saturday's Rally Finnskog.

### TOMMI TEACHES THIERRY

Citroen driver Thierry Neuville may be a novice in winter rallying, but he enjoyed some solid tuition from four-time world champion and three-time Rally Sweden winner Tommi Makinen last week.

### OSTBERG'S FINNSKOG TEST

Mads Ostberg almost missed the start of Rally Finnskog on Saturday after technical problems with his Fiesta RS WRC in the run-up to the event. He eventually finished third and continued to test the next day.

IRC

# Turbo cars now eligible for 2012 IRC

Fiesta RRC can join IRC ranks



**TURBOCHARGED CARS WILL BE eligible for this year's Intercontinental Rally Challenge for the first time, after a change of regulations in the series.**

The Autosport-run IRC has elected to align itself with FIA European Rally Championship rules, permitting cars like the Ford Fiesta RRC (Regional Rally Car) to compete. The Fiesta RRC runs a turbo restrictor two millimetres smaller than that on a World Rally Car, offering near parity with the atmospheric Super 2000 cars that are the norm in the IRC.

The Fiesta is, however, the only turbo car that could win in IRC because M-Sport is the only team registered for points. Former Skoda driver Freddy Loix may switch to a Fiesta RRC this season.

Francois Ribeiro, motorsport development director for Autosport Events, said: "IRC is already shaping up to be another exciting year for the series but with the regulation changes it promises to be even more thrilling."

The IRC begins with the Azores Rally on February 23-25.

### WILSON OUT WITH INJURY

Go Fast Energy Ford WRT driver Matthew Wilson will miss the next two rounds of the World Rally Championship after breaking his left ankle while out training on Saturday. Wilson will be pushing for a return on Rally of Portugal, but admits the March 29 start of that event may also come too early.

### SOLBERG FAST IN OLD CAR

In preparation for this week's second round of the WRC in Sweden, Henning Solberg wheeled out a Mitsubishi Lancer Evo VI to finish just half a minute behind Mikko Hirvonen's Citroen DS3 WRC on Saturday's Rally Finnskog.

### McRAE BACK TO WRC

Alister McRae will return to the WRC for the first time in almost five years

### NEW-LOOK BRC LAUNCHED

This year's British Rally Championship was launched at Curborough Sprint Course near Lichfield in Staffordshire on Thursday last week. The series caters for two-wheel-drive cars only. The first round is Rallye Sunseeker International (February 24-25) based in Bournemouth.

### GASS POWERED IN GALWAY

Former Pirelli Star Driver Darren Gass collected his first international rally win at the weekend, driving a Subaru Impreza WRC to victory on the Galway International Rally. Gass finished just 1.3 seconds ahead of Eugene Donnelly, who was second on his first time out in a Mini WRC. Garry Jennings turned in a great drive to win Group N and take fourth overall in his Mitsubishi.

## WRC PREVIEW

Event	Rally Sweden
Round	2/13
Based	Karlstad
Date	February 9-12
Stages	24
Mileage	216.96
Surface	Snow
Last year's winner	Mikko Hirvonen
Championship leader	Sebastien Loeb



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The purpose of this role is to provide second and third line support for users. This includes actioning new requests and resolving incidents involving desktop equipment and related software. You will be required to support factory and trackside users. This role provides a varied, interesting and a technically challenging workload as you will be exposed to leading edge software and hardware as well as a degree of interesting and varied project work, you must be prepared to work weekends and travel to events when required.

You will have:

- Ability to effectively analyse and solve 2nd / 3rd level problems.
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with sensitive and confidential information. This is a tough job that will demand the highest of standards but one that will provide enormous satisfaction for the right applicant. It is essential that the PA is based within 30 minutes of the Horsham, West Sussex, head office, so relocation may well be necessary, but the role will also involve considerable travel around the circuits.

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**Applicants should apply in writing, including current CV and salary expectations, to:**  
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Closing date 17th February 2012

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# Sports Extra

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Formula Renault BARC had a strong 2011

## AUTOSPORT SAYS...

**BEN ANDERSON**  
NATIONAL EDITOR

ben.anderson@haymarket.com



### THE PAST TWO SEASONS HAVE

not been good for Formula Renault UK: grids have tumbled and pressure is mounting for series promoter SRO to do something - after all, 12-car grids do not look impressive on ITV4.

SRO's plan to turn things around apes the format of British F3 - three races per weekend, reversed grids and a cheaper class for older cars.

In theory, there's nothing wrong with better aligning a feeder series with its destination category, but the 'class B' element - to be known as Formula Renault Junior - creates a headache for organising club BARC.

Simon North, who ran Formula Renault UK for many years and now looks after the club-level BARC series in which former FR UK Tatuus chassis currently race, is worried about FR Jr stealing his drivers and teams away. Lisa Crampton, who now looks after FR UK for SRO, is desperate to keep the TOCA wolves from the door by using older cars to boost grids.

The problem is that, currently, FR BARC's rules prevent its drivers from also contesting FR UK - a relic from the days when the same chassis were eligible for both categories and ran to very similar specs.

Crampton's argument that drivers should be able to race where they wish carries weight, but equally it's understandable that North should want to ensure a duplicate class doesn't rip the rug from under him.

Formula Renault Junior would probably work better if, like F3, the older cars were an extra generation behind the newest ones - thus avoiding duplication altogether. There's no chance of that now, but the Barazi-Epsilon-based Eurocup is oversubscribed, so perhaps SRO should be looking up, rather than down, to grow its grids...

### Extra contact details

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## Renault Junior in rules row

Promoters at loggerheads as SRO fights for plan to boost Formula Renault UK

» ORGANISERS OF FORMULA Renault UK are pressing for a rule change in the lower-level BARC series in order to help their plan for a new Junior category succeed.

FR UK promoter SRO is planning to re-admit the Tatuus chassis that became ineligible for the series when the current Barazi-Epsilon car was introduced in 2010. It hopes to use the old cars still running in the club-level Formula Renault BARC series for a class B in FR UK, to boost numbers after struggling to attract grids of more than 12 cars in 2011.

But the current Formula Renault BARC regulations preclude drivers from contesting both series, and FR UK promoter Lisa Crampton believes this

rule will have to change if Formula Renault Junior is to succeed.

"I think it's a ridiculous rule," she told AUTOSPORT. "It's like me saying to my Clio Cup drivers that they can't do British GT. They [FR BARC promoter Grovewood] are being very protective of their championship. I can see where they are coming from, but they have got 16 or 17 cars and I don't think it [FR Jr] will take drivers away from them."

After consultations with teams, SRO plans to restrict Formula Renault Junior to "three or four" rounds (on non-FR BARC circuits), in order to make budgets more affordable and allow drivers to achieve the necessary licence upgrade over the first half of the season

to compete in FR UK.

AUTOSPORT understands there is a proposal in place to limit FR Jr to drivers that have already signed up for a full season of FR BARC, but Crampton is concerned this will prevent drivers from other categories, such as InterSteps, taking part in FR Jr.

FR BARC promoter Grovewood was due to meet with its teams yesterday (Wednesday) to discuss the issue.

FR BARC boss Simon North said: "That regulation has been there since 2005 and the reason is that FR BARC has been, and always will be, a very different animal to FR UK. It's designed to be a low-cost championship, which is really important for its health and position in the marketplace.

"I appreciate the problems FR UK have got and I don't like the situation they have got themselves into, but I want to make sure that privateers and people on lower budgets with teams [in FR BARC] don't get blown away by drivers who should be in a higher championship.

"We have got a very delicate situation and I think the BARC very much wants to make sure that whatever measure is taken to help FR UK doesn't upset the situation with FR BARC, because then you've got two problems instead of one. We need to find a way to help FR UK that won't damage FR BARC."

Formula Renault UK is struggling at the moment



## CONTENTS

**p90** DRIVER FOCUS  
AARON STEELE



British GT

# Scott gets new Ferrari for 2012

Former British GT race winner targets outright success with MTECH 458 contender

Scott has already tried new 458

**BRITISH GT RACE WINNER** Aaron Scott will step up to the main GT3 class this year with a second MTECH Ferrari 458.

Scott, who won British GT races in a Dodge Viper in 2009, shared MTECH's older GT3B-class Ferrari 430 with John Dhillon in the series last season.

The duo will now graduate to a 458 and will race alongside the similar machine of team regulars Matt Griffin and Duncan Cameron.

Scott, who also won the inaugural

British Endurance Championship crown with Craig Wilkins in 2011, said: "Last year I didn't just want to win the class, as we were the only ones in it, so I pushed to get the most from what I had. We hoped it would be a long-term deal."

The 32-year-old believes the pair will be competitive in the top class of British GT. "MTECH has worked pretty hard to put a crew together and John's improving all the time," he added. "I work really well with Matt and we'll try to make us the

best Ferrari team. I see no reason why we can't fight for poles and wins."

British GT regular Hector Lester is also expected to return with the 458 he drove in the last two rounds of 2011, while 2009 champions David and Godfrey Jones will again race their Pyro-run Mercedes AMG SLS.

British marque Ginetta will be represented in both GT3 and GT4, with Ian Stinton and Jake Rattenbury set to share a G55 in GT3 under the Stark Racing with Hepworth banner, while Team WFR is also likely to

return to British GT this year with a G55 and a G50. Renowned sports car ace Warren Hughes tested the team's G50 at Donington Park last week.

Former G50 Cup champion Nathan Freke's Century Motorsport will enter two cars in GT4, with reigning Welsh Sports and Saloons champion Dom Evans set to drive, while BMW Z4 squad Barwell Motorsport will also run a G50 for Peter Erceg, who is switching from the Aston Martin Vantage GT4 he raced with the team in 2011.

## Formula Ford

### Mygale to USA with Herta squad

#### LEADING FORMULA FORD

constructor Mygale has joined forces with American teams Bryan Herta Autosport and Jeffrey Mark Motorsports to sell cars in the US.

The new firm will be known as Mygale North America, and will import and service the French cars. IndyCar squad BHA, co-owned by former Champ Car race winner Bryan Herta, will run at least two Honda-powered Mygale SJ11s in the 2012 F1600 Formula F Series.

Herta said: "Mygale has become the worldwide leader for these chassis, so the opportunity to create a company that can distribute them to the North American market, while

also creating a factory team, was extremely attractive."

Mygale boss Bertrand Decoster, whose cars won every round of British Formula Ford in 2011, added: "This was one of many projects in the USA where we could come in with a fresh and powerful package."



SJ11 cleaned up in Formula Ford last year

## Ginetta Junior

### Robertson back for title attack

#### GINETTA JUNIOR FRONTRUNNER

Charlie Robertson will return to the series for a second season this year with HHC Motorsport.

Robertson, 15, won three races and finished runner-up in the championship to Seb Morris in Ginetta Junior last year, becoming the youngest MSA race winner when he took his maiden success at Croft.

Robertson will drive alongside former kart racer Tom Jackson, who has graduated from HHC's Junior Academy. Team boss Charlie Kemp confirmed the squad was in talks with drivers for the third seat and expects Robertson to be a title favourite in 2012.



Robertson was a Junior frontrunner in 2011

"He's done very well and learned an awful lot, but needs to learn how to close out a championship as well," said Kemp. "He's got a good chance - it's going to be an absolutely storming season because there's some decent drivers and teams out there."

Robertson added: "We know Ginetta Junior will be as tough as ever this year, but I'm well prepared and confident we can fight for the title."

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Ginetta BTCC drive will be a one-off

**Ginetta GT Supercup**

## Ginetta drops BTCC prize drive in favour of 'pounds for points' fund

**UK SPORTSCAR CONSTRUCTOR**

Ginetta has replaced its part-funded BTCC prize drive for the GT Supercup champion with a 'pounds for points' scheme in this year's championship.

Inaugural G55 champion Adam Morgan is set to graduate to this year's BTCC in a Speedworks Toyota Avensis with financial support from Ginetta. This season, Ginetta will instead use a £100,000 fund to award prize money to the top 10 G55 finishers in each race, rather than award a prize drive for 2013 to the overall winner.

Drivers will earn £10 for every point they score, with double prize money on offer for the Croft and Knockhill rounds.

The overall G55 champion will also receive an extra £5000 on top of whatever prize money they earn in 2012, while the G50 class champion will again earn the use of a G55 for the following season.

Series co-ordinator Max Gregory said: "This year's prize fund will offer each competitor the chance to win something while still providing a substantial overall amount for the overall championship winner.

"The £100,000 prize pot is sure to give many teams the chance to recoup some of their costs during what is undoubtedly a difficult financial time for many involved in the sport."

MARCUS PYE

# HUMBLE PYE

The voice of club motor racing



Derichs in action in 701-9 at Kyalami

I was driving past Silverstone last Wednesday when I learned [from former FIA Thoroughbred Grand Prix chief Steve Lydon] of the untimely passing of Erwin Derichs. Not widely known outside his native Germany, but hugely respected in the historic racing world, he died of heart failure on January 31, aged 68.

Born on May 27, 1942, Derichs built Escort Twin-Cams for Ford in the late 1960s. He subsequently joined caravan manufacturer Gunther Hennerici's Eifelland racing team, preparing Formula 3 Marches, then Rolf Stommelen's F2 Brabham BT30 and subsequently his F1 Eifelland March 721-4.

In '73, Erwin founded his own specialist engineering company, Derichs Rennwagen, which over the intervening years has restored and prepared single-seaters, sports-racers, GTs and touring cars. Based in Mayen, close to the Nurburgring, the business is also Dunlop's German motorsport distributor.

From '74, Derichs also designed and built eponymous Formula 3 cars, with two-litre Ford, BMW and Toyota engines. One - the D387 raced by Peter Kroeber among others - unusually featured small-diameter front wheels.

Erwin himself turned out in the F3 cars from time to time, through to the '80s, but was more successful hustling Ford Mustangs

in demanding events on the Nordschleife, and at the Spa Six Hours.

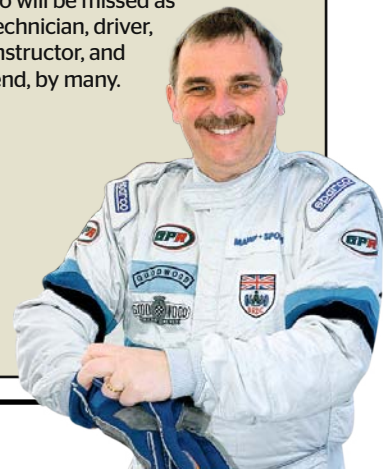
Having restored the distinctive Luigi Colani-reworked Eifelland March F1 car - with its extraordinary fluted airbox fed from the front of the cockpit surround - Derichs then joined the FIA Thoroughbred Grand Prix championship in the late '90s with another March, 701-9, briefly the mount of Hubert Hahne and Jean-Pierre Jarier.

Motivated by a very early Cosworth DFV, making modest power, it wasn't quick, but Erwin endeared himself to fellow competitors with his sporting spirit.

His English was limited, yet at Kyalami he was delighted just to be competing. "The last time I was here was [as crew chief] with Stommelen in '72," he beamed. Rolf finished 13th in that year's South African GP. Many years later at the 'Ring, Derichs came into his own. A TGP rival cracked a brake disc bell and was probably out.

Derichs was asked if he could weld it. He shook his head, but took it and returned in the morning with four that he'd machined overnight. He refused to take money. "Racers are friends, we help each other," he said. That was typical of the man, who will be missed as a technician, driver, constructor, and friend, by many.

Erwin turned out in F3 cars from time to time, but was more successful hustling Ford Mustangs"



**British GT/Le Mans**

## Howard to Le Mans with Aston

**BRITISH GT RACE WINNER**

Andrew Howard will contest the Aston Martin support race at this year's Le Mans 24 Hours.

The Aston Martin Racing Festival is open to the GT1 DBR9, GT2 V8 Vantage, GT3 V12 Vantage and DBRS9, and both versions of the GT4-specification Vantage.

The 45-minute race, to be held on the Saturday morning prior to the 24 Hours, will include a mandatory pitstop.

Howard plans to race his new British GT V12 Vantage in the event, which is open to one- and two-driver entries.

"It's the chance of racing on that

**circuit and going with Aston**

Martin," said Howard. "It'll be a good forerunner if we ever want to go to GTE [the current GT class in the French classic].

"We'd hope for a class win and, technically, we should be able to compete with some of the GT2s."

Howard is looking at a number of possible co-drivers, including his British GT partner Jonathan Adam, for the event.

AUTOSPORT understands 25 entries have already been received, including two GT1 and two GT2 machines. Aston Martin Racing is hoping for around 35-40 cars for the June 16 event.

**Radical UK Cup**

## GT champ Stanley to get Radical

**FORMER BRITISH GT4 CHAMPION**

Jamie Stanley will contest the Radical UK Cup this season with Lanan Racing.

Stanley, 28, who won the 2010 British GT4 title sharing a Ginetta G50 with Christian Dick, will co-drive an SR3 with

fellow former Lotus Elise Trophy racer Chris Headlam. The pair contested the final round of the 2011 UK Cup at Snetterton and qualified 11th, but encountered problems in the races.

Stanley said: "Chris did one race last year and decided to do the whole season this year. It's nice to move across to sportscars and hopefully we can build on that and climb the ladder."

Stanley will dovetail his Radical programme with a campaign in the Lotus Cup UK. He will defend the Exige Cup class title he won last year with his co-driver of the past three seasons Glenn Sherwood.

Stanley drove SR3 at the back-end of 2011





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## IN BRIEF



Adam crashed V12

**BRITISH GT ACE JONATHAN ADAM** crashed the new V12 Aston Martin Vantage GT3 during a test at Donington Park last week. "I had only just come out and it snapped away from me; maybe it was tyres or something electrical," he said after hitting the wall at Hollywood.

**BRITISH FORMULA FORD RACER** Dan de Zille will graduate to Formula Renault UK this season with Fortec Motorsport. Indian Shahaan Engineer will join de Zille in Fortec's line-up. The team has also confirmed karter Jack Aitken will race alongside Cameron Twynham in its InterSteps squad.

**BRITCAR PRODUCTION CLASS 1** champions Simon Phillips and Peter Storey are stepping up from their Lotus Elise to an ex-European Challenge Ferrari 458 for 2012. Both drivers had their first runs in the car at Donington last week.

**PIRANHA MOTORSPORT HAS** completed its line-up for this year's Ginetta Challenge. Former Caterham ace JJ O'Malley will be joined by returnee Ryan Ratcliffe and Rick Parfitt Jr.

**ALEX DRABBLE, SON OF HISTORIC** racer Simon, will race a Fluid Motorsport Van Diemen in the Duratec class of British Formula Ford this season. Drabble Jr, 19, has previously raced a 1992 Swift in FF1600 and had instruction from renowned driver coach Rob Wilson.

**MASTERS HISTORIC RACING AND** the HSCC have dovetailed their timetables to enable competitors at the Masters season opener at Oulton Park on March 17 to enter the HSCC event at Donington the following day. A bottle of champagne will be awarded to every entrant who does both, with a magnum awaiting the driver adjudged to have scored the best results.

**BELGIANS JOSE LAREPPE AND** Joseph Lambert topped a 304-car entry to win the 15th Monte Carlo Rallye Historique in their Opel Kadett GTE.



Kadett duo won

## Zandvoort Historic GP

Lotus 79 and 72  
to run in 2012

Famous F1 Lotuses to travel to Netherlands for inaugural Zandvoort Historic GP

Andretti leads Peterson at Zandvoort in 1978

**CLASSIC TEAM LOTUS WILL** run cars spanning Types 25 to 79 at Zandvoort's inaugural Historic Grand Prix event on September 1-2, as part of a worldwide programme to celebrate the 60th anniversary of the marque.

Colin Chapman - father of CTL boss Clive - founded the Lotus Engineering Company in 1952, the same year as Zandvoort (which opened in '48) joined the world championship.

Chapman's Team Lotus won the Dutch GP six times between 1963 and

'78, four times in five years with Jim Clark and once each with Jochen Rindt and Mario Andretti. Only Ferrari eclipsed that, with eight victories in title counters.

CTL plans to race its JPS-liveried 79/3, sister to the 'black beauties' that finished one-two there in '78, with Ronnie Peterson backing up world champion-to-be Andretti.

The team is currently rebuilding 72/3, which Emerson Fittipaldi wrecked at Zandvoort in 1973, for July's Goodwood Festival of Speed and would like to take

it back. A period-type parade of cars into town (on Saturday evening) is among the event's features.

Australian John Bowers is sending Lotus 25 R4, Clark's 1963 winner, with CTL for the HGPCA races. With GP Masters grids, they trace almost the history of the Dutch GP, last run in '85.

American Chris MacAllister's 49 R2 - in which Jimmy Clark landed an historic debut win for the Ford Cosworth DFV V8 engine in 1967 - is not currently available to go.

## Tasman Revival

## Ross ends the run of Lyons



Ross took two F5000 wins

**MSC NEW ZEALAND FORMULA 5000** Tasman Revival title favourite Steve Ross broke Michael Lyons's nine-race domination by winning two races at Christchurch's Ruapuna Park last weekend.

Unbeaten over last month's NZ Festival of Motorsport at Hampton Downs, Lyons, who is not registered for points, found McRae GM1 driver Ross rejuvenated as the Skope Classic meeting took competitors back to the South Island.

Polesitter Lyons (Lola T400) won Saturday's opener, after leader Ross gyrated on oil, and put Ross under

pressure in Sunday's races until broken valve springs forced him to back off in heat two, then retire from the feature.

Rotorua's Brett Willis finished a career-best second in the 15-lap finale, delighting his crew who fixed monocoque damage on the ex-Colin Hyams/Brendan McInerney Lola T330 after an incident in qualifying.

Former champion Ian Clements (T332) joined them on the podium, with Aaron Burson (GM1), Briton Greg Thornton (Chevron B24) and Russell Greer (ex-Graeme Lawrence T332) completing the top six.

## HRDC

## GT ace Turner to race Zodiac

**ASTON MARTIN FACTORY DRIVER** Darren Turner will contest the Historic Racing Drivers Club's Touring Greats season opener at Castle Combe on Easter Monday.

Turner will share his ex-Adam Gittings Ford Zodiac Mk2 with the unrelated James Turner, who is planning to contest the full HRDC season and also hopes to enter the car in the Goodwood Revival.

The Combe event will be Darren's first race at the Wiltshire venue since Formula First in 1993. "We went to Snetterton for the HRDC last year, but had a problem with the gearbox and didn't race," he said.

"We still stayed to watch the race and it looked like lots of fun. All the types of racing I do are so serious that it's nice to do something sociable - I can't wait."

Barrie 'Whizzo' Williams is also expected to race at the Combe event, sharing Richard Frankel's ex-Scuderia Filipinetti Porsche 904/6 in the new GTS65 category.

# Steele marches on



**MSV F3 Cup top dog Aaron Steele is hoping to turn his Sunoco GT prize win into a career Stateside.** *By ANDREW VAN DE BURGT*

**M**otorsport is all about momentum. But while the driver has almost total control of how that is built up and maintained on track, off it is a different matter. Money has always greased the wheels of the sport, but seldom have times been as tough as the ones we've gone through for the past three years for a driver unable to call on substantial family backing.

Take Aaron Steele. His performances in BRSCC F3 during 2008 caught the eye and he earned a place among the finalists of the McLaren AUTOSPORT BRDC Award after narrowly winning the final Formula Palmer Audi shootout for the coveted sixth spot that year. He'd also attracted the attention of A1GP's Team GB, which gave him a rookie run-out at the Brands Hatch race in early 2009, but that was almost as far as driving went that year.

A Porsche Carrera Cup race at Donington Park and a one-off outing in a friend's Mini Cooper S were the sum total of his racing. And while he was able to concentrate on his mechanical engineering degree, Steele was forced to return to club F3 in the MSV F3 Cup for 2011.

"I didn't want to take a year out," he says. "I ended up taking time out because I couldn't find the money to do anything. It was really unfortunate because that came after the McLaren AUTOSPORT BRDC Award and I'd got to a point in my career where I thought it was going somewhere. I did the A1GP test at Brands, which was phenomenal, and I thought, 'It's all going to happen now'; and then the rollercoaster ride just stopped."

Steele admits that the F3 Cup didn't take a lot to conquer – in fact he won 14 of the 18 races, and retired from the four he didn't – but it opened doors in the shape of an F2 test and a drive in the Continental GT support race to

## MINI CHAMP THINKS BIG



Knox looking to US opportunities

**CHRIS KNOX MISSED OUT ON BEATING** Aaron Steele to the inaugural Sunoco Grand-Am 200 Challenge prize drive, but that didn't stop the reigning Mini Challenge champion from racing at Daytona anyway.

With a little help from established Grand-Am racer and fellow Scot Robin Liddell, Knox tested a Chevrolet Camaro GS.R at Daytona before Christmas, but also made sure to show his face in the awnings of the Mini teams.

This proved a shrewd move, because Knox then received a last-minute call to compete against Steele in an RSR Motorsports R53 Mini Cooper S. Sharing with regular pairing Craig Conway and Randy Smalling, Knox helped the crew finish 47th overall and 20th in class after an "insane" final-lap double-draft pass on two quicker cars.

"Sitting on the startline, all these American fans were coming up to me and saying good luck," says Knox, who hopes to return for the second round of the series at Barber Motorsports Park in March.

"You've never met them before but they know so much about you! The racing over there is so much more fan-oriented than in the UK."

"I've not given up on the UK, but a Mini season over there is a third of a [Ginetta] G55 budget. I've proved I was quick and could bring the car home, so I'm hoping it can only lead to bigger things."

*Ben Anderson*

Knox brought Mini home at Daytona



A1GP test at Brands was 'phenomenal'



Steele won '08 FPA shootout



'Big boat' Camaro whetted GT appetite

Grand-Am's blue riband Daytona 24 Hours. The Sunoco-backed prize ultimately became the focus of Steele's 2011 campaign when F3 Cup victory was all but a formality.

Engine problems in his Mitchum Motorsport Chevy Camaro during practice and qualifying, which meant he started last, plus a gearbox problem around 30 minutes into the two-and-a-half hour race, prevented Steele from showing what he could do. However, it did open his eyes to the US racing scene, and a move to the States and Indy Lights, or possibly Star Mazda, is a real possibility this year.

"I love driving single-seaters," he says. "GT stuff didn't appeal when I was younger, but the more I learn about it the more appealing it gets, and I'd love to do more racing in that car. As much as it's a big boat, it's great fun. The team is great and it's a professional series. I've just been unlucky, the car ran strongly last year... that's motorsport."

After a year of racing virtually unchallenged, Steele revelled in being part of an 88-car field. But while the F3 Cup was a walkover, there was one round in 2011 that gave Steele a chance to demonstrate that he was more than just a stickleback in a puddle.

It came at Spa, where the Austrian F3 championship formed part of a huge group of junior single-seaters. Steele ran a 2002 Dallara-Sodemo in the F3 Cup; the Austrian series was open to chassis running up to the end of the next generation, meaning some 2007

Mercedes-powered cars were on the grid. "Practice was a disaster with so much traffic, so qualifying was the first time I'd had a clear run and I qualified third for race one behind the Hauser brothers," Steele recalls. "At the start of the first race I was boxed in at La Source and lost a couple of places. It took me until the end of the lap to get up to third and by then there was a gap. I couldn't get any closer, but they weren't pulling away, so I knew I had to make a good start for race two."

"We [Steele and David Hauser] went in to the first corner side by side, so I backed off and tucked in behind him, had a great run through Eau Rouge and nailed him down the straight. From there I just drove qualifying laps – I was hounding the wheelnuts off that thing."

**"I thought, 'It's all going to happen now', then the rollercoaster ride stopped"**

**Steele describes career stall**

I felt like I was driving even beyond the limits of the car; it was a weird feeling, and one of the best races of my life."

Now the challenge is for Steele to keep up that momentum. In Europe, F2 is his most realistic option, but nothing is signed right now. With the knowledge of how it feels spending a year on the sidelines, he is pulling out all the stops to make sure he doesn't have to go through that again. ❧

## YOUR SAY

What you think of the motorsport news of the past week



### Ugly F1 cars put noses out of joint

Formula 1 cars are supposed to be things of beauty, elegant thoroughbreds on posters adorning schoolboys' bedroom walls.

How on earth therefore have we ended up with these ugly ducklings, as most of the 2012 cars have turned out to be? Are the regulations to blame or their implementation? Either way they look just plain wrong and no amount of talking up from designers is going to change that. Not since the high-cockpit-side regulations of 1996 have we seen such monstrosities.

It looks like McLaren has turned up to a beauty pageant to find that all the other contestants got into a fight the night before!

**Kevin Thomas**, Poole, Dorset

EDITORIAL CONTACT [mail@autosport.com](mailto:mail@autosport.com)

**It is beyond belief that** a simple rule change can restrict designers in such a catastrophic way that they are forced into designing cars that are undeniably ugly.

Having read much expert opinion, it seems there's a unanimous view that overtaking will not be at the same level as last season.

We may therefore be forced to watch a procession of these grotesque machines.

Thank goodness McLaren has at least attempted to achieve some style. Its cars

are at least swans amid a flock of ugly ducklings. Let us hope, as more wraps come off, that there are more to join them.

**Paul Caldwell**  
By email

**What is it with the** stepped nose? If looks are anything to go by, so far, then McLaren is going to breeze it.

The stepped nose reminds me of the Williams-Honda FW09 and that was a disaster – even Patrick head said it wasn't one of his best.

**Richard Hargrave**  
Hitchin, Herts

**I read with concern that** the FIA has told individual WRC event organisers that they need to finalise their own TV deals, as it's not been possible to reach an agreement with Eurosport.

The manufacturers are not happy with this and I'm not surprised. How can they be expected to invest in the WRC if there is ad hoc TV coverage and no global promoter?

Just when I thought the WRC was about to move forward, yet again it appears to have stumbled.

**Andy Maclean**  
Churchill, Oxon

**I never thought I would** see the day when Williams had two pay drivers in the team.

For me, this is the end of Williams as a genuine grand prix outfit, and I will be surprised if they get any points in the 2012 season.

Without an experienced driver such as Adrian Sutil or Rubens Barrichello – or even Kimi Raikkonen – what chance do its two drivers have in sorting out any problems the car may have?

**Mike J Kelly**  
London

**AUTOSPORT.COM**

### TOP FIVE ON OUR WEBSITE

1. **McLAREN UNVEILS ITS 2012 CHALLENGER**
2. **FERRARI LAUNCHES ITS 2012 F1 CAR**
3. **NEW McLaren 'A COMPLETE REWORK'**
4. **FERRARI CANCELS NEW-CAR LAUNCH EVENT**
5. **FERRARI DEFENDS 'UGLY' CAR DESIGN**

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This week's star letter will receive a Road Angel Vantage – a dedicated safety camera and blackspot locator that displays the legal speed limit of every road you drive, automatically and wirelessly updating its database every few minutes as you drive. For more details on Road Angel visit [www.roadangelgroup.com](http://www.roadangelgroup.com) Please ensure that your full address is included on all correspondence.

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# THE LATEST GEAR

The most desirable new releases for motor racing fans: books, DVDs, models, art and gifts

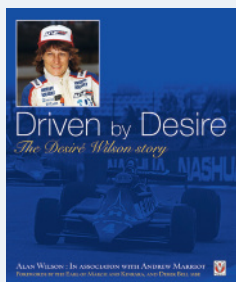


### F1 2012 CIRCUIT POSTER AND FAN GUIDE

Fan bible £9.50; Poster £13 ([sam-osborne.co.uk](http://sam-osborne.co.uk))

Graphic illustrator and F1 fan Sam Osborne has produced a pocket-sized guide to the season, with all sorts of charts and lists to fill in as you go. To complement the A5, 28-page fan guide, he's designed an A4 poster featuring his unique take on all 20 GP venues, available in red or blue.

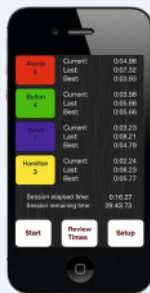
Aimed at a younger audience, the fan guide is good fun for the armchair fan keen to record on-track shenanigans.



**DESIRE WILSON BIOG**  
£24.99 (978 1 845843 89 2)  
[veloce.co.uk](http://veloce.co.uk)

Believed by many to be the most gifted lady racer, Desire Wilson was a gutsy pedaller who won an F1 race and two sportscar events in a long career.

This engaging tale, written by her husband Alan and veteran hack Andrew Marriott, recalls her early struggles and celebrates her success.



**STOPWATCH APP**  
£7.49 (iPhone/iPad)  
[Apple iTunes Store](http://Apple iTunes Store)

A laptimer's delight, the all-new 'Race Stopwatch' App allows you to assign different drivers and/or car numbers to each coloured segment for comparison.

All the info can be stored and emailed using Excel spreadsheets for later download and analysis.

Android options and free upgrades will follow.



**FORD GT 1:24 MODEL KIT**  
£49.95  
[grandprixmodels.com](http://grandprixmodels.com)

It's hard to argue with Grand Prix Models' claim that Simil-R's 1:24-scale Matech Ford GT is "the best presented plastic kit we've ever seen", for it takes plastic-model detailing off the scale.

And it comes with four decal options: two Le Mans 24 Hours cars and two FIA GT1 series machines.

## HOT ON THE WEB THIS WEEK

**YOUTUBE: MCLAREN-MERCEDES MP4-27 LAUNCH**



**SEARCH FOR:** F1 2012 - McLaren Mercedes MP4-27 Launch (12:02)  
Sky F1 anchorman David Croft hosts the unveiling of the Woking squad's latest challenger, and grills race drivers Jenson Button and Lewis Hamilton and testers Gary Paffett and Oliver Turvey.

# WHAT'S ON...

Your guide to the best events taking place in the UK and around the world this week – plus TV and online

## SWEDISH RALLY

**World Rally Championship**

**Rd 2/13**

**Karlstad, Sweden**

**February 9-12**

[wrc.com](http://wrc.com)

Sweden is normally Ford territory – the Blue Oval has won this rally without interruption since 2006. But this year Citroen has an event ace in the form of 2010/11 winner Mikko Hirvonen. Whether that gives Citroen a welcome boost or not, the whole WRC community may simply be happy to be competing again after another troubled week.



Plenty of snow to cushion the blow

## TOYOTA RACING SERIES

**Rd 5/5**

**Manfeild, New Zealand**

**February 11-12**

[toyotaracing.co.nz](http://toyotaracing.co.nz)



It's New Zealand GP time for the TRS boys

**ACCESS  
ALL  
AREAS**

Our guide on how to keep the motorsport flame burning through the cold winter months

## FOLLOWING F1 TESTING

Now that the Formula 1 test season is well and truly in full swing, you'll want to keep up to date as it unfolds. Obviously the best platform to do this is the internet, with autosport.com offering the very best in testing coverage with its real-time live-text commentary service at [live.autosport.com](http://live.autosport.com).

In the 'Plus' section of the website – for magazine and digital subscribers – you'll also find a daily testing blog and the latest interviews with the movers and shakers.

You can also follow our world-leading journalists' Twitter accounts: @eddstrawF1, @noblef1, @glenn\_autosport, @strangautosport and

@radarguruf1 (our resident weather forecaster).

You can also join our Facebook group and Google Plus page – simply search for 'Autosport'.

Of course, you can follow all the teams and drivers with their own internet sites and Twitter accounts...

[redbullracing.com](http://redbullracing.com) – @redbullracing  
[sebastianvettel.de](http://sebastianvettel.de)  
[markwebber.com](http://markwebber.com) – @AussieGrit  
[mclaren.com](http://mclaren.com) – @TheFifthDriver  
[jensonbutton.com](http://jensonbutton.com) – @JensonButton  
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[hispaniaracing.com](http://hispaniaracing.com) – @f1\_hrt  
[pedrodelarosa.com](http://pedrodelarosa.com) – @PedrodeRosa1  
[narainracing.com](http://narainracing.com) – @narainracing  
[marussiaf1team.com](http://marussiaf1team.com) – @Marussia\_F1Team  
[timoglock.de](http://timoglock.de) – @realTimoGlock  
[charlespic.com](http://charlespic.com) – @Charles\_Pic1

## Television

### THURSDAY FEBRUARY 9

0100-0200 [Sky Sports 3](#)

Max Power

0315-0345 [ESPN](#)

Planet Speed

1730-1830 [Sky Sports 2](#)

Max Power

1750-1855 [Motors TV](#)

Andros Trophy: Super Besse Highlights

2100-2200 [Sky Sports 4](#)

Racemax

2235-2305 [Motors TV](#)

WRC: Rally Sweden preview

### FRIDAY FEBRUARY 10

0100-0200, 1300-1400 [Sky Sports 3](#)

Racemax

0115-0215 [Motors TV](#)

AUTOSPORT International

Charity Karting

1515-1545, 2235-2305 [Motors TV](#)

WRC: Rally Sweden preview

2200-2300 [ESPN Classic](#)

The Quest of Le Mans

### SATURDAY FEBRUARY 11

0115-0145 [Motors TV](#)

WRC: Rally Sweden preview

2235-2305 [Motors TV](#)

AUTOSPORT International: Highlights

0355-0420 [Channel 5](#)

Motorsport Mundial

0600-0700, 1200-1300 [ESPN Classic](#)

MotoGP: Spanish Grand Prix 2007

0700-0800, 1400-1500 [Sky Sports 4](#)

Max Power

0900-0935, 1210-1240, 1650-1720

[Motors TV](#)

WRC: Rally Sweden Day 1

1000-1100, 1800-1900 [ESPN Classic](#)

The Quest of Le Mans

1240-1545 [Motors TV](#)

Daytona 24 Hours: Highlights

1825-1925 [Motors TV](#)

Andros Trophy: Super Besse Highlights

2000-2100 [ESPN Classic](#)

MotoGP: Spanish Grand Prix 2006

2235-2305 [Motors TV](#)

WRC: Rally Sweden Day 2

### SUNDAY FEBRUARY 12

0115-0145, 0900-0935, 1210-1240,

1445-1515 [Motors TV](#)

WRC: Rally Sweden Day 2

0230-0330 [Sky Sports 3](#)

Max Power

0800-0900, 2100-2200 [ESPN Classic](#)

The Quest of Le Mans

1000-1100 [ESPN Classic](#)

MotoGP: Qatar Grand Prix 2006

1105-1205 [Motors TV](#)

AUTOSPORT International: Highlights

1200-1300, 1900-2000 [ESPN Classic](#)

MotoGP: Czech Grand Prix 2006

2235-2305 [Motors TV](#)

WRC: Rally Sweden Day 3

### MONDAY FEBRUARY 13

0130-0230 [Sky Sports 2](#)

Racemax

0900-0935, 1650-1720, 2130-2205

[Motors TV](#)

WRC: Rally Sweden Day 3

2300-0000 [ESPN Classic](#)

The Quest of Le Mans

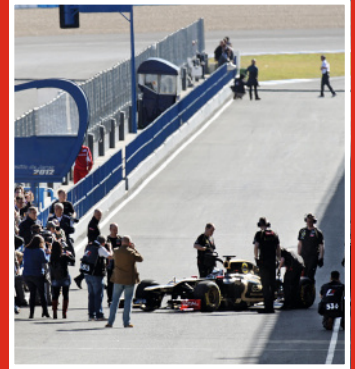
## Online

# AUTOSPORT.COM

Coming up on the web this week

### FORMULA 1 TESTING

AUTOSPORT.com is the only place to be to keep up with F1 testing at Jerez and find out who has set the early benchmark ahead of the new season, with LIVE commentary of the day's events plus news, analysis and expert technical insight in Drawing Board. Plus, it's Rally Sweden time, so find out what's happening in Karlstad with our stage reports and news from the service park.



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## REVVED UP OVER WHAT'S ON THE BOX

We cast a critical eye over the best and worst of this week's TV coverage

And we chased that goddam Limey outta town



WITH TWO INCHES OF travel chaos settled on the pavement outside, Mrs Revved Up was dispatched to the shops to get some bread and tinned soup before all the pensioners stockpiled it for themselves.

The heating was turned up to glacier-melting level and I bedded in for an afternoon/evening of sport on the telly. Once the football was dispensed with, it was time for some four-wheeled entertainment in the shape of *Top Gear*.

Clarkson and crew's attitude towards motorsport in general will always offend the purists (which is surely the

point), but there were bound to be thousands of heads nodding in agreement as Jezza said: "F1 is Stradivarius; NASCAR is banging a saucepan with a spoon."

This segued into Richard Hammond giving us an idiot's guide to NASCAR from moonshine runners to the most popular spectator sport in the States, via some enormous pile-ups and plenty of fisticuffs.

The Hamster was sent to Texas to mix it with the good ol' boys, and was treated to expert instruction as Kyle Petty talked him through a lap of the track. "You gotta cut the grass. More gas,

more gas, more gas," Petty implored as Hammond screamed like a tweenie at a Justin Bieber concert in the driver's seat.

It was hard not to be jealous as Hammond was given the honour of driving the pace car ahead of the start of the Cup race, which came over as a genuinely thrilling experience, especially as Greg Biffle thundered his way up the inside, inches from Hammond's wing mirror.

He hit the nail on the

head that NASCAR's biggest problem is that the races go on forever, and the inevitable use of the montage song from *Team America* neatly covered it off.

It all passed by without any need for a scripted 'incident', but back in the studio the lads return to form with a juvenile – but nevertheless spot-on – hand gesture for the Institute of Advanced Motorists. Feed the wheel my arse!  
*Revved Up*

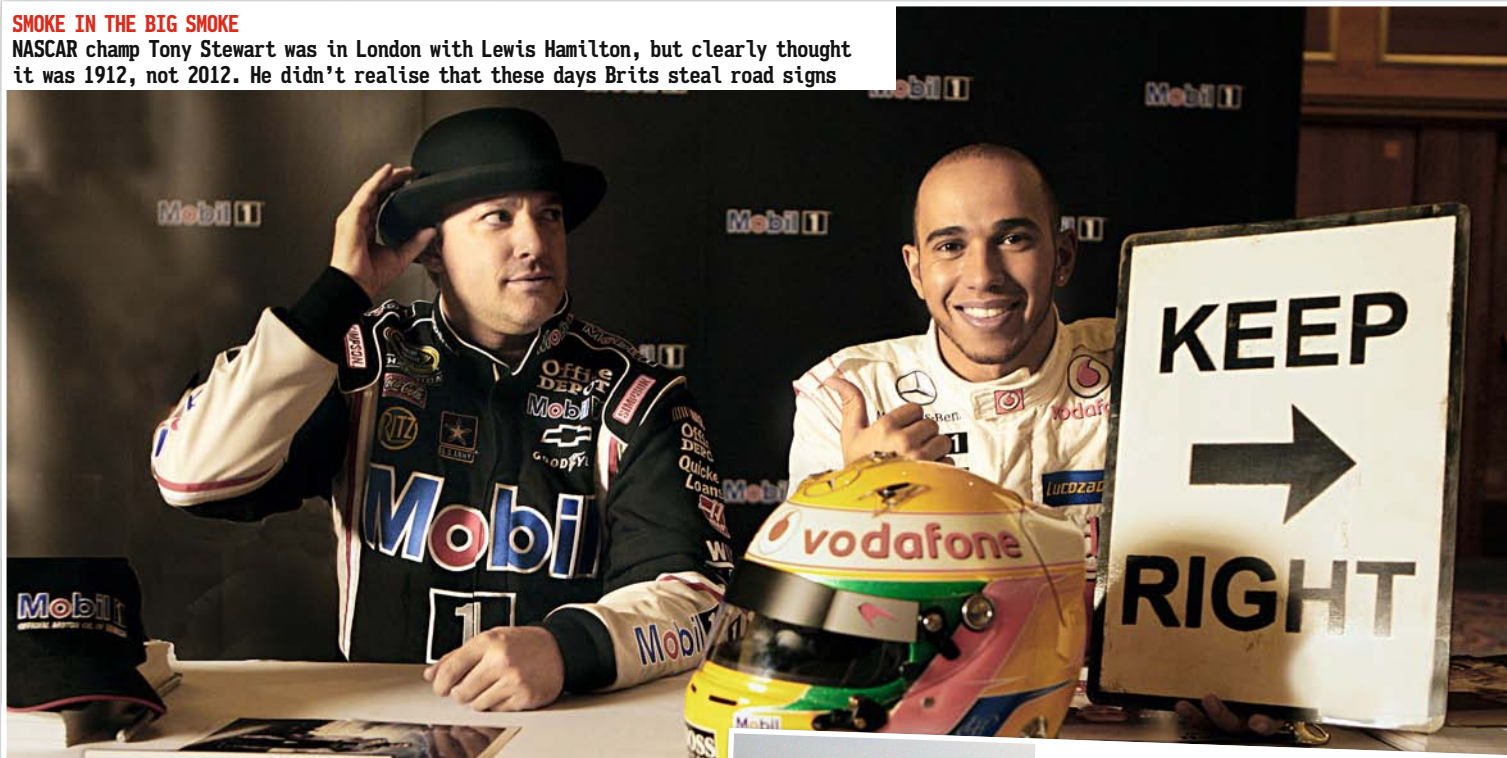
"Hammond screamed like a tweenie at a Justin Bieber concert as Kyle Petty shouted 'more gas, more gas!' at him"

# THE WEEK IN PICTURES

Our lensmen pounding the beat from London to Kent via Florida and Spain .....

## SMOKE IN THE BIG SMOKE

NASCAR champ Tony Stewart was in London with Lewis Hamilton, but clearly thought it was 1912, not 2012. He didn't realise that these days Brits steal road signs



## «SNOW»DRIFTING AT CLEARWAYS

This is how the snow hit Brands Hatch. Good job we sent our office Kent man to Jerez otherwise he'd have had nightmares on the M25 this week



## CASTRONEVES FINDS THE LIMITS

Here's Team Penske star Helio Castroneves leaving the road during last week's IndyCar test at Sebring



## ONE GOOD THING ABOUT THOSE PLATYPUS NOSES...

...is that you can see a car's number from the front. This is Felipe Massa and his Ferrari on day one of testing at Jerez

PICLS: FERRARO, ABBOTT/LAT

# FROM THE ARCHIVE

Williams shocks with radical new challenger, January 8 2004

“The design, incorporating a pair of sloping spars, was one of the most attention-grabbing of the 2004 season”



Montoya harries the 'Walrus' Williams

**THIS YEAR IS BY NO MEANS THE FIRST TIME THE** aesthetics of a Formula 1 car's front-end have drawn so much attention – one need only look back to 2004 when Williams shocked with the radical FW26 and its twin-keel front nose/wing section.

The design, incorporating a short nose connected to the front wing via a pair of sloping spars that extended forward and down, was one of the most attention-grabbing of the season.

The design philosophy was founded upon a similar principle to many of this year's challengers: to promote airflow to the underside of the car. It also proved fast in testing, leading to Juan Pablo Montoya – who had already agreed to move to McLaren the following season – being tipped as one of the pre-season favourites.

The radical design also drew strong declarations from the Williams hierarchy, who were seeking to end what was at the time the team's longest run without winning a championship – a record that has of course been subsequently extended.

“The ambition is to win the title,” a bullish Patrick Head said of the car. “Since 1997 it has been the longest period in Williams's history without a championship so our aim is to win them both.”

Such confidence ultimately proved unfounded,

however, with the car proving unstable and difficult to set up at race weekends. Williams won just once that year – in the final grand prix of the season, and only after the radical nose had been dropped in favour of a more conventional approach.

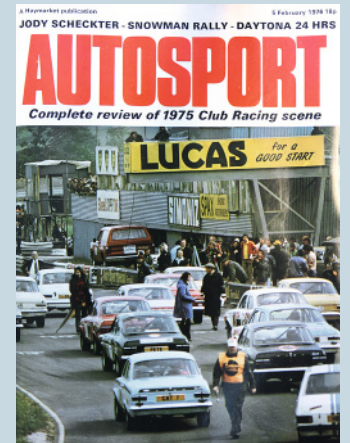
There are numerous further precedents of weird noses being incorporated in F1. The March 711 of 1971 was odd enough, with a front wing fixed to the top of the nose, but the design proved successful and Ronnie Peterson took the car to second in that year's world championship (albeit without a race win).

In 1983 the Toleman TG183 featured the 'gaping mouth' due to front-wing mounted radiators, while in 1972 Brabham's BT34 earned notoriety for its 'Lobster Claw' front nose.

This year it's the conventional approach that's raising eyebrows, with the majority of teams (McLaren being a notable exception at least initially) opting to run a step in their front nose in order to promote airflow to the underneath of the car.

Still, Head's words at the launch of the FW26 ring true. “If the latest car you have made is not the best, you are in a sorry situation,” he explained. “But you have got to be careful not to make too many superlatives. Williams knows it's down to what happens on track.”

## THIS WEEK IN...



FEBRUARY 5 1976

**BMW'S WORKS-RUN CSL PROVED A** worthy winner of the 1976 Daytona 24 Hours, even if its cause was aided by a controversial stewards' decision that a contaminated fuel consignment represented a force majeure, leading to a 150-minute halt to the race.

Brian Redman, Peter Gregg and John Fitzpatrick held a lead of over 50 miles when dawn broke, only for their car to come to a spluttering halt shortly after. Redman, who had just taken control, discovered traces of water in the injectors and, after frantic work, was able to limp back to the pits, where BMW found its fuel ruined by water.

With other cars soon falling foul of the same fate organisers stopped the race to allow teams to sort the issue. That preserved the CSL's advantage, and when the race was restarted – under a pall of protests and heavy rain – Redman went on to win.



PICS: COATES/LAT



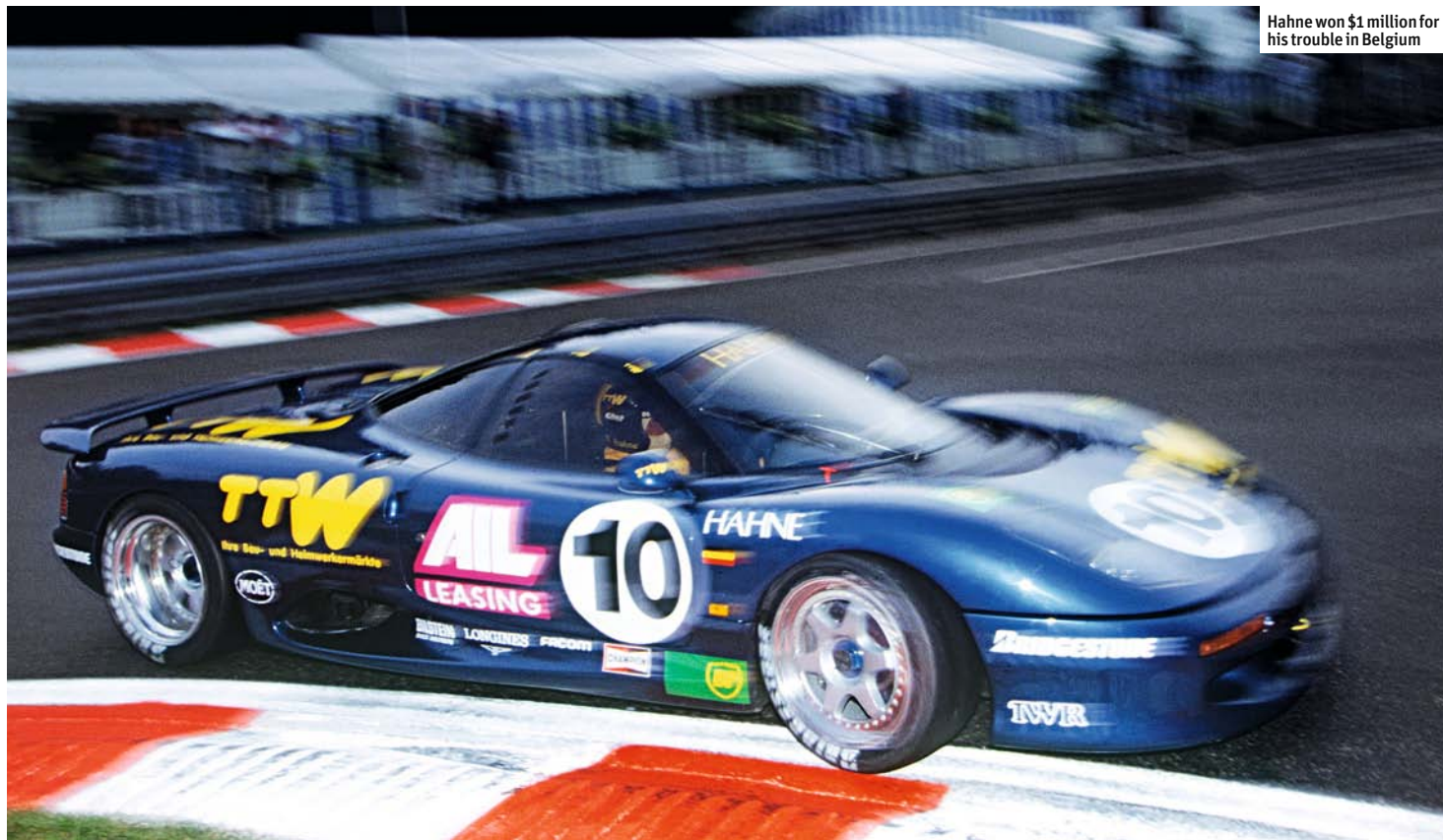
## DID YOU BEAT THE GRAND PRIX PREDICTOR?

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Visit [castroledgerankings.com/predictor](http://castroledgerankings.com/predictor)

# ARMIN HAHNE

■ Jaguar Intercontinental Challenge ■ Jaguar XJR-15 ■ Spa-Francorchamps ■ August 25, 1991 ■ \$1m victory



Hahne won \$1 million for his trouble in Belgium

## THE RACE I'VE CHOSEN

might not have been my most exciting, but it definitely gave me my best income.

In 1991 Jaguar laid on three races for the XJR-15 supercars. They built 50 of the carbon-tubbed cars, of which fewer than 20 were for racing. The only difference was the gearbox – the race car had a six-speed 'box – and the exhaust, but they were good fun.

The races all supported the grands prix – at Monaco, Silverstone and Spa – so there were some good drivers in them, like Derek Warwick, David Brabham, Juan Fangio, Win Percy, Bob Wollek and John Nielsen.

I qualified second to Warwick in Monaco but half-spun on oil while chasing him, so fell to fifth. At Silverstone, I had a misfire and again finished fifth. The winners of the first two races, Warwick and Fangio, won Jaguar XJS road cars and after Monaco Derek wound me up about going out in the XJS to pick up a pretty girl and take her to dinner.

Well, for the finale at Spa I had the last laugh. I had a new engine

**"I was called beforehand to see clerk of the course Roland Bruynseraede because someone told him I had threatened to take off anyone in my way. I hadn't!"**

from [car builder] TWR after they found something in my old one and I managed to qualify second without using both sets of new Bridgestone slicks. I found a time good enough for the front row with my 'scrubbed' first set.

At the start I followed poleman

Cor Euser for a few laps but his tyres went off as he'd used them for the second qualifying session.

I passed him – it was quite easy, really. The car was great around Spa but you had to be a bit careful as the heavy engine – a six-litre V12 – caused quite a bit of

roll-oversteer in the fast corners.

We didn't know how many laps the race would be (until we saw the last-lap board) as they didn't want us bashing into each other at the end. I'd been called beforehand to see clerk of the course Roland Bruynseraede because someone told him I had threatened to take off anyone in my way. I hadn't!

The race lasted for 11 laps and I won by 3.4 seconds to collect the \$1 million prize money.

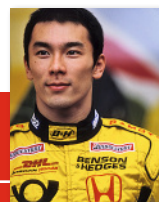
Later on, I saw Derek Warwick, who had crashed at Blanchimont while chasing me, and joked that I had enough money to buy several XJS roadcars and take several girls to dinner. He wasn't happy! ✖  
*Armin Hahne was talking to Henry Hope-Frost*

## IN PROFILE



**GERMAN RACER ARMIN HAHNE IS A** successful sportscar and touring car all-rounder with wins in most of the major categories. He began karting at 16, before moving to the then-prestigious German Racing Championship. His tin-top CV includes seven DTM wins, three European championship victories, and wins in the Nurburgring and Spa 24 Hours, while sportscar exploits include Le Mans starts with Jaguar, Honda and Porsche. Now 56, Hahne still competes – and wins – in German VLN.

**NEXT WEEK**  
**Takuma SATO**



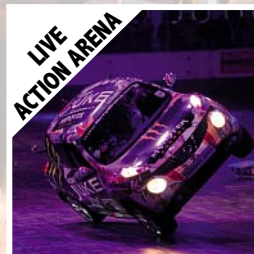
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