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**28-PAGE
BRITISH GP
ANALYSIS**



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And how playing safe cost Ferrari



PLUS

SILVERSTONE TRAFFIC CHAOS

What exactly went wrong - and could it happen again?



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POLE POSITION

Silverstone in the spotlight – for good and bad reasons



NOW THAT THE MUD HAS SETTLED, what did we learn from the British Grand Prix at Silverstone? We learned that its contingency plan for extremely wet weather wasn't good enough; that there aren't enough hard-standing car parks; that if you don't get the traffic flowing then the park-and-ride buses get trapped too; that if you can't get all of the people in, then you can't get those who did manage to make it out again, because the roads are still blocked.

We examine the traffic chaos in detail on pages 10-13, but that said there were some pretty Herculean efforts to ensure that Sunday went to plan. Well done to those who made it happen (including, of course, the marshals) and enormous kudos to the paying spectator for putting up with all the muddy misery.

On track, we were rewarded with a thrilling finale as Mark Webber chased down and passed Fernando Alonso for the win. Job done, his reward followed in the shape of an extended contract. I've known him since he first arrived on these shores in 1995, and I've never seen him drive better.

Charles Bradley

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BRITISH GRAND PRIX

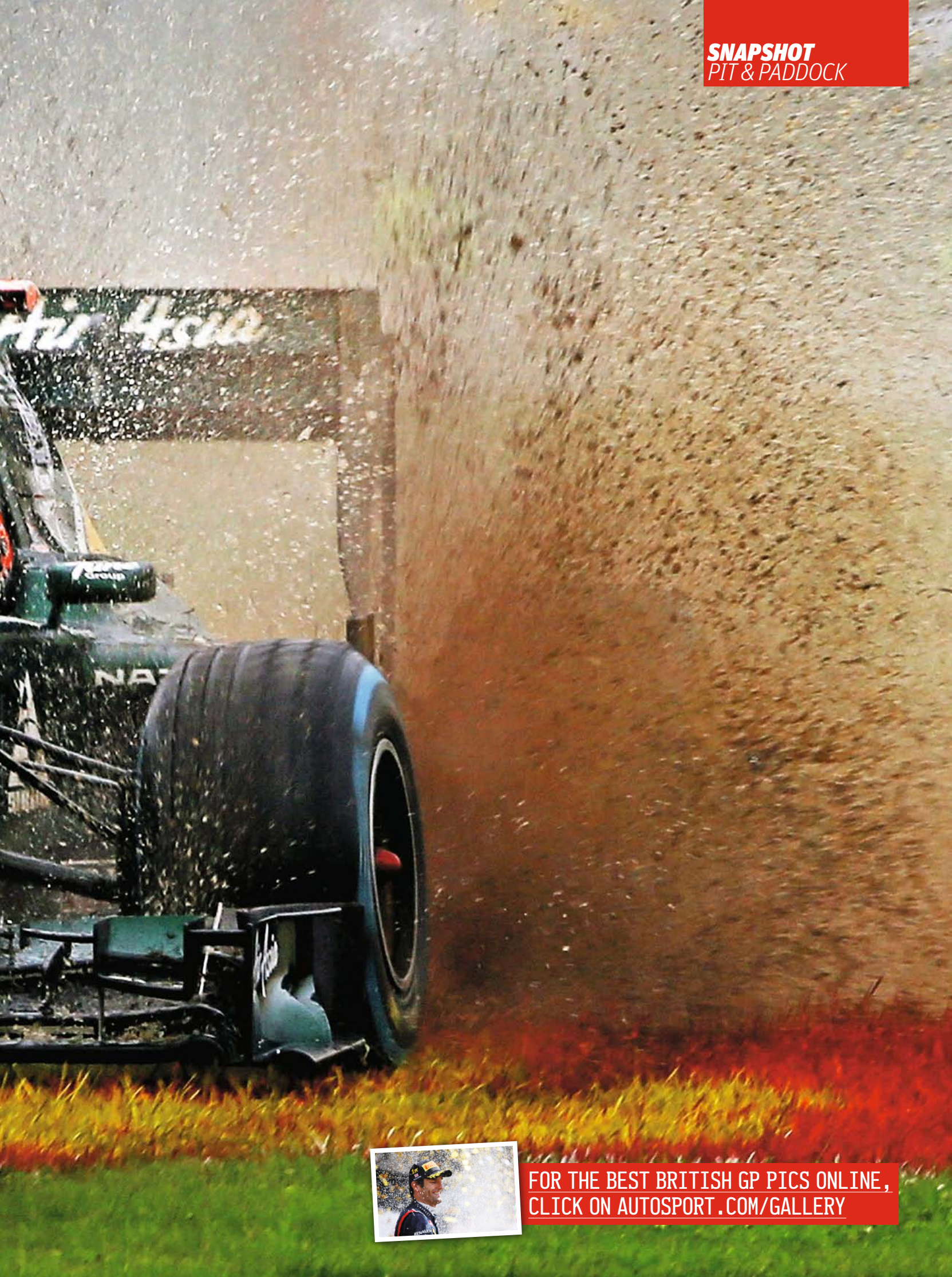
You should try driving in the car parks...

Heikki Kovalainen's Caterham ploughs through the sodden run-off at Becketts in Friday practice, at the same time as many fans were stranded outside in traffic jams or bogged down in muddy car parks. Silverstone news, p10; British GP report, p28.

Pic: Mason/Getty Images



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Silverstone promises fix

British GP fans won't suffer a repeat of travel and parking chaos, say circuit bosses. By EDD STRAW

Silverstone has promised it will do everything it can to ensure that there is no repeat of the traffic chaos that led to fans being told not to attend qualifying for last weekend's British Grand Prix.

Circuit managing director Richard Phillips advised spectators holding public car-parking passes not to travel to the track on Saturday. This drastic move, which had echoes of the 2000 race, was part of a plan to cut the number of cars by around

5000 and preserve sufficient usable car parking for race day.

Definitive figures were not available as AUTOSPORT closed for press, but Phillips estimated that around 10,000 fans with tickets did not come on Saturday. Full refunds will be offered both for those fans and anyone who was not able to make it to the track on Friday, when some cars were stuck in traffic for more than five hours. No figure has been given for the losses, but a very

"If we had gone for it on Saturday, it would have been suicidal - madness, absolute madness"

Silverstone MD Richard Phillips

conservative estimate would put them at well in excess of £1million.

"The weather-related issues leading up to and during this year's event were unprecedented, but lessons will be learned," Phillips told AUTOSPORT. "We will be conducting a full review and doing everything possible to ensure there's no repeat."

WHAT WENT WRONG?

On Wednesday and Thursday, around 40mm of rain fell over a 12-hour period. This had two key effects on the way that fans arrived at the track. Firstly, a greater number of campers came on Friday morning rather than on Thursday night. Secondly, many of them made a late decision to bring caravans or motorhomes, which were then turned away by campsites.

This left a significant number of

extra vehicles circulating in the traffic system and led to the jams that left some stuck in their cars for five hours or more. To try to solve the problem, Silverstone opened some of the grass car parks planned for use later in the weekend. Because of the rain, these were churned up and rendered unusable.

"We just had to accommodate as many as we possibly could and the damage was started by then," said Phillips. "We had to abandon just parking on hard [standing] because we had to get traffic in as best we can. We broke into a lot of the grass car parks and as a result of that, we lost 50 per cent of our parking."

In order to protect the remaining car parks, the decision was therefore made to ask some fans to stay away on Saturday.

WAS THERE ANOTHER SOLUTION?

Once grass car parks that were not intended for use were opened on Friday, Silverstone had no choice but to restrict the number of cars coming for qualifying to "salvage" Sunday. Around a quarter of the expected cars did not turn up, which was on target.



Weather disrupted on-track action too

DISRUPTION TIMELINE

How things nearly spiralled out of control

THURSDAY MORNING

Silverstone issues a statement assuring fans that contingency plans are in place if bad weather hits... but warns fans to leave early.



FRIDAY MORNING

Silverstone traffic system breaks down. This is blamed on a large number of vehicles being turned away from campsites.

FRIDAY EVENING

Silverstone MD Richard Phillips advises fans with public car park passes to stay away on Saturday. He estimates 20,000-30,000 fans could be affected.





Traffic was tough to control at weekend

WHAT YOU THOUGHT

Much of the feedback AUTOSPORT received about the British Grand Prix was positive. The selection below is representative of the correspondence we received.

I will be back next year. We waited about an hour in traffic on Friday night but got through, put our tent up and enjoyed the weekend... mud or no mud!

David Whitehouse

Was there on all three days using the park-and-ride service from Sixfields in Northampton. If more fans used the park-and-ride rather than expect to park at the circuit then travel time will be quicker for everyone.

James Clark

Definitely will be there next year. Stewards did their best in difficult conditions. Just had to leave home much earlier than in previous years.

Kieran Timothy Atter



Bernie Ecclestone's view that Silverstone's management "probably couldn't predict the rain" was ill-considered. The probability of disruptive weather was predictable. Whether proper provision should have been made to counter the risk is the question to be answered. If the business of F1 cares about its global image, Silverstone, the BRDC, FOM, the FIA the teams and even the drivers should shoulder responsibility and act on behalf of the consumers. In future stay at home, watch it on TV and save shed-loads of money which you can spend on other exciting motorsport events at venues where they value your support and treat you with respect. I will.

David Shaddock

Having braved the biblical weather conditions on Friday and Saturday my only criticism would be the appalling toilet facilities at Farm and Village.

Graham Webb

Fans should be treated better given what we have to put up with. Roaming grandstand tickets for Friday and Saturday a joke. Really hard to get in. Grandstand tickets should be numbered and allocated for each day.

Amanda Longhurst

We feared the worst following all the reports but we arrived and parked within 15 minutes. Cars were packed in like sardines and it was anybody's guess how long it would take to get out. But we had no problem at all. It was then just the normal traffic congestion as in previous years. Silverstone should be given a pat on the back.

Martin Bishop

Despite all the difficulties for many fans at the British Grand Prix, I was very proud to have been at the event. In the face of adversity, everybody banded together to make a great occasion. All the marshals were friendly and helpful.

Luciane Sabiston

I was appalled at the way in which some F1 fans were treated at Silverstone. Some were asked not to attend on Saturday because of the rain. We are told they will receive refunds but what of other compensation? Those



who may have booked into hotels etc should also be given recompense. In 1985, I went on a trip to the cancelled Belgian GP at Spa. I am still waiting for any sort of refund.

Alan Jarman



Phillips had to make tough decisions

Justin Wilson opened new road in 2002



TRAFFIC MANAGEMENT SCHEME

Since the infamous 2000 British Grand Prix, when heavy rain in April caused chaos, major changes have been made to the traffic system around Silverstone.

- In 2002-2003, the A43 and the Dadford Road that approaches Silverstone were expanded into dual carriageways. The A43 was re-routed to by-pass Silverstone village with the old road re-designated the A413.

- The current traffic-management scheme has been in place since 2004. It was revised in 2006/7 so that the A43 was closed to through-traffic during the event.

- Silverstone's parking strategy was revised ahead of the 2002 race after what happened in 2000. Park-and-ride was introduced, with public car-parking spaces limited to 18,000.

Since 2000, there have been ongoing reviews of the traffic strategy, including a push for further bus services to reduce the number of cars travelling to the British Grand Prix.

"If we had gone for Saturday, it would have been suicidal," said Phillips. "It would have been madness, absolute madness. Limiting the number of cars traveling to Silverstone on Saturday was a difficult decision but it was, ultimately, the right one. It enabled us to work through Friday night, all day Saturday and Sunday night to ensure that we were in better shape for the race."

WHAT IF SUNDAY HAD GONE WRONG?

With 127,000 fans attending on Sunday, there were fears that there could be a repeat of the traffic jams. Silverstone put no restrictions on attendance and despite some of its

SATURDAY MORNING

Queues ease dramatically compared with the previous day. It's estimated that 10,000 fans chose not to come on Saturday.

SATURDAY AFTERNOON

Silverstone tells fans to come on Sunday as planned, but arrive early, car pool where possible and expect bumper-to-bumper parking.



SUNDAY

All spectators are parked up by late morning with queuing on a par with previous years. The race day attendance is quoted at 127,000.

◀ car parks being unusable, efficient use of the space that was available through measures such as bumper-to-bumper parking meant that everything proceeded as planned.

There were a number of contingency plans in place had traffic built up on Sunday. The most extreme of those being turning the A43 dual carriageway into a car park.

“It was something that if we had to resort to would probably have caused as many problems as it solved,” said Phillips. “It was a much better idea to get people in and park them as close as possible.”

MORE ASPHALT CAR PARKS?

Superficially, this sounds like the ideal solution, but it’s a no-go for several reasons. It would be hugely expensive and it’s unlikely that Silverstone would get planning permission to do this. It’s also deeply questionable whether it’s right to coat fields in asphalt for parking for three days a year.

What Silverstone must do is look at ways to preserve the grass car parks more effectively and increase the potential for convenient public transport to the venue.

WILL THIS DAMAGE TICKET SALES?

It took three years for ticket sales to recover in the wake of the 2000 debacle and some fans who were stuck in traffic for hours on Friday



or couldn’t go on Saturday may decide against returning. But Phillips is hopeful that the event won’t suffer.

“The support and reaction from fans has been incredibly positive,” said Phillips. “Most appreciate that the whole country is battling with the unprecedented wet weather and that since introducing the current traffic-management system in 2004, there have been very few, if any, issues for fans getting in and out.”

HOW TO CLAIM A REFUND

Silverstone has promised a refund for fans “who had tickets for the Friday and Saturday but had difficulties attending the event”. As AUTOSPORT closed for press, systems were being put in place to allow the refunds to be processed. Check www.silverstone.co.uk and follow @SilverstoneUK for information and ensure you retain unused tickets and stubs.

CAN SILVERSTONE REALLY DELIVER?

There were already signs last weekend that Phillips and his team have an idea of cost-effective measures that can be looked into, such as changing the way that campsites are organised and increasing the capacity of park-and-ride schemes. The latter, of course, depends on suitable parking spaces and buses being sourced.

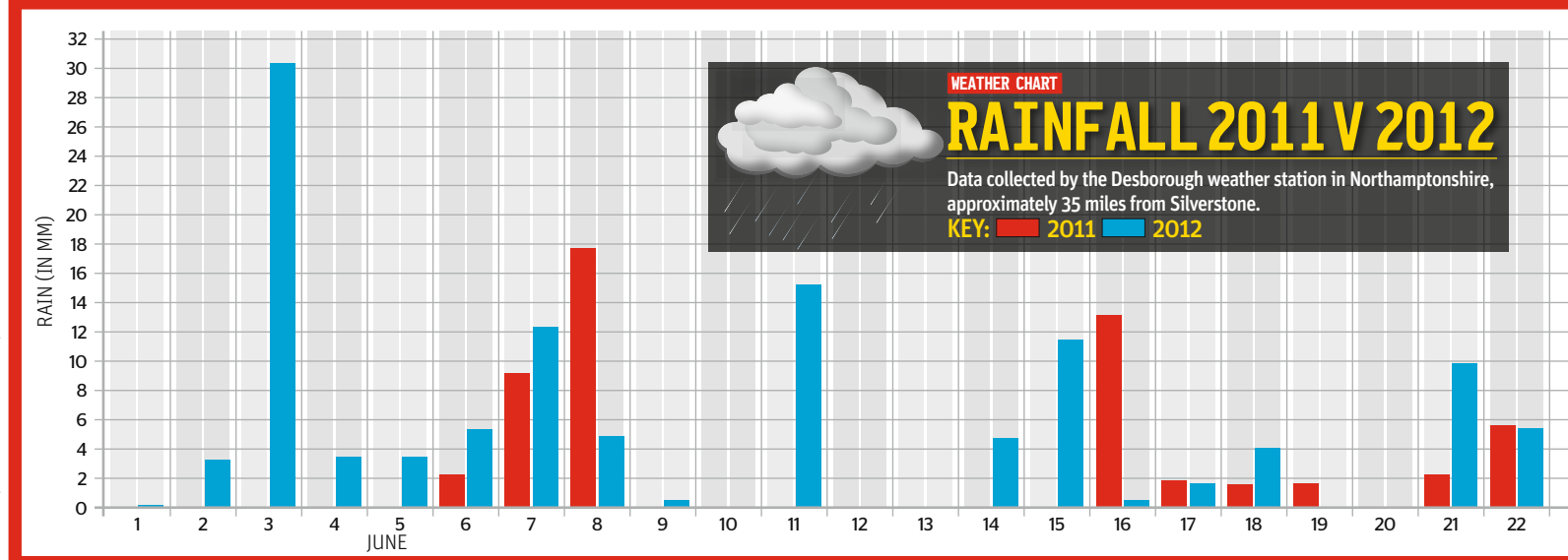
There are doubts over how much Silverstone has to invest, but Phillips is adamant that progress can be made without investors.

“Our plan is to continue improving the venue for fans, with or without an external investor,” he said. “And part of that will factor in lessons learned this weekend.”

It’s clear there were no adequate contingency plans for the scenario and this is an area that the traffic plan must focus on. In addition, AUTOSPORT observed that stewarding on the roads outside the track was poor and, in some key places, non-existent. Silverstone must address these if it is to make good on the promise.



Mud caused havoc in car parks, again



PICS: MASON/GETTY, EBREY, LEICESTER/LAT



Dark clouds dominated the Silverstone skyline

Huge funding needed for investment

Silverstone needs investment of more than £100 million to realise its development ambitions, claims BRDC chairman Stuart Rolt.

The BRDC owns Silverstone and following the changes to the circuit and the building of the new pit and paddock complex, which cost in excess of £27m to build, it needs an investment partner for further improvements. A 'masterplan' exists to develop the facility further, which includes the construction of a hotel.

Such a deal would likely involve the sale of equity in the circuit and Rolt would not rule out anything up to and including the sale of 100 per cent of Silverstone Holdings, provided it guaranteed the track's future as a motorsport venue.



BRDC chiefs want further improvements

"We are looking for someone who is ready to spend over £100m in a 25-year time period," Rolt told AUTOSPORT. "They won't do that unless they are given some serious security and ability to recover their investment."

We're looking for someone who is going to come in and look after the whole circuit.

"An investor needs to have the depths of pockets and the understanding of motor-racing so that it can be their show."

AUTOSPORT SAYS...

EDD STRAW
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Silverstone's traffic contingency planning clearly wasn't comprehensive enough. What happened on Friday was proof of that. But three things impressed me about the reaction by Richard Phillips, Silverstone's besieged managing director.

Firstly, at no point did he simply blame the weather. He *did* point to the excessive rainfall, but accepted that Silverstone must make changes next year and already had some embryonic ideas for how this might be achieved. He didn't appear to be simply playing the get-out-of-jail-free card so beloved of politicians by saying 'lessons will be learned' with no intention of doing any such thing.

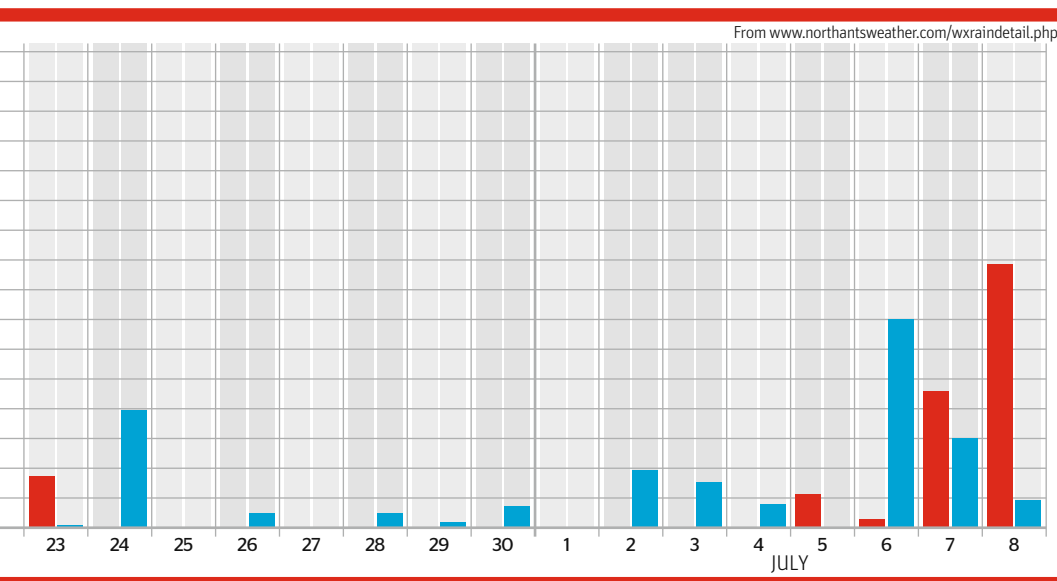
Secondly, once the situation had got out of control on Friday, he and his team made all the right moves. Better planning could have allowed Silverstone to deal itself a far better hand, but Phillips and his team played the cards it did have to stay away on Saturday was a decisive move that paid off. Many would simply have opted for the hit-and-hope approach and potentially ruined race day.

Thirdly, there's the question of money. Silverstone needs investment, and a lot of it. But Phillips picked up on several cost-effective areas for improving spectator access based on the way the number of cars was reduced on Sunday – encouraging car pooling for example.

Silverstone could have just offered excuses. But it didn't. And if that attitude continues you can be sure things will change for next year.



Silverstone's plan worked – only just



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Stewart: Webber right to stay put

Ex-champ backs Aussie's decision to remain with Red Bull for 2013

Triple world champion Jackie Stewart believes that Mark Webber would have been wrong to turn his back on Red Bull.

It was announced on Tuesday this week that Webber has signed a new deal that will keep him at the team in 2013. The Australian had been linked to a switch to Ferrari.

Stewart has no doubts that staying put was the right move. "Why would he want to go to another team?" the Scot told AUTOSPORT. "I would stay with Red Bull. Mark Webber and Red Bull get on very well, he has won two grands prix this year and he is mature. If he went to Ferrari, Fernando Alonso would unquestionably be favoured because he is a twice world champion. So Mark is better off where he is."

Stewart cited Red Bull's proven record of success, the result of an intense recruitment drive during its early days in F1, as the main reason for staying. He likened it to his



Stewart declined offers to leave Tyrrell

situation during his heyday, when he stuck with Tyrrell despite interest from other teams.

"You go where the talent is and you go where the leadership is," said Stewart. "Ken Tyrrell had a great history of collecting quality people to work for him and I recognised that. Mark will recognise that at Red Bull."

It is a logical move for Webber for a number of reasons. Red Bull is on target this year for a third consecutive

constructors' championship, and to leave the best team in F1 would be a major gamble. All of his success in F1 has come there. Crucially for a driver of his height, the team has worked very hard on ways to best accommodate him in the cockpit. To sacrifice all of that to be Alonso's number two would make little sense.

AUTOSPORT understands that Red Bull owner Dietrich Mateschitz, who has a great deal of respect for

Webber, has been keen to keep the 35-year-old for some time. Toro Rosso drivers Daniel Ricciardo and Jean-Eric Vergne have not yet shown enough to justify a promotion to the Red Bull squad, while a move for a driver such as Lewis Hamilton could have destabilised the team.

Chief technical officer Adrian Newey stressed the value of continuity to the team's success. By retaining Webber for a seventh consecutive season, that ensures stability of the driver line-up, with two-time champion Sebastian Vettel already on a long-term deal.

"Continuity is hugely important," said Newey. "Red Bull first raced in 2005 and in truth that was a Jaguar painted blue. Then it had a steep learning curve of developing the culture with quite a lot of new people joining. It took time to develop a way of working, a culture. Once you get to that stage, continuity becomes very



Webber with boss Christian Horner

WEBBER AT RED BULL 2007-2012

Starts: 99 Wins: 9 Podiums: 31
Pole positions: 10 Fastest laps: 13
Laps led: 537

2007 (12th)

Rejoined the team that he raced for in 2003-04 in its Jaguar guise. With Red Bull still on the rise, the high point was the team's second-ever podium finish at the Nurburgring (below).



2008 (11th)

Fourth place in Monaco was the high point, although Webber was a consistent scorer in the first half of the season before the team switched full focus to preparing its 2009 machine.

2009 (4th)

Finally broke his F1 victory duck at the 130th attempt, winning at the Nurburgring despite having to serve a drive-through penalty.

2010 (3rd)

Wins in Spain, Monaco, Britain and Hungary (below) meant that he headed to the finale with a shot at the title. A poor run at Abu Dhabi meant that he slipped to third overall.



2011 (3rd)

A combination of Pirelli rubber and exhaust-blown-diffuser technology made life difficult for Webber, who struggled to get near team-mate Vettel and won only the Brazilian Grand Prix.

2012 (currently 2nd)

Victories in Monaco and at Silverstone (below) mean that Webber is currently Fernando Alonso's closest challenger in the title race, just 13 points behind.



important. People have learned to work with each other and it's then about making that an ever tighter-knit group."

Webber's Red Bull deal has further weakened Hamilton's bargaining position as he chases a deal for 2013. The former world champion and his XIX Entertainment management have been holding out for an improved contract offer from McLaren. Negotiations have reached a point of stalemate, but with few realistic alternatives for Hamilton next year — either a move away or for use as leverage in contract talks — McLaren can afford to be patient.

Mercedes appears to be the only other big team that could have a berth, given that he is unlikely to partner Alonso at Ferrari. But Michael Schumacher appears keen to stay on, and it is far from certain that the team could offer Hamilton requisite financial or competitive package.

Alguersuari works on return

Toro Rosso refugee Jaime Alguersuari is strongly placed for a Formula 1 comeback next season, with Force India among the potential berths for the Spaniard.

Alguersuari, 22, is one of a number of drivers whose fate hangs in the balance until all the line-ups at the top teams are decided. With Mark



Alguersuari is chasing a drive

Webber now signed up to stay at Red Bull, and Lewis Hamilton, Felipe Massa and Michael Schumacher increasingly likely remain in place, the stability at the front of the field is likely to create fewer opportunities further down the grid. That would likely mean another season at Force India for Paul di Resta.

But Alguersuari is understood to be putting together a strong financial package, so even if there is no opportunity at Force India then Williams and Sauber could be potential destinations.

AUTOSPORT understands that Kamui Kobayashi's future at the Swiss team is not certain as his performances have become more erratic, while team-mate Sergio Perez has bagged two podiums.



Aero testing in the spotlight

Maria de Villota's horrific accident last week is under scrutiny, but straightline tests are already highly regulated

The straightline aero test shunt that cost Marussia test driver Maria de Villota her right eye will be examined in a series of comprehensive investigations.

As is standard procedure after a workplace accident in the United Kingdom, Marussia has put together a report for the Health & Safety Executive. There will also be an internal investigation and a third, independent one that has been commissioned by the team. Once

these are complete, the FIA is likely to look into the accident, but only from the point of view of understanding it and allowing its Institute to incorporate any findings into its ongoing F1 safety research.

Despite straightline tests taking place behind closed doors, they remain tightly regulated by the FIA. It inspects and approves venues (see panel for a list of the 19 locations), evaluating such factors as surface quality, how even the grass verges

alongside the run are, obstacles on the verges and run-off areas/tyre barriers at the end of the run. The approval process explicitly stipulates where on each site the straightline test can take place, and the location of the pit area.

"Any test venue we go to is FIA-approved and the safety levels are very high," Williams chief operations engineer Mark Gillan said. "It was a terrible accident and we feel very sad for what has happened but when we

go aero testing, it's done to the same standard [as track testing]."

While details of de Villota's crash are sketchy and the team has not commented beyond what has been released in official statements, all indications are that the above safety demands were complied with.

De Villota had tested an F1 car before, a 2009 Renault at Paul Ricard last August, and she had raced high-powered single-seaters. She had also regularly attended grands prix with Marussia and had extensive training in the operation of the car. Ex-Scuderia Toro Rosso driver Sebastien Bourdais, a 2010 rival of de Villota's in Superleague Formula, believes that bad luck was to blame.

"She is not the fastest driver in the world, but that's not what we are talking about," Bourdais told AUTOSPORT. "She drove plenty of these sorts of cars and she did alright."

"I have no idea what happened but the fact that the tail-lift was at helmet height is bad. But when bad things are meant to happen, it seems like nothing is going to prevent it. She's talking to an engineer and then all of a sudden the thing takes off. It's just wrong place, wrong time."

De Villota making progress

Maria de Villota was in a serious but stable condition as AUTOSPORT closed for press after making good progress since her test crash last Tuesday.

The 32-year-old struck the tail-lift of a truck after returning from her first run. The impact was at around eye-level, giving de Villota potentially life-threatening head injuries. She underwent a lengthy surgical procedure on the night of the accident during which doctors were able to complete a large amount of reconstructive surgery. They were,

however, unable to save her right eye.

It is understood that her left eye is in no danger and that there were no injuries to the neck.

Last Friday, her condition was upgraded from critical to serious but stable following further surgery on her facial injuries.

The latest statement from the Marussia team read: "We have taken a great deal of encouragement from today's developments and the rather more positive signs for Maria's family."



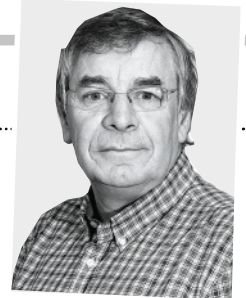
Hamilton put de Villota stickers on his helmet



Marussia showed support for de Villota with mirror stars

EXPERT VIEW

GARY ANDERSON
TECHNICAL CONSULTANT



I have been around motorsport for over 40 years and have seen many terrible accidents, but when I heard about what happened to Maria de Villota I was truly horrified. No one deserves anything like this but for such a fun loving and beautiful lady to suffer what she is going through is tragic.

I have limited information on the crash, so I can only offer informed speculation based on the photographs and sound recording from the engine.

It sounds like the brakes are on and the engine is working against them. I wonder if her initial reaction was to press the clutch with her left foot rather than going for the hand clutch? It's a natural reaction. It was her first time in the car and her only previous experience in an F1 car was last August. It's a lot like if you drive a manual road car and when you hire an

automatic you go for a clutch pedal that isn't there and stamp on the brake.

This means that even if she pressed the neutral button, with the engine torque fighting the brake torque the gearbox will remain locked in gear and the car will keep going forward. It's surprisingly easily done in the heat of the moment.

When I drove the Jordan 197 at the Goodwood Festival of Speed 15 years ago, I did more or less the same thing in the car park and I've seen plenty of professionals do it.

My thoughts and prayers – and on this occasion, I am sure, those of the entire motor racing world – are with you right now, Maria.

Anderson knows how tricky F1 cars can be



FIA-APPROVED STRAIGHTLINE TEST VENUES

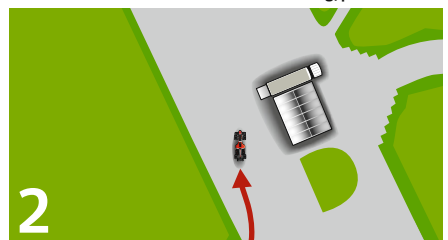
There are the 19 venues around the world approved by the sport's governing body for straightline test running:

- BIC Dragstrip (BAH)**
 - Duxford Aerodrome (UK)**
 - Elvington Airfield (UK)**
 - Fiorano (I)**
 - Colmar-Berg (LUX)**
 - Idiada (E)**
 - Laarbruch (D)**
 - Lommel (B)**
 - Lurcy-Levis (F)**
 - Mendig (D)**
 - Aragon (E)**
 - Nardo (I)**
 - RAF Cottesmore (UK)**
 - RAF Keevil (UK)**
 - RAF Kemble (UK)**
 - RAF Wittering (UK)**
 - San Luis De Menorca (E)**
 - Santa Pod (GB)***
 - Vairano (I)**
- *dry weather only*

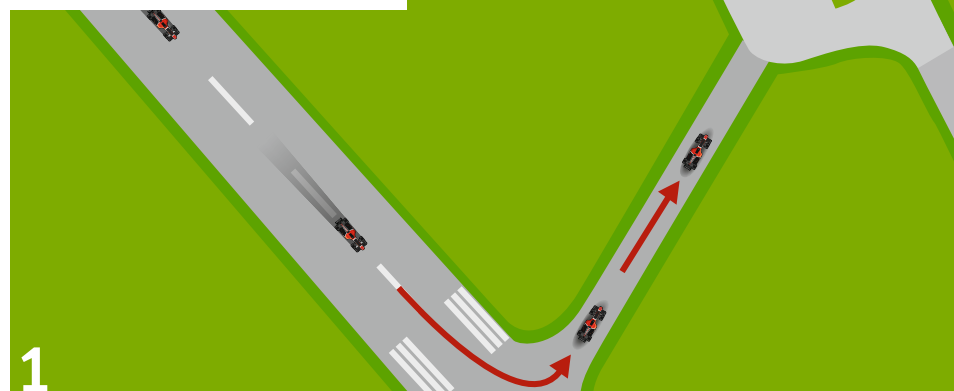
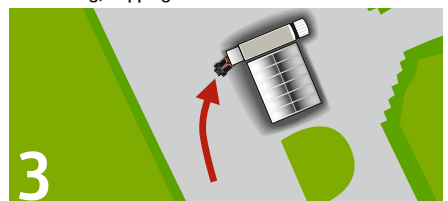
HOW IT HAPPENED

De Villota returns at reduced speed from her first aero run, turning off the runway onto a taxiway leading to the 'paddock' area.

De Villota heads towards the team's awning/pit area.



For reasons that the team has yet to confirm, the Marussia crashes into the tail-lift of a truck alongside the awning, trapping de Villota in the car.



THIS WEEK IN F1

McLAREN SPEED SLUMP

Jenson Button believes that McLaren has slipped down the competitive order in recent races to the point where both Sauber and Williams have a quicker car in some conditions. "It's not just the Red Bulls and the Ferraris that are quicker, a lot of cars are," said Button. "The Williams is quicker in low-speed corners, the Sauber is quicker in high-speed corners. We don't seem to be exceptionally strong anywhere at the moment."



CHINESE DRIVER TO MAKE DEBUT

Ma Qing Hua will make his F1 test debut for HRT in the Silverstone young-driver test, which runs today (Thursday) and Friday. Williams reserve Valtteri Bottas will also appear, while Marussia is planning to run GP2 drivers Max Chilton and Rio Haryanto.

Pastor is a driver who doesn't respect other drivers. Everybody has concerns about him. He is a driver who doesn't know we are risking our lives and has no respect at all

Sergio Perez slates Pastor Maldonado after their British Grand Prix collision



MASSA: I CAN STAY ON

Felipe Massa believes that he will remain at Ferrari next year if he maintains the form he has shown since the Monaco Grand Prix. "If I keep this up and keep improving the car and working I don't see any reason why not," said Massa of the possibility of staying on for an eighth season.

Castrol GRAND PRIX EDGE PREDICTOR

Russell Jordan's prediction that Mark Webber would win at Silverstone helped him top the ninth round of the Castrol EDGE Grand Prix Predictor. He also scored a maximum return by backing Sebastian Vettel for third, and Michael Schumacher for seventh. To play the game, visit predictor.autosport.com

DRS RULE TWEAK

The FIA has modified the DRS usage regulations to disable the system when there is a yellow flag in the activation zone. This happened for the first time on lap 13 of the British Grand Prix in the wake of the clash between Pastor Maldonado and Sergio Perez.

6

Number of times that an Australian driver has won the British Grand Prix. Mark Webber (2010, 2012), Alan Jones (1980) and Jack Brabham (1959, 1960, 1966) have shared the victories

PODIUM INTERVIEWS COULD BE CONTINUED

More post-race interviews on the F1 podium could happen this year after Sir Jackie Stewart interrogated the top three after the British Grand Prix. This replaced the usual TV interviews that take place in a press conference room.

WOLFF SET FOR AERO RUN

Williams development driver Susie Wolff is set to make her debut in F1 machinery in a straightline test in October.



MARUSSIA UPGRADE SUCCESS

Marussia's major upgrade package for the British Grand Prix, which featured a new rear wing, floor, sidepods and exhausts, proved successful. The team is confident that it has closed the gap to Caterham and Timo Glock was able to finish just 25 seconds behind Heikki Kovalainen.



PICS: THOMPSON/GETTY; COATES; DUNBAR; EBREY; FERRARO/LAT



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- Apply corrosion resistant coatings



MARK HUGHES GRAND PRIX EDITOR

Jenson Button hasn't forgotten how to drive, and it's only matter of time before he's back at the front, but bad luck is hurting his form and his confidence

Jenson Button seems caught up in some sort of weird energy field at the moment, as if events magnetically conspire against him regardless of what he does. After bounding into last weekend full of optimism, you could hear the resignation in his voice as he stepped out of the car post-qualifying after fate had found yet another new way to mess with his weekend. "It's OK," he said. "I'm getting used to it."

But we need to de-couple this with the genuine difficulties he was having with the car around Spain, Monaco, Canada time. Last weekend at Silverstone, just as at Valencia two weeks earlier, his underlying pace was good; he actually has rediscovered the physical feel he needs from the car to perform. It's just that events have disguised it at the critical time.

Although he qualified only ninth fastest in Valencia, that was not

reflective of his competitiveness. He'd been fastest of all in Saturday morning practice and his strong form continued into Q1 and Q2 and in the latter session he was marginally faster than team-mate Lewis Hamilton. It all went wrong as he went out for his single Q3 run there. Although his complaints of massive understeer even as he was on his out-lap sounded all too like the sort of feedback he was giving in the previous races when he was genuinely lost on set-up, this was more to do with how the car was on a particular set of tyres. It did not behave like that before or afterwards.

At Silverstone he again looked competitive through the practices, but again his qualifying was complicated by difficulties with a particular set of tyres. In this instance, he contributed towards his problem by persevering too long with his original set of intermediates. As the track was becoming faster, his tyres were becoming worse and at the crucial moment of decision, with the Q1 clock counting down, he made what turned out to be the wrong call, trying for one more lap before coming in for a fresh set. It was an understandable call, given that fresh rain might be arriving at any moment and it was therefore important to get a banker lap in first. But those tyres didn't even have a banker in them and when he got out onto his new set, he could barely believe how much better they were.

He was now quick in sectors one and two – but the complication was that it was now raining heavily in the last part of the track, to the tune of around 1.5 seconds.

A yellow flag at the final turn only complicated things further. Not seeing a stranded car, he was wary it might be spun in the middle of the track as he exited Club and he thereby backed off in a big way and sealed his Q1 fate.

In the race he was sporadically very quick. He has not forgotten how to drive and in the last two races the 'back-to-basics' set-up has returned to him the feel he needs from the car. It's just circumstance that's been interfering. But the interesting part might be how his state of mind may be effecting his reaction to those difficulties. It's easy to brush setbacks off when you're confidence is sky-high, more difficult when you're trying to recover from a difficult period.

As he found himself, on the opening lap of Valencia, faced with the choice of lifting off for a barging Fernando Alonso or returning like for like – which would have taken them both into the wall – he opted for the former. In a different state of mind he might not even have found himself in that compromising position; that energy might have led him to make different decisions earlier in the lap. Similarly, a mind uncluttered with how to get out of a vicious circle might have made a different choice when presented with that awkward qualifying conundrum at Silverstone.

Perhaps there are more things on his mind at the moment even than getting out of his downward spiral of form. There were even whispers of the 'R' word at the weekend. He's a genuinely great driver and it would be sad indeed if we did not see him translating it all sometime very soon. ☹

PIC: EBREY/LAT

Plenty of head scratching for Jenson Button of late



“It's as if events magnetically conspire against Button”



Chevrolet's failed rescue plan

Attempts to keep WTCC project going with funding from General Motors in the US did not come off

Chevrolet Europe made an unsuccessful bid to keep its World Touring Car Championship programme alive by approaching its American parent company to take over funding of the project.

The European arm of Chevrolet, which entered the WTCC in 2005 as part of a major relaunch of the brand on the continent with a range of South Korean-built cars, made the decision to axe the programme at the end of this season after a strategic review of all its marketing programmes.

Eric Neve, Chevrolet Motorsport manager in Europe, then approached the GM Racing motorsport division in Detroit in search of funding to continue into next year.

"I was very hopeful that GM Racing would embrace the

programme and support it financially from the US as Chevrolet's only true global racing programme," Neve told AUTOSPORT. "That was where I was hoping our salvation would come from."

"That hasn't happened. Their orientation is clearly on their existing programmes in NASCAR, IndyCar and GT racing [with the Corvette C6-R] and there weren't enough resources to add a programme like the WTCC."

The decision to stop was made by Chevrolet Europe earlier in the summer. But, when Neve was asked by AUTOSPORT about the future of the WTCC campaign at the Le Mans 24 Hours in mid-June, he said that the plan was to continue into 2013. He met with senior GM personnel over Le Mans week, but their refusal to back the WTCC campaign resulted



Menu, Muller, Huff are free agents

in the announcement of the withdrawal in the middle of last week. Chevrolet vice-president of performance vehicles and motorsports Jim Campbell would not reveal how close GM Racing

came to taking over the programme. "The racing portfolio we have in North America is set," said Campbell. "The decision they made after eight years was to allocate their resources to other places."

CHEVY IN THE WTCC

2005
Arrival in WTCC with Lacetti. Achieves target of a podium (prior to exclusion) at Macau.

2006
RML brings engine development in-house. First victory comes in wet race at Brands.

2007
Menu takes first Lacetti pole at Zandvoort. Nicola Larini is fifth in points as team takes six victories.

2008
Only five wins for Chevrolet, but Huff takes third in the championship with Macau victory.



Taking on BMW and SEAT in '08

WTCC boss remains defiant

Chevrolet's withdrawal will not result in a decrease in the prestige of the World Touring Car Championship, according to series boss Marcello Lotti.

He expects the series to remain at a similar level to 2012 in terms of manufacturer participation with the arrival of Honda and, most likely, Lada. He is also predicting a similar size of grid of more than 20 cars.

"Next year I am sure that we will have at least five brands represented on the grid and three or four of those with some kind of marketing involvement [which would mean they would be registered for manufacturers' points]," he said.

"But the most important thing is to have the grid. That is the platform from which we build for the future."

Lotti said that he was in talks with two more manufacturers about joining the WTCC. He would not reveal their identities, but one is known to be Nissan, which is currently evaluating its long-term motorsport future.

The withdrawal of Chevrolet was, said Lotti, "one of the realities of motorsport".

"They have been with us for eight years and it could not continue forever," he said, "although I did think they would continue into 2013."



Lotti thinks grid will stay strong



Chevy works effort is on the way out



Neve (l) tried to save WTCC team

"I could imagine a scenario where we run a couple of Cruzes for next season"

RML boss Ray Mallock

Chevrolet Europe's decision follows the appointment in January of a new president and managing director, Susan Docherty.

"Following a strategic review of our motorsport and marketing programmes, we have decided to leave the WTCC to focus our Chevrolet brand activities in other areas," she said.

Neve explained that this year's fleet of Cruze WTCC cars would remain the property of RML, which has masterminded the Chevrolet factory campaign since 2005. It will be free to run them or sell them to privateers next year.

RML boss Ray Mallock explained that it was his company's ambition to remain in the WTCC with a new manufacturer in the long term and, possibly, with its Chevrolets in the short term.

"We want to continue and it would be nice if that included next year," he said. "I could imagine a scenario where we run a couple of Cruzes. We are having a number of discussions and we'll see what shakes out, but getting a works-style budget together is going to be extremely difficult."

RML will continue to support privateers running the Cruze and Lacetti touring cars running in the WTCC, Swedish Touring Car Championship and in the Far East.

Chevrolet Europe said the timing of its announcement had been made to allow RML and its drivers to plan for the future. Rob Huff explained that his desire was to remain with RML, while Alain Menu said that he hoped to continue as a touring car driver for at least one more season.

Reigning champion Yvan Muller was unavailable for comment.

AUTOSPORT SAYS...

PETER MILLS
WTCC CORRESPONDENT

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The recent buzz around the WTCC fuelled by Honda's imminent factory return need not be silenced by the pressing of a metaphorical 'snooze' button following Chevrolet's announcement last week of its withdrawal at the end of this year.

The relatively early decision will assist the RML-run team in lining up any alternative opportunities but, as is to be expected in July, it leaves questions about the 2013 grid.

In addition to Honda, a factory presence from Lada Sport is a given in 2013. Whether SEAT Sport's return with a new-generation Leon will be more than a programme offering customer support remains to be confirmed.

Dominant over the past three years, Chevrolet has stated the Cruze machines will remain at RML. Team founder Ray Mallock told me last week that "RML's 2013 WTCC programme is entirely up for review", meaning RML could run the Cruzes next season or wait for a chance to link up with a manufacturer.

RML would face a challenging timeframe to compete at next season's first race with a new marque, the lead time to bring a clean-sheet design to the track typically being 12 months.

RML-run or not, customer Cruzes are likely to be represented. But even if private entrants play an ever-increasing role, for the health of the WTCC it's important that incoming makes follow Chevy's example and shout about their involvement.

Chevy made huge push in the WTCC



CHEVROLET BY NUMBERS

25 RACES BEFORE FIRST VICTORY

DRIVERS' TITLES

2

8 SEASONS COMPETED IN

POINTS

105

ADVANTAGE HELD BY YVAN MULLER OVER FIRST NON-CHEVY DRIVER IN 2012

2 MANUFACTURERS' TITLES

59 OUTRIGHT VICTORIES

DRIVERS WHO RACED FACTORY CARS 9

PICS: GIBSON/LAT

2009
New Cruze model replaces Lacetti. Six victories in season, including one for departing Larini.

2010
Muller replaces Larini and wins first time out on way to title. Chevy also seals manufacturers' crown.

2011
Turbo global engine now in Cruze. Chevys win 21 of the 24 races as Muller takes another title.

2012
So far it's 11 wins from 14 races, with the top three places in the standings locked out.



Depleted GT1 grid last weekend

➔ P60 WORLD GT1 REPORT

WORLD GT1

Ratel scrambles to save GT1

Plan to combine grids with European GT3 series will be put to FIA to keep premier championship alive

The grid for the FIA GT1 World Championship is set to be combined with that of the FIA GT3 European Championship for the remaining rounds in Europe.

The move is part of a rescue plan put together by series boss Stephane Ratel to ensure the survival of the world championship. It will also involve a major rejig of the calendar of the second half of the season.

Ratel said: "We have unanimous approval from the teams and I will present the idea of a merged project

to the FIA. We can't run with a grid of 15 cars in GT1 and 11 or 12 in GT3."

A similar idea was proposed by Ratel during the off-season, but was vetoed by the FIA. He believes that his plan will receive the go-ahead from the sport's governing body this time.

The plan is then to encourage the GT1 teams to run three cars at the season finale at the Buddh circuit in India in December.

All-Inkl Mercedes team boss Marc Basseng said: "Stephane's idea of combining the grids is a good one."

The remainder of the world championship calendar remains in a state of flux.

Ratel has now admitted that the two rounds in China will not go ahead. He says he wants two replacement races in Europe in addition to the remaining rounds at the Moscow Raceway, which is likely to change dates, and Buddh.

It seems certain that the world championship will run on the Blancpain Endurance Series bill at the Nurburging on September 23.

This would involve moving Moscow's date from the following weekend, possibly to September 1.

Ratel believes that the eight teams in GT1 all want to return to the series next year despite the uncertainty.

Hans Reiter, boss of the eponymous Lamborghini team, said: "We would prefer to continue in a professional championship like this rather than step down to an amateur series such as Blancpain or try to do the World Endurance Championship, which costs a fortune."

ELMS

Status fills up with Jousse

THE FRENCH JOUSSE BROTHERS, Julien and Maxime, will drive together in this weekend's European Le Mans Series round at Donington Park.

Julien, who won last year's Le Mans Series LMP1 title with Pescarolo, and younger brother Maxime, who was runner-up in the 2010 Formula Palmer Audi series, will drive Status Grand Prix's LMP2 entry on a one-off basis alongside regular Alexander Sims.

The Status Lola is one of 10 P2s on the entry for Donington. That is one down on the ELMS opener, after the withdrawal of the Boutsen and Race Performance ORECA and the addition of a second OAK Morgan.

There are only two cars apiece in the LMPC, GTE Pro and GTE Am divisions. No entrants have taken advantage of the rules that have allowed GT3-spec machinery into the ELMS.



New drivers for Status Lola

INDYCAR

Dallara rejects price-cut demands

DALLARA HAS RULED OUT MEETING

the IndyCar team owners' demands for a 40 per cent cut in the costs of spare parts for the new DW12, although it says that it is open to finding a compromise.

Reports last week claimed that teams were increasing pressure on the constructor to cut the price of its parts inventory after facing a steep hike in costs compared to recent years.

But Stefano de Ponti, who heads Dallara's US arm, told AUTOSPORT that while he is open to negotiating a better deal, a 40 per cent cut is unreasonable.

"We can't match that," he said. "We are willing to help, but that is an impossible percentage. We met our commitment with IndyCar, and we did our business plan in accordance with what they told us to do. Unfortunately, there is this idea that we are a goldmine at Dallara. We are not."

De Ponti also said that he would fight any attempts by teams to start using outsourced parts – which would be in contravention of the series rules – due to the terms of the contract with IndyCar,



Teams say DW12 is too expensive

which provides for Dallara to put a specific mark-up on parts. He explained that the need to deliver the DW12 to a certain price meant that it did not recoup its costs on the chassis themselves.

IndyCar president of race operations Brian Barnhart, who is acting as the liaison between the teams and the

➔ P56 INDYCAR TORONTO

suppliers, said: "I don't think anyone should point their finger directly at Dallara."

"Our responsibility to the owners is that we've got to reduce expenses. That's got to be how we participate across the board, right down to things like testing."

INDYCAR

Classic tracks made to wait for return to Indy schedule

INDYCAR HAS RULED BOTH ROAD

America and Michigan International Speedway out of next year's schedule, although series CEO Randy Bernard has admitted that both remain high on his wishlist.

The series had considered piggy-backing the American Le Mans Series round at Road America in August this year as a replacement for the cancelled Chinese round, while Michigan has long been touted as a contender to bolster the number of ovals on the calendar.

But Bernard said that concerns about weakening existing events

near those venues has ruled both out in the short term. Road America is just over an hour from Milwaukee; Michigan is 90 minutes from Detroit.

"We want to build the Milwaukee Mile first," said Bernard. "We'd love to go to Road America. But it is very important for us to stick to our plan."

Bernard said that reports that Michigan would be eliminated for the same reason were "accurate".

"We want to make sure that we're giving Belle Isle and the Milwaukee Mile the chance to be successful," he said. "But long-term, Michigan is definitely something we want to do."



IndyCar not going to Michigan – yet



Hinchcliffe is a hit in IndyCar

INDYCAR

'Hinch' boost for Canada

INDYCAR BOSS RANDY BERNARD

believes that the skyrocketing profile of up-and-coming star James Hinchcliffe could be the springboard for a third race in the Canadian's home country.

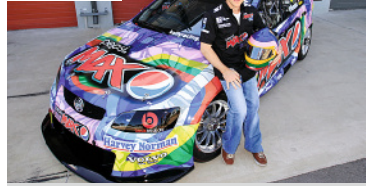
Hinchcliffe, who took the Andretti Autosport seat vacated by Danica Patrick, has become one of the series' highest-profile drivers due to a heavy marketing campaign from sponsor GoDaddy and the popularity of his 'Hinchtown' website.

He featured heavily in the promotion of last weekend's event in Toronto – his hometown – and Bernard said that the buzz could create an opportunity to expand the series' footing in Canada.

"I do think the interest [to support a third race] is there," he said. "With any sport you need stars to build it, and we have a star here now that we can build around. And the time is right to build it in Canada."

IN BRIEF

JV and his V8



VILLENEUVE MAKES V8 DASH

Jacques Villeneuve was a last-minute addition to the V8 Supercar grid at Townsville last weekend. The 1997 Formula 1 world champion was the latest driver to be drafted in at Kelly Racing for Greg Murphy, who has been out of action recently with a back injury.

PHOENIX AND POCONO HOPE

US ovals Phoenix International Raceway and Pocono both remain in contention to join the IndyCar calendar in future. The series has a meeting scheduled with PIR in the coming weeks, while Pocono operators are currently doing a feasibility study into hosting a race.

FOURTH INDY ENGINE TALKS

IndyCar CEO Randy Bernard says that he is still in talks with a potential fourth engine manufacturer to join Honda, Chevrolet and Lotus in 2014. Bernard said that any deal will be settled by mid-October.

PROSPEED PULLS OUT

The Belgian ProSpeed Porsche team has withdrawn its GTE Am class 911 GT3-RSR from this weekend's Donington Park round of the European Le Mans Series. Team boss Rudi Penders has not ruled out returning to the series if sponsorship can be found.

HEXIS McLARENS PENALISED

The two Hexis McLaren MP4-12Cs have been penalised for running updated mapping at the Navarra round of the FIA GT1 World Championship in May. The 10s penalties awarded to both cars in the two races does not affect the double victory for Frederic Makowiecki and Stef Dusseldorp.

HEIDFELD TO SUPERCUP

Ex-grand prix driver Nick Heidfeld will race on the Formula 1 support bill in the Porsche Supercup at next weekend's German Grand Prix. The German, who was invited to be a guest entrant by Porsche, said: "I'm aware that it won't be easy to match the pace of the Porsche specialists, and that's what makes this so exciting."



Heidfeld will race Porsche



Citroen could leave the WRC behind

WRC

Citroen's WRC future in doubt

Dominant force in rallying has its programme thrown into uncertainty by sales figures. By DAVID EVANS

A major slump in road car sales could bring about the end of Citroen's illustrious reign at the top of the World Rally Championship – with some sources expecting the French firm to depart the series at the end of the season.

Citroen's commitment to the WRC runs until the end of 2013, but team principal Yves Matton and his predecessor Olivier Quesnel have both stated that they had been given clear indication from the very top of the PSA Group that Citroen's long-term future lies in the WRC. That was, however, before the Versailles firm sold a quarter of a million cars fewer in

the first half of this year compared with the first half of 2011.

Despite Matton insisting the two are not linked, it looks increasingly likely that Citroen's best chances of remaining in the WRC next season lie with its eight-time champion Sebastien Loeb staying in the sport.

Matton said: "It is very important to us that Seb continues and we will try to convince him."

Citroen is offering Loeb an easier life than ever before in his 12-year association with the firm. Currently considering whether to remain in the WRC and aim for what is quite likely to be a ninth straight title (he's currently 38 points ahead of the rest of the

field), Citroen's top brass is making it clear to him that it would be prepared for him to do less public relations and testing work. On top of that, it would be willing for him to do more racing via his eponymous race team.

The feeling is that Loeb will let Citroen know his decision before the end of the month. In the meantime, a board meeting in Paris today (Thursday) could have a significant impact on the direction of the firm's WRC programme.

A statement from the PSA Group said: "The Peugeot and Citroen brands' traditionally strong markets – France, Spain and Italy – are in profound crisis."



Loeb's future could be key

Worldwide Citroen sales dropped 13.6 per cent year on year from 1.86m to 1.62m, while in Europe 12.6 per cent fewer cars were registered by the firm – including a 13.3 per cent drop in France.

GLOBAL RALLYCROSS

Gronholm wants a rematch

MARCUS GRONHOLM HAS LEFT hospital after crashing out of the X Games and is already hunting down Sebastien Loeb for a rallycross rematch.

The Finn was in hospital for a week after he lost consciousness during the severe crash that ruled him out of the much-anticipated duel with Loeb, who went on to score an easy victory.

Gronholm said: "Sebastien had come to race and I went into the event with a really positive feeling. It was annoying that it ended the way it did. Perhaps Sebastien will consider a rematch some day."

Gronholm has yet to decide on the rest of his season – but the GRC points leader has been ruled out of this weekend's fourth round in New Hampshire.

IN BRIEF

ATKINSON LANDS FINLAND SEAT

Chris Atkinson will contest Rally Finland in Nasser Al-Attiyah's Citroen DS3 WRC in place of the Olympic-bound Qatari. The Australian is targeting a podium finish.

NEW BASE FOR MONTE

Next year's Monte Carlo Rally will start and finish in the Principality for the first time

since 2006, after sources close to the event confirmed the WRC opener's Valence base would be binned for a route based in the Alpes Maritimes.

SEAFRONT START FOR SPAIN

The organisers of the Catalunya Rally have confirmed a 1.2-mile seafont stage will open the final round of this year's WRC.

GP2/INDYCAR

Coloni works on Indy move

ITALIAN RACE TEAM SCUDERIA COLONI is evaluating a move into the IndyCar series next year.

The GP2 race-winning team is seeking a fresh challenge after having its contract in the Formula 1-support series terminated two years early.

Team boss Paolo Coloni told AUTOSPORT: "We have made initial contact with IndyCar expressing our interest in joining the series. After many years of racing in Europe this would be a big and exciting project for us. These are very early stages at the moment, but I hope that we can put a project together."

The reason for Coloni leaving the



Coloni will leave GP2

series has not been officially released, but AUTOSPORT understands there has been alleged serious misconduct.

GP2 would not comment further than its original statement, which read: "As a result of a disagreement between Coloni Motorsport and GP2 Organisation, Scuderia Coloni will not participate in the series from the 2013 season. Scuderia Coloni forfeits all the points received or to be received by it as a

team in the 2012 season."

Enzo Coloni, father of Paolo Coloni and the man behind the eponymous F1 team, said: "We took part in the championship since its first edition and we have many good memories from our racing seasons. I would like to thank Bruno Michel and the whole GP2 staff for their cooperation throughout the years."

Coloni has won 10 races in GP2 since the series began in 2005.

NASCAR

Second drugs test key for AJ

LEGENDARY AMERICAN TEAM BOSS Roger Penske will not pass judgement on AJ Allmendinger's failed drugs test until the results of a second sample have been revealed by NASCAR.

The 30-year-old was suspended by the governing body ahead of last weekend's Cup race at Daytona for failing a drugs test at the previous race at Kentucky Speedway. The team drafted in former IndyCar champion and Nationwide Series driver Sam Hornish to drive the #22 Dodge at the last minute, and it confirmed on Monday that he will drive the car again this weekend at New Hampshire. But Penske said that he had not made any decisions about Allmendinger's long-term future yet.

"It's a disappointment at this particular time, but we're going to wait and see what the second test results are before we make any comments or decisions," Penske told *USA Today*. "I don't think it's fair to him. Things happen

like this. It's unfortunate, but I'm counting on another ['b' sample] test being proper for him. And at that point we'll make a decision."

Hornish was called by the team while filming a live television programme on Saturday afternoon, and was rushed by private jet from Charlotte to Daytona.

"I don't know if I should say I'm happy to be here or not," he said after a shredded tyre dropped him to a 33rd-place finish. "But all in all I'm thankful for the opportunity."



Allmendinger is on the sidelines

FORMULA 3

F3 return for race winner

EX-BRITISH FORMULA 3 RACEWINNER

Rupert Svendsen-Cook is to make his return in the category this weekend in the European F3 Open series at Brands Hatch.

Svendsen-Cook, who claimed a double pole at the track in British F3 last year, will contest the UK round of the Spanish-organised championship on the Formula 2 support bill.

The 21-year-old, who has been driver-coaching for Double R Racing this season, is racing for the French Top F3 squad in place of regular driver Pierre Sancinena.

"They're quite a new team," said Svendsen-Cook. "I did a test for them earlier in the year at Lurcy-Levis to help them develop the new Dallara F312, and now the chance has come to race it."

"Apart from that test I've had limited miles in the new car, although my experience in 2010 and '11 should put me in good stead. It's nice to get back in a car and go racing."

IN BRIEF

De Jong will skip Germany



DE JONG BACK TO AUTOGP

GP2 newcomer Daniel de Jong will skip the German Grand Prix-supporting round of the series due to a clash with the AutoGP meeting at Curitiba in Brazil. The Dutchman will return to Rapax for the Hungaroring GP2 round on July 27-29.

WEBSTER JOINS MASTERS F3

Formula Renault BARC ace Josh Webster will make his Formula 3 debut this weekend in the Masters race at Zandvoort, with one of T-Sport's National Class Dallara-Mugens. Webster is also hoping to contest some British F3 rounds.

BTCC RACER FOR SUPERSTARS

BTCC racer Jeff Smith will make his debut in the Superstars series this weekend at Spa. The 46-year-old will race a Team Dinamic-prepared BMW M3.

CUP BOYS TEST GRAND-AM

NASCAR team-mates Juan Pablo Montoya and Jamie McMurray took part in a Grand-Am test on the Indianapolis road course on Monday in preparation for the series' Brickyard 400-supporting endurance race. The Ganassi drivers will share the team's #02 entry on July 27.

EDWARDS HITS OUT

Carl Edwards has slammed suggestions that NASCAR should consider mandatory caution periods to spice up the racing. "You can't fabricate competition," said the two-time Sprint Cup runner-up.

Edwards doesn't want more of this



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BRITISH GP

Silverstone, July 8

ROUND 9/20

LAPS 52

WINNER

Mark Webber
1h25m11.288s

POLE POSITION

Fernando Alonso
1m51.746s

FASTEST LAP

Kimi Raikkonen
1m34.661s

RACE RATING

★★★★☆

Well worth enduring the dismal British summer for, we reckon

DRIVERS STANDINGS

Alonso	129pts
Webber	116pts
Vettel	100pts

MILESTONES

- Red Bull chalks up its 30th F1 victory
- Felipe Massa ends a 29-race streak of not finishing in the top four
- Paul di Resta fails to reach half distance for the first time in his grand prix career



WEBBER SPINS A NEW TALE OF THE UNEXPECTED

Nothing was predictable about the British GP. Even the winner was surprised to get a chance to snatch victory. MARK HUGHES reports



QUALIFYING

Alonso takes pole with 'the judgement of an angel'

“You needed luck,” said pole winner Fernando Alonso. “You had to be in the right place at the right time on the right tyres.” You also needed the supreme judgement of a great driver to take full advantage of that luck, just like race day in Valencia a couple of weeks ago. It was the same driver maximising that luck when it came.

It was lucky for Ferrari that there was enough of a break in the weather to continue qualifying an hour and a half after it had been curtailed half way through Q2, when the red cars languished 15th and 16th. They were there because in that session you needed to be out immediately on wets, and Ferrari had chosen inters. The error of that call had to be corrected by pitting, by which time you'd lost two laps of running when the track was at its least bad. Alonso came perilously close to putting the Ferrari into the wall at this time as he exited Chapel and caught the standing water. He showed the judgement of an angel in getting off the brakes at the perfect time to keep it from ending in an expensive carbon crunch.

The rain was pounding down now and, with even the full-wet Pirelli not able to deal with this level of standing water, the red flag was shown. Opinion was divided on whether it should have been. Had the grid been formed at this point, Sergio Perez's Sauber would have been on pole from Lewis Hamilton's McLaren, Nico Rosberg's Mercedes and Jean-Eric Vergne's Toro Rosso. The Ferraris, Michael Schumacher's Mercedes and Romain Grosjean's Lotus would not have made it into Q3. Jenson Button was already out, a Q1 victim, a McLaren nestled among the small-team cars after Jenson had waited a couple of laps too long to get onto fresh intermediates on a track that had been drying, but which was very wet in the final sector by the time he got back out. Even so, he might just have scraped in had he not been cautious through the yellow flags at Club for Timo Glock's spun Marussia.

The remaining six minutes of Q2 eventually ran, each lap quicker than the last as the track dried almost into inters territory and the Ferraris and Schumacher got through (Alonso only just, stuck as he



Alonso was let off hook, and judged it perfectly

was behind a Toro Rosso on the final lap). Grosjean was fifth fastest but beached it in the Vale gravel trap on his final effort, meaning he could take no part in Q3. The yellows he'd created were out as Alonso came through to complete his lap. Again Fernando's judgement was exquisite as he lifted just enough to avoid setting his best sector time, though without giving anything further away. Daniel Ricciardo and Bruno Senna – on course to have made it through to Q3 at the expense of Alonso and Vettel up until this moment – did not judge it quite so finely and were out.

Perez fell from first before the red flag to 17th, having gone out on inters and stayed with them. Neither Sauber was through, despite having been among the quickest cars up to that point. This was a massive lost opportunity for the team. Kamui Kobayashi at least changed from his initial choice of inters and got a wet-tyred lap in to go 12th.

Rosberg was out, only 13th after simply failing to put a good lap together. Nico Hulkenberg's Force India, with a wet-weather wing setting, made it through, Paul di Resta's, with a dry-weather wing, did not and he lined up 11th. Vergne sunk down back to a more usual Toro Rosso level in 16th, two behind team-mate Ricciardo,

with Senna's Williams in between.

With the rain holding off as the final session began, opinion was split on tyre choice. Hamilton, Schumacher and Kimi Raikkonen in the KERS-less Lotus went for wets, the rest for inters. On the first flying laps the choice was pretty close, but thereafter we were solidly into inters territory – and those on wets were forced to come in for a change, losing them valuable track running at a crucial moment and leaving them time for just one flying lap on inters.

Meanwhile the final-lap pole battle became an Alonso-vs-Webber showdown. Red Bull had figured it needed to be last across the line to take full advantage of the drying track, but in achieving that was caught out by the rain arriving just as Mark was approaching the last corner. That lost bit of grip and traction through Club probably accounted for more than the five hundredths by which Webber lost out. But, like Fernando said, you needed to be lucky. It had been a terrific effort from both men, on the perfect knife-edge between confidence and circumspection.

Just a couple of tenths behind them, third fastest, was Schumacher and this was another great effort, given that it was

his only flying lap on inters and that he was fastest of all in sectors two and three, reflecting his less familiar start to the lap. Had he not initially gone for wets, might he have been on pole? As it was, he was a couple of tenths faster than Vettel, who admitted to simply not being quite quick enough when it counted. Half a second slower than Webber, Seb certainly appeared to be a little less gung-ho in his approach.

Felipe Massa lined the second Ferrari up fifth, albeit 1.3s slower than his team-mate. Both Ferraris were on the original front wing and not the new one tried in practice. Raikkonen put the Lotus sixth, his KERS problem having lost him a couple of tenths and a grid place. Pastor Maldonado was seventh for Williams, having just failed to get to the line in time for a lap that was sure to have been quicker.

Hamilton found to his dismay that the McLaren would simply not switch the inters on and his single flying lap on them was a lurid one, good only for eighth. Having been comfortably quickest during the full wet running, he was understandably disappointed. It was a trait shared with the Force India and Hulkenberg could manage only ninth, a full 1s slower than Hamilton, having been second quickest to him in the wet of Q2. Furthermore, he was taking a gearbox change penalty, promoting Grosjean to ninth.



Merc joins in the 'Silverstone wave'



Gloomy Button failed to clear Q1 hurdle



P38 RESULTS
All those vital stats





Alonso just got the jump on Webber at the start



RACE CONDITIONS

After days of rain, everyone was shocked to see a strange yellow ball in the sky throughout. Track temp reached 31C

Nothing was as expected – neither the pummelling rainfall 36 hours before the race weekend that rendered many

of the campsites unusable and which created such traffic chaos, nor the welcome sunshine of race day that meant a heat haze rising from the grid.

We all know that prediction is folly in 2012. McLaren, for instance, went to Silverstone expecting to shine on a fast aero-dependent track not dissimilar to Barcelona, where it had been on pole by half a second. Yet Lewis Hamilton could qualify and finish only eighth here – and the team was counting itself lucky afterwards that the Saubers and Pastor Maldonado's Williams, which had all been demonstrably faster, were delayed or retired.

Mark Webber went into the British Grand Prix weekend dubious about whether the updated Red Bull's devastating form in Valencia would translate, feeling pretty sure that Silverstone's fast sweeps were more Lotus and McLaren territory. Even after he qualified the further-upgraded RB8 on the front row it was still a surprise that he could win the race, given that for most of it Fernando Alonso's polesitting

Ferrari looked able to pull out any gap necessary to cover all strategic possibilities.

And it was certainly a surprise to Ferrari when, during Alonso's final stint, the left-front soft option tyre began to degrade significantly faster than had the same spec of tyre on Felipe Massa's car in the first stint.

Webber wasn't expecting to see the deficit to the Ferrari coming down in big chunks like it did. He sniffed blood, went on the attack, his hard tyres more robust and faster, the RB8's grip and balance as good as it's ever been. And with 10 minutes to go he was within the DRS zone.

Lack of data was part of the reason for all the surprises. Friday practice and qualifying were run with intermediate tyres and wets, and the only dry running came in the cool of Saturday morning. During that time many teams – and especially McLaren – experienced serious front graining problems on the softer option tyre. Even when the graining phase was over, that tyre didn't last much longer. Sheer wear, rather than the usual heat degradation, would finish them off in as few as eight laps.

That was a function of the greenness of the track from all that rain. What track rubber had built up on Saturday morning was, of course, washed away by the rain of qualifying and so we were back to a green track by race start. It was what to do with that problematical soft tyre that loomed large in everyone's strategies.

McLaren wanted to avoid it when the track was at its greenest and therefore started both Hamilton and Jenson Button on the hards.



Vettel got bogged down in early scrap

Furthermore, there was still a possibility of rain later, and if you ran inters at any point in the race you'd no longer be obliged by regulation to run the soft. You'd therefore be at an advantage over those who had.

At Ferrari, they were uncertain. On the one hand, there was no telling whether the tyres would stand up well enough to do the theoretically fastest two-stop. Starting on the hards, and knowing within the first stint how long you could make them last, would make that choice more flexible. Furthermore, as the track rubbered in, the soft might be both faster and more durable by the end.

Alonso had suffered McLaren-style serious graining and wear of the left-front soft during the Saturday practice but had great pace on the hard. So that's what he chose to start

on. Felipe Massa would start on the soft, and that would give Ferrari some good data on how short or long Alonso's stint on them could be later.

At pretty much every other team, the thinking was that two stops would be no problem. They could get the softs out of the way with a short opening stint, leaving the faster tyre for the maximum possible time. Besides, the briefly greater grip of the soft would give better acceleration off the grid and on the opening laps.

So that's how it was poised, with Alonso sitting on pole with his silver-walled tyres, Webber alongside him on the yellow-striped softs. The Red Bull was, in fact, slightly better on acceleration, despite being on the dirtier side of the grid, and Alonso chopped smartly across to his right to block Webber, who switched across to the left for a better line ▶

◀ through Abbey and down through the kink of Farm, heading towards Village right-hander and the tight Loop that follows.

Alonso pushed only as hard as he needed to in these heavy-fuelled opening laps, and didn't initially pull much of a gap out over Webber as those soft tyres on the Red Bull gave their brief initial advantage.

But both were pulling quickly away from Michael Schumacher. The Mercedes was nowhere near as quick a car in the dry as it had been in the wet of qualifying and soon there was a sizeable queue behind it. Michael's robust defence helped ensure this was strictly a two-horse race as other potential fast cars quickly lost touch with Alonso and Webber. "The characteristics of this circuit do not suit us," admitted Michael, "and we knew this going in." The car does not like long-duration corners.

After five laps Alonso began to get the hammer down, pulling the gap over Webber out to over 3s by the 10th lap. "Actually," said Webber afterwards, "even though I knew that Fernando was eventually going to have to run the slower tyre I thought in the first stint that he was in very, very good shape to probably close the win out. He's a wily old fox and I had the feeling he could pull the pin out when he needed to."

Mark nonetheless stayed relentlessly on it, trying to combine the slow pace with a good stint length. "That was the absolute key today," he added. But the balance in this first stint was not ideal, with a little too much understeer, and he would have some front wing added when he stopped.

With Webber's option tyres past their best, he came in at the end of lap 14 to get onto his first set of the faster primes. He had been just over 5s adrift of the leading Ferrari when he came in and, although he was lapping 0.8-0.9s faster on his

What you'd call an early bath for di Resta



new tyres than Alonso had been going on his old rubber, it seemed odd that Ferrari should feel it necessary to respond and pit Alonso on the very next lap.

Knowing that Alonso would be two-stopping, Ferrari needed to maximise the length of each of these

"It was obvious Fernando was pushing but the balance wasn't there"

Mark Webber

first two stints on the primes in order to limit how long he would be on the troublesome options at the end. At the rate at which Webber would have been catching Alonso at this stage, Ferrari could have kept its man out for at least another three laps, such was the cushion Fernando

had built up. As it was, the team wasted that opportunity by bringing him in immediately. Playing it safe, Ferrari got Alonso out still over 5s ahead on his new primes, but it would need to be paid for later.

In fact, he was also paying for it now, as he came out behind the yet-to-stop Hamilton, who would be going for another five laps yet. It was imperative that Fernando not be delayed behind the old-tyred McLaren for too long. Lewis's pace in this stint once he'd got into clear air was good, actually slightly faster than Alonso had been going on the same tyres before he stopped. But being in the queue behind Schumacher since the start had left the McLaren already 15s behind.

Although he was engaging the Ferrari wheel to wheel, Hamilton was in reality fighting the Lotuses of Kimi Raikkonen, who had pitted



DRIVER BY DRIVER by Edd Straw

1  **7/10**
Event rating

SEBASTIAN VETTEL

Red Bull-Renault RB8-04
Start: 4th. Finish: 3rd

There was a lot good about Vettel, and impressive pace in the race after losing time in the Schuey train carried him within striking distance of Alonso. But a scruffy qualifying lap and damaging his front wing by clipping Massa on the opening lap were the rough edges.

2  **10/10**
Event rating

MARK WEBBER

Red Bull-Renault RB8-03
Start: 2nd. Finish: 1st

You could maybe argue that Webber might have improved his weekend by going 0.048s faster in qualifying to take pole. That this is the only criticism is evidence of just how strong he was. Was quick when he needed to be during his third stint and thoroughly deserved second Brit GP win.

3  **4/10**
Event rating

JENSON BUTTON

McLaren-Mercedes MP4-27-04
Start: 16th. Finish: 10th

Qualifying was awful, although in mitigation he would have made it into Q2 but for yellow flags on his final two flying laps. Deserves credit for nicking a point, and was within two seconds of his strategy-hampered team-mate. Some positives but a load of negatives.

4  **5/10**
Event rating

LEWIS HAMILTON

McLaren-Mercedes MP4-27-03
Start: 8th. Finish: 8th

Like his team-mate, found the McLaren ill-suited to intermediate rubber in qualifying. Drove well in the race to climb into the top six, but McLaren's decision to run him for only seven laps on the softs in his second stints hung him out to dry. Proved unable to halt the slide thereafter.

5  **10/10**
Event rating

FERNANDO ALONSO

Ferrari F2012-295
Start: 1st. Finish: 2nd

The Ferrari F2012 is much improved, but Alonso first pole since Singapore 2010 owed more to his virtuosity than the machinery. Perhaps a longer second stint would have given him a chance to win the race, but other than strategy the Spaniard's drive was immaculate.

6  **8/10**
Event rating

FELIPE MASSA

Ferrari F2012-294
Start: 5th. Finish: 4th

A very classy weekend from Massa, who finished in the top four for the first time in 30 races. Looked strong in the wet and even an outside bet for pole, while in the dry race he never looked like losing fourth, despite late pressure from Raikkonen. A number two's job very well done.



Kobayashi ran over his Sauber mechanics



Grosjean needed new front wing, then starred

from just ahead of him on the 13th lap, and Romain Grosjean, who had been making his way through the pack in fine style and was already up with Raikkonen, although he would need to stop sooner.

Hamilton held Alonso off for three laps, their dicing bringing the crowd to its feet regardless that Lewis was not, in reality, in a fight with Fernando. In fact, Hamilton could have done without this, for all it really did was hasten the wearing out of his tyres at a time when he needed to be maximising his stint length. He was brought in from second at the end of the 21st lap. The beleaguered McLaren boys turned him around in a superb 2.6s and he exited still just behind Raikkonen in seventh.

On the 33rd lap, Webber was in for his final set of primes. With Alonso still out front, but with a stint on the slower tyre ahead of him, what Ferrari did next would be crucial. Before Webber's stop Alonso had a lead of 5.5s. Just as with the first

stops it was a comfortable margin, particularly as the Ferrari was still running well. In response to Webber's stop Alonso stepped up the pace, finding a couple of tenths. On his new tyres Webber was going around 0.4s faster than Alonso, a good pace but surely nothing unduly concerning for Ferrari, with that cushion and the need to minimise the length of the final stint. Yet the team kept him out for only four laps longer, when Alonso still effectively had a 3s margin over Webber.

From the perspective of the heat of the moment it probably felt the safe thing to do to bring Alonso in at the end of the 37th lap. It allowed a margin for any problem at the pitstop, and a stint of 15 laps to the finish on the softs with a light fuel load was surely going to be OK. After all, Massa had done 13 heavily-fuelled laps at the start on them without problem. But if it was a conservative, safe tactical move in the heat of the moment, it was actually a risky one in the bigger picture.

Alonso exited the pits after a McLaren-matching 2.6s pitstop with a 4s lead over Webber, and Mark wasn't expecting much to change at this point. "I thought he had it all covered," he said, "but I kept pressing just in case." After four laps that gap began to come down...

"Ciaron [Pilbeam, Webber's engineer] got on the radio at this point and said that Alonso wasn't doing much on the options," continued Webber. "I thought he was just looking after the tyres, but as I pressed and got closer to him I could see what his problem was. He was struggling with the front left and, if you lose the balance around a track as fast as this, it's very hard for the driver to do anything about it. It was obvious he was pushing as hard as possible but the balance wasn't there. That's when I first smelt blood. I realised this was real ▶



Vettel leads Raikkonen and Maldonado early on

7  **7/10**
Event rating

MICHAEL SCHUMACHER
Mercedes F1 W03-05
Start: 3rd. Finish: 7th
Overachieved in qualifying by taking third but, as the traffic jam he collected in his wake during the first stint attested, the Mercedes simply wasn't up to staying there. Claimed seventh was the maximum and he had a point, for he had no business being ahead of Red Bulls, Ferraris or Lotuses.

8  **2/10**
Event rating

NICO ROSBERG
Mercedes F1 W03-03
Start: 11th. Finish: 15th
Wasn't particularly quick in qualifying. Wasn't particularly quick in the race either. In fact, he was utterly anonymous. That he finished behind the Toro Rossos was down to a slow final pitstop, but beyond that he never showed the pace needed to mount a serious challenge for points.

9  **7/10**
Event rating

KIMI RAIKKONEN
Lotus-Renault E20-05
Start: 6th. Finish: 5th
Another solid weekend for Raikkonen, although given the pace of the car you have to wonder whether a podium was possible if he'd not been shuffled off the track on the first lap. He certainly thought so, but time lost in the first stint meant he didn't have the chance to get back up there.

10  **7/10**
Event rating

ROMAIN GROSJEAN
Lotus-Renault E20-04
Start: 9th. Finish: 6th
Once again, Grosjean was impressively rapid and his underlying speed was greater than his team-mate's, as evidenced by his climb from the back to sixth. But there were mistakes: binning it into the Vale gravel trap in qualifying and damaging his front wing early in the race.

11  **5/10**
Event rating

PAUL DI RESTA
Force India-Merc VJM05-02
Start: 10th. DNF
Hulkenberg proved that it was possible to get a Force India set up for dry conditions into Q3 and di Resta almost did, only to get bumped by Alonso late on. His race effectively lasted only a few corners as he was hit and suffered a puncture, as well as suspension damage.

12  **7/10**
Event rating

NICO HULKENBERG
Force India-Merc VJM05-03
Start: 14th. Finish: 12th
Up until Copse Corner on the penultimate lap, Hulkenberg had done an excellent job. Made Q3 and recovered from his five-place grid penalty to run ninth in much of the final stint. Would have scored a point had he not bafflingly tried to repass Senna at the fast right-hander and gone off.

◀ and it was completely game on.”

The gap was down to just a couple of seconds on the 43rd lap, then 1.3s, and on lap 45 Webber was within DRS range. The Red Bull was one of the slowest cars down the straights, so even with the help of DRS it wasn't straightforward, especially as Alonso was rescued on one lap by encountering a lapped HRT at the DRS detection zone, just as Webber was lining him up. This, of course, gave Alonso the benefit of DRS too, neutralising that of Webber's. But it was only delaying the inevitable.

On lap 48 Webber used his greater momentum into Brooklands to simply go around the outside of the Ferrari, Alonso trying to come back at him up to Luffield and again at Copse, but it was done. Webber was on the way to his second victory of the season.

It was all Alonso could do to maintain enough of a pace to keep Vettel at bay in the remaining laps. The reigning world champion had snicked a small piece of his front wing against the back of Massa on the opening lap as he battled the Ferrari and Raikkonen.

Vettel ran fifth in the early laps, with the blockage of Schumacher's Merc in third creating a few tense moments. On the third lap Massa took a look down the inside into Copse – flat-in top remember – and Michael veered slightly towards the Ferrari to dissuade him, Massa getting a big twitch of oversteer into

the corner as the Mercedes stole his air. This gave the closely-following Vettel a run on the Ferrari and Seb bravely tried for the inside into Maggotts, Massa hanging on for the inside of the Becketts left-hander.

Vettel was then trying around the outside of Stowe and the inside of Vale, but got smartly shoved over the kerb, Massa taking no nonsense.

In an attempt at getting Vettel out of the stalemate in the Schumacher queue, Red Bull brought him in for his fresh prime tyres at the end of the 10th lap. Seb put in a couple of

“Grosjean was arguably the man of the race, but needs to stay out of trouble”

Lotus newbie gets noticed by Jackie Stewart

good hard laps around 1s faster than the dicing Schumacher and Massa, with the Ferrari finally getting by on the inside of Stowe, just as Vettel was making his out-lap – he was therefore ahead of them both after they'd each pitted.

Vettel then had to fight his way past the struggling yet-to-stop cars of Nico Rosberg and Button, pulling nice moves on both, with Massa following him through.

With Vettel pitting for a second time on lap 31, Massa could not respond immediately, for Raikkonen

was too close behind. Had Ferrari committed Massa to a longer final stint, the worry was that the Lotus – always able to hold onto its tyre performance for a long time – would be able to pass in the late stages. As it was, Kimi pitted on the 34th lap and Ferrari brought in Massa in response a lap later, emerging still ahead.

Raikkonen had been among the battling since the start. His bid to take fifth from Vettel on the first lap was foiled when he had to clatter over the inside kerb at the Loop to avoid T-boning Massa.

Immediately behind, Grosjean and Paul di Resta touched, puncturing the Force India's right-rear and damaging the Lotus's front wing. Paul spun as he tried to turn into Aintree, and but in his long drive back to the pits the flailing tyre caused extensive damage to the floor and he'd later retire after a big spin through Becketts. Grosjean, with his damaged wing, ran out wide through the Loop, losing several places and forcing the following Hamilton to back off – to be instantly zapped by the Williams pair of Maldonado and Bruno Senna.

With his compromised entry onto the main straight, Raikkonen was a sitting duck and he moved sharp left in an unsuccessful attempt at blocking Maldonado. Into the left of Brooklands at the end of the straight, Hamilton dived down Senna's inside to reclaim one of the places he'd just lost.

Grosjean, bereft of much of his front downforce, was dropping like a stone, edged out over the Brooklands exit kerb by the Sauber of Sergio Perez, who later in the lap would nail a great move on Nico Hulkenberg's Force India from Stowe through to Vale to take 10th. Curiously, Grosjean stayed out for a further ragged lap but came in at the end of the second for a new nose, rejoining on fresh, hard tyres. The delay had dropped



Alonso vainly tries to hold off Webber

him to the back, but it had got the troublesome soft tyre out of the way, giving him a greater distance than anyone else on the faster tyre. It was to be the beginning of a ruggedly magnificent comeback drive.

Maldonado, who had been repassed by Raikkonen, and Perez (who had overtaken Senna) pitted together at the end of the 11th lap, moving the hard-tyred Hamilton up to the back of sixth-placed Raikkonen.

The two Latin-Americans left the pits in the same order, but Perez got a run going on the Williams down Wellington Straight and swept around its outside into Brooklands. Fighting the move, Maldonado took a big chunk of inner kerb, oversteering him into the side of Perez, pirouetting them both around, but with the Sauber terminally damaged. “You cannot race with this guy,” Perez fumed. “He's a dangerous driver.”



Perez clashes with bruiser Maldonado

DRIVER BY DRIVER by Edd Straw

14  **3/10**
Event rating

KAMUI KOBAYASHI
Sauber-Ferrari C31-01
Start: 17th. Finish: 11th
Had no chance on intermediate rubber in Q2 and had a pretty busy race. Never quite captured the incisiveness of his team-mate, but had he not mown down his pit crew at his final stop he would have ended the day with a clutch of points. A costly and dangerous blunder.

15  **7/10**
Event rating

SERGIO PEREZ
Sauber-Ferrari C31-02
Start: 15th. DNF
Couldn't be blamed for being sent out on the wrong tyres in Q2. Climbed order in the race, but this brought him into the path of Maldonado. The Williams driver was to blame for the collision, but inevitably there is always a risk if you go around the outside of someone...

16  **7/10**
Event rating

DANIEL RICCIARDO
Toro Rosso-Ferrari STR7-04
Start: 12th. Finish: 13th
When you've got a car that is very much the ninth best in the field, it's difficult to make a good impression. The Australian shaded his team-mate in qualifying and the race despite slipping behind him at the start. The seven-second gap to the points flattered the car a little.

17  **7/10**
Event rating

JEAN-ERIC VERGNE
Toro Rosso-Ferrari STR7-03
Start: 23rd. Finish: 14th
Looked to be enjoying himself in the wet in qualifying and there were times when he was among the quickest on track, but it wasn't enough to make Q3. Overcame his 10-place grid penalty by jumping to 16th at the start but lost the one battle that counted – against his team-mate.

18  **3/10**
Event rating

PASTOR MALDONADO
Williams-Renault FW34-02
Start: 7th. Finish: 16th
“Dear Pastor, it's all well and good qualifying a handy seventh and running as high as sixth. But if you're going to overcook it when you hold an inside line and hit Perez, it undermines everything. It was an honest mistake, but it's not the first time this kind of thing has happened.”

19  **7/10**
Event rating

BRUNO SENNA
Williams-Renault FW34-03
Start: 13th. Finish: 9th
Needed, and delivered, a decent weekend. Probably would have made Q3 but for yellow flags and, save for a spin in the race after dropping a wheel onto the artificial grass at Stowe, acquitted himself well while battling with the likes of Hulkenberg and Button.



copyright on and had many of those witnessing it making a sharp intake of breath. The Frenchman is shaping up into one of the stars of the season, and four laps later he was able to effortlessly go by Hamilton in the DRS zone.

That short middle stint had left Hamilton with a long stint to do now on a set of hards that he was reporting felt awful. "He said they felt like a totally different type of tyre to those he was on in the first stint," reported the team's Paddy Lowe. "He was around 1s per lap slower on them than we were expecting. So we were then wishing we hadn't pitted him so early in trying to keep him ahead of Grosjean. Hindsight says we should have surrendered that, kept him out longer and concentrated on protecting him from Schumacher."

Once clear of the McLarens, Grosjean was setting the track alight, cutting into the 5s deficit to team-mate Raikkonen. Despite tyres that were eight laps older, he was lapping around 0.5s faster. Once he was within a couple of seconds he was called off, but it had been another thrilling performance.

"He was arguably the man of the race," said two-time British Grand Prix winner Jackie Stewart, "but he just needs to stay out of trouble on those opening laps."

Massa, Raikkonen and Grosjean took fourth to sixth, with Kimi nailing the race's fastest lap last time around. Behind them, Schumacher had pounced on Hamilton's grippless McLaren in the DRS zone five laps from home to take seventh place in his Mercedes. Hulkenberg, Senna and Button fought for the last couple of points places. Senna put a clean pass on the Force India, with Hulkenberg then flying off the track at Copse trying to retaliate, handing the final point to Button.

In a season full of surprises, we'd just been treated to another. ❧



Webber and Alonso let fly after Brit GP thriller

Into the second stint, Hamilton was fitted with a set of options, with the plan being to do just a short stint on them and have him back on the hards for a long final stint.

But the McLaren's pace on the soft was poor and he was left behind by the prime-tyred Raikkonen. Even so, Schumacher was easy meat for them both on the 24th lap, Kimi passing the Merc at the end of the DRS zone, Hamilton following up with a move down the inside into Copse.

With Raikkonen continuing to pull away from Hamilton, Lewis would soon be under threat from the other Lotus of Grosjean, who pitted on lap 26 (effectively his only 'strategy' stop, given that his first one had come on lap two). As Romain was immediately very quick on his fresh hards, McLaren was monitoring where Lewis would drop into – and it was clear that quick action would

be needed if he was to get back out on track still ahead of Grosjean. It was for this reason that Hamilton was brought in as early as lap 28, just seven laps after his first stop. It got him out still just ahead of the Lotus – and just behind team-mate Button, who would run for another four laps yet before his second stop.

Jenson wasn't making it easy for Lewis, who now had Grosjean swarming all over the back of him, and on the 31st lap Button was radioed to let Hamilton past. Lewis got by down the inside into Copse, and the lost momentum this caused Button enabled Grosjean to pounce as they exited that corner wheel to wheel, Romain to the right with the flat-out left kink of Maggotts coming up fast. Not for an instant did he flinch, audaciously slicing by the McLaren. It was the sort of move that Hamilton used to have a

20  **6/10**
Event rating

HEIKKI KOVALAINEN
Caterham-Renault CT01-3
Start: 19th. Finish: 17th
Reckoned he could have slipped into Q2 in the wet conditions had he put his best lap together, making him only one of 23 drivers who had a Saturday sob story. Did a good job to repass the two HRTs and Glock after a slow start, but the car didn't have the pace to do any more.

21  **5/10**
Event rating

VITALY PETROV
Caterham-Renault CT01-2
Start: 18th. DNS
Was uncharacteristically delighted with the car's major upgrade package on Friday, but was frustrated at a missed opportunity in wet qualifying despite beating his team-mate. His race ended before it started thanks to an engine failure, which at least meant he avoided the traffic jams.

22  **7/10**
Event rating

PEDRO DE LA ROSA
HRT-Cosworth F112-02
Start: 21st. Finish: 20th
It's difficult to judge, but the Spaniard, who is pretty handy in the wet, perhaps should have got a little closer to the Marussias in qualifying. Attempted a one-stop strategy in the hope of attacking Pic and Glock but proved unable to get near them. Valiant, if doomed.

23  **6/10**
Event rating

NARAIN KARTHIKEYAN
HRT-Cosworth F112-03
Start: 22nd. Finish: 21st
The wet conditions allowed Karthikeyan to qualify closer to de la Rosa than he has all season (disregarding the unrepresentative Australian GP when the car was barely ready). Did well to lead Pic in first stint but complained of tyre degradation. A solid weekend, but nothing more.

24  **9/10**
Event rating

TIMO GLOCK
Marussia-Cosworth MR01-02
Start: 20th. Finish: 18th
Couldn't have done much more with a Marussia that was evil in the wet and can be forgiven for spinning at end of his final Q1 lap. Did damned good job in the race to finish just 20s behind Kovalainen. Proof that the team's first windtunnel-gestated upgrade is on the money.

25  **7/10**
Event rating

CHARLES PIC
Marussia-Cosworth MR01-03
Start: 24th. Finish: 19th
Pic was a little slow in getting up to speed during qualifying, which meant that yellow flags thwarted him when he looked on course to get a lot closer to Glock. Considering over half of the 20s deficit to Glock was built up in the first stint while Pic was stuck behind the HRTs, he can be satisfied.

Drawing board

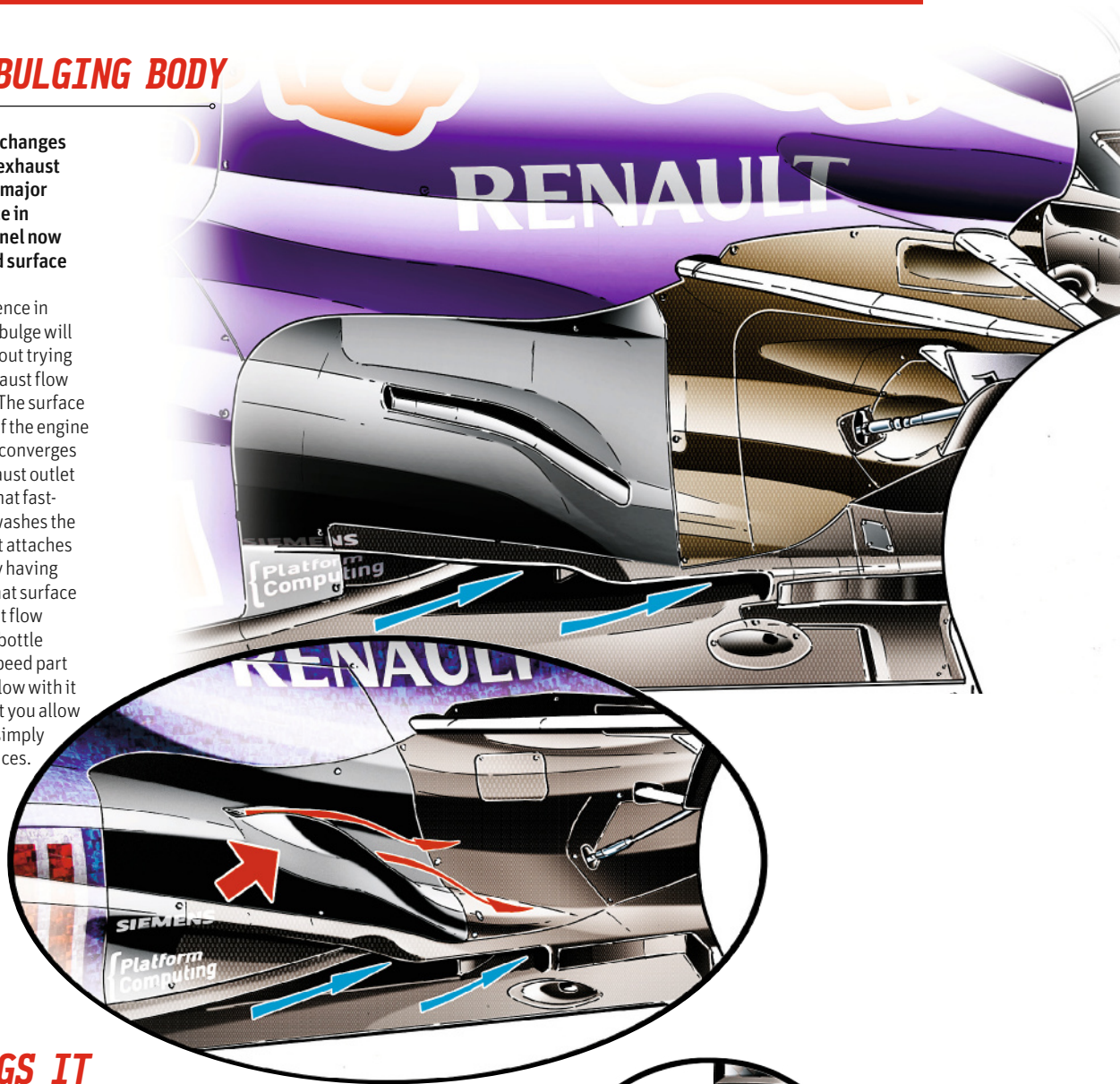


Gary Anderson, Mark Hughes and Giorgio Piola outline modifications made by Ferrari, McLaren and Red Bull for the ninth round of the world championship at Silverstone

RED BULL'S BULGING BODY

→ Red Bull made further changes to the rear bodywork/exhaust arrangement following the major upgrade at the previous race in Valencia. The exhaust channel now stands proud of the sidepod surface (red arrow, inset).

GARY ANDERSON: The difference in effect between bulge and no bulge will be pretty small, but this is about trying to direct the high-energy exhaust flow precisely where you want it. The surface flow on the Coke bottle, top of the engine cover and top of the sidepod converges into that area. When the exhaust outlet is flush with the bodywork, that fast-surface bodywork flow just washes the exhaust flow into it and it just attaches itself to the body surfaces. By having the exhaust stand proud of that surface flow, you can give the exhaust flow some penetration. The Coke bottle flow – which is the highest-speed part – will still bring the exhaust flow with it directionally, but in bulging it you allow it to remain distinct and not simply dissipate over the body surfaces.

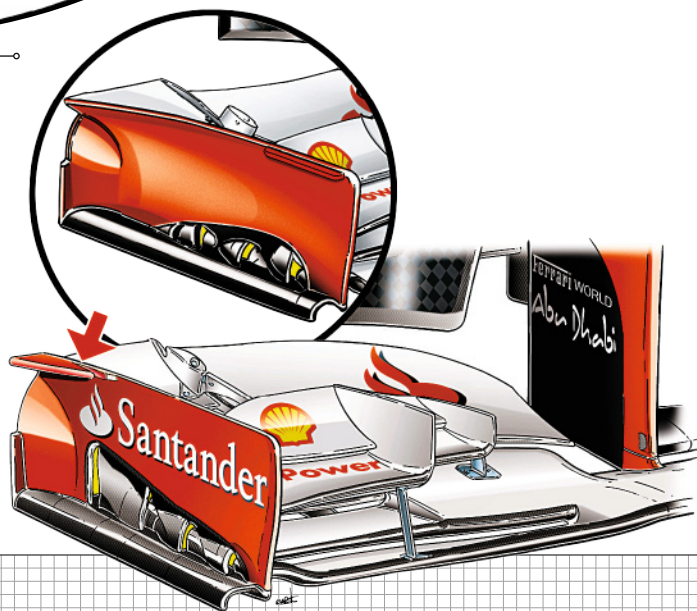


FERRARI WINGS IT

→ Ferrari's new front wing differed in its endplate treatment (old arrangement inset) with more slot gaps (yellow) to bleed away air and reduce stall. It was tested by both Felipe Massa and Fernando Alonso in both Friday and Saturday practice but was not used in qualifying or the race. Alonso destroyed one example of the wing with an off at Stowe on Friday morning.

GARY ANDERSON: This is an attempt to bleed more airflow in order to make the endplate and flaps work better together during the turning moment. The endplate tries to turn the airflow around the front tyre. Because it curves

so much you end up getting separation there. It's a big thing relative to steering angle – with the car in a straightline the front tyre forms a lot of blockage to that outer section of wing. In that state, the wing gives a positive effect under braking, but when you turn the wheel you reduce that blockage and the wing stalls because of the reduced flow. Ferrari and Red Bull have one of the least aggressive front-wing endplates, the smaller area of endplate giving a bigger area of wing. Whenever you have a problem in that area, it will be exacerbated with a small endplate/big wing arrangement because there's more surface area.

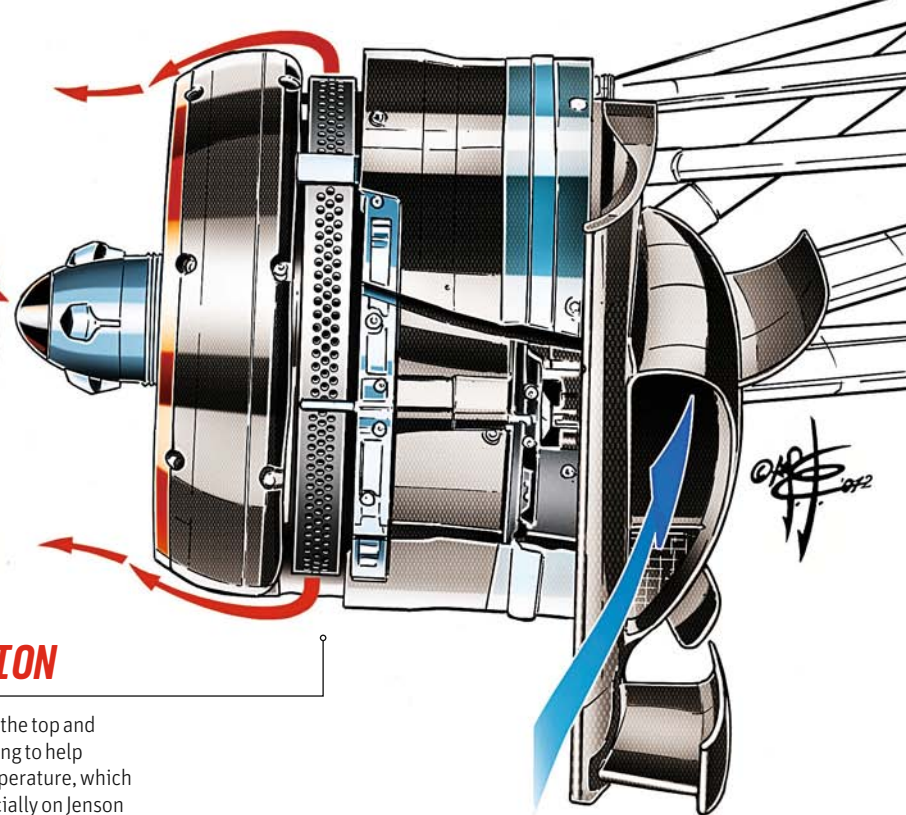
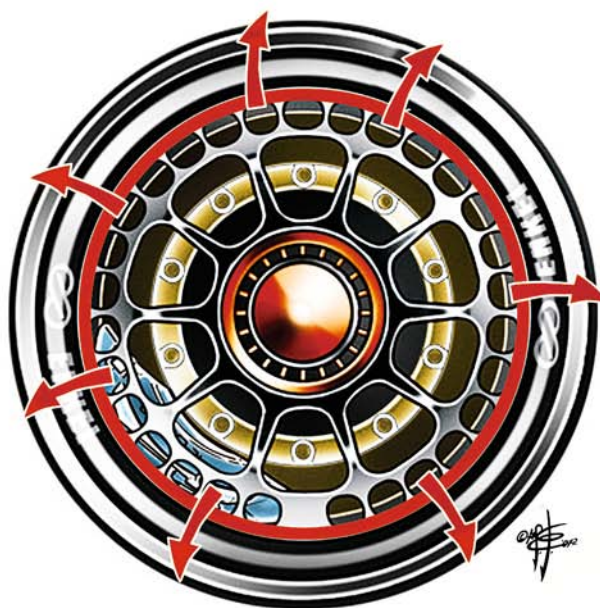
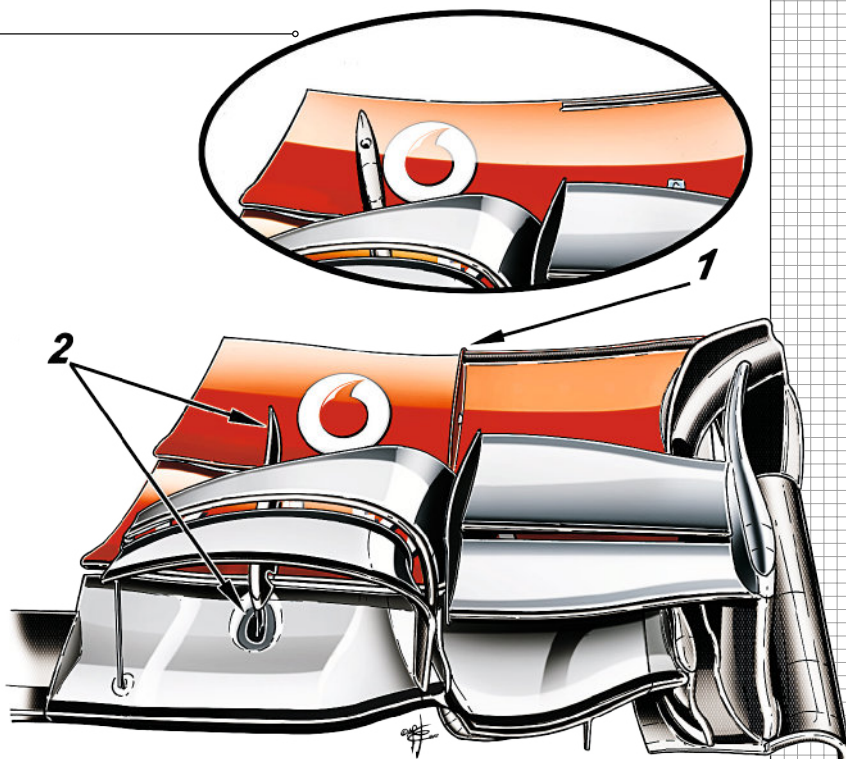


McLAREN FLAPS OVER FRONT WING...

➔ McLaren produced this revised front wing as part of a Silverstone upgrade. Its top surface is split into two sections (1), so that the flap angle adjustment is now done only on the inner half, leaving the outer section set. Inboard, the lower profile is now attached to the main plane operating on both flaps (2) rather than just the top one as previously (inset).

GARY ANDERSON: On the old version the flaps were all in one piece so whenever the team adjusted it, the full width of it had to be done. That outer bit is about level with the front tyre and because the airflow in that part is working as a compound, three-dimensional shape, even the smallest flap adjustment has a big effect on the whole thing. That's not always helpful and McLaren has now isolated the outer side from the inner. With the new set-up more flap adjustment will be needed for the same front-wing effect, but it will have less effect on the rest of the car. I'd expect development of the outer part's shape, now that it's freed up from part of its

function. The rest of the car is developed around the front wing and, typically, the team will do a front-wing sweep through a range of, say, 10 degrees to make sure it works throughout that range. Within that there will be a sweet spot that gives more front end as the centre of pressure moves forward, while the car's total downforce increases. You don't want the centre of pressure moving forwards when you increase the front-wing angle if it then reduces the car's rear downforce. If the team wants to change the balance to the rear it will have to find other solutions to remove that front downforce – such as turning vanes behind the front-wing wake to help the airflow under the floor. Looking at the McLaren now, that inner flap is nowhere near its maximum, suggesting that the team hasn't really arrived at the wing's sweet spot yet. The wing's probably very good but, at the moment, when the team drops the flap angle, the car is probably losing total downforce in that quest to find the perfect balance.



...WHILE BRAKING WITH TRADITION

➔ Part of the McLaren's aero upgrade included these new front brake ducts. However, they were not used at Silverstone, the conditions not really suitable for assessing their performance.

GARY ANDERSON: McLaren is still continuing with a traditional duct inlet rather than using the sidewall of the tyre as the inner duct wall, like Williams, Sauber and now Ferrari. McLaren is

taking heat out through the top and bottom of the drum, trying to help generate front-tyre temperature, which it struggles with – especially on Jenson Button's car. With the little piston in the middle of the drum it looks like it might also have variable brake cooling, as at the rear. It's very difficult to use brake temperature for tyre heat consistently, especially when it's wet and you're not generating the heat in the brakes.

BRITISH GP RESULTS



PRACTICE 1: Friday

POS	DRIVER	TIME
1	GROSJEAN	1m56.552s
2	RICCIARDO	1m56.827s
3	HAMILTON	1m57.174s
4	PEREZ	1m57.664s
5	MASSA	1m58.119s
6	WEBBER	1m58.463s
7	KOBAYASHI	1m58.483s
8	SCHUMACHER	1m58.493s
9	ROSBERG	1m58.942s
10	VERGNE	1m59.076s
11	VETTEL	1m59.414s
12	PETROV	1m59.614s
13	BOTTAS	1m59.733s
14	KOVALAINEN	1m59.787s
15	MALDONADO	2m00.125s
16	RAIKKONEN	2m00.253s
17	BUTTON	2m01.834s
18	GLOCK	2m01.835s
19	DE LA ROSA	2m04.341s
20	CLOS	2m05.022s
21	PIC	2m11.760s
22	ALONSO	no time
23	DI RESTA	no time
24	BIANCHI	no time

Weather: wet

PRACTICE 2: Friday

POS	DRIVER	TIME
1	HAMILTON	1m56.345s
2	KOBAYASHI	1m56.474s
3	SCHUMACHER	1m56.545s
4	ROSBERG	1m56.567s
5	PEREZ	1m57.493s
6	BUTTON	1m57.948s
7	KOVALAINEN	1m58.580s
8	RAIKKONEN	1m58.897s
9	HULKENBERG	1m58.943s
10	ALONSO	1m59.015s
11	DI RESTA	1m59.429s
12	MALDONADO	1m59.472s
13	VETTEL	1m59.476s
14	VERGNE	1m59.854s
15	MASSA	2m00.565s
16	GLOCK	2m00.820s
17	SENNA	2m01.099s
18	PETROV	2m01.348s
19	PIC	2m03.348s
20	KARTHIKEYAN	2m04.774s
21	GROSJEAN	no time
22	RICCIARDO	no time
23	WEBBER	no time
24	DE LA ROSA	no time

Weather: wet

PRACTICE 3: Saturday

POS	DRIVER	TIME
1	ALONSO	1m32.167s
2	BUTTON	1m32.320s
3	GROSJEAN	1m32.358s
4	VETTEL	1m32.420s
5	RAIKKONEN	1m32.454s
6	HAMILTON	1m32.477s
7	MALDONADO	1m32.622s
8	PEREZ	1m32.940s
9	KOBAYASHI	1m33.046s
10	HULKENBERG	1m33.150s
11	SENNA	1m33.267s
12	DI RESTA	1m33.367s
13	WEBBER	1m33.398s
14	SCHUMACHER	1m33.462s
15	VERGNE	1m33.673s
16	MASSA	1m33.674s
17	RICCIARDO	1m33.707s
18	ROSBERG	1m33.733s
19	KOVALAINEN	1m34.298s
20	PETROV	1m34.781s
21	GLOCK	1m36.605s
22	PIC	1m37.060s
23	KARTHIKEYAN	1m37.269s
24	DE LA ROSA	1m37.429s

Weather: dry

QUALIFYING TIMES

POS	DRIVER	QUALIFYING 1	QUALIFYING 2	QUALIFYING 3
1	ALONSO	1m46.515s (5)	1m56.921s (9)	1m51.746s
2	WEBBER	1m47.276s (11)	1m55.898s (4)	1m51.793s
3	SCHUMACHER	1m46.571s (6)	1m55.799s (3)	1m52.020s
4	VETTEL	1m46.279s (1)	1m56.931s (10)	1m52.199s
5	RAIKKONEN	1m47.401s (12)	1m56.388s (7)	1m53.065s
6	MASSA	1m47.309s (13)	1m56.469s (6)	1m53.290s
7	MALDONADO	1m46.449s (3)	1m56.802s (8)	1m53.539s
8	HAMILTON	1m47.433s (14)	1m54.897s (1)	1m53.543s
9	HULKENBERG	1m46.334s (2)	1m55.556s (2)	1m54.382s
10	GROSJEAN	1m47.043s (8)	1m56.388s (5)	no time
11	DI RESTA	1m47.582s (15)	1m57.009s	-
12	KOBAYASHI	1m46.649s (7)	1m57.071s	-
13	ROSBERG	1m47.724s (17)	1m57.108s	-
14	RICCIARDO	1m47.266s (10)	1m57.132s	-
15	SENNA	1m47.105s (9)	1m57.426s	-
16	VERGNE	1m47.705s (16)	1m57.719s	-
17	PEREZ	1m46.494s (4)	1m57.895s	-
18	BUTTON	1m48.044s	-	-
19	PETROV	1m49.027s	-	-
20	KOVALAINEN	1m49.477s	-	-
21	GLOCK	1m51.618s	-	-
22	DE LA ROSA	1m52.742s	-	-
23	KARTHIKEYAN	1m53.040s	-	-
24	PIC	1m54.143s	-	-

Weather: wet

QUALIFYING STATISTICS

	HEAD TO HEAD	
VETTEL	4	5
BUTTON	0	9
ALONSO	9	0
SCHUMACHER	4	5
RAIKKONEN	3	6
DI RESTA	5	4
KOBAYASHI	6	3
RICCIARDO	8	1
MALDONADO	7	2
KOVALAINEN	7	2
DE LA ROSA	9	0
GLOCK	6	2
WEBBER	5	9
HAMILTON	0	9
MASSA	0	9
ROSBERG	5	6
GROSJEAN	3	6
HULKENBERG	4	5
PEREZ	3	6
VERGNE	1	8
SENNA	2	7
PETROV	2	7
KARTHIKEYAN	0	9
PIC	2	6



FRIDAY TESTERS



1 VALTTERI BOTTAS

WILLIAMS 1m59.733s



2 DANI CLOS

HRT 2m05.022s



3 JULES BIANCHI

FORCE INDIA no time



THE GRID

1 ALONSO FERRARI 1m51.746s Hard	2 WEBBER RED BULL 1m51.793s Soft
3 SCHUMACHER MERCEDES 1m52.020s Soft	4 VETTEL RED BULL 1m52.199s Soft
5 MASSA FERRARI 1m53.065s Soft	6 RAIKKONEN LOTUS 1m53.290s Soft
7 MALDONADO WILLIAMS 1m53.539s Soft	8 HAMILTON McLAREN 1m53.543s Hard
9 GROSJEAN LOTUS no time Soft	10 DI RESTA FORCE INDIA 1m57.009s Soft
11 ROSBERG MERCEDES 1m57.108s Hard	12 RICCIARDO TORO ROSSO 1m57.132s Hard
13 SENNA WILLIAMS 1m57.426s Soft	14 HULKENBERG FORCE INDIA 1m54.382s* Hard
15 PEREZ SAUBER 1m57.895s Soft	16 BUTTON McLAREN 1m48.044s Hard
17 KOBAYASHI SAUBER 1m57.071s* Hard	18 PETROV CATERHAM 1m49.027s DNS
19 KOVALAINEN CATERHAM 1m49.477s Soft	20 GLOCK MARRUSSIA 1m51.618s Hard
21 DE LA ROSA HRT 1m52.742s Hard	22 KARTHIKEYAN HRT 1m53.040s Hard
23 VERGNE TORO ROSSO 1m57.719s** Soft	24 PIC MARRUSSIA 1m54.143s* Soft

*5-place penalty. **10-place penalty

THE RACE: 52 laps, 190.271 miles

POS	DRIVER	TEAM	LAPS	TOTAL TIME	FASTEST LAP	PIT STOP	TIME IN PITS	GRID
1	MARK WEBBER	RED BULL-RENAULT	52	1h25m11.288s	1m34.934s	2	51.033s	2
2	FERNANDO ALONSO	FERRARI	52	+3.066s	1m35.385s	2	50.370s	1
3	SEBASTIAN VETTEL	RED BULL-RENAULT	52	+4.683s	1m34.897s	2	51.148s	4
4	FELIPE MASSA	FERRARI	52	+9.519s	1m35.041s	2	50.435s	5
5	KIMI RAIKKONEN	LOTUS-RENAULT	52	+10.314s	1m34.661s	2	51.452s	6
6	ROMAIN GROSJEAN	LOTUS-RENAULT	52	+17.101s	1m34.884s	2	59.589s	9
7	MICHAEL SCHUMACHER	MERCEDES	52	+29.153s	1m35.191s	2	51.490s	3
8	LEWIS HAMILTON	McLAREN-MERCEDES	57	+36.463s	1m36.173s	2	49.501s	8
9	BRUNO SENNA	WILLIAMS-RENAULT	52	+43.347s	1m35.863s	2	52.556s	13
10	JENSON BUTTON	McLAREN-MERCEDES	52	+44.444s	1m36.086s	2	49.900s	16
11	KAMUI KOBAYASHI	SAUBER-FERRARI	52	+45.370s	1m35.478s	2	1m06.053s	17
12	NICO HULKENBERG	FORCE INDIA-MERCEDES	52	+47.856s	1m35.981s	2	51.504s	14
13	DANIEL RICCIARDO	TORO ROSSO-FERRARI	52	+51.241s	1m35.448s	2	51.239s	12
14	JEAN-ERIC VERGNE	TORO ROSSO-FERRARI	52	+53.313s	1m35.514s	2	52.689s	23
15	NICO ROSBERG	MERCEDES	52	+57.394s	1m35.750s	2	58.718s	11
16	PASTOR MALDONADO	WILLIAMS-RENAULT	51	-1 lap	1m37.515s	2	58.698s	7
17	HEIKKI KOVALAINEN	CATERHAM-RENAULT	51	-1 lap	1m38.050s	2	52.630s	19
18	TIMO GLOCK	MARUSSIA-COSWORTH	51	-1 lap	1m37.422s	2	51.406s	20
19	CHARLES PIC	MARUSSIA-COSWORTH	51	-1 lap	1m38.008s	2	52.477s	24
20	PEDRO DE LA ROSA	HRT-COSWORTH	50	-2 laps	1m39.618s	1	27.715s	21
21	NARAIN KARTHIKEYAN	HRT-COSWORTH	50	-2 laps	1m38.339s	2	57.852s	22
R	SERGIO PEREZ	SAUBER-FERRARI	11	damage	1m39.781s	1	25.192s	15
R	PAUL DI RESTA	FORCE INDIA-MERCEDES	2	damage	-	1	32.790s	10
DNS	VITALY PETROV	CATERHAM-RENAULT	-	fuel pump	-	-	-	-

Weather: dry. Winner's average speed: 134.124mph. Fastest lap: Kimi RAIKKONEN 1m34.661s (139.217mph) on lap 50.
Lap leaders: 1-15 Alonso; 16-18 Hamilton; 19-47 Alonso; 48-52 Webber.

TYRE CHOICE

STINT 1	STINT 2	STINT 3
Soft	Hard	Hard
Hard	Hard	Soft
Soft	Hard	Hard
Soft	Hard	Hard
Soft	Hard	Hard
Soft	Hard	Hard
Soft	Hard	Hard
Hard	Soft	Hard
Soft	Hard	Hard
Hard	Soft	Hard
Hard	Hard	Soft
Hard	Hard	Soft
Soft	Hard	Hard
Hard	Hard	Soft
Soft	Hard	Hard
Hard	Soft	Hard
Hard	Hard	Soft
Soft	Hard	dnf
Soft	Hard	dnf
dns		

Option tyre in bold; new set in red, used set in black

DRIVERS' STANDINGS

POS	DRIVER	PTS	AUS	MAL	PRC	BRN	E	MC	CDN	EU	GB	D	H	B	I	SGP	J	ROK	IND	UAE	USA	BR	
1	ALONSO	129	5 th	1 st	9 th	7 th	2 nd	3 rd	5 th	1 st	2 nd												
2	WEBBER	116	4 th	4 th	4 th	4 th	11 th	1 st	7 th	4 th	1 st												
3	VETTEL	100	2 nd	11 th	5 th	1 st	6 th	4 th	4 th	ret	3 rd												
4	HAMILTON	92	3 rd	3 rd	3 rd	8 th	8 th	5 th	1 st	19 th	8 th												
5	RAIKKONEN	83	7 th	5 th	14 th	2 nd	3 rd	9 th	8 th	2 nd	5 th												
6	ROSBERG	75	12 th	13 th	1 st	5 th	7 th	2 nd	6 th	6 th	15 th												
7	GROSJEAN	61	ret	ret	6 th	3 rd	4 th	ret	2 nd	ret	6 th												
8	BUTTON	50	1 st	14 th	2 nd	18 th	9 th	16 th	16 th	8 th	10 th												
9	PEREZ	39	8 th	2 nd	11 th	11 th	ret	11 th	3 rd	9 th	ret												
10	MALDONADO	29	13 th	19 th	8 th	ret	1 st	ret	13 th	12 th	16 th												
11	DI RESTA	27	10 th	7 th	12 th	6 th	14 th	7 th	11 th	7 th	ret												
12	SCHUMACHER	23	ret	10 th	ret	10 th	ret	ret	3 rd	7 th													
13	MASSA	23	ret	15 th	13 th	9 th	15 th	6 th	10 th	16 th	4 th												
14	KOBAYASHI	21	6 th	ret	10 th	13 th	5 th	ret	9 th	ret	11 th												
15	SENNA	18	16 th	6 th	7 th	22 nd	ret	10 th	17 th	10 th	9 th												
16	HULKENBERG	17	ret	9 th	15 th	12 th	10 th	8 th	12 th	5 th	12 th												
17	VERGNE	4	11 th	8 th	16 th	14 th	12 th	12 th	15 th	ret	14 th												
18	RICCIARDO	2	9 th	12 th	17 th	15 th	13 th	ret	14 th	11 th	13 th												
19	KOVALAINEN	0	ret	18 th	23 rd	17 th	16 th	13 th	18 th	14 th	17 th												
20	PETROV	0	ret	16 th	18 th	16 th	17 th	ret	19 th	13 th	dns												
21	GLOCK	0	14 th	17 th	19 th	19 th	18 th	14 th	ret	dns	18 th												
22	PIC	0	15 th	20 th	20 th	ret	ret	ret	20 th	15 th	19 th												
23	KARTHIKEYAN	0	dnq	22 nd	22 nd	21 st	ret	15 th	20 th	18 th	21 st												
24	DE LA ROSA	0	dnq	21 st	21 st	20 th	19 th	ret	17 th	20 th													



CONSTRUCTORS' STANDINGS

POS	TEAM	PTS	AUS	MAL	PRC	BRN	E	MC	CDN	EU	GB	D	H	B	I	SGP	J	ROK	IND	UAE	US	BR	
1	RED BULL	216	30	12	22	37	8	37	18	12	40												
2	FERRARI	152	10	25	2	8	18	23	11	25	30												
3	LOTUS	144	6	10	8	33	27	2	22	18	5												
4	McLAREN	142	40	15	33	4	6	10	25	4	6												
5	MERCEDES	98	0	1	25	11	6	18	8	23	6												
6	SAUBER	60	12	18	1	0	10	0	17	2	0												
7	WILLIAMS	47	0	8	10	0	25	1	0	1	2												
8	FORCE INDIA	44	1	8	0	8	1	10	0	16	0												
9	TORO ROSSO	6	2	4	0	0	0	0	0	0	0												
10	CATERHAM	0	0	0	0	0	0	0	0	0	0												
11	MARUSSIA	0	0	0	0	0	0	0	0	0	0												
12	HRT	0	-	0	0	0	0	0	0	0	0												



SECTOR 1 TIMES

POS	DRIVER	TIME
1	WEBBER	27.138s
2	RAIKKONEN	27.236s
3	SENNA	27.256s
4	RICCIARDO	27.306s
5	BUTTON	27.311s
6	ALONSO	27.386s
7	SCHUMACHER	27.428s
8	ROSBERG	27.433s
9	GROSJEAN	27.480s
10	VETTEL	27.490s

SECTOR 2 TIMES

POS	DRIVER	TIME
1	GROSJEAN	46.325s
2	MASSA	46.639s
3	VETTEL	46.662s
4	WEBBER	46.842s
5	RAIKKONEN	46.920s
6	SCHUMACHER	46.989s
7	RICCIARDO	46.996s
8	VERGNE	47.054s
9	KOBAYASHI	47.075s
10	ALONSO	47.081s

SECTOR 3 TIMES

POS	DRIVER	TIME
1	RAIKKONEN	28.700s
2	WEBBER	28.797s
3	VETTEL	29.026s
4	MASSA	29.147s
5	GROSJEAN	29.151s
6	SCHUMACHER	29.195s
7	KOBAYASHI	29.201s
8	RICCIARDO	29.226s
9	HULKENBERG	29.227s
10	HAMILTON	29.250s

SPEED TRAP (MPH)

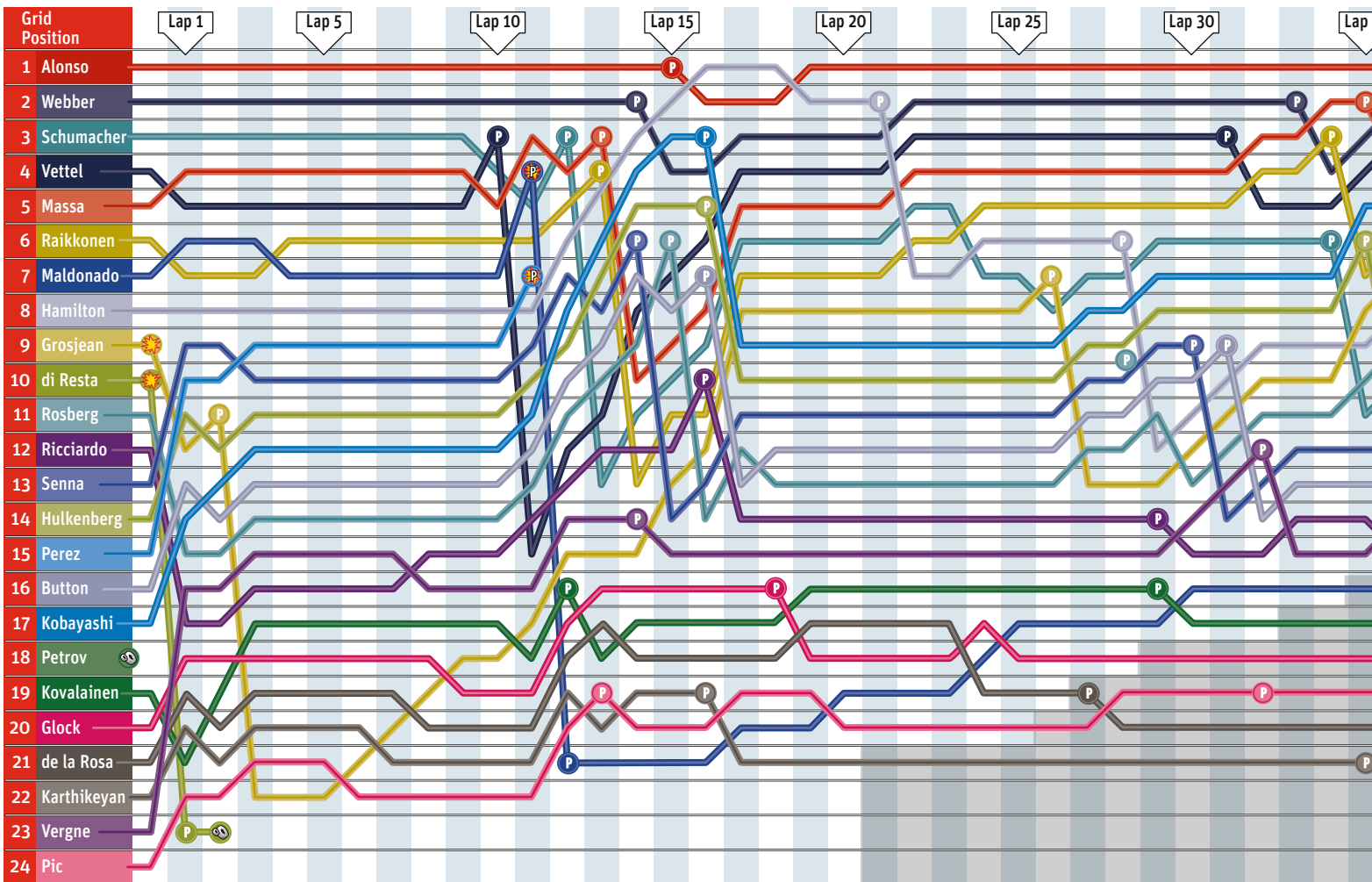
POS	DRIVER	SPEED
1	BUTTON	192.8
2	GROSJEAN	190.8
3	RAIKKONEN	190.1
4	MALDONADO	189.1
5	MASSA	188.5
6	SCHUMACHER	188.2
7	ROSBERG	187.7
8	SENNA	187.4
9	PIC	187.0
10	GLOCK	187.0



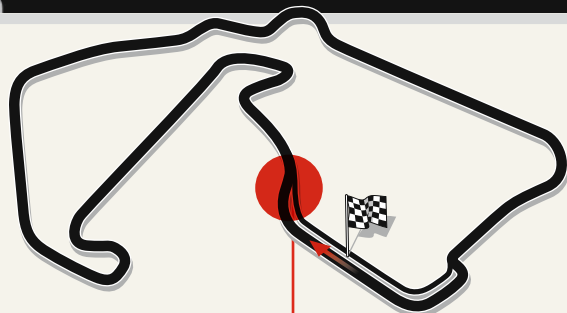
FOR IN-DEPTH F1 RESULTS **FORIX**

BRITISH GP THE FINAL WORDS

THE RACE: LAP BY LAP



TRACKSIDE VIEW **MARK HUGHES** GRAND PRIX EDITOR



It's like a picture painted by a depressive. Abbey through to Farm, a glistening high-speed S beneath foreboding grey with menacing black patches; darkly overpowering, impressively dramatic. In the middle of Farm, right on the line, is an extra-black piece of Tarmac, malignant and lying in wait. Suddenly there are spikes of wheelspin revs – and then Kamui Kobayashi arrives, left foot balancing brake against throttle as he enjoys the Sauber's sixth-gear balance. What is normally a flat-in-top kink is now a thing of mighty adventure. As the spray swallows him up, his fading sound is blotted by a new noise, that of an engine

glancing the rev limiter after a pitlane practice start. But this sound is amplified hugely by the 'tunnel' walls of the pit exit, which starts in a depression well below track height. By the time the cars appear out of that dip they're up to third gear, wheels still spinning wildly, throttle feet dancing, trying to feed too much power into way too little traction. Some, like Paul di Resta, are very circumspect in this. Others, such as Romain Grosjean, are lost in exhilaration, letting it all run free and furious, car gathering speed savagely, rubber keeping up as best it can. He leaves our sight, the Lotus hopping from puddle to puddle, red light flashing through the gloom.

THURSDAY

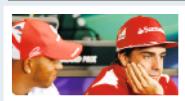
1339 Silverstone insists it is confident that wet weather won't cause traffic problems. "Silverstone has the top traffic-management experts in the business on site," a statement says.

1355 Pastor Maldonado (right) insists that he won't change his style in the wake of his clash with Lewis Hamilton in Valencia.



1400 Sergio Perez and Kimi Raikkonen express their confidence that their respective teams' qualifying performances will improve at Silverstone.

1515 Paul di Resta confirms he has split with manager Anthony Hamilton.




1517 Fernando Alonso calls on Ferrari to improve the pace of the Ferrari F2012, which he says still has a gap to close to the pacesetters.

1605 Michael Schumacher reveals that he sees wet weather conditions as an "opportunity" for a top result in the British Grand Prix.

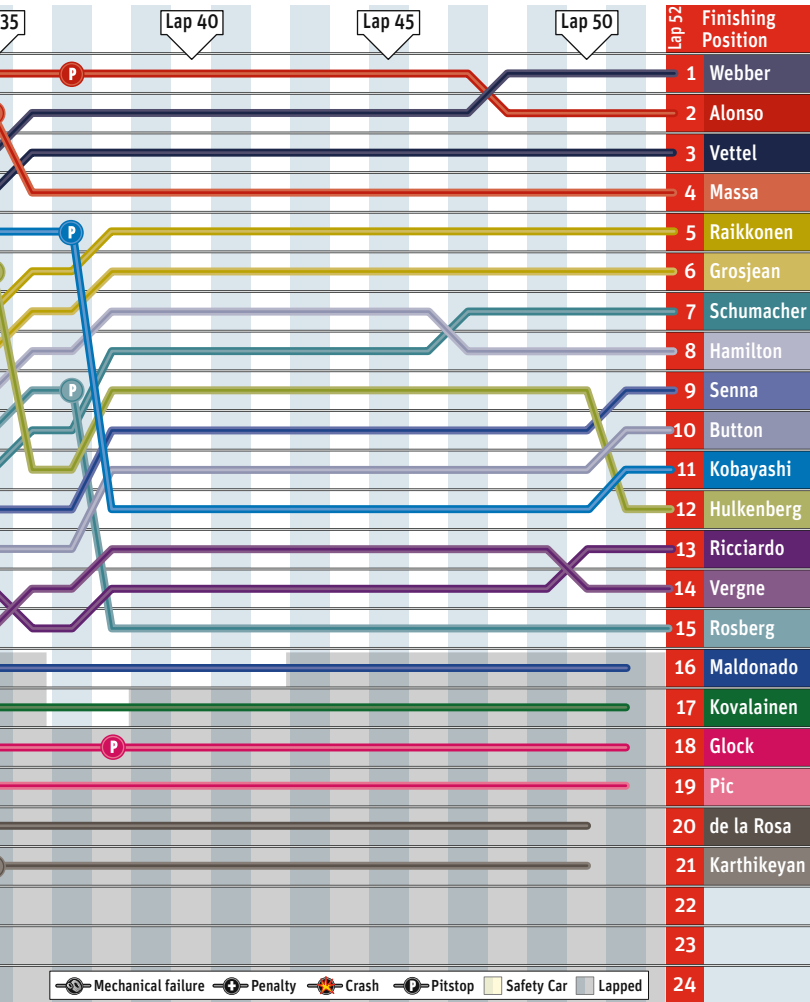
1630 Pedro de la Rosa tells **AUTOSPORT** lessons must be learned from Maria de Villota's crash. "We will see if there is anything we need to change to improve."

1658 Jenson Button admits that, although he was alarmed by Red Bull's pace in Valencia, he is not concerned about McLaren's relative speed this weekend.

1916 @H_Kovalainen: "Fun day, was sunny but might not be tomorrow... Evaluating updates and setup work in program tmw." 

GRAND PRIX DIGEST

The weekend in a nutshell - on-track incidents, team radio and tweets that you might have missed...



SATURDAY

0906 @MikeGascoyne: "Good luck to all those queuing to get into Silverstone this weekend."

0951 @SChecoPerez: "Very bad traffic to get into the Circuit!! And they close one line, not a good idea... Hopefully drivers can make it"



1022 Charles Pic's Marussia grinds to a halt thanks to a fuel pick-up problem. FP3 is red-flagged.

1044 Fernando Alonso spins on a damp kerb at Club.

1052 Perez spins at Club and later clatters across the grass at Becketts.

1054 Pic grinds to a halt again, this time on Hangar Straight. Lack of fuel pressure is blamed, suggesting he is out of fuel.

1317 Button heads out on fresh inters in Q1 to try to make the cut but misses out after Timo Glock spins exiting Club, triggering yellow flags in the final sector.

1333 Fernando Alonso loses it at high speed at Chapel in Q2, but keeps the car out of the wall. Two minutes later, session is red-flagged.

1507 Session restarts after 92-minute delay (right).



1515 Romain Grosjean spins into the gravel at Vale.

2218 @alo_oficial (Alonso): "Hello !! I didnt desapear..;), .. just had to do press conference, team meeting, autograph session and cocktail with sponsors and just catch my phone now! ;) Good day for us..., we will see how things go tomorrow ..!"

SUNDAY

1022 @PaulHembery: "Silverstone mess again. Sat traffic worked. Today they returned to the Friday approach. Result - chaos again. What clowns - fans rightly furious."

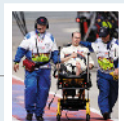
1323 Perez slates Maldonado after being hit by the Venezuelan at Brooklands. He brands him an "idiot" over the radio and later calls for the FIA to take action against him.



1326 Senna spins at Stowe after running wide.

1539 Felipe Massa talks up chances of remaining at Ferrari next year if he keeps up current form after finishing in the top four for the first time in 30 starts.

1629 Sauber confirms the three mechanics knocked over by Kobayashi during his second pitstop suffered minor injuries.



1635 @emmoftitpaldi: "Nice win @AussieGrit #F1 You told me @fosgoodwood you were prepared for #Silverstone no kidding! Now 2 wins 2012, well done!"

1713 Maldonado reprimanded and fined €10,000 for causing the collision with Perez. Stewards say that the double punishment reflects "the serious nature of the incident".

1714 Kobayashi fined €25,000 for running over his pit crew.

1810 @TonyFernandes: "With straightline test we couldn't do and more running in Germany let's hope we break into that nirvana we been waiting for."

FRIDAY



0908 @GaryPaffett: "Sitting in traffic trying to get in. Don't understand how it can be this bad on a Friday. Crazy!!!!"

0920 @OfficialSF1Team: "Completely stuck on the A43. If you see @SChecoPerez and @kamui_kobayashi please let them pass...;-)"

0954 @HRTF1Team: "The drivers are wearing Maria de Villota's star on their helmets. Our hearts are with you."



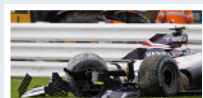
1030 HRT Friday driver Dani Clos spins exiting Aintree.

1037 Kamui Kobayashi spins at Village, narrowly avoiding collecting Romain Grosjean. At the same time, de la Rosa spins onto the grass at Aintree.

1049 Heikki Kovalainen understeers onto the grass at Becketts.

1539 @realTimoGlock: "Bit of swimming today only 6 laps in FP1!"

1408 Bruno Senna: "There's no point in driving in these conditions"



1458 Senna loses the rear of his Williams after hitting a puddle exiting Chapel and crashes heavily. FP2 is red flagged.

1530 Fernando Alonso, on inters, spins into the wall exiting Stowe and hits the wall. He is able to return to the pits.

2110 Silverstone MD Richard Phillips strongly advises 20,000-30,000 fans with public car passes to stay away on Saturday.

From track and everything in-between

Sky Sports broadcast its first British GP at the weekend. CHARLES BRADLEY went behind the scenes

Last weekend the Sky Sports F1 TV channel promised you “Silverstone. Like never before” – the latest of its soundbite slogans of which it seems so fond. Of course, you could only truly substantiate that claim if you subscribe to its pay-to-view coverage, but we took an exclusive behind-the-scenes peek into how it produced its British Grand Prix qualifying show on Saturday.

Just six months since the channel’s creation (it’s been on-air for four of those) the previous eight grands prix meant its production team was truly into its stride. In the TV compound, just across the road from the Silverstone Wing, sits Sky’s ‘pod’ – which houses all its technical equipment as it travels around the world on the same freight planes alongside the F1 cars and kit.

Inside, racks of computer servers are constantly being bombarded with incoming footage from Formula One Management’s TV streams, as well as its own cameras. All material is stored in computer file format, so whenever a moment occurs that needs replaying or analysis, it can be accessed within seconds of it actually happening. Literally thousands of hours of footage are accessible instantly, because it’s all time-synched, with different angles – such as on-boards – also available.

A few doors down is the gallery, housed in a metal cabin, the real hub of the operation. Over 30 screens are the main focus – a Star Trek-style wall of incoming footage relaying all the potential angles the channel can cut to when required.



Pre-show graphics getting the final edit



Martin Turner (centre) assumes overall control

Calling the shots is executive producer Martin Turner, who was charged with turning the whole Sky Sports F1 operation into reality. AUTOSPORT arrives as the pre-show is in full swing, and the gallery is buzzing as the show is knitted together with pre-recorded pieces (crafted in the edit suites next door), plus snazzy graphics, and chat from the presenters. It’s a constant flow of countdowns and cues, standby orders to cameramen, cajoling of narratives and then compliments when it’s gone to plan.

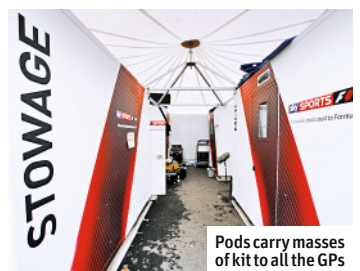
There’s a unique atmosphere in live TV galleries: zero room for panic, but there’s an underlying buzz as things transpire. “White hot” is how Turner describes the atmosphere from the hot seat, as he briefly breaks off to say hello.

“When I’m in the chair, I’m the director, working closely with the

producer, talking all the time about where we’re going to next, how long we’ve got, etc,” says Turner. “My job is then to convey the instructions to the team on the floor, the cameramen and presenters, so everyone knows what we’re doing next. I’m essentially the driver, getting the technical team to deliver what the production team wants to create the show.”

With qualifying fast approaching, AUTOSPORT is invited by David Croft to join him and Martin Brundle in the commentary booth. Overlooking the start/finish line, Croft stands to Brundle’s left, with our own Mark Hughes supplying expertise in a spotting role. Hughes’s stash of Post-it notes, to assist the commentators, is impressive.

Again, the buzz is almost palpable as qualifying begins;



Pods carry masses of kit to all the GPs

the energy is high and ramped up to maximum as Jenson Button struggles to make it out of Q1. Then, just to turn it up to 11, Timo Glock spins right in front of us!

The commentators have one main flatscreen, which shows the live Sky broadcast feed and timing info, with two more timing screens to their left, and three more screens to their right (top to bottom: pitlane feed, driver tracker and on-board). Brundle also has his iPad, to read out

to screen...



A huge amount of data is available

tweets from viewers. On my headset, I can hear the ‘talkback’ system they use to keep in touch with Turner and producer Phil Marshall.

Little do we know what’s to come. The heavens open in Q2, the red flags fly, it’s time for the Sky team’s mettle to be tested: the dreaded fill-in. “Let’s get some lives from Ted and Nat” is the instruction, and Crofty links to Ted Kravitz and Natalie Pinkham in the pits, whenever they can grab a word with a team principal, and there’s another ace up its sleeve: the Skypad.

Sky has its own studio on site in the TV compound, where Georgie Thompson and Allan McNish exploit their touchscreen box of tricks to analyse incidents, such as Fernando Alonso’s hair-raising off at the exit of Chapel Curve.

“Thank God for the Skypad”

raises a chuckle over the cans as the delay goes on and on, before the attention is switched back down to the paddock and Simon Lazenby, Damon Hill and Johnny Herbert in the paddock. With the Skypad exhausted of material, Thompson and McNish are sent into the paddock too, doubling

“It’s smiles all round in the commentary box as we all reflect on the fun and games”

its options.

In the commentary box, now off-air, talk turns to the previous instances of drama, such as the lightning strike that took out the power supply in Malaysia. Battery life became quite marginal, but the show went on all the same.

Back at Silverstone, the cars

finally get back on track. Croft and Brundle jump back on their feet and go back to what they do best: hands are wrung with anticipation, then unleashed to animatedly point at the screen as the sector times unfold.

With the action so thick and fast, Hughes dispenses with his trusty Post-it notes and uses his own headset/microphone to make his observations directly to the commentators.

“What a session! Well done guys,” is the verdict from Turner as the coverage cuts away to the post-session press conference, and it’s smiles all round in the commentary box as we all reflect on the fun and games we’ve just witnessed.

“It’s a lot of logistics, a lot of effort, a lot of locations,” concludes Turner after putting another show to bed. “It has been



Croft (right) and Brundle in full flow

a huge challenge, but we’re learning at every grand prix.

“With F1, we’ve only got 40 hours of racing and a year’s worth of programming to fill. So the expanding of the stories, that’s our challenge, to make the fans realise their sport hasn’t gone to sleep until the next issue of AUTOSPORT comes out, or the next race comes around. We want to be the home of F1, and we’re putting in the effort to justify that moniker.”

SILVERSTONE

GREAT BRITAIN

July 7-8
GP2 Series
Round 7/12



AT A GLANCE

- Race 1 Esteban Gutierrez
- Race 2 Luiz Razia
- Pole position Fabio Leimer
- FLs Gutierrez/Julian Leal



Feature-race winner Gutierrez holds off runner-up Cecotto



Gutierrez times it to perfection

The Lotus driver's second straight Feature Race win owed much to his second-guessing the weather and stopping at the right time - all helped by his team-mate's stranded car

PASSING MONSOONS TEND TO be superfluous in a series as dependably unpredictable as GP2 and capricious weather played only a passing role at Silverstone last Saturday.

It was a race in which a dominant force was weakened by random, external influence. James Calado had suffered thus in Valencia, but this time he was the unwitting cause and Fabio Leimer his prey.

There was enough standing water to justify a safety car start, but that wasn't sufficient to calm everyone. It wasn't wholly surprising that Rodolfo Gonzalez should be involved in an incident, but for once the Venezuelan was innocent: he was minding his own business when recent Rapax recruit Daniel de Jong smacked into him during the

opening lap, the Dutchman retiring as a result... and landing an irrelevant 10-position grid penalty for the sprint, for which he'd have lined up last anyway. Starting him from Banbury might have been more appropriate.

Gonzalez lost a couple of laps having the back of his car repaired, but resumed to run around at the back.

The safety car remained out until the end of lap seven, by which time Davide Valsecchi, Felipe Nasr and Stefano Coletti (three of four drivers sent to the back of the grid, along with Marcus Ericsson, for running dry during qualifying and being unable to provide a fuel sample) had made 'free' pit stops for fresh wets. Valsecchi, incidentally, had also collected a 10-position



Leimer (5) lost race-one win to safety-car timing

penalty for passing under the red flag, a fate that likewise befell Giedo van der Garde.

Few teams bothered echoing the pit tactic, because it was reasonably assumed the track would dry. While Silverstone has many

assets, however, rapid drainage isn't among them.

Leimer has been consistently quick in races this season, but this time he'd bagged pole as a useful complement and he looked unstoppable: he was 2.8s

clear after one racing lap, partly because he was the only bloke who could see where he was going but also a reasonable gauge of his superiority. He would barely be seen again... until he unexpectedly popped

RACE RATING

★★★★☆

Saturday's race was a soggy struggle, but Sunday's sprint had some tasty racing action

MILESTONE

Last time a Cecotto and a Palmer shared a podium? Johnny Sr and Jonathan, Donington F2, July 1982



REPORT GP2 SILVERSTONE

SIMON ARRON
reports



Tactics helped Gutierrez to another feature win



Palmer made it on to the podium for iSport



Cecotto victory hopes dashed by pitstop gaffe



DAMS's Nasr and Valsecchi made synchronised stops

Delayed drivers run the practice gauntlet

Weather-induced traffic bedlam was more than just an unwelcome throwback at Silverstone last weekend, for it guaranteed that racing would not be restricted to the circuit. When the congestion was at its nadir on Friday morning, the queues contained several GP2 drivers whose practice session was imminent.

"I managed to wriggle to the other side of the A43," said Lotus GP driver James Calado, "but that would have meant driving the wrong way along the road." Given the circumstances it seemed like a practical solution, but he was swiftly intercepted by the local equivalent of an FIA steward – a member of the Northamptonshire constabulary. "I thought, 'Here we go, I might be delayed even longer'," he said, "but I explained that I was supposed to be driving at Silverstone – very soon, in fact – and they helped me get into the circuit."



Jolyon Palmer posted this pic on Twitter feed

iSport team-mates Jolyon Palmer and Marcus Ericsson were even more marginal. It had taken them more than two hours to travel from the Tropic of Northampton when they left their road car with friends and opted to run the final couple of miles, whereupon team principal Paul Jackson commandeered a golf buggy, met them at the gate and ferried them to the paddock to change and clamber into their Dallaras with precious few minutes to spare. "It wasn't exactly ideal," Jackson said, "but fortunately we'd completed all our pre-practice briefings the previous day."

up in the midfield.

Johnny Cecotto and Jolyon Palmer ran second and third from the start, with Lotus twins Esteban Gutierrez and James Calado (plagued by oversteer throughout qualifying) next from Nigel Melker and Luiz Razia, both of whom dispatched Max Chilton soon after the green-flag start.

The leading positions remained unchanged while teams waited for a dry line to appear, but Lotus was the first to decide it probably wouldn't: Gutierrez pitted on lap 15 and Calado on 16, fitting fresh wets to the left-hand wheels only (rather than the rears, the opposition's favoured ploy). Calado slowed soon after rejoining when he began losing gears, however, and parked at Abbey.

His Dallara had been there almost two laps when the safety car was dispatched and triggered a flurry of pit activity. Leimer, though, did not come in: some rivals thought he had time to make the pit entry, but the Swiss denied as much. "It was really strange," he said, "because Calado's car was stopped to the inside of Turn 1 and the situation wasn't dangerous. If they called the safety car 10 seconds earlier there would have been no problem, but I was just passing the pit entry. It's hard for me to understand the timing..." Cecotto sympathised with Leimer. "I only just had time to make the pits," he said, "because I was already approaching when I saw the safety car boards."

It could have been a stroke

"It's not the first time it's happened this season"

Cecotto on pitstop blunder

of winning luck, but the mechanics on his right wheel fumbled their change and he lost about seven seconds.

"It's not the first time that has happened this season," he said, "and it always seems to be the same wheel." Good preparation, perhaps, if ever he races for McLaren in F1.

Having recently completed his out lap on fresh tyres at racing speed, rather than in the slipstream of a silver Mercedes SLS, Gutierrez was now promoted to second on the road, behind Leimer but ahead of Cecotto, Palmer, Melker, Razia and the DAMS duo, Nasr and Valsecchi having made great capital



Gutierrez, Cecotto and Palmer on R1 podium



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◀ from their early stop and the unexpectedly consistent conditions.

With time running out (only 25 of the scheduled 29 laps would ultimately be possible), Leimer hoped to make another break in a bid to minimise the damage, but the race was neutralised almost as soon as it restarted at the end of lap 21. Coletti and Ericsson had both taken a punt on slicks, but the Monegasque spun at Chapel and the safety car reappeared for another two laps while he was craned away. Leimer finally pitted during this period and went on to record what must be one of the finest 14th places in racing history.

That left Gutierrez clear to score his second consecutive Feature Race victory, with Cecotto and Palmer completing the top three. "I was aware that Fabio hadn't pitted," Gutierrez said, "so



Van der Garde led race two from pole but faded

after the restart I was just trying to be consistent and keep things clean. It's really interesting to drive in conditions like this, when grip levels are changing. I really enjoyed it."

Palmer survived one early scare – running wide at Stowe on lap 10. "I hit the

brakes, locked the rear and honestly thought I was off for a beer" – while Melker resisted Razia's late assault to score his best GP2 result to date. The Brazilian kept edging ahead on the approach to Stowe, but Melker always had the drier outside line and made that advantage count. Nasr and Valsecchi came next – the Italian ceding his season-long points lead to Razia – from van der Garde, Chilton and Rio Haryanto, whose seventh place in qualifying was nixed by the five-place grid penalty he was given for GBH last time out in Valencia.

From pole, van der Garde led away in the sprint – but didn't stay there for long. Razia drove with splendid

aggression to dispatch both DAMS cars during the opening two laps – and then dealt with the leader around the outside of Stowe. The race would be his.

Nasr and Valsecchi were soon second and third, as van der Garde's exaggerated tyre wear triggered a plummet that eventually caused him to stop. Nasr put pressure on the leader for a while, briefly moving ahead at Village on lap eight before running wide and ceding the place once again.

For Razia it was a momentary trifle: he faced no further worries until Valsecchi passed Nasr at Stowe on lap 14, dummied to the left before diving down the inside. The Italian immediately closed to within

a second of Razia, but the Brazilian responded with a couple of swift laps that deterred any further challenge.

Nasr briefly lost third to Gutierrez on the final lap, but the Mexican then ran wide at Stowe and punted Cecotto into retirement when he rejoined. Palmer thus took fifth, after a fine recovery from a tardy start, while Melker completed the top six.

Calado made good progress through the field, but clashed with Chilton while trying to take ninth at Becketts.

For their collective belligerence, the Lotus team-mates copped 10-position Hockenheim grid penalties. ❧



Razia took Sprint win and the points lead

RESULTS

GP2 Series, round 7 of 12, Silverstone (GB), July 7-8

RACE 1 GRID
1 LEIMER 2:01.889
2 CECOTTO 2:02.804
3 PALMER 2:02.872
4 GUTIERREZ 2:03.258
5 CALADO 2:03.274
6 CHILTON 2:03.423
7 RAZIA 2:03.553
8 MELKER 2:03.699
9 KRAL 2:04.029
10 HARYANTO 2:03.398*
11 BERTHON 2:04.140
12 CRESTANI 2:04.280
13 GONZALEZ 2:04.430
14 DE JONG 2:04.782
15 GUERIN 2:05.040
16 LEAL 2:05.218
17 ONIDI 2:05.350
18 VDGARDE 2:03.565*
19 TRUMMER 2:05.573
20 RICHELMI 2:05.677
21 TEIXEIRA 2:07.231
22 SERENELLI 2:09.161
23 NASR no time
24 ERICSSON no time
25 VALSECCHI no time
26 COLETTI no time

RACE 1 – 25 LAPS, 91.512 MILES				
POS	NAME	TEAM	TIME/REASON	GRID
1	Esteban Gutierrez (MEX)	Lotus GP (ART)	1h00m22.657s	4
2	Johnny Cecotto Jr (YV)	Barwa Addax Team	+1.700s	2
3	Jolyon Palmer (GB)	iSport International	+5.257s	3
4	Nigel Melker (NL)	Ocean Racing Technology	+6.368s	8
5	Luiz Razia (BR)	Arden International	+6.523s	7
6	Felipe Nasr (BR)	DAMS	+7.552s	23
7	Davide Valsecchi (I)	DAMS	+9.051s	25
8	Giedo van der Garde (NL)	Caterham Racing	+9.841s	18
9	Max Chilton (GB)	Carlin	+11.116s	6
10	Rio Haryanto (RI)	Carlin	+11.958s	10
11	Fabrizio Crestani (I)	Venezuela GP Lazarus	+12.130s	12
12	Nathanael Berthon (F)	Racing Engineering	+12.843s	11
13	Stephane Richelmi (MC)	Trident Racing	+15.701s	20
14	Fabio Leimer (CH)	Racing Engineering	+16.421s	1
15	Simon Trummer (CH)	Arden International	+16.818s	19
16	Josef Kral (CZ)	Barwa Addax Team	+17.833s	9
17	Victor Guerin (BR)	Ocean Racing Technology	+18.167s	15
18	Ricardo Teixeira (AO)	Rapax	+23.183s	21
19	Giancarlo Serenelli (YV)	Venezuela GP Lazarus	+24.345s	22
20	Julian Leal (CO)	Trident Racing	+38.351s	16
21	Marcus Ericsson (S)	iSport International	+39.831s	24
22	Fabio Onidi (I)	Scuderia Coloni	+44.902s**	17
23	Rodolfo Gonzalez (YV)	Caterham Racing	-2 laps	13
R	Stefano Coletti (MC)	Scuderia Coloni	20 laps-spin	26
R	James Calado (GB)	Lotus GP (ART)	17 laps-gearbox	5
R	Daniel de Jong (NL)	Rapax	1 lap-accident damage	14

RACE 2 – 21 LAPS, 76.870 MILES				
POS	DRIVER	TIME/REASON	GRID	
1	Razia	37m28.656s	4	
2	Valsecchi	+5.642s	2	
3	Nasr	+17.775s	3	
4	Gutierrez	+19.969s	8	
5	Palmer	+25.869s	6	
6	Melker	+28.600s	5	
7	Ericsson	+31.980s	21	
8	Onidi	+35.797s	22	
9	Leimer	+38.127s	14	
10	Kral	+40.378s	16	
11	Trummer	+40.533s	15	
12	Haryanto	+48.471s	10	
13	de Jong	+54.161s	26	
14	Berthon	+54.643s	12	
15	Teixeira	+1m15.967s	18	
16	Serenelli	+1m17.971s	19	
17	Leal	+1m30.456s	20	
18	Cecotto	20 laps-accident	7	
19	Chilton	19 laps-accident	9	
20	Calado	19 laps-accident	25	
21	van der Garde	19 laps-tyre wear	1	
22	Crestani	19 laps-DNF	11	
R	Gonzalez	3 laps-puncture	23	
R	Richelmi	0 laps-accident	13	
R	Coletti	0 laps-accident	24	
NS	Guerin		17	

CHAMPIONSHIP TABLES		
POS	TEAM	PTS
1	Lotus GP	217
2	DAMS	205
3	Arden	169
4	Carlin	122
5	Racing Engineering	110
6	iSport	104
7	Lotus GP	93
8	Leimer	69
9	Ericsson	56
10	Cecotto	49
11	Palmer	48

All in Dallara-Mecachrome GP2/11.
* grid penalty. ** 30s time penalty.
Race 1 Winner's average speed: 90.857mph. Fastest lap: Gutierrez, 2m01.622s, 108.350mph.
Race 2 Winner's average speed: 122.932mph. Fastest lap: Leal, 1m43.374s, 127.477mph.

SILVERSTONE

GREAT BRITAIN

July 7-8
GP3 Series
Round 4/8



AT A GLANCE

- Race 1 Antonio Felix da Costa
- Race 2 William Buller
- Pole position Mitch Evans
- FLs Felix da Costa/Tio Ellinas



Buller was overjoyed after his back-to-front victory in race two

Buller charges to the front

An inspired tyre choice for Northern Irishman William Buller allowed him to work his way up from the back to give Carlin its second series victory in as many days



Buller's win bettered previous best of P9!

BY LAST SATURDAY EVENING, the racing slick had been a fairly rare commodity at Silverstone. Finally, though, the capricious drainage system had relented by the time GP3 drivers reached the grid. The most suitable tyre type might have been obvious, but that didn't facilitate choice.

Pole qualifier Mitch Evans opted for a set of used slicks. The Kiwi expected track temperatures to be cool and felt those would bed in better over a race distance. He made a good enough start to lead into Abbey, but caution tempered his ambition. "I was a bit of a guinea pig at the front," he said, "because there were lots of damp patches and I wasn't sure how much grip was available."

Aaro Vainio had made a

slowish start from the front row – unsurprising, as he was on the wetter side of the track – and Antonio Felix da Costa swept through to take second. By Turn 3, he'd capitalised on Evans's momentary hesitation to take the lead – and that would be the trigger for Carlin's first GP3 win.

"I was able to follow him for the first half of the race," Evans said, "and was trying to pressure him into a mistake he didn't make. By mid-distance, though, my tyre choice was beginning to hurt me."

His quarry had started on new tyres, though, and was able to control the pace. "The car felt brilliant," he said. "It was very easy to drive. It's very easy to promote understeer around here – I remembered that from last

year and focused on setting the car up to avoid it. Does this end a run of bad luck? Not really. I don't believe in such things: you create your own luck."

Vainio ("I quite enjoyed the tricky conditions, probably because I'm a Finn and they felt quite normal") remained third to the flag, from team-mate Daniel Abt, but third Lotus GP driver Conor Daly was the unsung star. Starting 13th (he had a 10-position penalty hanging over him from Valencia), he scythed through the upper midfield to take fifth, ahead of Tio Ellinas, Alex Brundle (who felt he suffered from not having chosen slightly higher tyre pressures) and Kevin Ceccon.

Will Buller started seventh, but ran wide through the opening

Felix da Costa put Carlin in victory lane



complex and was biffed into retirement when he attempted to rejoin, while Alice Powell finished 17th and Robert Cregan 20th.

"I just hope it's dry tomorrow," said the vanquished Evans, "because I have plenty of fresh tyres and it would be quite nice to use them..."

Most of the world was still eating Corn Flakes (or queuing outside Silverstone's main gate) when cars came to

the grid for a second time on Sunday morning. And yes, some were on slicks... but only some.

Ceccon and Ellinas opted for wets and left the slick-shod Brundle behind as they peeled into Abbey. The Cypriot swept into the lead before the lap was out, with Evans and da Costa lying third and fourth. Brundle, meanwhile, might as well have selected reverse – ditto the strategically similar Daly,

RACE RATING

★★★★☆

Lively without being ludicrous - and Will Buller gets 5/5 for his calm control in race two

MILESTONE

Carlin scored its maiden GP3 win on Saturday... then won again on Sunday!



REPORT GP3 SILVERSTONE

SIMON ARRON
reports



Title hopeful Vainio took a race-one podium



who'd worked his way back to 20th by lap two. Within a couple of laps, though, slicks would be a couple of seconds quicker than wets - and counting.

Those on wets soon began to fade, but first the race had another phase: Jenzer drivers Patric Niederhauser and Robert Visoiu started on well-scrubbed wets that proved the best option while the track was at its most transitional. By the end of the eighth lap they were first and second - but slicks were now comfortably quicker and next time around they were split by the remarkable Buller, who drove tenderly on slicks for the first few laps before rising spectacularly as the track dried: from 25th on the grid he was 17th on lap two and in the lead by lap 10, whereupon he pulled away to give Carlin its second win in as many days.

Daly admitted to having

felt hesitant before the start.

"It was the team's call to start on slicks," he said, "but when you're up at the front and most have gone for wets... Within a few laps, though, I sensed the race might be coming to me."

He tracked Buller through the field to take second, while Niederhauser hung on to take third from Ellinas, who'd pitted for slicks on lap eight. Visoiu took fifth - not bad, because he'd started 15th after being given a three-place penalty for ignoring the chequered flag in race one - while da Costa completed the top six.

Evans suffered horrible understeer on wets and dropped out of the points, although his points lead wasn't dented because Vainio crashed out.

Brundle started on slicks and recovered to 10th after an early spin - and a pitstop to clear radiator debris. ❁

PORSCHE SUPERCUP

Rast inches to win and points lead



Rene Rast took the Porsche Supercup series lead after a

thrilling Sunday-morning race in which he pipped rivals Norbert Siedler and Sean Edwards in a dash to the flag.

Qualifying took place on a drying track, with the times tumbling on slicks in the closing minutes. Rast took pole right at the end, but his time was disallowed for exceeding the track limits, and he thus dropped to second behind Kuba Giermaziak.

Edwards also lost his best time and earned third, ahead of surprise package Patryk Szczerbinski, Giermaziak's fellow Pole and Verva teammate. Championship leader Siedler and Christian Engelhart were fifth and sixth, while regular frontrunner Kevin Estre was down in 11th.

Poleman Giermaziak struggled with wheelspin off the line and tumbled down to fifth as Rast, Edwards, Szczerbinski and Siedler all charged past. Rast had no new tyres left after qualifying while pursuer Edwards did, and that

It was closer than this come the finish



seemed to give the Brit an advantage as he sought a win in front of his home crowd.

However, some canny driving by Rast kept him safely in front, despite the enormous pressure from behind. Siedler passed Szczerbinski for third and also joined in the battle at the front, well aware that his points lead was at stake.

On the last lap Edwards seemed all set to have a final go at snatching the lead but it was Siedler who caught him by surprise and charged down the inside at Stowe to claim second, the top three runners crossing the line just 0.586s apart. Giermaziak eventually found a way past his teammate to claim fourth, while

Szczerbinski's fifth was his best result in the series to date.

Estre made a good start from his lowly grid slot and moved up to sixth, ahead of Michael Ammermuller and Nicki Thiim, the latter pair gaining after a puncture sent Christian Engelhart off the road.

● Adam Cooper

RESULTS

1 Rene Rast, 14 laps in 25m41.015s; 2 Norbert Siedler, +0.415s; 3 Sean Edwards; 4 Kuba Giermaziak; 5 Patryk Szczerbinski; 6 Kevin Estre; 7 Michael Ammermuller; 8 Nicki Thiim; 9 Sebastiaan Bleekemolen; 10 Jeroen Mul. **Points** 1 Rast, 78; 2 Edwards, 77; 3 Siedler, 77; 4 Estre, 57; 5 Giermaziak, 52; 6 Engelhart, 49.

RESULTS

GP3 Series, round 4 of 8, Silverstone (GB), July 7-8

RACE 1 GRID

1 EVANS 1:51.892	2 VAINIO 1:52.216
3 DA COSTA 1:52.233	4 LAINE 1:52.332
5 ABT 1:52.543	6 CECCON 1:52.572
7 BULLER 1:52.648	8 SAKURAI 1:52.807
9 BRUNDLE 1:53.133	10 ELLINAS 1:53.536
11 REGALIA 1:53.549	12 VENTURINI 1:53.624
13 DALY 1:52.930*	14 PIRIA 1:53.769
15 VISOIU 1:53.861	16 N° HAUSER 1:53.893
17 POWELL 1:53.852*	18 SURANOVICH 1:54.324
19 KISS 1:52.930*	20 SPAVONE 1:54.339
21 MACHADO 1:54.427	22 GAMBERTINI 1:55.175
23 CREGAN 1:55.363	24 STOCKINGER 1:55.711
25 RINGEL 1:59.371	

RACE 1 - 14 LAPS, 51.164 MILES

POS	NAME	TEAM	TIME	GRID
1	Antonio Felix da Costa (P)	Carlin	27m14.410s	3
2	Mitch Evans (NZ)	MW Arden	+7.062s	1
3	Aaro Vainio (FIN)	Lotus GP (ART)	+8.783s	2
4	Daniel Abt (D)	Lotus GP (ART)	+16.136s	5
5	Conor Daly (USA)	Lotus GP (ART)	+22.156s	13
6	Tio Ellinas (CY)	Marussia Manor Racing	+22.325s	10
7	Alex Brundle (GB)	Carlin	+38.448s	9
8	Kevin Ceccon (I)	Ocean Racing Technology	+41.719s	6
9	Matias Laine (FIN)	MW Arden	+42.314s	4
10	Patric Niederhauser (CH)	Jenzer Motorsport	+44.489s	16
11	Tamas Pal Kiss (H)	Atech CRS GP	+53.795s	19
12	Robert Visoiu (RO)	Jenzer Motorsport	+1m00.061s	15
13	Giovanni Venturini (I)	Trident Racing	+1m02.451s	12
14	Facu Regalia (RA)	Jenzer Motorsport	+1m03.081s	11
15	Kotaro Sakurai (J)	Status Grand Prix	+1m05.140s	8
16	Marlon Stockinger (RF)	Status Grand Prix	+1m12.707s	24
17	Alice Powell (GB)	Status Grand Prix	+1m26.048s	17
18	Vicky Piria (I)	Trident Racing	+1m34.318s	14
19	Fabiano Machado (BR)	Marussia Manor Racing	+1m38.754s	21
20	Robert Cregan (IRL)	Ocean Racing Technology	+1m39.170s	23
21	Antonio Spavone (I)	Trident Racing	+1m39.960s	20
22	Dmitry Suranovich (RUS)	Marussia Manor Racing	+1m40.812s	18
23	Fabio Gamberini (BR)	Atech CRS GP	-1 lap	22
R	Ethan Ringel (USA)	Atech CRS GP	2 laps-spun and stalled	25
R	William Buller (GB)	Carlin	0 laps-accident	7
NS	David Fumanelli (I)	MW Arden		
NQ	Carmen Jorda (E)	Ocean Racing Technology		

RACE 2 - 14 LAPS, 51.164 MILES

POS	DRIVER	TIME/REASON	GRID
1	Buller	29m49.526s	25
2	Daly	+8.577s	4
3	Niederhauser	+30.017s	10
4	Ellinas	+37.529s	3
5	Visoiu	+52.038s	15*
6	Felix da Costa	+1m03.722s	8
7	Ceccon	+1m05.954s	1
8	Gamberini	+1m06.482s	23
9	Machado	+1m07.321s	19
10	Brundle	+1m20.941s	2
11	Evans	+1m22.894s	7
12	Regalia	+1m23.503s	13
13	Sakurai	+1m24.203s	14
14	Kiss	+1m28.143s	11
15	Cregan	+1m44.079s	20
16	Venturini	+1m52.408s	12
17	Ringel	+1m54.151s	24
18	Laine	13 laps-acc damage	9
19	Spavone	-1 lap	21
20	Suranovich	12 laps-DNF	22
21	Piria	12 laps-DNF	18
R	Abt	11 laps-spin	5
R	Stockinger	11 laps-accident	16
R	Vainio	11 laps-accident	6
R	Powell	9 laps-spin	17
NS	Fumanelli		
NQ	Jorda		

CHAMPIONSHIP TABLES

POS	DRIVER	PTS
1	Evans	100
2	Vainio	89
3	Felix da Costa	58
4	Abt	54
5	Niederhauser	50
6	Daly	45
7	Ellinas	45
8	Ceccon	43
9	Laine	42
10	Stockinger	39
POS	TEAM	PTS
1	Lotus	188
2	Arden	177
3	Carlin	83
4	Jenzer	72
5	Manor	45
6	Ocean	43

All in Dallara-Mecachrome GP2/11.
* grid penalty.
Race 1 Winner's average speed: 112.694mph. Fastest lap: Felix da Costa, 1m53.951s, 115.644mph.
Race 2 Winner's average speed: 102.926mph. Fastest lap: Ellinas, 1m59.829s, 109.971mph.

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Welcome



Scratch the surface of Formula 1

and beneath all that glitz and glamour is a hard-nosed engineering industry. And, we're not talking about the lumbering engineering of ships and bridges here, this is a world with some very special qualities.

The lifeblood of any F1 team is research and development and, unless you are moving forwards, you are going the other way on a fastrack to back of the grid. But there is something unique about the way F1 goes about this process. It happens very fast and very intensively because the results are measured ruthlessly 20 times a season. If you lag behind, it becomes very clear, very quickly.

This environment of intense competition is what gives the F1 engineering world its particular character. The people who populate it are some of the brightest minds you can hope to meet. They have no concept of the impossible and

ooze clever, innovative solutions.

This is what makes a journey through the world of F1 technology so compelling. Here, we have tried to give you a glimpse into the minds of these people and how they overcome the challenges they are presented with.

In 2014 the F1 engine rulebook is being rewritten, but what are the new challenges engine designers will be up against? We talk you through the complexities of the new rules and how they are likely to be exploited. Why are we on the verge of a brand new era in F1 aerodynamics? Talking to an industry expert, we find out. How do you manage the simple act of slowing down an F1 car while still recovering energy for KERS and giving the driver the tyre life he needs? Bruno Senna's Williams race engineer gives us an insight. It's complex and can be challenging but the journey will never be boring.

CHARLES ARMSTRONG-WILSON
EDITOR



Jaguar looks to F1 for its supercar development

DIFFERENT LINE

Motorsport's traditional business model as a marketing industry is being challenged, but are new opportunities opening in engineering services?

By **PAUL J WEIGHELL**

Betting all of a racing team's capital on getting to the chequered flag first more often than not is a sure-fire way of inviting liquidators to set up camp in the car park. As Chris Aylett of the UK Motorsport Industry Association (MIA) points out: "A race with 10 teams will have nine losers."

Despite those stark facts, the business plan of too many motorsport organisations has traditionally been a risky circular game of cheque book chasing chequered flag chasing cheque book. Many modern motorsport companies now assume they will not win races and so must seek income beyond selling advertising space. However, that strategy requires that you have assets that can be sold to those outside the immediate racing industry circle.

The only tangible product of motorsport, however, is a stream of technically advanced vehicle prototypes, built of equally technically advanced components, which are tested under extreme conditions over a short period of time before being superseded by the next prototype. Is there a general market for such skills?

Believe it or not, the UK government is actually aware that a minimum critical mass in key technical areas is needed for British industry to survive and that the most demanding engineering issue for the future seems to be energy efficiency. Drilling down from that principle, it only takes a short step to list the key technologies required. These include efficient energy sources and storage as well as the development of lightweight structures required

to support energy efficient applications. Not a million miles from motorsport's areas of specialism.

A NEW DIRECTION

The new industry group NAIGT [New Automotive Innovation and Growth Team] is the result of a collaboration between the UK Government's Department for Business, Innovation and Skills (BIS) and the Automotive Council. Working with Ricardo, a multi-industry engineering provider, it has created an innovative Automotive Technology Roadmap for the future of the UK automotive industry.

Vital to that future is research and development in areas identical to those encoded within motorsport DNA. So striking is the parallel that the MIA has produced, also with Ricardo, a companion Motorsport Technology Roadmap, currently for consultation within the industry and at least partially aimed at matching motorsport business to interested mainstream companies.

Motorsport companies are already past masters in precisely those key areas as racing is little more than the application of energy in the most efficient way and to do that the industry already produces extreme examples of efficient engines and lightweight structures. Motorsport is now also producing energy storage systems and testing them in the F1 and sportscar racing arenas.

The UK now possesses both an officially recognised need for energy efficient solutions and world-class suppliers of energy efficient R&D style prototypes. Even to governments, two plus two sometimes equals four. ▶

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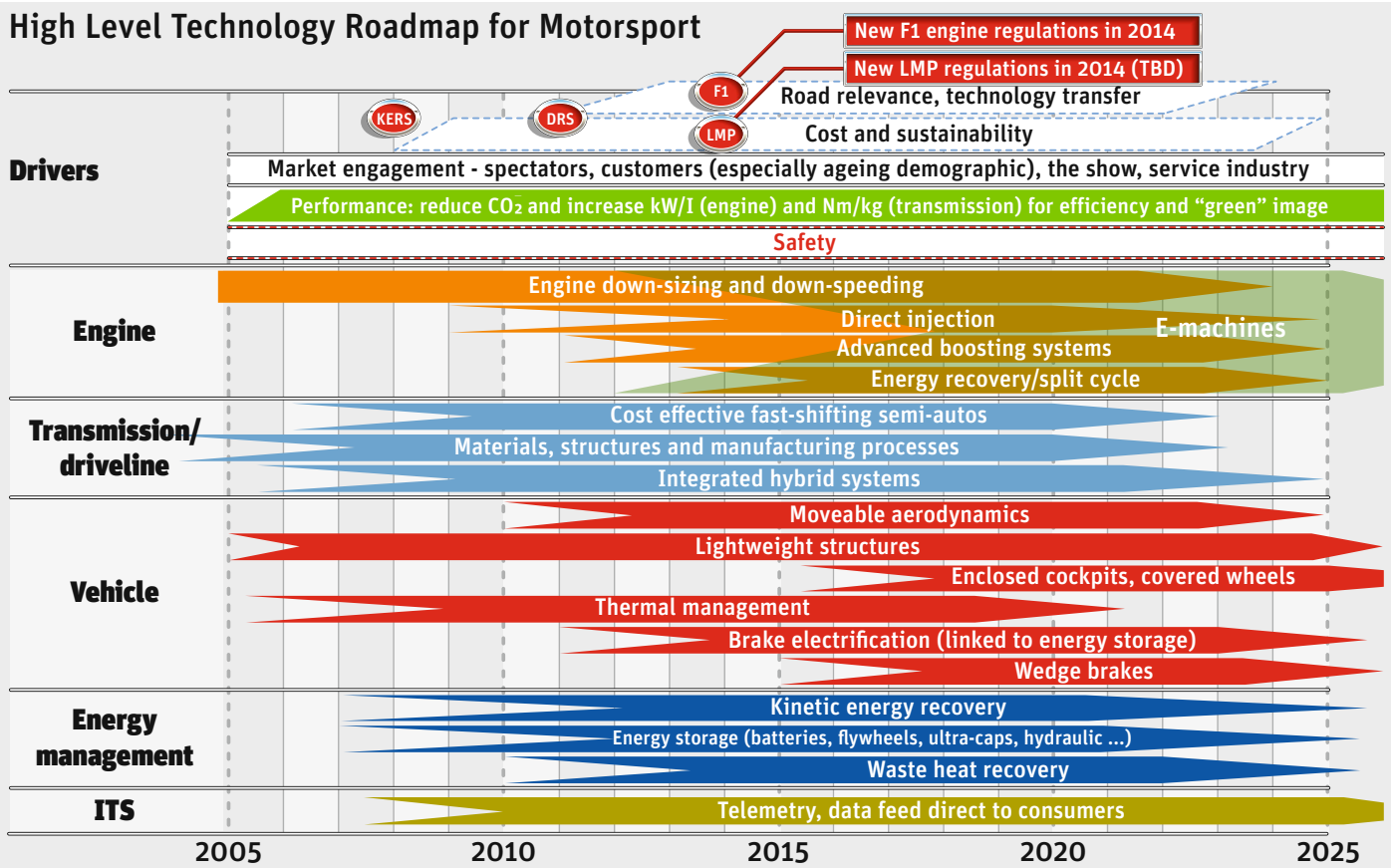
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High Level Technology Roadmap for Motorsport



RACING AS R&D

Existing collaboration between wider industry and racing is already seen at F1 level where some teams have been wholly owned by vehicle manufacturers, such as Ferrari and Mercedes, where ideas are routinely transferred from racing to production. Even independent teams without long histories of vehicle manufacturing like McLaren and Williams now have related businesses outside of motorsport.

For example Williams is currently collaborating with Jaguar to develop a hybrid supercar. Williams will provide the aerodynamics and carbon composite shell skills and Jaguar the advanced hybrid running gear and eventual production. A senior manager on the project told us that the tie-up is at least as much for sound engineering reasons as it is for the halo effect of working with an F1 team. In classic race team style, just five

prototypes are being built for testing until next year when Jaguar may produce 200-250 cars. This sort of workload split perfectly dovetails the small batch and development skills of motorsport with the downstream production and after-sales skills of more mainstream vehicle companies.

It is not just fully-fledged F1 teams that are assisting mainstream manufacturers but a wide range of motorsport companies are now offering R&D functionality. Examples include Falken which uses motorsport to develop road tyres; Zircotec whose coatings technology for F1 is also used in road cars and Harman which creates active noise cancellation systems from race-derived active suspension algorithms. There are many more.

GOVERNMENT FUNDING

Where such collaborations may once have been bilateral and sporadic, can they now be more formally encouraged?

Well-known transmission technology specialists Xtrac states: "Virtually all of the world's top motorsport teams, and increasingly more high technology industry applications, rely on Xtrac's expertise." That they won a contract in 2010 to help develop advanced electric powertrains exemplifies the process. This contract is part of a suite of projects aimed at developing a low carbon vehicle industry in the UK that attracted £24m funding from the government.

GO-FASTER PROJECTS

One often cited beneficial feature of motorsport collaboration is a reduction in the time taken to develop products. A very long running and hugely

leveraged example is Shell, with more than 50 of its technical staff involved in the F1 programme. Typically the time taken to develop a road fuel is three to four years, while the racing development cycle is measured only in months to meet the much tighter F1 timescales. Mike Evans, of Shell Global Solutions, explains that until 1999 Shell had essentially different technical groups developing road car fuels and racing fuels for Ferrari. Since then Shell has included F1 staff into the road fuel development programmes.

Shell's technical relationship with F1 has also meant integrating an entire R&D team into the Ferrari race crew, including installing a permanent trackside laboratory which takes up half of one of Ferrari's race trucks and is in constant use over each race weekend. Shell was the first F1 fuel supplier to have such a facility and the latest version is the most advanced trackside laboratory in the paddock. Not only did the F1 staff have help to reduce road fuel development time, but their expertise in performance producing chemistry and friction modifiers helped create V-Power fuels for road vehicles.

Some car makers also use their motorsport associations to flow engineering graduates through racing departments where they can learn to achieve high engineering standards in diminutive timescales. Less common is the use of a team's professional racing driver to help develop road cars, although one high profile example was Michael Schumacher's active involvement with the development of the Ferrari 458 and especially its driver controls.

Another ergonomic R&D transfer from racing ▶

Shell and Ferrari share unique partnership





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Some advance F1 tech to all areas of industry



◀ was the sequential manual gearbox common in motorcycles which became adopted by F1 in the form of Ferrari's semi-automated and clutchless F1 version. It in turn appeared in their road cars and can now be programmed for performance and/or fuel saving.

SELLING PITSTOPS

Motorsport companies that can extend their customer base beyond the obvious automotive and engineering worlds may find rich pickings. Perhaps the most interesting and forward looking developments are those where motorsport companies can sell non-engineering services.

McLaren Applied Technologies (MAT) is particularly keen to leverage its expertise in fast, data-driven decision making. According to McLaren: "The scientific elements of this expertise include analytics, data management, strategy modelling, processes, telemetry and human IP. These elements sit at the very heart of McLaren's unique and bespoke technical DNA, which is characterised by a relentless and fast-paced pursuit of ultra-accurate technological high-performance."

MAT's recent collaboration with GlaxoSmithKline (GSK) will include building an F1 pit style mission control facility at GSK headquarters. This will combine analytic tools and processes to provide GSK management with information to speed decision-making in areas such as inventory management, pricing, competitor activity and customer needs. Andrew Witty, CEO, GlaxoSmithKline is understandably bullish: "I am delighted to announce this partnership with McLaren, which brings together two British companies whose continued success hinges on the ability to innovate and rapidly respond to change and competitor activity. McLaren has an unparalleled reputation for innovation, built on rigorous analytics and fast decision-making."

The author has also been responsible for transferring some F1 style pit strategy software

Recent Williams garage fire, sparked by KERS?



tools into areas of financial trading as real-time, look-ahead estimation expressed in graphical format is a goal common to both sectors.

ENERGY EFFICIENCY

Both the Automotive and the Motorsport road maps assign high priority to energy efficiency and CO₂ emission reduction. No recent motorsport to mainstream crossover has faced more development and scrutiny than the energy efficient and CO₂ emission reduction technology we all know as KERS.

Flybrid, Williams, Ricardo and others have been responsible for the gradual introduction of KERS from F1 and sports prototype racing to road cars like the AMG Mercedes. KERS was not a racing innovation originally but its global development and exposure via F1 has brought it to the fore.

Back in 2009, the then FIA president Max Mosley backed KERS strongly. "It doesn't matter whether a car is driven by electricity, hydrogen, fossil fuel or any other source of energy. KERS will always be needed. Energy will be expensive for the foreseeable future, probably increasingly

"KERS will always be needed. Whatever the energy source, it will be expensive, so it's uneconomical to waste it"

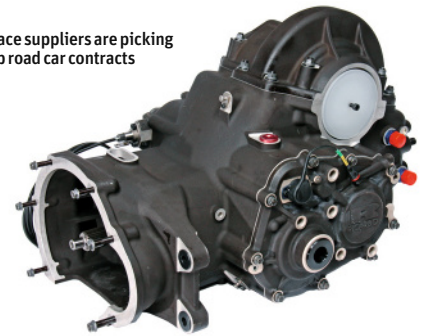
Max Mosley, former FIA president

expensive, which means that it will be uneconomic to waste it. Accordingly, if the technology exists (which it almost already does) to recover all the energy currently lost when a car brakes, that technology will be deployed. Because KERS enables the same packet of energy to be used again and again with only a slight loss in each cycle, KERS will inevitably become universal."

There are detractors to motorsport as an R&D function who fear that degradation of racing as a viewer-attracting sport will be the result of 'boring' engineering developments. After the recent fire in the Williams F1 pit garage, Ecclestone said of KERS in particular: "I think the fire was a lot to do with that kinetic energy thing which sparked. It should never have been introduced. It's an expensive secret because nobody knows anything about it. The public don't know and don't care."

Maybe not, but they will buy it. Love it or not, KERS has been the outstanding popular advertisement for motorsport as a serious place to do R&D so we again asked Max Mosley for

Race suppliers are picking up road car contracts



his current thoughts on the issue of motorsport as a research and development facility.

"Quite apart from the interest and the importance of these new technologies to F1's overall image, several teams told me how much directing the research effort into useful areas was helping them with their sponsors. And in one case, a major sponsor told me directly that this had kept them in F1.

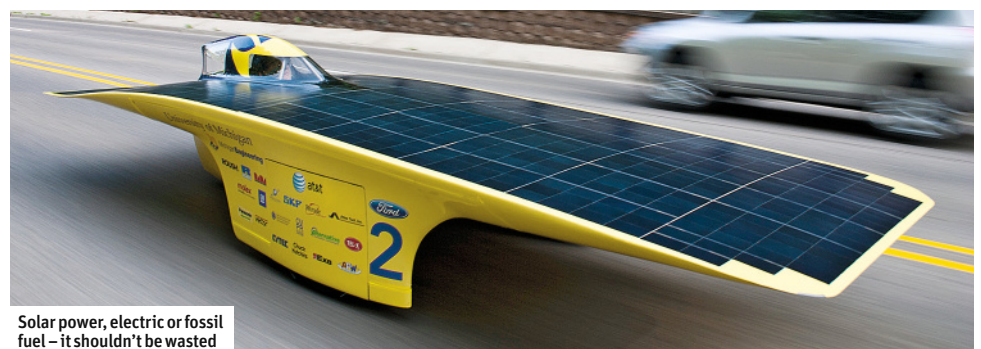
"The whole thing was confirmed and reinforced in my mind when I had my first meeting with [Dr Burkhard] Goeschel who was then heading GPWC but was also on the main board and head of R&D at BMW. We saw completely eye to eye that the R&D effort in F1 should be directed to pure and applied research into useful technologies rather than spending fortunes trying to shave a few grams off the weight of a gearbox.

"If I had my way, there would be a cost cap [through the use of standard components] and a freeze on non-useful and pointless R&D. To be fair to Bernie, he was always worried that with new technologies, one team would get an unassailable advantage for a few months and ruin the season. It was his job to worry about that, my job to try to see a bigger picture."

Today many are seeing that bigger picture. From the UK government to the Automotive Council and MIA there is a concerted effort to harvest the brains, technology and product development timescales that evolve naturally within UK motorsport and apply them liberally to UK industry for the general benefit.

Racing as a business has certainly come a long way since the days when the cost of the van fuel to get home may have relied on winning the prize money. 🏆

To learn how your company might take advantage of and/or contribute to the wider business field or to learn more about the industry road maps, please visit the MIA website www.the-mia.com.



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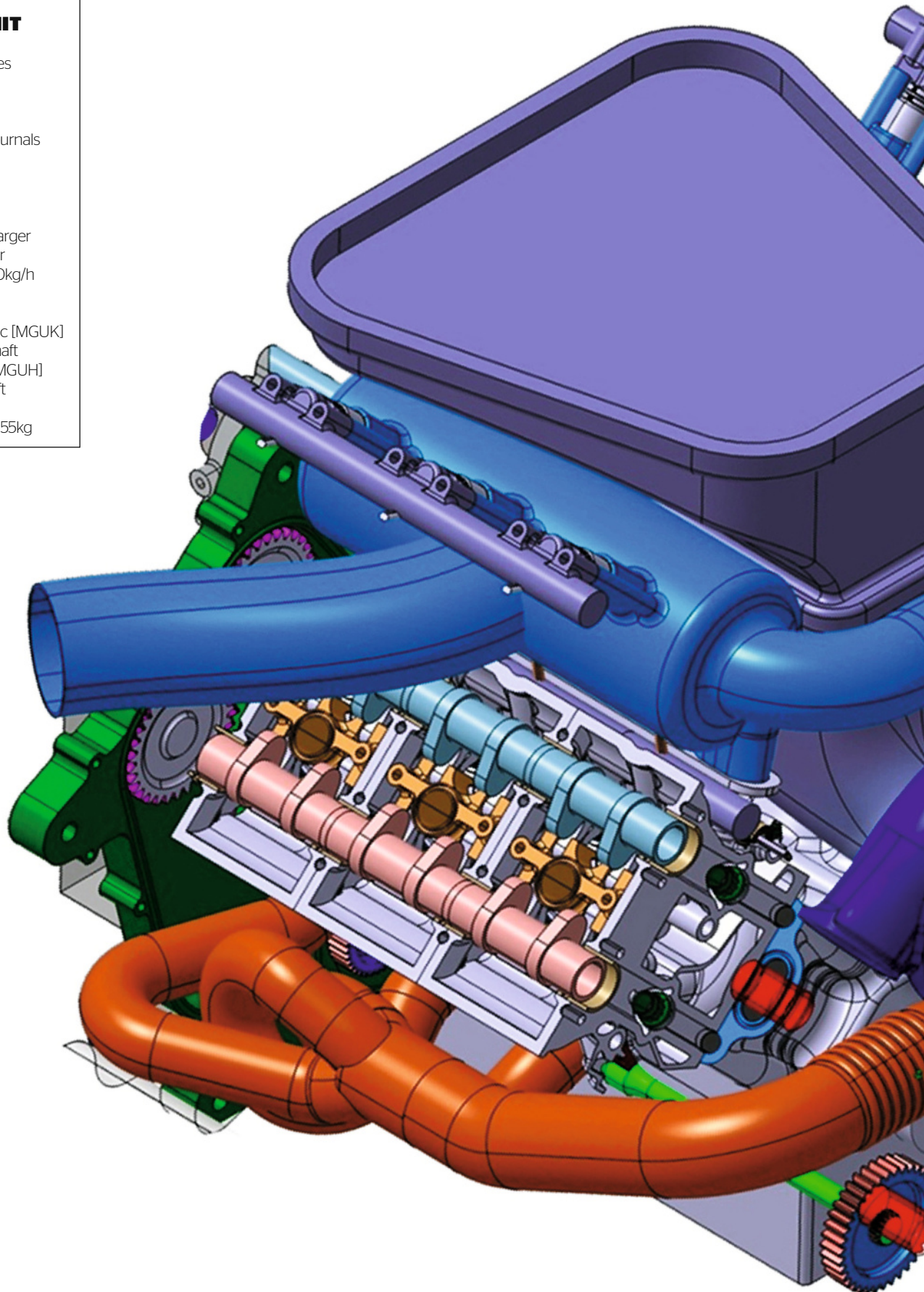
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LEAN TIMES AHEAD

In 2014, the current F1 engine rules are due to be torn up and a new generation of power units takes over. What will they be like?

By **CHARLES ARMSTRONG-WILSON**

Since the Formula 1 engine freeze in 2007, engines seem to have slipped off the F1 agenda as power differences between teams have become less significant, but all that will change for 2014. Prepare yourself for the dawn of a new family of 1.6-litre turbocharged V6s. Perhaps that configuration sounds familiar to anyone who can think back to the 1980s, but this new breed of engines promises to be very different from those fire-breathing, 1000bhp monsters.

At around the time the engine freeze was adopted, the rule makers and engine builders started talking about where things should be going in the future. Everyone agreed that, for F1 to be sustainable and credible, fuel efficiency should be central to the new rules and a raft of new regulations were drafted to pursue this thinking through a range of ideas.

First, it was decided to limit the amount of fuel for a race to just 100kg; about two thirds the amount teams currently get through. Also a fuel flow limit was proposed of 100kg per hour. You don't have to be a mathematical genius to spot that 100kg of fuel at 100kg/h will not get you to the end of a typical GP. So, a load of other strategies were included in the rules to encourage teams to recover energy and make up the shortfall.

Firstly the Kinetic Energy Recovery (KERS) technology currently in use will be freed up and become more sophisticated. Today's cars are only allowed to use 400KJ of recovered energy in a lap and at a rate of 60KW. For 2014 the cars can use 10 times as much stored energy, or 4MJ, at twice the rate, 120KW, fed to the wheels by a motor generator connected to the crankshaft. That means twice as much additional power and for up to 33 seconds a lap. The downside is you will only be allowed to collect 2MJ per lap, so you either only use half the output limit each lap or save it on some laps and use it all on others to pursue race strategies.

But this is just the start. Not only are the new engines turbocharged, but a mechanical drive from the turbo can also drive a second motor generator. Electricity from this can be used in two ways. Either it can charge the batteries, but only within that total of 2MJ per lap. Or the power can go straight to ►

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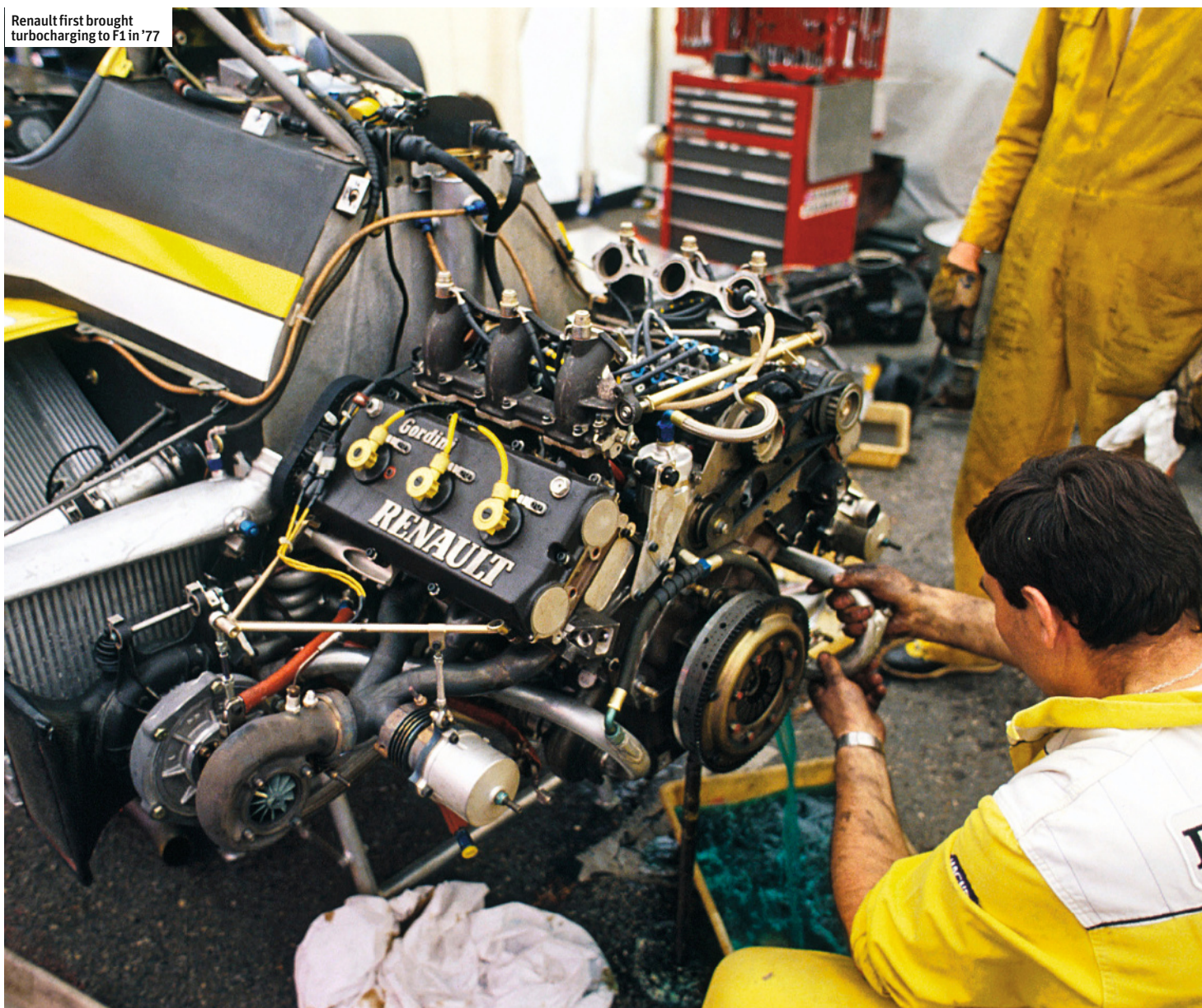
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Renault first brought turbocharging to F1 in '77



Renault's Rob White: "a whole new area for F1"

"If you allow F1 engineers to turbocharge with no constraints, you'll end up with an external combustion engine"

Andy Cowell, Mercedes AMG

◀ the other motor generator on the crank and be used to drive the car directly. Here the amount of power is unlimited by the rules but at a price. Putting a load on the turbo will, of course, reduce the performance of the engine.

Alternatively you may like to use that generator as a motor instead and spin the turbo up to create more power. That is entirely within the rules and adds to what promises to be a burgeoning list of strategy options for getting the car through the race as quickly as possible. "This is a whole new subject for F1," says Rob White, technical director at Renault Sport F1, "energy management takes place at many different levels and over many different

timescales." The key will be writing software that can make the best choices from all these options.

Of course, give any F1 engineer an inch and they will always take the proverbial mile. Andy Cowell, engineering director of Mercedes AMG High Performance Engines observes just that. "If you allow a group of F1 engineers to turbocharge an engine and you don't put technical constraints on it, you'll have a gas turbine on the back end and it'll be an external combustion engine." So, rules dictate no variable geometry and that no additional fuel can be sprayed into the turbo.

There is no boost limit, though, and the natural thing to do would be to run very high boost pressures at low revs to reduce losses due to friction. However, to keep the drama of high revs, that has been covered off too. Below 10,500rpm the fuel flow limit is further restricted by a formula that reduces it in direct proportion to revs to almost zero at tickover. "The spirit of the regulations is going from where the power is controlled by revs and capacity to where it is controlled by a fuel flow," says Cowell. ▶

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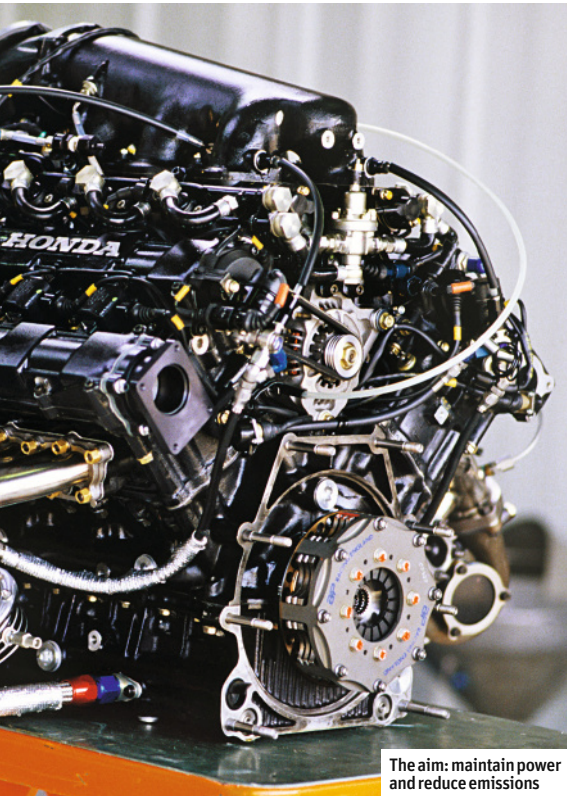
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2014 ENGINES TURBO COMEBACK



The aim: maintain power and reduce emissions

◀ The bore of the engine has been set at 80mm and that, with the 1600cc capacity, gives a maximum stroke of 53mm. This is a bore to stroke ratio of 1.5:1, less extreme than the 2.5:1 current engines are limited to. Usually pursuing a short stroke is all about reducing piston speeds to allow higher revs. But a rev limit of 15,000rpm has been set for the new engines resulting in maximum piston speeds close to today's engines of around 26 metres per second.

Making power at high revs may be a problem for another reason. To align the new units more closely with the latest generation of high efficiency road car engines, the rules mandate direct injection of fuel into the cylinders. The problem with this technology is its reluctance to produce good torque higher up the rev band. So, with full fuel flow only available above 10,500rpm but a fueling technology that is not good at high revs, engineers will have their work cut out. "I guess that's one of the reasons why we're a bit busy," says White.

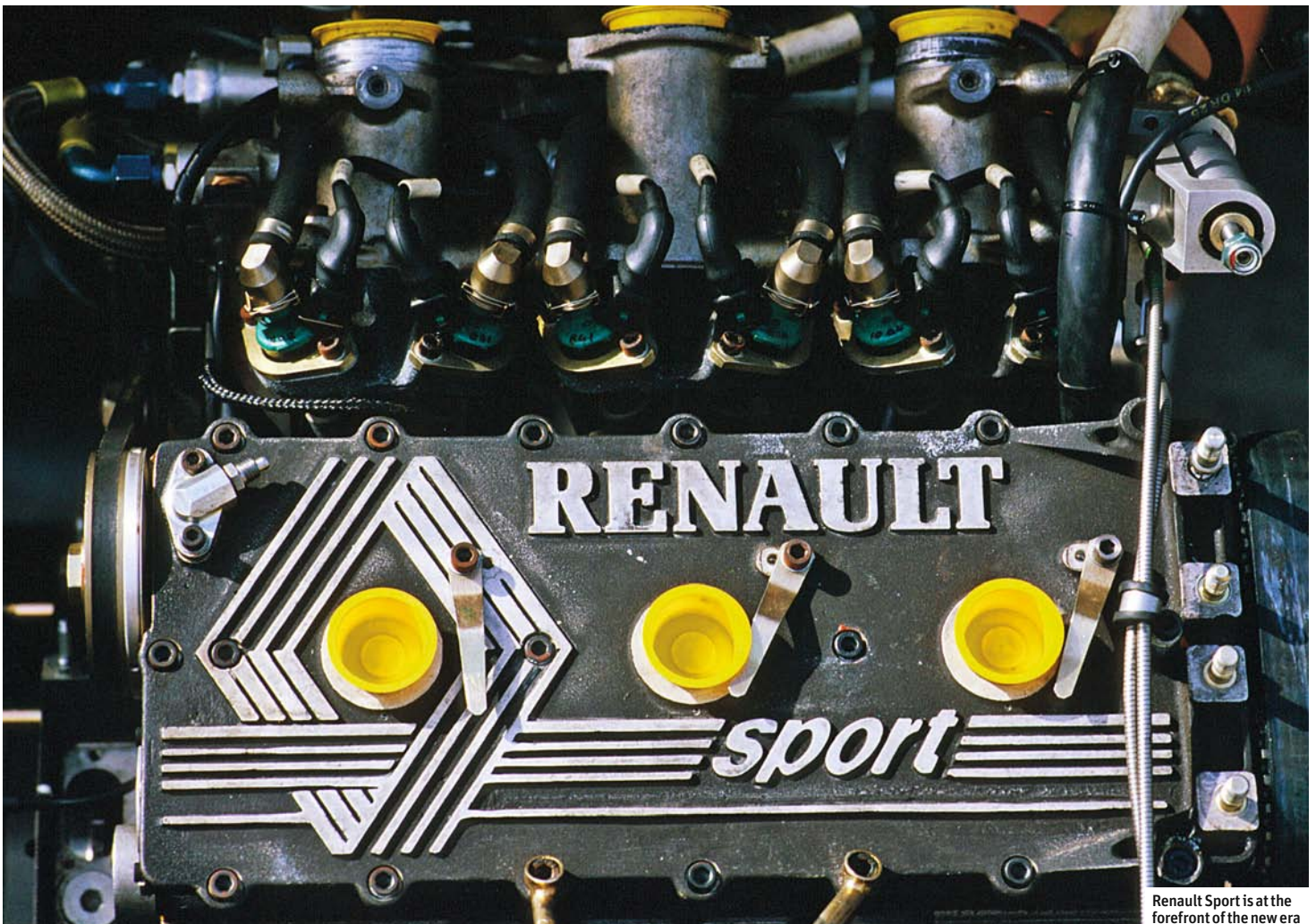
"It will be wonderful with the new unit if our lap times are the same, but we're emitting 35 per cent less CO₂"

Andy Cowell, Mercedes AMG

Another requirement of the rules is the cars must be able start themselves independently and always drive on electrical power in the pitlane. Starting easily is not one of an F1 car's noted qualities, but White does not see this as a great challenge. "If the car stalls in a pitstop, you just poke a starter in the back." With the size of motor generators envisaged and the capacity of the batteries he is confident the new cars will start easily.

Power outputs of the core internal combustion engine will inevitably be lower but Cowell highlights the importance of viewing all the systems together as a single power unit. "I think it will be wonderful if, with this power unit, our lap times are the same as they are today while we are emitting 35 per cent less CO₂. If all the manufacturers target that, I think it'll be wonderful for the sport."

And, what will the new engines sound like? Running at 3000rpm slower than today and with two cylinders less, they will deliver power pulses at a frequency of 750Hz, lower than the current unit's 1.2Khz. Might they sound a bit tame? White points out that, while the turbo will take some of the energy out of the exhaust note, the new engines will be exhausting through a single outlet. In contrast, the current V8s are effectively two four-cylinder units each with its own exhaust pulsing at a 600Hz frequency. "The sound will be very agreeable," he says. 🏎️



Renault Sport is at the forefront of the new era

WIND OF CHANGE

We may be living through a critical period in the development of F1 aerodynamics, with teams exploiting ever more complex concepts.

By **CHARLES ARMSTRONG-WILSON**

Formula 1 has been playing with wings and things for more than 40 years, so you would have thought there was little chance of the teams coming up with something fundamentally new. After millions of hours on the track and in the windtunnel, surely they are just running through iterative development, gradually honing shapes against a law of diminishing returns. According to one industry authority, that is most definitely not the case. In fact, he claims, we are witnessing the most exciting period in F1 aero development for decades.

Rob Lewis of Computational Fluid Dynamics [CFD] specialist TotalSim believes that teams are exploiting ever more complex forms of active aero, all within the rules and despite the best efforts of the regulators. Much like the era of active electronics, there are more brains being devoted to exploiting it than to preventing it and the FIA is fighting a losing battle against a wave of brilliant ideas. So what exactly is it that they are doing and how are they getting away with it? To answer that, we need to start with some F1 aero basics.

Downforce has a direct trade-off in terms of drag. Although teams hone their cars for the best possible lift-to-drag ratio, once they have achieved a certain level of efficiency, more downforce generally equates directly to more drag. With this in mind, the aim of the race engineer is to set the level of downforce that will deliver the best lap time by balancing straight-line drag against grip through the corners.

Drag, however, is directly proportional to the square of the speed. That means that even if the fastest corner on the track is taken at 150mph, down the straights the downforce is still increasing

and generating drag. But what if you can change the downforce depending on the speed? If you can shed the downforce above maximum cornering speeds then there are two benefits.

Firstly, as we pointed out, less downforce equates to less drag which means faster speeds down the straight and a correspondingly faster lap time, not to mention the benefits to overtaking.

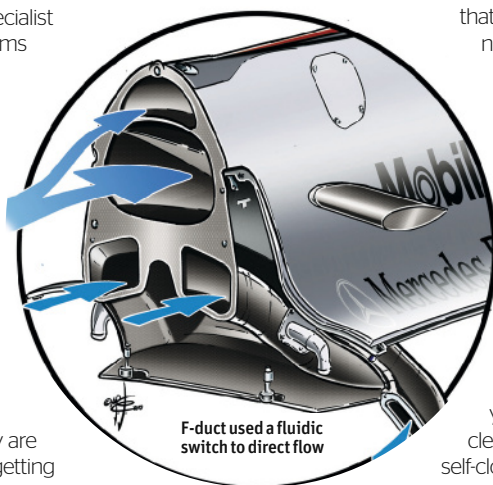
Secondly, as the car is held up by springs, more downforce means more load on the suspension and a lower ride height. Up to a point, low ride height is good because it helps the car

generate more downforce from its floor area. However, you need that downforce in the corners, not down the straight and if the suspension is still being compressed on the fastest parts of the circuit, it means the car has to ride higher in the slower ones.

For these two compelling reasons, teams have been throwing their best brains at the problem of shedding downforce at high speed. Over the years we have seen some clever solutions including the self-closing gap on the rear wing and the McLaren f-duct. The way

these work is by detaching or stalling the airflow from the lower surface of the wing element.

This stall on the wing causes a big chunk of the downforce, and consequently the drag, to be lost. F1 cars need to generate a lot of lift in a very small space, similar to an aircraft on landing, so they use multi-element wings. The trick of the multi-element wing is the gap between the elements adds more airflow part way along the journey under the wing to keep the air moving fast enough to stay attached. For F1, the standard practice is to have a two-element rear wing with a gap between the two that will introduce more air to the flow and persuade it to keep going along its tortuous



The rumoured Ferrari three-way sensing aero

Moveable aerodynamic devices were illegal for years; teams came up with flexible structures that deformed with air pressure on them

path and also provides an extra boost of suction under the flap.

In recent years teams cottoned on to the potential of closing that gap at high speed to cause separation. This would shed both downforce and drag and, with careful design, could be tuned to occur at a specific speed on the straights. But moveable aerodynamic devices had, at the time, been illegal for many years so the teams found ways to do it with flexible structures that deformed according to the air pressure on them. It was a neat, elegant solution but, over time, people became suspicious and, once it had been spotted, the rule makers went to great lengths to outlaw it. Essentially they introduced deflection tests using

THE AERO EFFECT CRITICAL ADVANCES

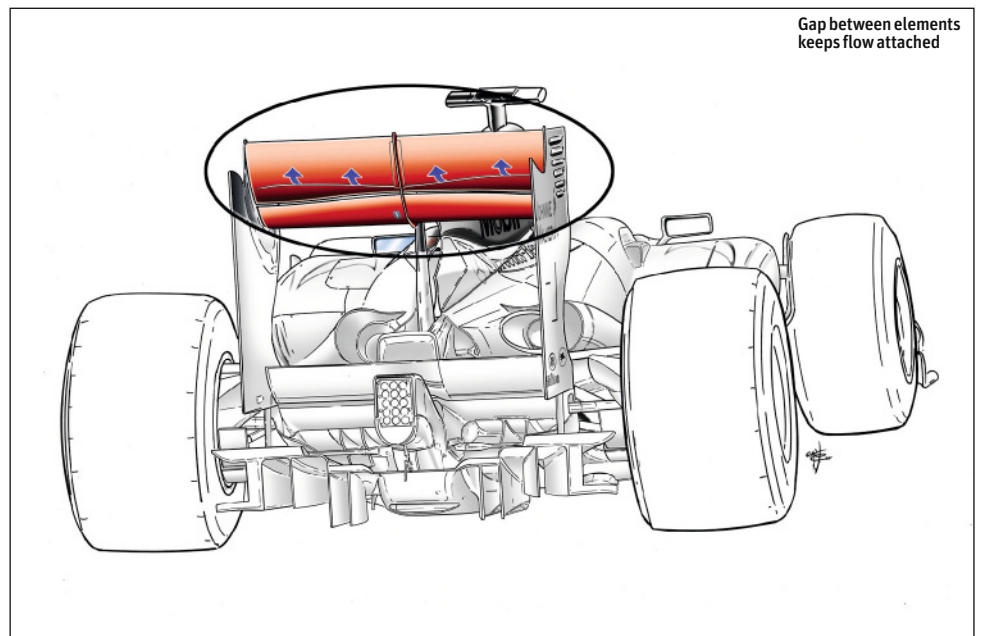


weights and spring balances that showed up any untoward flexibility in the structures.

Then McLaren came up with the f-duct. Whether this signified the birth of this new way of doing things, nobody seems sure, but it was the first manifestation to become public knowledge.

The clever bit about the f-duct was the use of fluidic switch technology. Drawing a parallel with electronics, a transistor allows a small current to control a big one. Likewise, a fluidic switch allows a small flow of air to direct a big one. On the McLaren this meant that when the driver closed a hole in a pipe with the back of their hand, it directed a small flow of air that disrupted a bigger flow of air that was keeping the flow attached to the rear wing. The result was detached airflow so less downforce and less drag.

At this point the organisers were beginning to realise the impossibility of their task. If you cannot ban something effectively, then the next best strategy is to legalise it. In this case, the FIA introduced its drag reduction system [DRS] that allows one of the wing elements to be moved, detaching the airflow. It was then decided to use ►



Gap between elements keeps flow attached



Windtunnels are where aero secrets are unlocked

The TotalSim guide to dubious aerodynamic techniques

All the following ideas are feasible on an F1 car although, unlike the fluidic switch principle, they are not necessarily legal. We are unable to say for certain whether they have or have not already been used.

Disappearing Gurney

A Gurney flap, named after racer Dan, is a way of keeping the airflow over a wing energised at lower speeds. However, if you could lose it at high speeds, drag could be substantially reduced. Lewis's suggestion is to attach the gurney to the lower skin of the wing and hold the upper and lower surfaces together at the trailing edge with magnets bonded into the composite. As the pressure drops on the underside of the wing it will eventually peel the magnets apart and pull the gurney down to

below the level of the upper surface. Instant disappearing Gurney. And for my next trick...

Pop the question

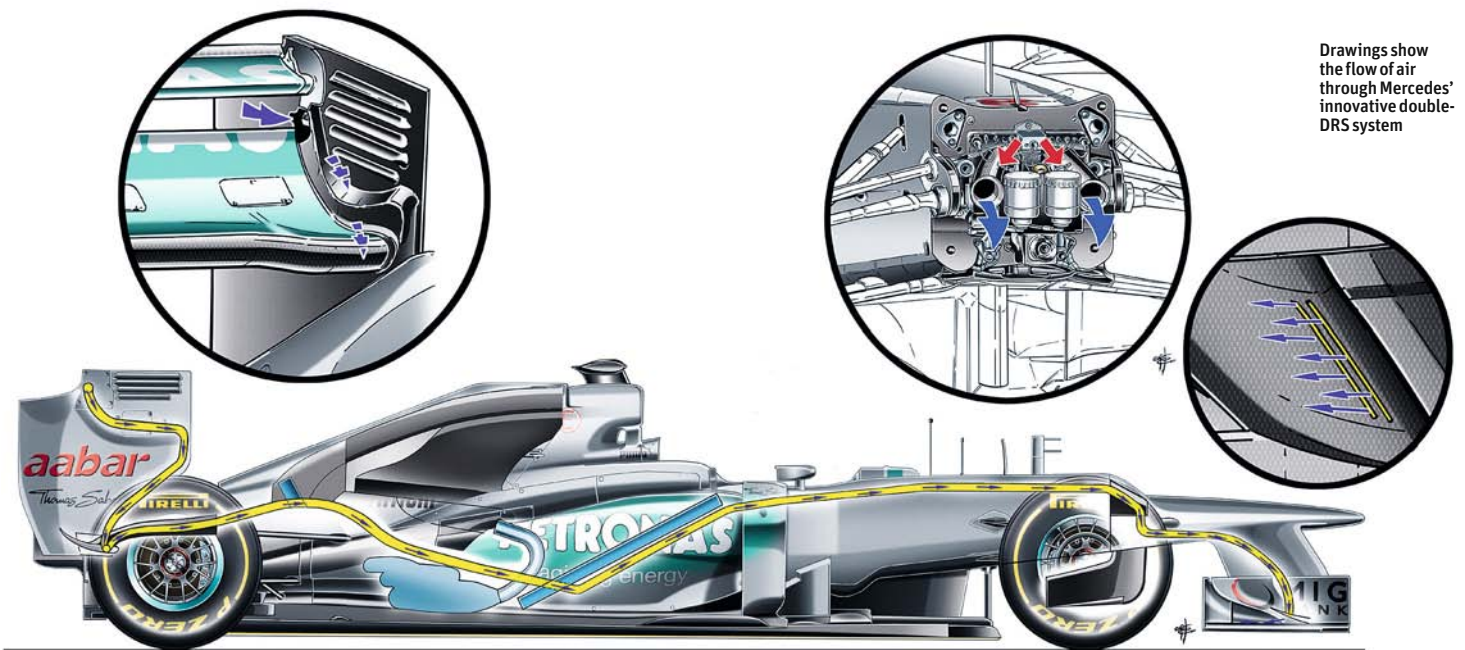
The profile of a wing is crucial to its performance and they are constructed with internal structures to keep them in shape. However, the strength of a structure depends a lot on its form and how loads are fed into it; think of a cardboard tube. A diaphragm can be very strong in one form but, if popped into another mode, can be a lot weaker. Lewis suggests bracing a wing profile with a diaphragm that also separates it into two pressure chambers. If one chamber is open to an area of high pressure, the wing's leading edge for instance, and the other to an area of low pressure, like the underside, then it would create a pressure differential across the diaphragm. This could generate a force strong enough to pop the

panel into a less rigid shape allowing the wing to flex and shed downforce.

A buzz in the air

The junction between airflow and the shape it is following is called the boundary layer and is a complex area of turbulence that can behave in all kinds of strange and unexpected ways. In some scenarios vibrating the surface will cause the airflow to separate and in others it will keep it attached. Either way it offers the potential for the airflow to be managed. Piezo electric cells are electrical devices that can generate high-frequency vibrations in response to an electrical input. If they were invisibly bonded, along with all their wiring, into key areas of aerodynamic surfaces they could be operated electronically to affect the airflow. This idea would perhaps be a little harder to use these days when all the car's wiring has to connect to the standard ECU.

THE AERO EFFECT CRITICAL ADVANCES



Drawings show the flow of air through Mercedes' innovative double-DRS system

◀ it as a device for improving racing and was only sanctioned for use by a following car on a specified part of the course, the DRS zone.

Unfortunately, that means that there were still plenty of opportunities to exploit a covert system of drag reduction. In other words, the game was still on and, if the teams could find a way of managing downforce at speed, then there were still benefits to be had.

The legacy of the McLaren f-duct and its kind in F1 is the fluidic switch. Its principle is that it can sense conditions in one area of the car and use this information to affect the aero in another. On the McLaren, the airflow from the pipe through the cockpit was quite small, but it was used to divert a higher energy flow from the air scoop above the driver's head. That was until the organisers stopped teams using a driver input specifically to alter the aero.

The principle in F1, though, is what is learned is never forgotten and this effect comes up time and again. In the past it has applied to generating downforce off the car's floor using ground effect, materials to cope with the high revs and temperatures demanded by turbo engines, and now it's the ability to tune downforce to the conditions.

Rob Lewis is a man with a strong track record in motorsport aerodynamics. He ran Reynard's CFD department which was acquired by F1 team BAR and then Honda. He takes up the theme. "A fluidic switch can be used as a direct parallel of a computer switch, only bigger. As with a computer, they can be used in combinations to create simple logic circuits. It can be applied to deal with issues like balance shift as you brake. You could build in some intelligent fluidic device that changes the balance as the car pitches."

Lewis believes that in the secretive world of F1 aero, teams are working on ways to sense conditions on one part of the car and use it to influence the behaviour of flow in other areas in increasingly complex ways. Mercedes is already openly using a system, the W-duct,

"A fluidic switch can be used as a parallel to a computer switch, and can be used in different combinations"

Rob Lewis, aerodynamics expert

which senses the state of the DRS on the rear wing and uses it to stall the flow on the front wing. The significant part of this feature is the signal is being transmitted the entire length of the car from the rear wing to the front purely by fluid flow down a pipe. Once you can do this, there is almost no limit to the complexity of aero management you can create.

Lewis highlights a study that has appeared on the internet claiming to show how the Mercedes f-duct was preceded by a more complex system on the Ferrari. It uses the air entering the hole in the extreme front of the nose as the trigger. However, any change in the direction of the entering air greater than one degree is magnified by the structure inside using the coander effect to channel it through one of two alternative routes. These affect the downforce on the left or right hand side of the front wing. Now, not only can this system reduce aerodynamic load on the straights but it can help compensate for weight transfer in the corner. It could even reduce the locking of the inside front wheel in corners under braking by biasing the downforce to that side.

But this, according to Lewis, is just the start. He says we should expect to see more of these ideas coming into play to manage the airflow over the car in ever more sophisticated and complicated ways. Very soon F1 cars could be plumbed with their own internal fluidic computer that can manage the airflow of the car. Most importantly, it will all be done without any moving parts and so will be entirely within the rules. ❖



Rob Lewis: more complex ideas coming into play

VIEW FROM THE TOP

Silverstone has fully re-equipped its race control, giving an unparalleled view of the track and ensuring nothing is missed.
By *IAN WAGSTAFF*



PICS: EBREY/LAT

Every inch of Silverstone can now be monitored

BIG BROTHER CCTV IN ABUNDANCE

There was a time, certainly on the longer circuits, when a driver could have an accident and nobody would even be aware, let alone rush to their aid. Now racetracks employ all-seeing cameras, indeed in the case of Silverstone's latest equipment that could even be described as roving eyes, that ensure every incident can be analysed in the minutest detail.

The Silverstone Wing building was opened last May and, over the winter, the circuit authorities decided to take the opportunity to review on-site race control facilities. "We wanted to make things better, not only for the big events but also for the

rest of the track and the season, to make it more multi-functional," says Michaela Robins, business systems manager for Silverstone Circuits Ltd.

A major investment has been made in the new Race Control, which is to be found in the southern end of the Wing. A small investment – an extension to what already existed – had been made last year simply to get it up and running, but this was only seen as a first step.

Race Control now features the coincidental symmetry of 32 new 32-inch LG monitors as well as three 50-inch incident screens sited above them, all powered by new software. Any incident can be

blown up onto one of the 50-inch monitors. All are connected to the system by HDMI (High Definition Multimedia Interface) and give a perfectly sharp image of what is happening on track. The effect is a veritable wall of video monitors facing a room otherwise filled by three tiers of desks. Previously, Race Control was served by large screens that were split into four. Those working there advised that individual screens for each camera would be more functional and this was taken onboard. The number of turn cameras now is just one more than the 31 of last season although a number of them have been relocated, mainly because of the changes in track ▶



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Michaela Robins has overseen improvement



Silverstone officials now have finger-tip control...



...with the aid of hi-tech computer systems

“We can use it as one race control for one big circuit, or split it and use two for two circuits at the same time”

Michaela Robins, Silverstone circuit

◀ configuration. Other monitors are available for data display, such as timekeeping. The new system also controls the yellow and red lights.

It made sense to improve the National Race Control at the same time. “We needed to look at both simultaneously because we wanted to use the same technology. We can use it as one race control for one big circuit or, if the need’s required, we can split it out. Two individual race controls can therefore be used for two circuits at the same time. This also allows us to decide where we want to put the cameras,” said Robins. National Race Control in the old Jimmy Brown building has, therefore, been upgraded with 26 new 32-inch monitors, replacing the old CRT (cathode ray tube) screens.

Silverstone has partnered up with one of the UK’s major players in CCTV for their surveillance operation, Vital Services, which supplies to the likes of Network Rail. Vital Services has worked on the project with BGN, a network and data communications specialist that is also concerned with the implementation of cameras at the Circuit of the Americas at Austin, Texas. Through its Secure Systems operation, Vital Services provides the Digilive software that controls the video wall including which type of display is used and how the camera is controlled.

Every track camera has been replaced by Sony IP (internet protocol) cameras across the system. These give greater flexibility; all are PTZ (pan, tilt,

zoom) controlled, with 28 megapixels, so that Race Control can zoom into an incident. “We can even pan them round to the crowds if we want to,” said Robins. “The old cameras were nowhere near as sophisticated as what we have now.”

Everything is recorded onto the system with instant playback available for the clerks of the course. There are also running feeds into the hospitality boxes and a link into the medical centre, enabling the team there to be involved while the recovery is still happening.

The monitoring and recording equipment can also be used for all on-track activity, not just racing. An incident within the racing school was recently recorded, which enabled the instructor to pop into Race Control and determine his own reasoning for the cause, literally frame by frame. “It’s such a much more intuitive, useful system,” observes Robins.

Both the old and new systems were run simultaneously during the change-over period. Work was finished in time for the Blancpain Endurance event on June 2-3, although the system was first trialled the week before at the MGCC meeting. Following this, fine-tuning took place before its first major test over the weekend of the British MotoGP. During this period, Vital Services still had people on site to guide through the process of changing over systems. “It’s a learning exercise for us,” admits Robins, “but all the chief incident officers have now been trained in the system. It’s

a lot smoother and quicker and so it is now just a matter of refining the system to our needs.”

Silverstone’s internal Race Control team operates the system with the clerks of the course, as supplied by the race organiser, sitting behind them in the tiered desks. If the latter notice anything on the screen, the Silverstone operators can then zoom in on the particular camera. If an incident needs to be recorded this can be bookmarked and then sent to whoever needs the information. A sequence of camera recordings can then also be quickly picked up if the incident has been covered by more than one camera. At the time of writing, all information was being recorded 24 hours a day.

During this year’s British Grand Prix 14 people will be present in the Race Control room, of which three will be Silverstone Circuits staff. Six incident management people are employed full-time at the track while a number of individuals also work for the company on a daily basis. Heading the operation is health and safety manager Lesley Cox, along with Adrian Rhodes, who has been a major part of the project carrying out all the user testing and acting as safety team co-ordinator.

Now both safety and conflict resolution can be carried out faster and more efficiently at the UK’s premier circuit. It will make the drivers safer, but it may also make it harder for them to deflect the blame... ❧

BALANCING ACT

Tyre management is a key factor in F1 and a vital part of that process is brake technology. Bruno Senna's Williams race engineer Tom McCullough explains the correlation to **CHARLES ARMSTRONG-WILSON**

Nobody would argue that all the Formula 1 teams have found the latest generation Pirelli tyres challenging to say the least. But it may surprise some people to know one of the most important tools in managing those tyres is the brakes. Or, more precisely, rear axle torque control - according to Tom McCullough, Bruno Senna's race

engineer at Williams.

The challenge is to achieve just the right amount of torque on the rear axle under braking that is key to balancing the work the tyres have to do. "If the tyres are brand new and you are in a qualifying mode, you can be quite aggressive with the braking torque on the rear to get the front end of the car into the apex, because the rear tyres ►



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Senna locks the unloaded front tyre on his Williams

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◀ can take it," says McCullough. "But when you get into a racing mode, especially at circuits like Montreal with no high-speed corners, rear tyre degradation is dominant, especially with the Pirellis, and front tyre wear is minimal. These Pirellis are not worn out by big braking episodes in a straight line so the front tyres have a very easy time but we want to manage the rear tyres."

McCullough explains the importance of having a strategy for the different braking scenarios. "We think of it in two phases; straight-ahead and turning in. In a straight line at speed you can generate a lot of longitudinal *g*-force but are limited by the tyres and the grip they can generate with the changing levels of downforce."

Despite the aerodynamic loading, a driver can still lock all four wheels at maximum speed. Then the vertical loading drops by as much as two thirds during the braking event before turning in unloads the inside front wheel. "Drivers drive to the grip they have," explains McCullough, "so initially they can hit the brakes very, very hard then reduce pressure [as downforce reduces]." It all sounds very straightforward, but for the race engineer the challenge is to balance the braking

"For the race engineer the challenge is to balance the braking front and rear during the braking event"

Tom McCullough, Williams

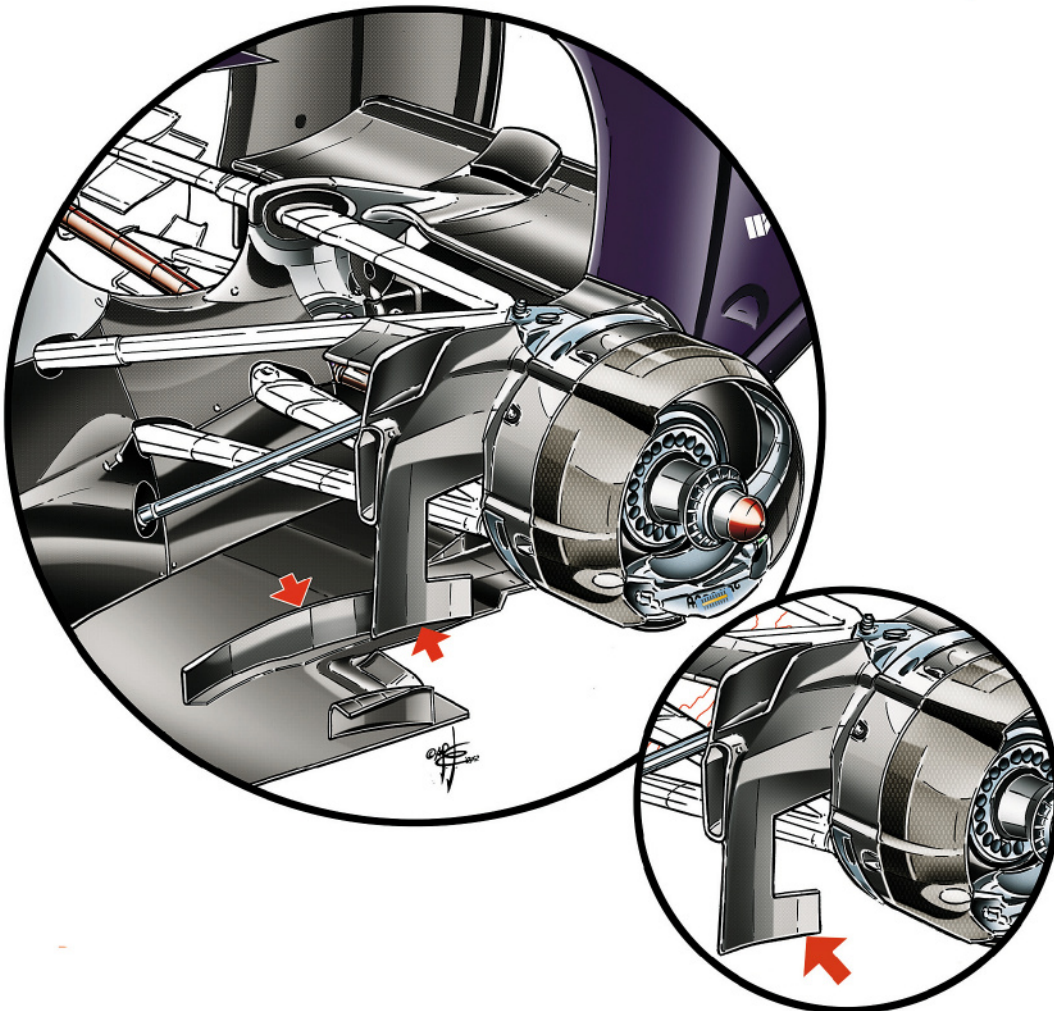
effort front and rear throughout the braking event so that the driver gets maximum effect with the desired balance for managing the tyres.

"The main three things to control this are hydraulic brake balance, KERS harvesting strategy and engine torque control," says McCullough. "Ultimately the sum of all those do the same thing but you can, for instance, reduce brake bias and increase KERS harvesting strategy to get the same braking effect. You can play with all these to get what becomes a balancing tool for the car as well."

The rules say during the race the hydraulic brake balance can only be altered by the driver [see panel] and may not be preset to change automatically in response to an outside factor like a locking wheel. There was a time when ▶



McCullough works closely with Senna



Brake ducts are a key aerodynamic part too

That lever, what does it actually do?

Thanks to in-car footage, we have all seen the drivers, particularly in the Mercedes, shifting a lever on the left between corners. But what exactly does it do? McCullough explains: "Not every corner you come to wants the same hydraulic brake balance, so we have a quick shift brake balance."

At the end of a long straight, a car can brake very hard thanks to the high aerodynamic downforce and generate as much as 4.5*g* deceleration. This results in major weight transfer onto the front tyres and off the rears. To pull the car up as quickly as possible, you need most of your braking effort on the fronts. Otherwise, if the rears lock early, the driver has to reduce his braking effort long before the fronts are anywhere near their maximum.

Conversely, entering a slower corner where the braking is not in a straight line, you cannot generate high deceleration and weight transfer. In this situation, if you have too much brake bias towards the front, they will lock long before the rears are anywhere near the limits of their grip. "On our car we have a brake balance knob that can generically move the base point plus or minus three per cent, so a six per cent range," says McCullough. "There are some tracks where it's not really worth too much but then there are some tracks, Malaysia is one, where there are two pretty difficult corners with very laterally loaded entries.

"A lot of the teams have similar things. When Rubens [Barrichello] came to us from Brawn, he said, 'Your brake balance is very hard to adjust between corners.' We told him that we didn't really adjust it between corners; he said, 'Well you need to.' So we designed a system and now every driver does it, and says, 'Yes it's really good'. It was actually something that Rubens took from Ferrari to Honda."

The one in the middle wins races



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Front/rear brake bias is driver-adjustable

◀ proportioning valves that changed under pressure and other variations on that theme were tried.

“Teams have played with those over the years,” McCullough reveals, but admits, “there’s not that much in all those things. You can limit front and rear efficiency with a touring car type valve like you see BTCC drivers using to prevent rear locking when you hit the pedal. Initially it just cuts off the rear pressure above a certain rate.

“But sometimes in F1, keeping things simple can really help you. Although we go through phases of people coming up with a hydraulic system that does this, that and the other, ultimately our current philosophy is not to use too many of those things. We have one of them fitted to our car and play with it every now and then, but generally we don’t normally use it.”

That leaves KERS harvesting and engine braking as the main tools to modulate the brake bias. “The engine torque can be controlled by modifying the over-run map. Within the rules we can move the throttle, ignition spark and fuel several degrees. If we want to, we can go to what we call full motor torque which is as much of a handbrake as you can make the engine be, or we can power the engine so you lock the front wheels and miss the corner.”

And then there is KERS. “The driver will

have a whole set of multiknobs on the steering wheel with eight different positions. We don’t use all of them, probably half. When you get to somewhere like Montreal, the way the tyres work and the track evolves, then the way you run the car in first practice and then in qualifying is all very different. You need your drivers to understand it a bit as well because you can’t do it all from the pitwall. You have to educate them to know what is the best thing to do to get the best total axle torque control.

“The driver just feels the torque control within the rear which, in effect, is between the hydraulic brake balance, KERS harvesting and the engine control. We can play around with those three factors and he feels the same. However, if you were not harvesting enough KERS, your battery would run out leaving you without KERS for the rest of the race. You are juggling your recovery rate against not upsetting the car balance in the race. Perhaps you know that at this stage in the race the tyres are good so you can get away with that, but when you are going to make them do 48 laps to the end of the race it changes.”

It all adds up to a strategy for getting the car stopped as quickly as possible and to achieve that, these systems all need to work in perfect harmony. ❁

Living in a material world

Another tool the engineer has available to modify the brake balance during the braking event is the disc and pad material.

“We work closely with Carbone Industrie,” says McCullough, “and because they design and manufacture discs you can tailor exactly what you get from the disc and pad characteristics. You can adjust the temperature range those systems are working at to affect their coefficient of friction and bite peak.” It is even possible to use the point at which the material becomes heat saturated and fades as part of the balance strategy.

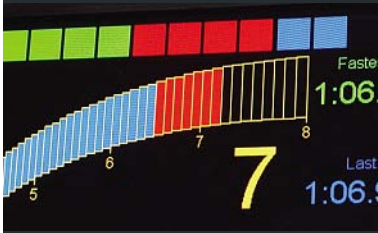
McCullough explains. “For example, at Monza when you are braking really hard in a straight line, you want the initial peak to hit you when the downforce is really high so the driver can brake very, very late. Then, as the speed comes off and the downforce drops, sometimes you want the rear material to saturate more than the fronts because the rear starts to get a bit light as the load comes off and you start to suffer a bit from locking. There we can select different disc and pad combinations and also adjust the temperature range that those materials are working in.

“We take the discs and pads to the AP Racing brake dyno in Coventry and characterise the material at different temperatures and energy-level inputs, with different inertias to simulate different fuel loads. We then can build up a balance model. The material is very repeatable with very tight tolerances. Five or 10 years ago it had a very big scatter but now they are all within a very tight tolerance zone so we have consistency.

“When you work with someone like CI you have all these extra tools. Their philosophy is ‘tell us what you want and we’ll make it’. That’s why we like working with them because when you come into changing tyres or different engine rules, they have a group of people who just design and manufacture discs and pads for F1. It’s a great place, like a mad scientist’s lab.”



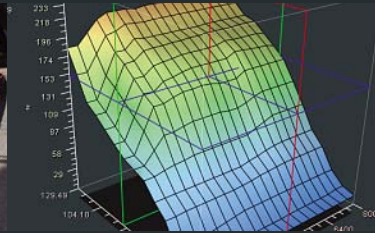
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**MORE THAN AN ECU
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McLaren ECU is spec unit in Formula 1



SINGLE MINDED

There is one thing all F1 cars have in common: the standard ECU. It aims to keep them under control, but just how much freedom do they still have?

By **CHARLES ARMSTRONG-WILSON**

Biologically speaking, the wiring of a grand prix car is its central nervous system and the ECU is its brain. Traditionally ECU stands for engine control unit but the unit this term describes in a Formula 1 car is so much more. Even McLaren's description of a powertrain control unit sells it short.

Since 2008, all F1 cars have used the same spec ECU, a unit supplied by McLaren Electronic Systems, and known colloquially among the teams as the

standard ECU or 'SECU'. It came about thanks to the impossibility of policing the in-house generated code that teams used to manage their cars.

McLaren Electronic Systems' MD Peter van Manen explains. "The McLaren ECU is both mechanically and electronically locked. The mechanical lock is a seal that can be easily checked by sight while the electronic lock is a system that will not allow the unit to run if it does not recognise the software installed. That ensures only FIA ►



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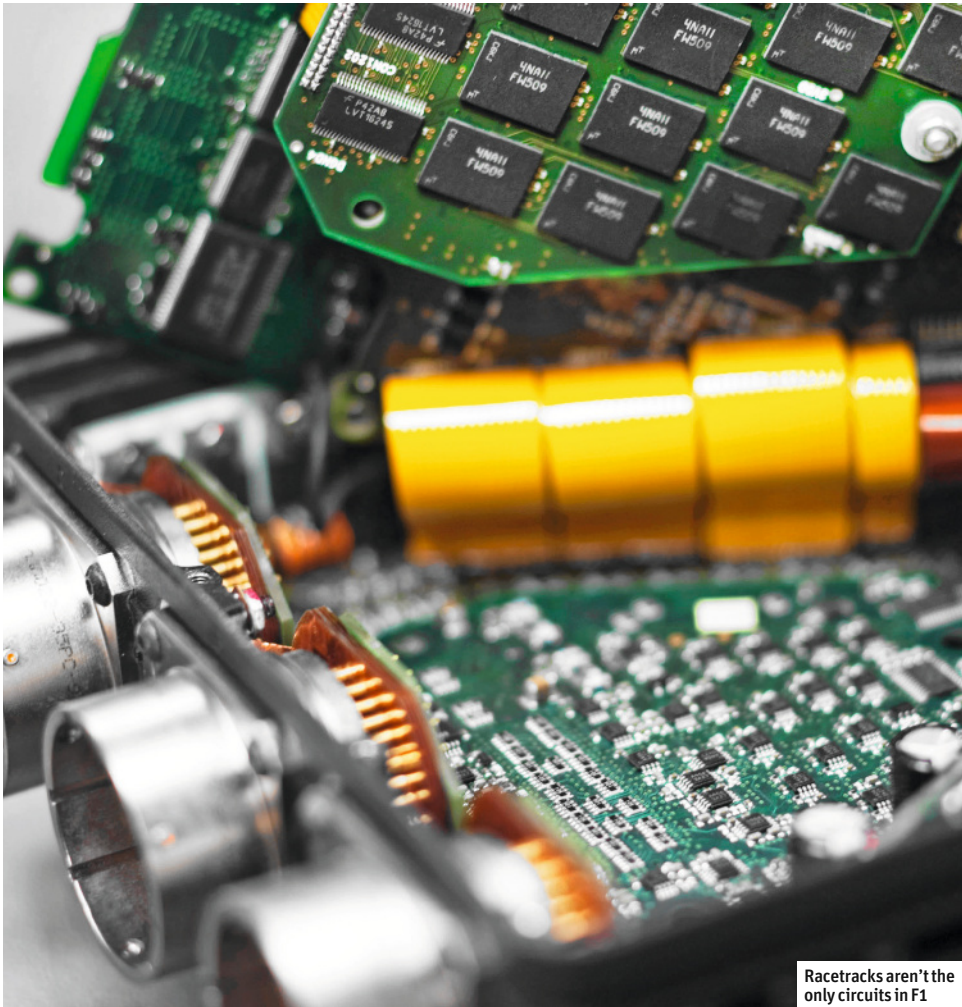
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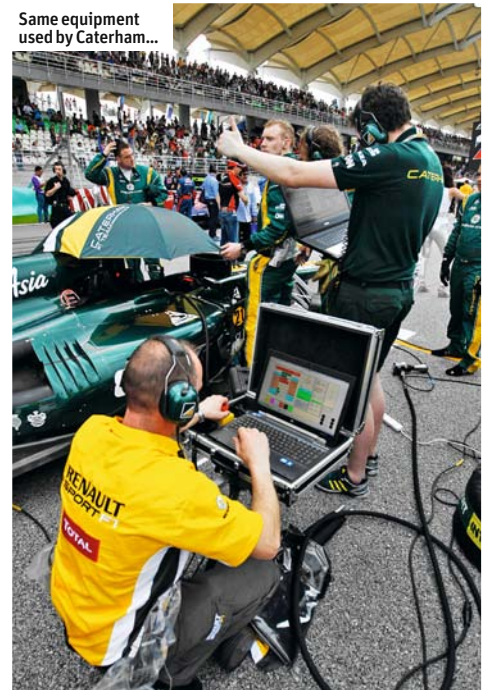
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Racetracks aren't the only circuits in F1



Same equipment used by Caterham...



...as it is by ECU maker McLaren

◀ approved software can be run on the unit.” However, despite being a ‘spec’ part, the SECU is still a very impressive bit of digital technology. According to van Manen, the job of the SECU is to manage the flow of torque and data. However, to unpack that simple statement, it manages everything in the drivetrain plus all the sensors that acquire data either to manage the drivetrain or to be supplied to the engineers.

Starting at the front of the engine, the cars have a throttle by wire system with no mechanical link between the pedal and the engine. So the SECU is sent information by a position sensor at the pedal and uses that to control how far hydraulic actuators open the throttle barrels. But the relationship between the two does not have to be linear and teams can write a map dictating how far the throttles open for each degree of movement of the pedal. This allows them to put the most pedal movement where the greatest sensitivity is needed. The only restriction is the rules that demand the relationship between the two must always be the same and not change during the race. In other words, no closed loop method for helping the driver cope with wheelspin.

Next the SECU has to control the amount of fuel injected, when it is injected and when the spark ignites it. All these parameters are crucial for maximum power and economy. But conditions are changing all the time depending on everything from what the driver is asking the engine to do at

The sensors on the drivetrain detect positions, pressures and temperatures at all times. If anything’s not right, it can flag a warning or stop engine

the time to changes in ambient conditions such as air temperature. The fuel-air ratio is detected by a sensor in the exhaust to further adapt and compensate.

So, in addition, teams can also populate maps to compensate for conditions that overlay their basic fuel and ignition maps. All this is not dissimilar to a road car, but the big difference is an F1 engine is a V8 revving to 18,000rpm. That means all these calculations have to be done 150 times a second.

At the back of the engine, the SECU controls the car’s multi-plate, carbon clutch. Like the throttle, there is no mechanical link with the driver who operates a paddle behind the steering wheel. Again a position sensor sends data to the SECU that controls a high-pressure hydraulic system at 250Bar operating the clutch. Like the throttles, the relationship of the paddle to the clutch can be mapped for maximum sensitivity around the biting point. Despite this, van Manen is still fascinated by the fine control required from the driver during the noise and adrenalin of the start of the race.

Putting it in computer terms, “their bandwidth is impressive”.

Next job on the route to the rear wheels is managing the gearbox. Since around 2003, F1 cars have run various versions of what in the paddock are called seamless shift transmissions. Before then a typical F1 gearshift would take about 1/40th of a second. But when engineers started adding up all the lost acceleration time due to gearchanges in a lap it came to a number big enough for them to start worrying about it.

Now an F1 gearbox will shift without any loss of drive. The trick is to operate alternate ratios on separate selectors so that the next gear can be pushed into engagement before the previous one has been fully disengaged. Normally this would mean instantaneous destruction but the secret is very precise timing, snatching the previous ratio out of engagement before the backlash catches up.

Pulling it off requires very careful mapping to manage the movement of the selectors to keep everything a hair’s breadth from disaster. As the car drives from the garage to the grid, the SECU is monitoring the position sensors on the gears to work out exactly where the engagement dogs are. That way, when it has to select a gear in the heat of battle, it knows precisely when to fire the new ratio into engagement and avoid dogs hitting each other. The result is perfect engagement every time with no mis-shifts.

Finally, the SECU manages the hydraulic ▶



All seems to be working correctly



Gearbox needs careful monitoring by SECU

◀ pressure on the car's limited slip differential although these days that is a very limited task as the rules have eliminated anything too fancy.

To achieve all these tasks the drivetrain is covered with sensors that can detect positions, pressures and temperatures at any moment in time. Not only do they feed information back to the SECU to allow it to run the engine, but also to check everything is as it should be and look out for any problems brewing. If something is untoward then it can do anything from flag up a warning to shutting down the engine.

Every sensor needed to run the car also has a back up. They constantly run fidelity checks on each other to make sure they are operating as they should. If a problem is detected with one sensor, the SECU can switch to another or take the data from an equivalent source. So, if the crank position sensor fails, it switches seamlessly to a second one. If the cam position sensor fails it can defer to the crank sensor allowing the engine to still be started. The idea being that no single-point failure should ever stop the engine running.

Teams collect data from all over the car and the SECU can record data from up to 512 parameters at any one time from more than 120 different sensors. It can also measure each of those parameters at up to 1000 times a second although ultimately the unit is limited by its total throughput. To make the best use of this limited capacity, teams will create their own logging sets depending on what they need to know.

Some items will be recorded continuously a number of times per second or triggered to capture bursts of information at moments of rapid activity. During a gearshift, for instance, a lot of data can be logged very quickly during and after the shift then, for the rest of the time, be logging at a lower rate. Other parameters may be gathered a number of times each revolution of the engine reducing the amount of data gathered at low revs.

To connect to all these sensors, the SECU has three massive 100-way, military standard connectors that accept plugs from the car's loom. But, at the extremes of the car, each corner has a remote data collection box linked to the SECU by

a high-speed data connection. Each of these can gather data from the wheels and brakes including wheel speed, brake temperature, brake pressure and even tyre temperature and pressure.

In total the car will log about 1.5GB of data during a race, or about 750 million numbers, almost all of which will be transmitted in real-time back to the pits via telemetry. Then when the car is back in the garage and plugged into an umbilical, it compares what has been received with what is still on the car and uploads the difference. In theory that covers any loss of telemetry but, as van Manen points out, "since we put a telemetry system on the car in 1993 we have never lost it in a race".

Teams generally like to get the data back to the pits as quickly as possible because they never know what questions they will have to answer in the race. Also, should anything untoward happen to the SECU in the race, they will still have the precious data to take home and, with restrictions on testing, that has never been more important.

To handle all this activity requires four 32-bit processors. Two are input/output processors that are very similar to the ones that you would find in a road car and run at 60MHz clocking speeds. They are preferred for this task because they come equipped with handy extras built in, like timer processor units and on-board flash memory. The other two are network type processors, running at 300 and 400MHz, respectively, that are better at doing large amounts of very rapid calculations, essential for managing the engine and gearbox and processing data.

The code run on the SECU is C, mainly automatically generated from model-based representations of the control system. C is a low-level coding language that keeps the burden on the processors lower. Speed is everything.

Since it was introduced in 2008, the teams have adapted well to the limitations imposed by the SECU and policing has become much easier. Most importantly, it creates a more level playing field. A SECU from an HRT could be fitted to a Red Bull and, once the appropriate maps have been uploaded, it would run the car perfectly. It aims to control the teams without restricting them. ❧



Xtrac is gearbox supplier in open F1 market, but they need SECU

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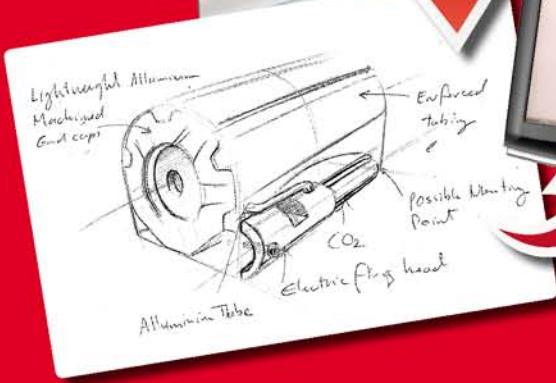
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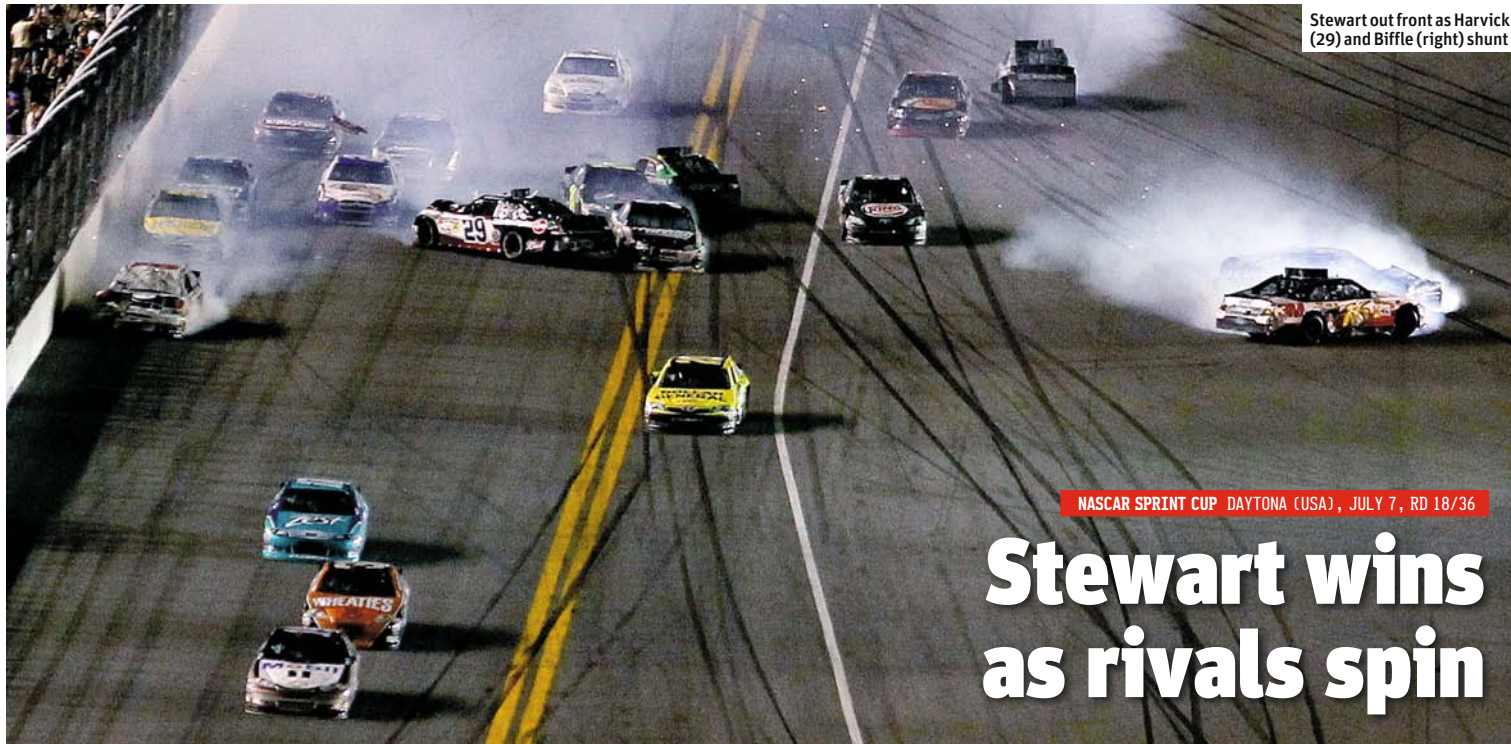


INTERNATIONAL RACES & RESULTS
NASCAR SPRINT CUP
 Daytona (USA), Rd 18/36

QUICK RESULTS
 → Winner **Tony Stewart**
 → Pole **Matt Kenseth**
 → Most laps led **Kenseth**
 → Points leader **Kenseth**

RACE RATING Late-race drama compensated for soporific opening stages
 ★★★★★

REPORTS
WORLD OF SPORT



Stewart out front as Harvick (29) and Biffle (right) shunt

NASCAR SPRINT CUP DAYTONA (USA), JULY 7, RD 18/36

Stewart wins as rivals spin

AS TONY STEWART WAS completing a remarkable back-to-front run to victory at Daytona, all hell was breaking loose behind him. The owner/driver had worked his Chevy into the lead, helped along the way by drafting partner Kasey Kahne. During the final sprint to the flag, following a 'big one' caused by Denny Hamlin's Joe Gibbs Racing Toyota being set spinning into the pack, Stewart and Kahne were out front and on the outside groove. On the inside was the Roush Fenway pair of Matt Kenseth and Greg Biffle. With Kenseth on point, their Ford Fusions had been the class of the field for the majority of the race until they were separated during green-flag pitstops. Back in tandem they had a great run

until Stewart was given an almighty bump that propelled him into the lead. With one corner to go, it was every man for himself and the Roush pair split, and found themselves three-wide as Kevin Harvick slotted his Richard Childress Racing Chevy underneath. Light contact between Kenseth and Biffle sent Biffle pinballing into Harvick and sparked chaos as pretty much all the field was involved. Blissfully unimpeded, Stewart claimed his 47th Cup win. "This is 18 wins at Daytona - we just haven't got the right one [the 500] yet," said Stewart, who started the race 42nd. "But all of 'em are special, and it's cool to do this. I don't even remember what happened on that last lap. I stayed in

that second lane and just tried to get the 17 [Kenseth] and the 16 [Biffle] pulled apart. Once we got them pulled apart, it gave us a run on the outside." Jeff Burton, who'd produced an amazing save in his RCR Chevy just a lap before the end, found a way through the debris to take second, while Kenseth was able to extend his points lead by taking third. Hendrick's Dale Earnhardt Jr, second in the points, was delayed in the Hamlin smash and finished 15th, while Biffle's battered car was classified 21st. Jimmie Johnson was taken out in the first big crash of the race when his Hendrick Chevy was sent spearing into the infield wall at pace. ● Connell Sanders Jr

KURT BUSCH GRABS NARROW NATIONWIDE WIN
 Cup racer Kurt Busch scored a narrow Nationwide win at Daytona, beating Ricky Stenhouse Jr by just 0.054s. Richard Petty protege Michael Annett scored a career-best third



RESULTS 1 Tony Stewart (Chevrolet Impala), 160 laps in 2h32m14s; 2 Jeff Burton (Chevrolet), +0.111s; 3 Matt Kenseth (Ford Fusion); 4 Joey Logano (Toyota Camry); 5 Ryan Newman (Chevy); 6 Carl Edwards (Ford); 7 Kasey Kahne (Chevy); 8 Brad Keselowski (Dodge Charger); 9 Michael Waltrip (Toyota); 10 Bobby Labonte (Toyota). **Points** 1 Kenseth, 676; 2 Dale Earnhardt Jr, 651; 3 Greg Biffle, 632; 4 Jimmie Johnson, 618; 5 Stewart, 592; 6 Kevin Harvick, 586; 7 Denny Hamlin, 584; 8 Martin Truex Jr, 584; 9 Keselowski, 573; 10 Clint Bowyer, 572.

CURRENT STANDINGS

- 1 **Sebastian Vettel** ◇ 25,205
- 2 **Mark Webber** ◇ 20,662
- 3 **Fernando Alonso** ▲ 20,120
- 4 **Lewis Hamilton** ▼ 19,582
- 5 **Jenson Button** ◇ 17,288

Ranking the world's best drivers
WHAT HAPPENED THIS WEEK
 Tony Stewart's Daytona win means he leapfrogs Jimmie Johnson to become the highest-placed NASCAR driver in the rankings, up two spots to eighth. He's just ahead of Johnson, Carl Edwards and Matt Kenseth, as all vault above IndyCar star Scott Dixon.
 To see the full list, visit castroldriverrankings.com

PICS: WARSHAW/GETTY, LAT SOUTH

- LMP1 Luhr/Graf
- LMP2 Dyson/Smith
- LMPC Bennett/Braun
- GT Bergmeister/Long
- GTC MacNeil/Keen



Great comeback by Pickett's team, but GT battle nixed by safety car

AMERICAN LE MANS SERIES LIME ROCK (USA), JULY 7, RD 4/10

Luhr and Graf rock it up with a dash of Lime

LUCAS LUHR AND KLAUS

Graf capped an amazing comeback for Greg Pickett's team at Lime Rock to beat Dyson Racing.

The Lola-Mazda of Chris Dyson and Guy Smith trailed by eight seconds when a late safety car period assured the victory for the Muscle Milk HPD ARX-03a.

After falling four laps behind due to an electrical gearbox glitch and a speeding penalty on the pit road, Luhr and then Graf regained enough ground to take advantage of two full-course cautions. Graf set a lap record during his portion of the comeback and, on a restart with 30 minutes remaining, he came through to catch leader Smith on the outside on the front straight.

"I knew that was our

only way around, but passing on the outside, that's always a little sketchy," said Graf.

The LMP2 contest went to Christophe Bouchut and team owner Scott Tucker in the Level 5 Motorsports HPD. A slow pitstop for the Conquest Endurance Morgan-Nissan put the Level 5 entry into a lap by itself when Tucker got on board. He was chased down by Conquest's Martin Plowman, but the safety car enabled Level 5 to hang on.

Patrick Long put the Flying Lizard Porsche well in front in GT with a fuel-and-go stop on his Michelins. The final safety car period precluded the race to the chequers in the GT class. Long's co-driver Jorg Bergmeister held off the Corvettes of Jan Magnussen and Oliver Gavin over the closing stint.

Scott Sharp recovered to

fourth in GT in the Extreme Speed Ferrari after a clash with Butch Leitzinger's LMPC. CORE Autosport's duo of Jon Bennett and Colin Braun won in LMPC for the second straight race.

● Jonathan Ingram

RESULTS

1 Lucas Luhr/Klaus Graf (HPD ARX-03a), 168 laps in 2h45m31.207s; 2 Chris Dyson/Guy Smith (Lola-Mazda B12/60), +12.392s; 3 Scott Tucker/Christophe Bouchut (HPD ARX-03b); 4 Martin Plowman/David Heinemeier Hansson (Morgan-Nissan); 5 Jonathan Bennett/Colin Braun (ORECA FLM09); 6 Alex Popow/Tom Kimber-Smith (ORECA). **GT 1 Jorg Bergmeister/Patrick Long (Porsche 911 GT3-RSR)**; 2 Jan Magnussen/Antonio Garcia (Corvette C6.R); 3 Oliver Gavin/Tommy Milner (Corvette). **Points**
LMP1 1 Luhr/Graf, 82; 2 Chris Dyson/Guy Smith, 74. **GT** 1 Gavin/Milner, 72; 2 Magnussen/Garcia, 64; 3 Dirk Muller/Joey Hand, 60.



Luhr and Graf flexed muscles

Yacaman leads Saavedra



INDY LIGHTS TORONTO (CDN), JULY 7, RD 8/12

Yacaman makes Team Moore merrier

GUSTAVO YACAMAN

capitalised on a disastrous race for the two main title contenders to claim the win in the Indy Lights round on the Toronto street circuit.

The Team Moore driver spent much of the race in an all-Colombian battle with Sebastian Saavedra (Andretti Autosport) after Sam Schmidt Motorsports' top two drivers in the points standings, Esteban Guerrieri and Tristan Vautier, managed to collide on the opening lap. Vautier sustained suspension damage that pitched the Frenchman into the wall a

couple of corners later, while Argentinian Guerrieri had to pit for a new front wing.

"That was a wild first corner," Yacaman said. "I'm not sure what those guys were thinking. We're not in bumper cars, you know? I got hit from behind and got bounced around but nothing happened to me or my car."

Guerrieri, meanwhile, lost even more time during a caution period when the pace car picked him up instead of the race leader, forcing him to hold station before the error was detected and he was waved past to rejoin the back of the field. Despite the

setback, he was able to rally back to sixth.

The removal of two Schmidt drivers from the equation still left another two of the team's drivers to deal with for Yacaman and Saavedra. One of them, Victor Carbone, had started from pole. He was dispatched by both drivers in short order after just over a dozen laps. The other, Britain's Oliver Webb, spent almost the entire race trying in vain to take fourth from Irishman Peter Dempsey.

● Mark Glendenning

RESULTS

1 Gustavo Yacaman, 50 laps in 59m21.0045s; 2 Sebastian Saavedra, +2.287s; 3 Victor Carbone; 4 Peter Dempsey; 5 Oliver Webb; 6 Esteban Guerrieri. **Points** 1 Guerrieri, 316; 2 Tristan Vautier, 295; 3 Saavedra, 284; 4 Yacaman, 269; 5 Carbone, 253; 6 Carlos Munoz, 218.

INTERNATIONAL RACES & RESULTS

V8 SUPERCARS

Townsville (AUS), Rd 7/15

QUICK RESULTS

- Winners **Jamie Whincup (x2)**
- Pole **Mark Winterbottom/David Reynolds**
- Fastest lap **Craig Lowndes/Winterbottom**

RACE RATING Great scrap between Triple Eight team-mates

REPORTS

WORLD OF SPORT



Whincup leads Lowndes in T8 fight

V8 SUPERCARS TOWNVILLE (AUS), JULY 7-8, RD 7/15

Whincup is still the main man about Town

THERE HAVE BEEN EIGHT V8 Supercar races at the Reid Park street circuit in Townsville and Jamie Whincup has won five.

The triple champion took both races in northern Queensland to extend his points lead, but the manner of the wins was completely different. Whincup's Saturday success came in a fuel race, he and Mark Winterbottom stretching their final fuel load three laps further than a usual range. On Sunday, he had to come

from a season-worst ninth on the grid to lead, aided by excellent pitwork.

Whincup definitely got the best fortune of the Triple Eight drivers. Craig Lowndes was forced to queue behind his team-mate in the pitlane on Saturday and then lost a spot to Whincup on Sunday when he accidentally activated his pitlane speed limiter when they were fighting for fourth. So close and intense was the battle for the win that it proved the pivotal moment in the race.

For much of Sunday it looked like David Reynolds would break through for his first V8 win. From his maiden pole position, the Ford driver looked comfortable but, when he lost four places in the second pit cycle, his winning hopes were dashed.

Jacques Villeneuve had mixed luck in his first weekend as a V8 Supercar racer, parking with an oil leak on Saturday and finishing 24th on Sunday.

● Phil Branagan

RESULTS

Race 1 Jamie Whincup (Holden Commodore VEII), 72 laps in 1h36m36.6067s; 2 Mark Winterbottom (Ford Falcon FG), +1.1504s; 3 Garth Tander (Holden); 4 Fabian Coulthard (Holden); 5 Craig Lowndes (Holden); 6 David Reynolds (Ford). **Race 2** Whincup, 72 laps in 1h33m49.2414s; 2 Lowndes, +1.8437s; 3 Will Davison (Ford); 4 Tander; 5 Winterbottom; 6 Reynolds. **Points** 1 Whincup, 1794; 2 Winterbottom, 1694; 3 Davison, 1654; 4 Lowndes, 1496; 5 Shane van Gisbergen, 1280; 6 Tander, 1239.

IN BRIEF



Hawksworth on top

STAR MAZDA

Championship leader Jack Hawksworth won both races in the Star Mazda double-header at Toronto. The Brit finished ahead of Zach Veach and Gabby Chaves in the Saturday race, and Juan Piedrahita and Sage Karam on Sunday. He now leads rival Connor de Phillippi by 39 points with just three rounds left to run.

ITALIAN F3

French Ferrari protege Brandon Maisano won the opening two Italian Formula 3 races at Misano. His Prema team-mate Eddie Cheever followed him home in both races and made it a hat-trick of seconds in race three, which was won by the JD Motorsport Mygale of Riccardo Agostini. Maisano was third.

FORMULA RENAULT NEC

British drivers dominated proceedings in the Formula Renault Northern European Cup at Oschersleben. Fortec driver Josh Hill won the first two of the three races, with Manor MP Motorsport's Jordan King coming second in both races. Jake Dennis made it a clean sweep for Fortec by winning race three from Hill and now leads the drivers' points.

GERMAN F3

With two wins for Swede Jimmy Eriksson and one for Japanese Kimiya Sato, the Lotus team (formerly known as Motopark Academy) was unbeatable in the third weekend of the German F3 Cup at Oschersleben. In the first race, Eriksson was followed home by Australian Mitchell Gilbert (Performance Racing) and Tom Blomqvist (Euro International).



Eriksson took a double

FIA GT3 EUROPEAN CHAMPIONSHIP ALGARVE (P), JULY 7, RD 4/6

Merc and Lambo fit the Algarve to a tee

HONOURS WERE SHARED

between the Heico Gravity-Charouz Mercedes and Leipter Lamborghini squads in the FIA GT3 European Championship races at the Algarve circuit.

The Charouz squad's pair of Mercedes SLS claimed a one-two victory on Saturday, Maximilian Buhk and Dominik Baumann leading home Mika Vahamaki and Max Nilsson. The third-placed Leipter Lamborghini Gallardo shared by Hari Proczyk and David Mengesdorf then came out on top on Sunday.

Buhk and Baumann led all the way in race one, despite a 15s time penalty for winning the previous race at Navarra in May. Nilsson was tapped into a spin at Turn 2 on the opening lap, but fought his way back to fourth, then the Swede took second from Stefano Gai's AF Corse Ferrari 458 straight after the mid-race pitstops.

Baumann lost out to a fast-starting Proczyk off the line in the second race before retaking the lead and pulling out a 10s lead ahead of the driver changes. A clutch problem delayed the car in the pits, leaving Buhk fifth.



Merc of Baumann and Buhk took first race

Local star Ni Amorim led after the stops in the Novadrivier Audi R8 LMS ultra he shared with Cesar Campanico but lost top spot to Mengesdorf a couple of laps later. The Portuguese held onto second ahead of Gaetano Ardagna Perez and Giuseppe Ciro in the second AF Corse Ferrari.

● Gary Watkins

Race 1 Maximilian Buhk/Dominik Baumann (Mercedes SLS GT3), 33 laps in 1h00m56.585s; 2 Max Nilsson/Mika Vahamaki

(Mercedes), +10.340s; 3 David Mengesdorf/Hari Proczyk (Lamborghini Gallardo GT3); 4 Michael Lyons/Stefano Gai (Ferrari 458 Italia); 5 Ni Amorim/Cesar Campanico (Audi R8 LMS); 6 Marc Sourd/Gregory Guilvert (Audi).

Race 2 Mengesdorf/Proczyk, 33 laps in 1h01m00.162s; 2 Amorim/Campanico, +5.250s; 3 Gaetano Ardagna Perez/Giuseppe Ciro (Ferrari); 4 Lyons/Gai; 5 Buhk/Baumann; 6 Miguel Toril/Sergey Ryabov (Ferrari). **Points** 1 Baumann/Buhk, 129; 2 Perez/Ciro, 110; 3 Proczyk/Mengesdorf, 109; 4 Gai/Lyons, 108.

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INTERNATIONAL RACES & RESULTS

IRC
San Marino (RSM),
Rd 7/13

QUICK RESULTS

→ **Winners Giandomenico Basso/Mitia Dotta**
→ **Most stages wins Andreas Mikkelsen/Ola Floene**
→ **Points leader Mikkelsen**

RACE RATING A great fight between two very different cars
★★★★☆

REPORTS
WORLD OF SPORT

INTERCONTINENTAL RALLY CHALLENGE SAN MARINO (RSM), JULY 6-7, RD 7/13

Basso beats Mikkelsen in San Marino thriller

AS BATTLES GO, SAN

Marino's IRC debut was top drawer. Three drivers led and twice the top two – Giandomenico Basso and Andreas Mikkelsen – tied on time at the top of the leaderboard.

Though Basso won, by a scant margin of 2.8s, this wasn't a case of turbo power – Basso was at the wheel of a Ford Fiesta Regional Rally Car – triumphing over normally-aspirated technology in the form of Mikkelsen's Skoda Fabia Super 2000, although it did play a factor.

Mikkelsen, the winner the last time the IRC ran on gravel in the Azores back in February, appeared to have stolen a march on his rival when he bossed Saturday's opener to move 9.2s clear. But with road cleaning more apparent on the next two tests, the extra torque



Basso: too much for Mikkelsen

available to Basso proved crucial as Mikkelsen struggled for traction while running first on the road.

It meant they were level-pegging at midday service back across Italy's border with San Marino.

Although Mikkelsen's challenge was unexpected,

his car's powersteering had failed nearing the end of stage eight to the extent that the Norwegian feared he would go off due to the reduced mobility the problem caused. In fact, he handed driving duties to his navigator Ola Floene on the road section to save himself

for the afternoon stages.

Mikkelsen won the first of those but Basso hit back to draw level again on stage 10. Slowly but surely, however, Basso's extra power told on the uphill sections and Mikkelsen had to settle for second, despite winning

the final two stages.

Umberto Scandola overcame a contaminated-fuel issue to take third in his Skoda while Sepp Wiegand, who led after two stages, landed fourth spot.

Briton Harry Hunt excelled with a dominant win in the IRC 2WD Cup, his first of the season.

● Graham Lister

RESULTS

1 Giandomenico Basso/Mitia Dotta (Ford Fiesta RRC), 2h36m52.7s; **2 Andreas Mikkelsen/Ola Floene (Skoda Fabia S2000)** +2.8s; **3 Umberto Scandola/Guido d'Amore (Skoda)**; **4 Sepp Wiegand/Timo Gottschalk (Skoda)**; **5 Jarkko Nikara/Jarkko Kalliolepo (Subaru Impreza R4 STI)**; **6 Gergely Szabo/Borbely Karoly (Mitsubishi Lancer Evolution X)**. **Points** **1** Mikkelsen 107; **2** Jan Kopecky 83; **3** Juho Hanninen 68; **4** Wiegand 52; **5** Basso 40; **6** Bryan Bouffier & Scandola 27.

TTA FALKENBERG (S), JULY 7, RD 4/8

Goransson victorious but Ekblom leads at half-time

THE FOURTH TTA RACE OF 2012 at Falkenberg was a Richard Goransson and BMW Dealer Team West Coast Racing affair.

The four-time Swedish champion claimed pole position and led the race from lights to flag, becoming the fourth different race winner in four races. Team-mate Fredrik Larsson made it a great day for the BMW team by taking third.

Saab racer Linus Ohlsson was the sole driver able to

challenge the BMW men in the race and secured his second podium of 2012, moving up to second in the points. Alx Danielsson had a nightmare weekend and retired from the race after contact with team-mate Jan Brunstedt.

Fredrik Ekblom is still the championship leader thanks to fourth position as the series heads into the mid-season summer break.

● Carl Svensson

RESULTS

1 Richard Goransson (BMW SR), 43 laps in 31m56.871s; **2 Linus Ohlsson (Saab 9-3)**, +2.303s; **3 Fredrik Larsson (BMW)**; **4 Fredrik Ekblom (Volvo S60)**; **5 Robin Rudholm (Saab)**; **6 Thed Bjork (Volvo)**. **Points** **1** Ekblom, 72; **2** Ohlsson, 56; **3** Goransson, 54; **4** Bjork, 47; **5** Robert Dahlgren, 44; **6** Alx Danielsson, 29.



Goransson and friends with fizz

SCANDINAVIAN TOURING CAR CHAMPIONSHIP MANTORP PARK (S), JULY 7, RD 4/8

Kristoffersson wins to stay on top

POINTS LEADER JOHAN

Kristoffersson was gifted a precious victory in race one at Mantorp Park.

Reigning champion Rickard Rydell made a great start from pole, as Kristoffersson slipped to fifth. Rydell kept his Chevy ahead until he was punted wide by the chasing Honda Civic of Tomas Engstrom.

This gave Kristoffersson and his bio-gas VW Scirocco the opportunity he needed, and he slipped by to take the lead and ultimately the win.

Engstrom drove a charging final series of laps to battle back to third.

Race two honours fell to Rydell's Chevy team-mate Michel Nykjaer, who led all the way from lights to flag. Engstrom kept him

Kristoffersson leads VW train



in sight and came home just 1.3s behind.

Rydell took third, but fourth was enough for Kristoffersson to retain his points lead. Spaniard Jordi Gene was seventh in both races for VW.

● Tege Tornvall

RESULTS

Race 1 1 Johan Kristoffersson (VW Scirocco), 15 laps in 21m56.280s;

2 Rickard Rydell (Chevrolet Cruze), + 2.769s; **3 Tomas Engstrom (Honda Civic)**; **4 Michel Nykjaer (Chevy)**; **5 Johan Stureson (VW)**; **6 Patrik Olsson (VW)**. **Race 2 1 Nykjaer** 15 laps in 20m44.734s; **2** Engstrom, +1.305s; **3** Rydell; **4** Kristoffersson; **5** Olsson; **6** Stureson. **Points** **1** Kristoffersson, 146; **2** Rydell, 137; **3** Nykjaer, 119; **4** Engstrom, 95; **5** Stureson, 86; **6** Olsson, 85.

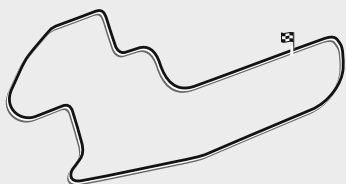
TORONTO

Canada

July 7-8

IndyCar Series

Round 10/15



AT A GLANCE

- Winner **Ryan Hunter-Reay**
- Pole **Dario Franchitti**
- Most laps led **Hunter-Reay**
- Fastest lap **Josef Newgarden**



Franchitti was fastest on pay day

Hunter becomes the hunted

Ryan Hunter-Reay took his third straight win of the year - this time on the streets of Toronto. And the Andretti Autosport driver now leads the points



TORONTO HASN'T ALWAYS been the most hospitable of environments for Americans. Barely a quarter of a mile from Exhibition Place, site of the IndyCar street circuit, are the remains of Fort York. It was here, exactly two centuries ago, that a group of British found themselves struggling to fight off an invading American force led by the splendidly-named General Zebulon Pike.

As they retreated, the

Brits set fire to their powder magazine which exploded just as the Americans stormed into the fortification, killing Pike and hundreds of his men. A new, stronger fort was built just down the road and successfully repelled another American force two years later.

How times have changed. Ryan Hunter-Reay became the second driver this season after Will Power to complete a hat-trick of wins

thanks to a perfect combination of luck, strategy and deft driving, and Ganassi's Charlie Kimball put in the drive of his life to make it an all-American one-two on the streets of Canada's largest city.

More significantly, Hunter-Reay's success broke Power's grip on the top spot in the points standings. Barely a month ago in Detroit, Power was talking up Scott Dixon as his main championship rival. Now Power is the one doing the chasing, and Dixon isn't even in the top three.

It's tempting to read something into the fact that Power's three wins in a row all came on road and street courses while Hunter-Reay achieved it with victories on a flat oval, a banked oval and a street circuit, but it has to

Franchitti and Power slug it out at the start



Kimball drove a blinder for second

be noted how easily last weekend could have belonged to Power. The Penske driver had started on the front row alongside polesitter Dario Franchitti, passed the Scot for the lead early in the race, and had opened a substantial gap before Graham Rahal crashed and brought out the first yellow flag.

This immediately created two problems for the Australian. First, many of

the drivers behind him — Hunter-Reay among them — had pitted a few laps earlier. Second, series regulations dictated that the pitlane be closed immediately after the race went yellow, meaning that the field had already bunched back up behind him when he was finally able to stop. Power has thrown a few points away cheaply in recent weeks, but on this occasion he and

RACE RATING

★★★★☆

Not the usual Toronto crash-fest - except for the end - but lots of action

MILESTONE

Sam Hornish Jr was the last American driver to lead the points when he won the championship in 2006



REPORT INDYCAR TORONTO

MARK GLENENNING
reports



RH-R (28) takes a formation-finish win



Toronto streets were calm - until the end



Dixon was first to retire, with a blown engine



Hunter-Reay has got accustomed to this

those around him were effectively made to suffer for having better fuel mileage than the rest of the field. It was bad luck in its purest form, and it dumped him into the middle of the pack.

But that's not to say that Hunter-Reay was an undeserving winner. The timing of that first caution was as perfect for him as it was catastrophic for Power, but others benefited from it just as much, and none executed the rest of the race as precisely as the Andretti team.

Bizarrely, one key moment of Hunter-Reay's weekend could potentially have been traced not to the race, but to the Sunday-morning warm-up, when he ran into the back of Power at Turn 3 and needed to have his nosecone replaced. For reasons neither he nor the

team seemed able to explain, the new front wing made the car far more agreeable to work with than it had been earlier in the weekend. It was an improvement that could only be measured in incrementals, but in a sport where lap times are counted to the 10,000ths of a second, these incrementals matter.

Hunter-Reay took the lead when Schmidt Hamilton's Simon Pagenaud pitted, the Frenchman having inherited the top spot when Power and the cars immediately behind him stopped during the caution. An uncharacteristically (for Toronto) long spell of green-flag racing allowed him to open a gap of several seconds before the inevitable yellows came with just five laps to go.

At that point, the prospect of a double-file restart, on a track littered with more than 80 laps worth of marbles just off the racing line, on one of the most crash-prone circuits on the calendar, was the last thing that he wanted. Sure enough, the field obliged by delivering an entire race worth of incidents when the green flag came out, but Hunter-Reay was able to avoid it and greet the chequered flag a few minutes later.

The first clash accounted for one of the podium contenders, and almost took care of two. Kimball and Dragon's Sebastien Bourdais had been running second and third, but that went bad when they tried to go into the first corner three-wide with AJ Foyt's Mike Conway. Conway and Kimball made light contact that was ▶

Dragon fires warning shot

“It's been a rollercoaster,” Sebastien Bourdais replied on Saturday evening in Toronto when AUTOSPORT asked about his weekend up to that point. “An emotional ride. But when you have days like this, it's worth it.”

Twenty-four hours earlier, two members of the Dragon racing pit crew had been taken to hospital after being skittled by the Dale Coyne car of Justin Wilson. It wasn't Wilson's fault - the car had refused to go into neutral as he entered his pit bay, and once he realised the problem he'd tried to steer into the wall to avoid the Dragon team just ahead of him. But there was not enough space for him to avoid a collision.

“He didn't slow down one bit, so he hit the wall, he hit my guys, my car, and

everything in between,” Bourdais said. “It was a big hit. I turned around and I knew exactly where Chuck [Homan] was supposed to be with the starter in his hand, and I turned around and I was kind of preparing myself to see something I didn't want to see. Then I found out that everybody was alright and there was nothing really serious. It was a miracle. A total miracle.”

Bourdais rebounded from the setback to qualify an outstanding fourth on Saturday, and would have been on the podium on Sunday had he not become a victim of the chaos during the final restart. Paul Tracy might have been missing from Toronto, but the other half of Champ Car's last great rivalry was keeping the flame burning bright.



Bourdais: from horror to hero

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“At the last second I tried to dive into the wall to take speed off and I still hit them. I really hope they’re OK”

Justin Wilson after hitting Dragon crew in practice



Dixon walks back after another dire weekend



Conway took the #14 Foyt machine to third



Briscoe (2) and Franchitti collide

◀ just enough to knock the Ganassi car into Bourdais and put the Frenchman into the barriers. It was a sad end to a dramatic weekend for the one-car Dragon team (see panel, p57), although Conway was equally deserving of the final podium spot after picking his way through the field after starting 11th on the grid.

Amid the other incidents that were going on almost simultaneously, the most significant – or perhaps more correctly, the most symbolic – came when Franchitti was squeezed into the wall by Penske's Ryan Briscoe, who himself was being pushed wide by another car. It capped off

another awful weekend for the lead Ganassi duo, with Franchitti's race having been earlier compromised when he missed his pit markers during a stop and pulled up too far from the wall for the fuel hose to be able to reach his car, losing him several seconds. He was still better off than team-mate Dixon, who became the race's first retiree when his engine let go after just eight laps.

It probably came as scant consolation to the Ganassi pitwall that rival Power's afternoon wasn't much better. He broke his front wing while trying to pass Sarah Fisher Hartman's Josef Newgarden and immediately pitted,



Kimball, Hunter-Reay and Conway celebrate

but the team opted to just change his tyres and leave the wing as it was in the hope of remaining on the lead lap. As soon as Power returned to the track it became clear that the wing was unusable and he was forced to stop again.

KV Racing's Tony Kanaan did well to rally to fourth after being dealt a

drive-through penalty early on for hitting one of Oriol Servia's tyres in the pitlane. Pagnaud was less fortunate, finishing 12th after being dealt a 30s penalty for blocking Newgarden. The Frenchman professed his innocence immediately afterwards, although replays seemed to suggest

that the sanction was entirely warranted.

The race was so eventful that the return of push-to-pass was relegated to a minor sub-plot – a situation no doubt exacerbated by a TV producer with a particularly acute knack of missing overtaking moves. Drivers reported afterwards that the system worked more or less as expected, but after an afternoon of such drama, its reintroduction took a back seat to questions about what could transpire when the series moves west to Edmonton next week.

Only five races remain, but there is a sense that the real championship battle is just starting. 🏆

RESULTS

IndyCar Series, round 10 of 15, Toronto (CDN), July 8

GRID	
2 POWER 59.3757	1 FRANCHITTI 59.3510
4 BOURDAIS 59.4721	3 WILSON 59.4506
6 HUNTER-REAY 59.4829	5 DIXON 59.5140
8 PAGENAUD 59.6650	7 CASTRONEVES 59.5476
10 RAHAL 59.8966	9 SATO 59.8197
12 BRISCOE 59.9888	11 CONWAY 1:00.0718
14 SERVIA 1:00.0004	13 KIMBALL 1:00.1557
16 TAGLIANI 59.5616*	15 HILDEBRAND 1:00.4508
18 B'CHIELLO 1:00.2043	17 KANAAN 1:00.1207
20 NEWGARDEN 1:00.2199	19 H'CLIFFE 59.5958*
22 ANDRETTI 1:00.6145	21 CARPENTER 1:01.0333
24 JAKES 1:00.5440*	23 VISO 1:02.5280
	25 SILVESTRO 1:00.6709*

85 LAPS, 148.75 MILES

POS	DRIVER (NATIONALITY)	TEAM	CAR	TIME	GRID
1	Ryan Hunter-Reay (USA)	Andretti Autosport	Dallara-Chevrolet DW12	1h33m26.5096s	6
2	Charlie Kimball (USA)	Chip Ganassi Racing	Dallara-Honda DW12	+0.0757s	13
3	Mike Conway (GB)	AJ Foyt Racing	Dallara-Honda DW12	+0.2848s	11
4	Tony Kanaan (BR)	KV Racing Technology	Dallara-Chevrolet DW12	+1.6672s	17
5	Oriol Servia (E)	Panther/Dreyer & Reinbold Racing	Dallara-Chevrolet DW12	+1.9128s	14
6	Helio Castroneves (BR)	Team Penske	Dallara-Chevrolet DW12	+2.4795s	7
7	JR Hildebrand (USA)	Panther Racing	Dallara-Chevrolet DW12	+2.6233s	15
8	James Jakes (GB)	Dale Coyne Racing	Dallara-Honda DW12	+3.7294s	24
9	Takuma Sato (J)	Rahal Letterman Lanigan Racing	Dallara-Honda DW12	+6.5633s	9
10	Alex Tagliani (CDN)	Bryan Herta Autosport	Dallara-Honda DW12	+9.9764s	16
11	Rubens Barrichello (BR)	KV Racing Technology	Dallara-Chevrolet DW12	+11.4636s	18
12	Simon Pagnaud (F)	Schmidt-Hamilton Motorsports	Dallara-Honda DW12	+13.8734s	8
13	Josef Newgarden (USA)	Sarah Fisher Hartman Racing	Dallara-Honda DW12	-1 lap	20
14	Sebastien Bourdais (F)	Dragon Racing	Dallara-Chevrolet DW12	-1 lap	4
15	Will Power (AUS)	Team Penske	Dallara-Chevrolet DW12	-1 lap	2
16	Marco Andretti (USA)	Andretti Autosport	Dallara-Chevrolet DW12	-1 lap	22
17	Dario Franchitti (GB)	Chip Ganassi Racing	Dallara-Honda DW12	-1 lap	1
18	Ed Carpenter (USA)	Ed Carpenter Racing	Dallara-Chevrolet DW12	-1 lap	21
19	Ryan Briscoe (AUS)	Team Penske	Dallara-Chevrolet DW12	83 laps-accident	12
20	EJ Viso (YV)	KV Racing Technology	Dallara-Chevrolet DW12	-4 laps	23
21	Justin Wilson (GB)	Dale Coyne Racing	Dallara-Honda DW12	67 laps-accident	3
22	James Hinchcliffe (CDN)	Andretti Autosport	Dallara-Chevrolet DW12	28 laps-engine	19
23	Graham Rahal (USA)	Chip Ganassi Racing	Dallara-Honda DW12	23 laps-accident	10
24	Simona de Silvestro (CH)	HVM Racing	Dallara-Lotus DW12	9 laps-engine	25
25	Scott Dixon (NZ)	Chip Ganassi Racing	Dallara-Honda DW12	7 laps-engine	5

CHAMPIONSHIP TABLE

POS	DRIVER	PTS
1	Hunter-Reay	335
2	Power	301
3	Castroneves	289
4	Dixon	281
5	Hinchcliffe	268
6	Kanaan	267
7	Pagnaud	264
8	Franchitti	230
9	Briscoe	217
10	Servia	215

Winner's average: 95.787mph. Fastest lap: Newgarden, 1m00.0639s, 105.188mph.

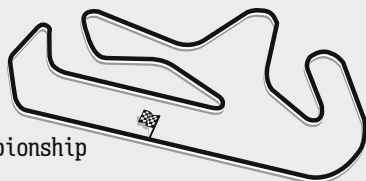
Qualifying: field divided into two groups for qualifying. The fastest six from each move into a 12-car second round. The fastest six from this move into the pole shootout. * grid penalty.

ALGARVE

PORTUGAL

July 7-8

FIA GT1 World Championship
Round 5



AT A GLANCE

- **Winners Jager/Pastorelli**
- **Qual race Basseng/Winkelhock**
- **Pole Vilander**



Vilander AF Corse Ferrari spun in race two

Meracs 'nosedive' to a double

All-Inkl's two Mercedes SLS racers left Portugal with a win double - and it was all down to the long-nosed, front-engined cars' speed out of the final corner...



All-Inkl Mercs took one-two in main race...

THE ALL-INKL SQUAD wasn't expecting great things when it rolled its pair of Mercedes SLS AMGs onto the transporter for the long trip to Portugal ahead of last weekend's round of the FIA GT1 World Championship. It was expecting its SLSs to be less competitive than usual, yet the German car proved to be the thing to have around the Autodromo Internacional do Algarve.

The result was a double victory for the team and a hefty haul of points to bolster its ambitions in the race for both the drivers' and the teams' titles.

The cause of All-Inkl's concern was the Algarve circuit's long start-finish

straight, yet its performance down the front stretch was central to its dominance last weekend. Marc Basseng, who both drives for and manages the German team, has long complained that the Merc is giving away a power disadvantage to its rivals, yet the car was at least a match for anything

else over the first two thirds of the straight.

The reason was the speed of the Merc through the final corner, Turn 16, and onto the straight, as Basseng explained.

"Our car has a long nose and it comes down quicker over the crest as we turn into the corner," he said. "We have better grip

through the corner than everyone else, especially the rear-engined cars."

That, combined with the Merc's excellent traction and good torque, clearly a factor through the up-and-down twisty middle sector, and the team's ability to dial in a relatively soft car over the bumps made the Merc quick over one lap for the first time this season. So much so that Basseng claimed his best qualifying spot of the season so far.

The Merc was also once again quick over a race distance, the hallmark of its season so far and the reason why All-Inkl was leading the teams' points going into the Algarve round. A track that is notoriously hard on

tyres played into the hands of the All-Inkl drivers.

It all contrived to make the Mercedes more or less unbeatable last weekend.

Markus Winkelhock, who started the car qualified by Basseng, ran second to the pole-winning AF Corse Ferrari 458 Italia driven by Filip Salaquarda through the first half of Saturday's Qualifying Race. A quick pitstop by the All-Inkl crew and a disastrous one for the Ferrari allowed Basseng to resume with a four-second lead over Frank Stippler in the best of the WRT Audi R8 LMS ultras.

Stippler owed his position in the car Oliver Jarvis had pitted in fourth position to a quick



...and celebrated with Hexis McLaren pair



RACE RATING

★★★★☆

All-Inkl won both races but the action behind them was fraught

“We were expecting something in the top 10, but never a victory or even a podium”

All-Inkl Mercedes driver Markus Winkelhock after winning on Saturday

REPORT WORLD GT1 ALGARVE

GARY WATKINS
reports



Basseng/Winkelhock took race-one victory

turnaround and was unable to hold off Yelmer Buurman's Vita4One BMW Z4. Their battle allowed Basseng to extend his lead to as much as 10s.

The second All-Inkl entry, in which Thomas Jager had shadowed his team-mate through the race's first half, ended up sixth after a slow pitstop when Nicky Pastorelli took over. However, the fortunes of the two All-Inkl cars were reversed in the full-points Championship Race.

Basseng led from pole to the pitstops, but a problem restarting the car when Winkelhock found the ignition switch turned off proved decisive. He came out just ahead of Jager, who had taken over the fourth-placed sister car two laps earlier, and slowed his team-mate enough for the Hexis McLaren MP4-12C in which Frederic

Makowiecki had stayed out a lap longer still to leapfrog the pair of them.

Winkelhock let his team-mate past after a couple of laps and then Jager quickly moved past Stef Dusseldorp in the McLaren to seal a second win of the weekend for All-Inkl. Winkelhock pulled off a carbon-copy of his team-mate's move one lap later to make it a one-two for Mercedes.

But Winkelhock wasn't happy after the race.

“We were quick enough to win the race,” he said. “You have to be unhappy if you start from pole and finish second.”

It was also a missed opportunity for Winkelhock and Basseng to take the championship lead. Given that no one knows how many races are left this year, those points could prove very valuable. ❧

Lucky break for title hopefuls



The two pairings that arrived in Portugal one-two in the championship got lucky last weekend. Michael Bartels and Stef Dusseldorp were battling it out for last place at the start of the Qualifying Race yet their BMW Z4 and McLaren MP4-12C came through to finish second and fourth respectively and secure decent grid slots for the main event on Sunday.

The good fortune for Bartels and team-mate Yelmer Buurman and Dusseldorp and Frederic Makowiecki was a

short safety car period a third of the way through that allowed them to make up time lost in the opening laps.

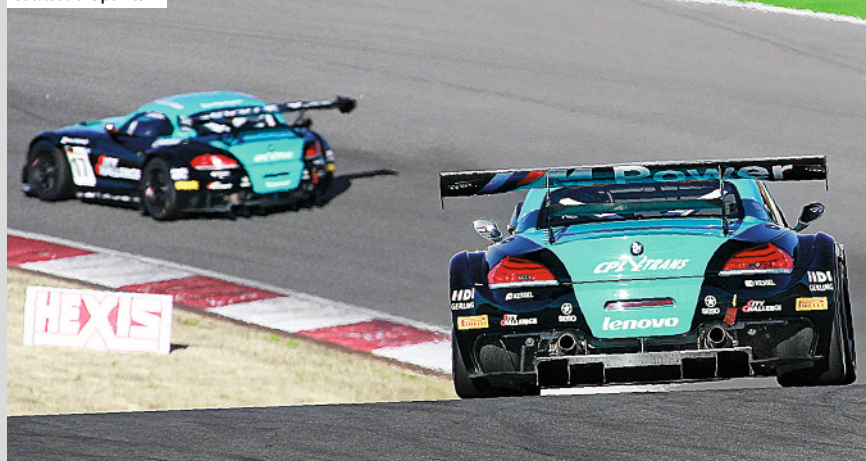
Bartels was up to 10th, albeit a distant one, when the safety car came out just before the pitstop window opened. Another quick turnaround by the Vita4One crew got him out in fourth, which had become second for Buurman at the chequered flag.

Hexis, again running the engine mapping with which it started the season, wasn't as quick in the pits, but Makowiecki was able to pass

two cars and then get within half a second of third-place Frank Stippler.

Makowiecki made a storming start to take second at the start of the Championship Race, but Dusseldorp was unable to resist the challenge of the two Mercs after taking the lead after the stops. The Vita4One BMW lost time in the pits, dropping the car from third to fourth, which became fifth on the final lap when Bartels missed a gear and allowed the Reiter Lamborghini Gallardo driven by Peter Kox to pass.

Bartels/Buurman still lead the points



RESULTS

FIA GT1 World Championship, round 5, Algarve (P), July 7-8

33 LAPS, 95.411 MILES

POS	DRIVERS	TEAM	CAR	TIME
1	Nicky Pastorelli (NL)/Thomas Jager (D)	All-Inkl.com Munnich	Mercedes-Benz SLS AMG GT3	1h00m25.723s
2	Markus Winkelhock (D)/Marc Basseng (D)	All-Inkl.com Munnich	Mercedes-Benz SLS AMG GT3	+1.537s
3	Stef Dusseldorp (NL)/Frederic Makowiecki (F)	Hexis Racing	McLaren MP4-12C GT3	+5.163s
4	Darryl O'Young (PRC)/Peter Kox (NL)	Reiter Engineering	Lamborghini Gallardo LP560	+6.511s
5	Michael Bartels (D)/Yelmer Buurman (NL)	Vita4One Racing Team	BMW Z4 GT3	+6.878s
6	Laurens Vanthoor (B)/Stephane Ortelli (MC)	Belgian Audi Club Team WRT	Audi R8 LMS ultra	+31.875s
7	Enzo Ide (B)/Francesco Castellacci (I)	AF Corse	Ferrari 458 Italia GT3	+34.723s
8	Mathias Lauda (A)/Nikolaus Mayr-Melnhof (A)	Vita4One Racing Team	BMW Z4 GT3	+51.195s
9	Matteo Cressoni (I)/Milos Pavlovic (SRB)	SUNRED	Ford GT	+1m45.458s
10	Andreas Zuber (A)/Mike Parisy (F)	Exim Bank China (Muhlner)	Porsche 911 GT3-R	32 laps-fuel
R	Gregoire Demoustier (F)/Alvaro Parente (P)	Hexis Racing	McLaren MP4-12C GT3	26 laps-engine
R	Albert von Thurn und Taxis (D)/Stefan Rosina (SK)	Reiter Engineering	Lamborghini Gallardo LP560	26 laps-engine
R	Frank Stippler (D)/Oliver Jarvis (GB)	Belgian Audi Club Team WRT	Audi R8 LMS ultra	7 laps-suspension
R	Filip Salaquarda (CZ)/Toni Vilander (FIN)	AF Corse	Ferrari 458 Italia GT3	1 lap-acc dam/rad engine
NS	Benjamin Lariche (F)/Dino Lunardi (F)	Exim Bank China (Muhlner)	Porsche 911 GT3-R	engine

GRID

2 IDE	1 VILANDER
1:45.630	1:44.730
4 PASTORELLI	3 BASSENG
1:45.709	1:45.693
6 CRESSONI	5 O'YOUNG
1:45.927	1:45.916
8 DEMOUSTIER	7 STIPLER
1:46.455	1:46.326
10 VANTHOOR	9 ROSINA
1:45.777	1:45.703
12 DUSSELDORP	11 BARTELS
1:45.906	1:45.897
14 ZUBER	13 MELNHOF
1:46.566	1:46.069

QUAL RACE: 32 LAPS, 92.520 MILES

POS	DRIVERS	TIME
1	Basseng/Winkelhock	1h00m08.853s
2	Buurman/Bartels	+8.460s
3	Jarvis/Stippler	+16.763s
4	Makowiecki/Dusseldorp	+17.267s
5	Mayr-Melnhof/Lauda	+20.851s
6	Jager/Pastorelli	+25.431s
7	Pavlovic/Cressoni	+27.080s
8	Parente/Demoustier	+30.707s
9	Parisy/Zuber	+33.854s
10	Ortelli/Vanthoor	+34.486s
11	Castellacci/Ide	+51.276s
12	Vilander/Salaquarda	+56.962s
13	Rosina/v Thurn und Taxis	-1 lap
R	Kox/O'Young	10 laps-steering
NS	Lunardi/Lariche	engine

CHAMPIONSHIP TABLE

POS	DRIVERS	PTS	POS	DRIVER	PTS
1	Bartels/Buurman	88	6	Vilander/Salaquarda	47
2	Winkelhock/Basseng	83	7	Jarvis/Stippler	44
3	Dusseldorp/Makowiecki	82	8	Parisy	38
4	Pastorelli/Jager	73	9	Matt Halliday	37
5	Vanthoor/Ortelli	58	10	O'Young/Kox	27

Winners' average: 94.73mph. Fastest lap: Kox, 1m47.134s, 97.15mph.

Qualification race winners' average: 92.29mph. Fastest lap: Vilander, 1m46.923s, 97.35mph. Driver listed on grid set qualifying time. First-named driver in each car in table started the race. Finishing order of qualification race determined grid for main race.



Long-nosed Merc had better final-turn pace

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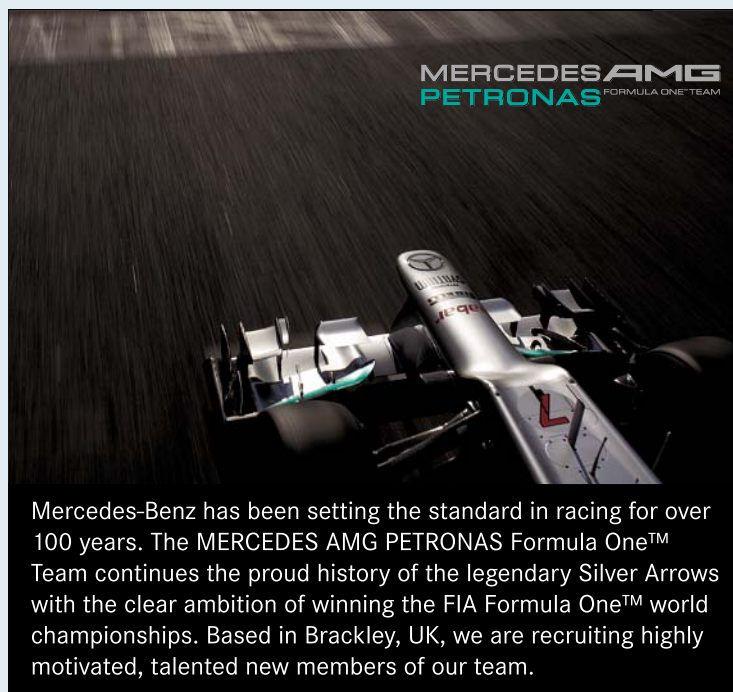
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Successful candidates will design aerodynamic components in CAD, then prepare CFD cases and attend wind tunnel tests to evaluate their performance, conducting in-depth analysis of the results from both tools. Candidates must be qualified to degree level or higher in Aeronautical Engineering or a related discipline, and demonstrate a good understanding of CFD and experimental testing techniques.

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The successful applicant for this position will devise and maintain project plans for the wind tunnel programme, and liaise closely with senior members of the Aerodynamics, Model Design, Model Making and Production teams to ensure that model components are specified, designed, manufactured, delivered and fitted in the agreed timescales. He or she will also be expected to identify and drive improvements in departmental procedures. Familiarity with the layout of Formula 1 cars and with manufacturing processes used for wind tunnel models is essential, and Microsoft Project skills would be a distinct advantage.

Senior Model Designers & Model Designers

Successful applicants will primarily be responsible for designing components for our wind tunnel test programme. Using surfacing and solid modelling techniques, they will be expected to produce parts from initial schemes through to detailed drawings and assemblies. Applicants for the senior positions will be expected to demonstrate an in-depth knowledge of all aspects of model design. Experience of NX7.5 would be an advantage.

Model Makers

Applicants must have served a recognized apprenticeship in model making or associated engineering trade, and have previous experience in Formula 1 model making and wind tunnel testing.

Model Component Finishers

This role will provide a great opportunity to enter the Formula 1 industry in the model making field, and would suit self-motivated people with a methodical attitude. After a successful trial period, training will be given to develop within the industry.

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Aero Track Support Engineer

The successful candidate will be part of a small group responsible for the analysis and reporting of full size aero performance and maintenance of the car's aerodynamic quality. Applicants for this role must have a strong background in Formula 1 aerodynamics, with an appreciation of wider car design issues. Familiarity with ATLAS software is essential, as are Visual Basic programming ability and excellent report writing and communication skills. The availability to travel to race and test events is a pre-requisite for this role.

Aero Analysts & Junior Aero Analysts

Reporting to the Head of Aero Analysis, successful applicants will analyse aero data from the full-size car, wind tunnel model and CFD, and develop tools and methods to improve our aerodynamics testing technique and correlation. Applicants must have an appreciation of the different aerodynamics tools used in F1 and strong experience in Microsoft Excel (preferably including VBA programming). The role requires adaptability, self-motivation and lateral thinking.

CFD Engineer

This role involves developing our cutting edge CFD methodology, as well as carrying out bespoke CFD investigations. Applicants must have a good post-graduate degree relevant to Computational Fluid Dynamics, understanding and experience of current CFD methods and software packages, and be proficient with Linux-based applications and environment.

Software Developer

This position involves creating and maintaining database applications using MySQL and programming in Visual Basic, especially within Microsoft Office applications. Experience in these activities is essential, and familiarity with working in both Windows and Linux would be a distinct advantage.

We also have positions available in our Design and Vehicle Performance departments, please see below:

Design Engineers

Educated to degree level in mechanical engineering or equivalent, successful candidates will detail designs from schemes and layouts and undertake their own layout work. Previous relevant design experience with an understanding of jig and tool design, design for manufacture and a willingness to follow a design through to production is an essential part of this role.

CAD/PLM Developer

Supporting our CAD users, the successful candidate will coordinate CAD support and training as well as overseeing the development of CAD standards. As a CAD mentor you will be expected to assist users to utilise the system more effectively and to actively manage users' expectations. You will be expected to have sufficient IT knowledge to optimise the CAD infrastructure. The successful candidate will also have extensive experience of PDM/PLM systems and be confident of implementing such systems within a focussed workgroup.

Vehicle Performance Engineers

Key responsibilities include, creating, developing and using both whole-vehicle and sub system models and validating those models to rig and track data. You will also be required to analyse and summarise track, rig and simulator data. You should have proven experience of such work using Matlab and Simulink tools. You will also demonstrate a sound understanding of vehicle dynamics theory and its application to race cars as well as possessing good verbal and written communication skills.



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formula one team

As part of our continued successful development we are looking for exceptional people to join our dynamic team where we encourage innovation and continually strive to maximise the highest level of performance. We currently have the following positions available to further enhance our existing teams:

- SENIOR AERODYNAMICIST
- SENIOR MODEL DESIGNER & MODEL DESIGNER
- CFD AERODYNAMICIST(s)
- EXPERIMENTAL AERODYNAMICIST(s)
- SENIOR COMPOSITE DESIGNER
- SENIOR MECHANICAL DESIGNER
- DESIGN ENGINEER – ENGINE SYSTEMS
- SOFTWARE ENGINEERS
- VEHICLE DYNAMICS ENGINEER
- CONTROL SYSTEMS ENGINEER (RACE SUPPORT)
- SENIOR STRESS ENGINEER
- MECHANICAL DESIGN ENGINEER (Electronic/Electrical Installation)
- MODEL MAKER
- AERO SCHEDULER
- COMPOSITE INSPECTOR

The successful candidates must:

- Be currently eligible to work in the UK
- Have previous relevant experience working within a high level motorsport environment
- Be able to demonstrate an innovative and flexible approach to problem solving and possess the ability to work through problems in a scientific and analytical way
- A strong working knowledge of Catia V5 and 3D CAD for applicable design roles
- Be able to integrate quickly into existing teams and be actively involved in many aspects of each department
- Have good communication and analytical skills and be able to work to tight deadlines, often under pressure
- Be highly self -motivated, thrive in a challenging environment and have a flexible approach to working hours

If you are interested in any of the above positions, please email your CV with a covering letter including your salary expectations to: sarah.watson@forceindiaf1.com (closing date for applications 20th July 2012)



Sports Extra

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ORECA to build coupe for SPEED EuroSeries

French squad adds baby prototype to its programme

New SPEED machine will be a closed car

» THE FRENCH ORECA organisation is building a car for the Group CN division, to add to a stable of prototypes that already includes an LMP2 and the Formula Le Mans one-make LMPC class racer.

The Paul Ricard-based company, which became a constructor of racing cars when it purchased Courage Competition in 2007, has decided to build a CN design for the SPEED EuroSeries, VdeV Proto Endurance series, various national series, and track-day use. The move is part of an expansion of the organisation's car-building arm, of which company founder Hugues de Chaunac has been talking for the past year.

"Building an entry-level Group CN car was the obvious route for us because of our prototype experience," he told AUTOSPORT. "We will be offering a range of prototypes that will allow an ORECA customer to move up the ladder and eventually race in the Le Mans 24 Hours in one of our LMP2 cars."

ORECA is still at the evaluation stage and has yet to decide if the CN car will be built around a carbon monocoque, like the majority of the latest cars, or an aluminium-honeycomb tub like the Juno CN2012 and previous-generation Ligier and Norma designs. De Chaunac

confirmed the car would not use the same tub common to the ORECA 03 LMP2 and the FLM09 one-make car because of the €95,000 VdeV cost cap.

The ORECA CN, which has yet to be given a type number, will uniquely be a coupe. De Chaunac explained that the drive for optimum safety had pushed his designers down this route.

"We believe there will be a lot of interest in a closed car, because some gentleman drivers who want to drive a prototype don't want to drive an open car for safety reasons," he explained.

"There are also lots of open CN cars, so we thought we would do something different."

The plan is for the first machine to be up and running by February next year so that the first deliveries can take place ahead of the 2013 season. ORECA plans to build eight cars in the first season.

SPEED EuroSeries boss Oli McCrudden welcomed ORECA's plans for a CN car. "We are delighted to be talking to an organisation such as ORECA, one of the great names in sportscar racing," he said. "Its decision to build a Group CN car is wonderful news and we hope to have ORECA's racing SPEED next year."

The next SPEED EuroSeries event takes place at Donington Park this weekend, supporting the ELMS.

ORECA plans to join the SPEED EuroSeries field



AUTOSPORT SAYS...

KEVIN TURNER
FEATURES
EDITOR

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THE HOME DRIVERS MAY HAVE failed to win the British Grand Prix this time around, but last weekend was a pretty remarkable one for UK drivers around the globe.

Josh Hill, the latest generation of a famous racing family dynasty, Jake Dennis and Jordan King dominated the Formula Renault NEC meeting at Oschersleben (see page 80). Across the pond, Jack Hawksworth was unstoppable in Star Mazda in Toronto, while in China Dan Wells has become a title contender in Formula Pilota China.

And that's before we mention Will Buller's GP3 victory at Silverstone, Jolyon Palmer's GP2 podium, GT ace Nick Tandy's stunning return to Formula Ford at Spa, and British F3!

Much has been said about the state of single-seater racing recently, and rightly so, but there appears to be no dearth of young talent. Even without Formula Renault UK, there are plenty of paths to follow, albeit some more costly than others.

From one end of a career to another, we celebrate Tony Dron in this issue (p90). A big part of the British racing scene for 40 years, from BTCC to historics, Dron has finally decided to hang up his helmet, so it seemed a good excuse for Marcus Pye to catch up with him and look back.

Extra contact details

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TONY DRON

Lydden targets bigger events despite loss of 2012 meeting

Kent circuit loses HRDC visit, but new manager believes better times ahead



Grids have not been large at Lydden recently



NEW LYDDEN CIRCUIT managing director Willie Woods is hoping to attract bigger events to the track, despite the cancellation of this season's Historic Racing Drivers Club meeting at the Kent venue.

The HRDC had targeted a 2012 Lydden date and looked set for an August 18 meeting. But it has now decided to leave its Lydden return until 2013 due to the recent management changes at the circuit.

HRDC boss Julius Thurgood said: "There have been no fewer than three changes of circuit manager [in recent months]. With time running out to

ensure that the proper and necessary detail preparation has been completed, the decision was taken to postpone this meeting until such a time that the latest management at Lydden is properly installed.

"It is the intention of the HRDC to resume negotiations with Lydden once this management reshuffle has been completed. We'll be happy to go back and support them."

Former Irish rallycrosser Woods, who is part of the Pat Doran-led consortium that bought the circuit from McLaren International, said: "I don't understand why the HRDC meeting has been cancelled. Julius

told me that there wasn't enough PR done about the meeting. But it's been on our website and all our flyers since the start of the season and we've advertised it everywhere.

"I want to work with him again next year. We've always wanted to run the HRDC meeting for this year and in the future."

Outside rallycross, Lydden's car racing activity has been maintained mainly by SEMSEC in recent years, but Woods wants to build on that.

"I have done a lot to promote British rallycross and I want to be just as successful here at Lydden Circuit," he added.

"We have set a whole new standard here in the past few weeks [since he took over]. We have made substantial improvements and we want to hold bigger and better events.

"We want to welcome back all those who used to enjoy the racing and friendly atmosphere at Lydden and we want to move forward together to make the sport stronger.

"Apart from the race meetings we are also improving the hospitality arrangements to create a better environment for corporate events."

Thurgood confirmed it was unlikely a 2012 replacement for the Lydden meeting would be found.



Lambo will appear again in British GT

British GT

German Lambo to return to British GT

THE RHINOS LEIPERT LAMBORGHINI team is returning to the British GT Championship for the next two rounds.

The German squad, a frontrunner in the FIA GT3 European Championship, will race at least one of its Lamborghini Gallardo LMP560s in the Snetterton and Silverstone events following its debut in the series on home ground when British GT visited the Nurburgring in May. Series regular Marco Attard will

again drive, although his team-mate has yet to be nominated.

Team boss Ingo Leipert said: "The Stephane Ratel Organisation [which runs British GTs] was very keen to have a Lamborghini in the series. They put us in contact with Marco for the Nurburgring and we have now extended that deal for two more races."

Attard and Marcel Leipert took seventh and 11th at the Nurburgring.

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Kiekens chases Cullen before crash

Formula Ford

Ford bosses defend mixed-class racing after serious Spa accident

LEADING FORMULA FORD FIGURES have defended the running of EcoBoost and Duratec machines together after two drivers broke bones in a crash at the Spa EuroCup meeting last weekend.

Ryan Cullen's new-for-2012 EcoBoost Mygale spun at Pouhon in the first race and was collected by the Duratec-engined Mygale of Jos Kiekens. A number of other cars then hit debris or went off in avoidance.

The race was eventually stopped and Kiekens was taken to hospital with a broken leg, while George Blundell (Duratec Mygale) suffered a broken toe.

British teams defended the move to run the two types of car together, done to boost grid numbers, despite the extra pace and weight (estimated at 40-50kg)

of the new turbocharged EcoBoosts. JTR boss Nick Tandy, who won all three races and has driven both, said: "They're OK to run together. It was just one of those things. If Jos had hit another Duratec I think it would have done the same thing."

Enigma boss Linton Stuteley, who runs Blundell, said: "The problem was the wet qualifying, which put the quicker Duratec drivers ahead of the slower EcoBoost drivers. What they should have done is put the EcoBoosts at the front and the Duratecs behind."

But British Formula Ford promoter Sam Roach said there were no such plans. "I don't think there's a need for change," he said. "The performance differential is not that great."



Moby Dick spotted in French sportscar racing waters

Porsche and Pescarolo ace Emmanuel Collard shared this sublime Porsche 935/78 with Manfred Freisinger at the Le Mans Classic last weekend. They finished seventh overall in Plateau 6. **More pics p83**

MARCUS PYE HUMBLE PYE

The voice of club motor racing

Dron starred for Triumph in the 1970s



Despite monsoons in the lead-up that foisted conditions on the organisers that nobody short of Noah could have countered, British Grand Prix Sunday was a cracker. Superb GP3, GP2 and Porsche Supercup races, plus an excellent Formula 1 feature, kept fans entertained and I was home, 120 miles away, to see Roger Federer finish off Andy Murray's Wimbledon tennis aspirations for another year.

Disappointingly, the Historic F1 race (which competitors had paid a fortune to enter), ran in the anonymity of Saturday evening. Having been batted around the timetable from their original Sunday breakfast-time slot, several overseas teams did not travel. Who could blame them? HF1 deserved better than to be treated like, as one of F1's head honchos is said to have put it, an 'unwanted guest'.

My first British GP was at Aintree as a small kid, but I well remember the times when a full day of support races guaranteed that genuine fans stayed until the end of the afternoon. With thousands of corporate guests leading the exodus these days, staggered campus-exit times are vital, so what would be wrong with reverting to that model?

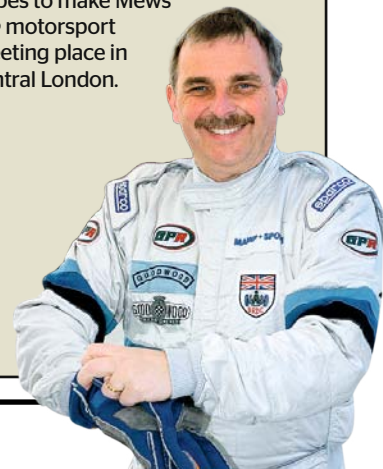
Not being involved in the Grand Prix nitty gritty, the best thing about

the day for me is the opportunity to catch up with racing folk. Bumping into Tony Dron - whose career I've enjoyed reviewing in this issue (see page 90) - pint in hand in the BRDC pavilion reminded me of his resounding British Saloon Car Championship victory in a Triumph Dolomite Sprint at the 1977 Silverstone GP meeting, two days before I joined AUTOSPORT.

I also chatted with Brian Classic, legendary purveyor of fine motor cars, who competed in the F3 support race of '67, when (in an era when F1 cars were much more fragile and far less reliable than they are now) I vividly remember watching Jim Clark win in his Lotus 49. And with Paul Owens, Derek Bennett's multi-skilled sidekick without whom so much of the Chevron success story might not have happened.

And it was a delight to take lunch with Blancpain Endurance Series racer Robert Nearn (son of the late Caterham Cars founder Graham), who recalled a brilliant Caterham battle we had with current Formula Junior ace Jon Milicevic at Donington in 1990. I was surprised to find that Robert is running a bar/restaurant/night club and has hopes to make Mews *the* motorsport meeting place in central London.

I well remember the times when the GP support races guaranteed fans stayed until the end"



AUTOSPORT GOLDEN HELMET

SCOTTISH LEGENDS ACE

Ross Marshall tops our list of race winners in the British Isles in 2012, the 25-year-old from Dunblane having enjoyed an exceptional season. A winless weekend at Brands means MX5 man Tom Roche misses the chance to go top. Creeping into the top 12 are Finnish FFord king Antti Buri and the cheeky Smart of Yorkshire teenager David Moore.

POS	DRIVER (CAR/CARS)	O/ALL	CL.	TOT.
1	Ross Marshall (Ford Coupe)	10	0	10
2	Tom Roche (Mazda MX5 Mk1)	9	0	9
3	Tom Sharp (Ginetta G55)	9	0	9
4	Henry Gilbert (Mini Cooper)	0	9	9
5	Tim Gray (Spire GT3)	8	0	8
6	Lawrence Davey (Ford Coupe)	8	0	8
7	Paul Smith (AHS Dominator)	8	0	8
8	Paul Sibley (MG Midget)	8	0	8
9	Paul Corbridge (Toyota MR2 Mk1)	8	0	8
10	Antti Buri (Mygale M12SJ)	8	0	8
11	David Moore (BRABUS Smart Fortwo 45i)	8	0	8
12	Stuart Jones (Reynard SF89)	7	1	8

Repechage, consolation, 'overflow entry' and handicap races not included. Races/classes must have minimum six starters, and be scheduled for a minimum distance of 10 miles. Overall wins take precedence in the event of a tie, followed by average grid size. For any queries, email us at autosporteditorial@haynet.com

VW Golf GTI Mk2

Golf drive for Vaulkhard

FORMER WORLD AND BRITISH Touring Car racer Harry Vaulkhard will contest the remainder of the VW Golf GTI Mk2 championship this season.

Vaulkhard, who raced a Bamboo Engineering Chevrolet Lacetti in the 2010 WTCC, will drive a Jabba Sport machine in the Oulton Park, Cadwell Park, Brands Hatch GP and Snetterton 300 rounds of the MSVR series.

"It is great value for money, extremely competitive and I can't wait to get back out racing," said the 25-year-old.

"I don't see it as a step down in my career as this is a very competitive championship, looking at the lap times and the numbers who enter. And everybody has the same kit.

"I'm sure all the drivers will be pushing me hard and it is certainly not going to be easy."



Vaulkhard raced Chevy in WTCC



Formula Renault

Fortec's Hill was quick in the wet and the dry

Hill targets title after double

Josh Hill leads Brit domination of Formula Renault NEC at Oschersleben

JOSH HILL BELIEVES HE CAN challenge for the Formula Renault North European Championship this season after taking his first wins in the category at Oschersleben last weekend.

The Fortec Motorsports driver, son of 1996 F1 world champion Damon, qualified third, but was elevated to second on the grid for both races as a number of other drivers were hit by yellow-flag infringements.

In a wet first race, Alessio Picariello and Hill beat poleman Jeroen Slaghekke on the run to the first corner.

Hill then took the lead before heading a British 1-2-3, with Jordan King and Jake Dennis completing the podium.

Hill beat Dennis away in a dry second race and went on to finish 2.7 seconds clear of King.

Dennis and Hill both pressured longtime leader Steijn Schothorst for much of the third encounter, with both finding ways past in the closing stages, with Dennis ahead.

"It helped I knew the circuit from last year, but we've always had the pace," said 21-year-old Hill, who

suffered contact and reliability issues earlier in the season.

"Everything went right and we were fast and consistent straight away. I would have preferred it to stay dry because I knew we would be quick and I'd not driven there in the wet before.

"I've always had my mind on the championship, but you don't focus on that. You focus on getting the wins and then you'll get the title."

Hill is now third in the standings, 28 points behind Dennis and eight behind King.

Formula Pilota China

Wells strikes to take points lead

FORMULA RENAULT UK REFUGEE Dan Wells has moved to the top of the Formula Pilota China standings after taking two wins at Ordos last weekend.

The Hong Kong-based Wiltshireman won the first race of the weekend - the second round of the FPC season - and finished third in race two.

He then managed to find a gap to demote former karting star Antonio Giovinazzi on the final lap of race three and in doing so bumped the Italian from the lead of the series, which is run for Formula Abarth cars.

"It all came together this weekend," said Wells. "I immediately loved Ordos - it's just like UK karting tracks. We had an engine blow in the last free-practice session but everything else was straightforward - it was mega."

Wells's ambition is to graduate with his KCMG team to the squad's Japanese Formula 3, then Formula Nippon line-ups. "They're a fantastic team," he said. "I'm very impressed with the standards they've set."



Dean made brief M28 appearance

Historic F1

Rare McLarens fail to start GP support event

FORMER F3000 RACER AND GT ace Richard Dean qualified Zak Brown's McLaren M28 eighth for last Saturday evening's FIA Historic Formula 1 round at Silverstone, but decided not to race.

Dean's fellow United Autosports team co-principal Zak Brown was also there with his M26, but neither started the British GP support race.

"There were a few reasons, the

main one being that the M28 is for sale and we had a bid on it over the weekend," said Dean. "Given that and the weather, there didn't seem at that point to be many upsides to racing it.

"The rain was torrential during practice [on Friday] and the cars were aquaplaning everywhere. I've never liked it when I'm not in complete control and there were half a dozen places each lap where I wasn't. I just

did my three laps to qualify, while Zak went out and pulled straight back in."

Brown still hopes to race his Porsche 962 at Monterey [in California] in August.

A McLaren - Bobby Verdon-Roe's MP4/1 - took pole at Silverstone, but retired with wheel problems.

P84 HF 1 REPORT

Star Mazda

Hawskworth back on top in Mazda

BRITON JACK HAWKSWORTH regained the lead of the Star Mazda Championship after taking a clean-sweep of victories in Canadian city Toronto last weekend.

Hawskworth, who was fourth in Formula Renault UK last year, now has four victories from eight races and a 39-point championship lead in the American single-seater series. He took advantage of erstwhile championship leader Connor De Phillippi finishing in seventh and 16th - after a mistake while running second in race two.

The BRDC Rising Star from Bradford also took pole position and fastest lap in both races, winning the first by 0.295s and the second by 0.557s (which finished behind the safety car) after sustained pressure and yellow flags in both events. He also finished the second event with a slow puncture.

Hawskworth praised his squad after the poor weekend at Iowa, where he crashed after a car failure.

"Team Pelfrey did an absolutely amazing job to give me a car capable of winning back-to-back races on a really

tough street circuit, particularly since we left Iowa two weeks ago with my car smashed to pieces," said the 21-year-old. "This kind of weekend has been in the works for a while, given how professional the team is and how hard they work."



Hawskworth celebrates with his Pelfrey squad

KX Akademy

Goff, Hill and Lloyd are latest on KX Akademy radar

RENAULT CLIO CUP POINTS

leader Jack Goff, Ginetta ace Jake Hill and Porsche Carrera Cup race winner Daniel Lloyd have been identified as talent the KX Akademy would like to see apply for next season.

Aimed at helping young tin-top drivers and motorcycle racers, the KX Akademy is already supporting Clio frontrunner Stefan Hodgetts and Ginetta GT Supercup contender Tom Ingram (see AUTOSPORT, June 28). British Touring Car star Jason Plato heads up the scheme, which also uses a panel of expert judges.

Goff, Hill and Lloyd - along with riders Jack Groves and Tommy Bridewell - have now been selected for 'Plato Likes Your Style' status. This means they will be followed closely this season with a view to potentially becoming part of the 2013 Akademy, should they choose to apply and make it through to the panel

interviews. If they are successful the programme will provide budget contributions and mentoring from double BTCC champion Plato.

"These guys are on my radar and I really hope they put pen to paper and apply," said Plato. "I'm off to see various other racers in the coming weeks to see who else floats my boat, plus I've got scouts out there checking for talent."

More nominations could be made and those selected will carry 'Plato Likes Your Style' stickers.



Plato has picked Goff as one to watch in 2012

David Allan 1965-2012

FORMER BTCC RACER DAVID

Allan was killed last Tuesday (July 3) in an accident at Millbrook Proving Ground.

Allan joined Honda in 1986 and became the section manager in charge of powertrain and product engineering.

The Swindon-based driver finished 12th in the BTCC Production Class in 2001 and ninth in 2002 for Synchro Motorsport, team-mate James Kaye winning that year's title.

AUTOSPORT understands the accident, in which several others were injured, is now the subject of an investigation.

Lotus Cup Europe

Evora takes privateer win

GREGORY RASSE TOOK THE FIRST victory for a Lotus Evora GT4 driven by a privateer in the Lotus Cup Europe at Spa last weekend, and immediately added a second at the double-header.

Rasse was quickest in qualifying, but was challenged all the way to the

flag in both races, winning the first by 1.920s from Jean-Baptiste Meusnier in his Lotus Exige. Rasse then had to fight back in the second race after dropping down at the start, eventually finishing two seconds ahead of Lotus 2-Eleven driver Xavier Georges, with Meusnier third.

David Harvey took the Open-class victory in both races and fellow Briton Craig Denman was the class of the field in the Production category, also winning twice.



Georges leads, but Rasse's Evora (middle) is lurking

IN BRIEF



Tordoff took 12th

SAM TORDOFF WAS THE HIGHEST

finisher of the eight Porsche Carrera Cup GB competitors who contested the Porsche Supercup race at the British GP at Silverstone last weekend. Tordoff finished 12th from a 25-car field, but it was a bittersweet meeting for 2012 Carrera Cup Scholarship driver Daniel Lloyd, who qualified 10th only to be eliminated on the opening lap of the race.

BRITISH RACING LEGEND BARRIE

Williams took a win and a second in a guest outing at Norway's Rudskogen circuit last weekend. 'Whizzo' won the first wet historic race in a Mini and led the second until being delayed by a backmarker on the final lap.

JASON MINSHAW IS SET TO MAKE

his HGPCA return at the Silverstone Classic later this month in father Alan's Brabham BT4, which has not been out for a couple of seasons.

MORE THAN 40 ENTRIES HAVE NOW

been received for the Classic Touring Car Trophy races at the Silverstone Classic. Among the 18 different models expected are Super Touring, DTM and Group A machines.

BRITISH PAIRING DAVID AND

Lorraine Gathercole won the Index of Performance in Plateau 4 of the Le Mans Classic last weekend in their Lotus Elan. The other Index winners included Mark Emmerling (Riley Brooklands), Ralf Hoble (Triumph TR2), Roger Wills/Joel Twyman (Lotus Elite), Paul Chau (Shelby Mustang GT350) and Marcus Mahy/Norbert Engels (BMW 2002 heidegger).

AFTER ISSUES IN ITS FIRST TWO

Plateau 6 races, the Gulf GR8 of owner Roald Goethe and sportscar racer Stuart Hall took a fifth at the Le Mans Classic.

SPORTSCAR RACER ANDY MEYRICK

and Henrik Lindberg won the first Plateau 6 race at the Le Mans Classic last weekend in their De Cadenet-Lola T380. The duo was 12th on aggregate.



Meyrick starred in De Cadenet



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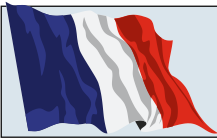
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LE MANS CLASSIC

IN PICTURES Circuit de la Sarthe

REPORTS
SPORTS EXTRA

Pre-war set gets under way, Le Mans style



French Talbot Lago defeats Brit Talbot and Alfa 8C

Aggregate pre-war victory fell to Christian Traber/Bruce Tenery, despite two wins by the Gareth Burnett/Richard Evans/Alex Ames Talbot



Pickering leads another Jaguar Le Mans success

Jaguar C-type, Mercedes 300SL and Jaguar D-type each took a Plateau 2 win, with Gavin Pickering's 'D' getting the overall victory



Lotus takes Le Mans victory as Lister falters

The Alex Buncombe/Derek Hood Lister won twice, but then wilted in Plateau 3, leaving Roger Wills/Joe Twyman/Emanuele Pirro in charge



Ford's famous GT unstoppable in classic enduro

Ford GT40s again dominated the earlier 1960s split, Leo Voyatzides and Roland D'Abel de Libran taking two wins and overall honours



Lola ace goes solo to win by almost four minutes

Bernard Thuner repeated his 2010 success, taking his Lola T70 to all three Plateau 5 wins, from Porsche 908/3 and Alpine A220 machinery



Gulf recovers to top the 'modern' Le Mans group

Despite struggling to 14th and sixth in the first two events, Chris MacAllister won race three and Plateau 6 overall in his Gulf Mirage

PICS: ERIC SAWYER



HISTORIC F1 SILVERSTONE, JULY 7

Hartley shocked to win as wheels fall off Verdon-Roe

STEVE HARTLEY WON the British Grand Prix-supporting Historic Formula 1 race at Silverstone last Saturday evening, but even he admitted that he was stunned to do so.

The intrigue began on the warm-up laps, as clear favourite Bobby Verdon-Roe – on pole by 4.5 seconds in soaking wet conditions in his McLaren MP4 – didn’t even make the bone-dry starting grid.

Brand new, untested wheelrims didn’t have drive pegs fitted and, although he pitted after the left-front worked loose on the first sighting lap, the right-front parted company on the second at Becketts. “If only we’d replaced them both when I pitted,” he rued. “If we’d had just one lap of dry practice, we’d have quickly identified the problem.”

With BV-R absent, and

some of the field mistakenly following him into the pits at the end of the first warm-up lap, many of the grid were late arriving. With cars all over the place – which at least replicated the haphazard period style of the older machinery – the spectacular field was unleashed.

Having inherited ‘pole’, Hartley’s Arrows A4 led the opening tour, but Bill Coombs (Tyrrell 009) surged past him at Village at the start of lap two. Richard Meins (Williams FW07) demoted Hartley to third at Brooklands soon after, but Hartley repassed him a couple of laps later.

Coombs – contesting a British GP support race for the first time since the F3 event in 1985 – got trapped in traffic under yellow flags on lap six, allowing Hartley to close, but the Arrows had



Steve Hartley heads the pack into Abbey

a brief off-track moment at Village, which allowed Meins back on his case.

The race looked like it was Coombs’s to lose as he extended a 16.8s lead, and on the penultimate lap he did just that, splashing through the puddles to a soggy halt on the inside of Copsie. “I felt it misfire at Luffield, then again at the end of the straight, then it

cut out altogether,” he said. “Either fuel or battery, I don’t know for sure. It was going so well, I’m gutted.”

Hartley inherited the win from Coombs, not that he knew it: “Bill was going so well, I didn’t expect to beat him. It was only on the slowing-down lap that I realised he’d stopped!”

Meins took second, ahead of a 1982 Williams driven

by Richard Eyre.
● Charles Bradley

RESULTS (15 LAPS) 1 Steve Hartley (Arrows A4); 2 Richard Meins (Williams FW07) +37.624s; 3 Richard Eyre (Williams FW08); 4 Joaquin Folch (Brabham BT49C); 5 Patrick d’Aubrey (Tyrrell 012); 6 Mark Higson (March 761). Class winners d’Aubrey; Higson; John Delane (Tyrrell 002). Fastest lap Bill Coombs (Tyrrell 009) 2m02.046s (107.98mph).



Neuhoff (15) leads through Eau Rouge

VW RACING CUP SPA, JULY 6-7

Neuhoff and Gilham share the victory spoils at Spa

MIKE NEUHOFF AND Tony Gilham claimed their first wins of the VW Cup season at Spa on the championship’s first visit to Belgium.

The Scirocco of championship leader and poleman James Walker slipped to third behind

the Golfs of Neuhoff and Aaron Mason away from the start, but Walker fought back to second past Mason, and narrowed Neuhoff’s lead to half a second by the end of the lap.

Walker slipstreamed to the front on the Kemmel straight on lap

two, only for Neuhoff to do the same a lap later. Mason was meanwhile keeping a watching brief and preserving his tyres, overtaking Walker on lap four, and Neuhoff next time around, to claim the lead. But engine problems on the penultimate tour ended Mason’s charge.

Neuhoff reclaimed the lead from Walker after Mason’s retirement, winning by a second. “I was

getting rather miffed at having gone from first to third in quick time,” said Neuhoff, “but Aaron’s exit gave me the opportunity.”

Walker was pushed back to third on the last lap by Gilham’s Golf, the BTCC man having to play catch-up after losing time to the leaders early on.

There were also three leaders in race two, Stewart Lines passing poleman Peter Wyhinny on the opening lap and hanging on in front until lap three, when Walker and Gilham charged through.

The duo battled for the duration, Gilham taking the lead on lap four of seven through Eau Rouge. There was a repass from Walker and another Eau Rouge duel before the end.

Gilham eventually claimed the win by nine tenths. “It was a tough race,” said Gilham. “There’s room for two through Eau Rouge, so long as

you are both committed and both sensible. We got through there twice side-by-side, and that’s quite an achievement in itself.”

Lines collected a maiden podium finish ahead of Neuhoff, who lost time in the early laps stuck behind the battling Tom Wilson and Wyhinny. He caught the leaders’ train only on the final lap.

● Nick Carter

RESULTS (BOTH 7 LAPS)

1 Mike Neuhoff (Golf); 2 Tony Gilham (Golf) +1.573s; 3 James Walker (Scirocco); 4 Tom Wilson (Golf); 5 Stewart Lines (Golf); 6 Peter Wyhinny (SEAT Leon). FL Gilham 2m49.597s (92.36mph) record. RACE 2 1 Gilham; 2 Walker +0.878s; 3 Lines; 4 Neuhoff; 5 Wilson; 6 Wyhinny. FL Gilham 2m50.498s (91.89mph). POINTS 1 Walker, 376; 2 Neuhoff, 312; 3 Wilson, 272; 4 Aaron Mason, 226; 5 Joe Fulbrook, 210; 6 Richard Morgan, 172.

FORMULA FORD EURO CUP SPA, JULY 6-7

Tandy takes hat-trick in crash-strewn meeting

RETURNING FORMULA Ford hero Nick Tandy won all three Spa EuroCup races on his first competitive outing in a new-generation EcoBoost for JTR, although the first of the hat-trick counted for little as the field enjoyed less than a full lap under racing conditions.

A five-car crash that left Dutch driver Jos Kiekens with a broken leg and George Blundell with a broken toe brought out the safety car to lead the field around for three laps before the race was halted.

There was also a crash in race two, which shortened it by a couple of laps – much to Tandy’s relief, for he had all but used up his tyres.

Polesitter Tandy escaped to open a 3.2s lead on lap one, his pursuers bottled up behind Jake Cook, who couldn’t get first gear off the line.

Luke Williams and Eric Lichtenstein towed each other around to reduce Tandy’s lead to 1.6s, but red flags flew on what would have been the penultimate lap when a collision on the old pit straight between Ryan Cullen’s EcoBoost machine and Michel Florie’s Duratec left Cullen’s car stranded mid-track. The results were wound back to six laps, when Tandy led Lichtenstein by 1.6s, with Williams third from Cook.

In the Duratec class, Dutch drivers Florie, Bart van Os and Max van Splunteren battled throughout, taking turns to lead, with van Os given the win thanks to the red flags.

In race three Tandy lost time at Eau Rouge and was slipstreamed back to second on the Kemmel straight by Cook. Tandy repassed next time around and, as Cook



Tandy fought hard for his three victories

made an error at Eau Rouge, it was Lichtenstein who took the battle to Tandy. They duelled for five laps until the Argentinian’s car slowed.

With Williams out with engine trouble, Cook was promoted to second; he was in no shape to catch Tandy, however. Julio Moreno claimed third, his maiden Formula Ford podium.

Florie’s car, rebuilt after its earlier shunt, performed

miraculously, leading the Duratec class throughout. He dedicated his win to his hospitalised team-mate Kiekens.

● Nick Carter

RESULTS RACE 1 (3 LAPS)

1 **Nick Tandy** (Mygale M12-SJ); 2 Eric Lichtenstein (Mygale M12-SJ) +3.133s; 3 Jake Cook (Mygale M12-SJ); 4 Julio Moreno (Mygale M12-SJ); 5 Luke Williams (Mygale M12-SJ); 6 Lasse Sorensen (Van

Diemen DP08). **CW** Sorensen. **FL** Williams 5m34.899s (46.78mph).

RACE 2 (6 LAPS) 1 Tandy;

2 Lichtenstein +1.656s; 3 Williams; 4 Cook; 5 Moreno; 6 Bart van Os (Mygale SJ09). **CW** van Os. **FL** Tandy 2m25.470s (107.70mph) record.

RACE 3 (8 LAPS) 1 Tandy;

2 Cook +8.635s; 3 Moreno; 4 Michel Florie (Mygale SJ10); 5 van Os; 6 Max van Splunteren (Mygale SJ10). **CW** Florie. **FL** Tandy 2m26.161s (107.19mph).

FUN CUP 3000km SPA, JULY 7-8

Bumper Beetle field fights to the end

A HUGE GRID OF 80 Fun Cup Beetle silhouettes took the start of the famous Spa 3000km race, formerly known as the Spa 25 Hours and now run over 24, last weekend.

UK victory went to Track Torque’s Henry Dawes, Radical racer James Swift, current masters championship leader Ross Kaiser, Mark Owen and

Lawrence Howlett. The drivers of this number 106 TDI car qualified ninth overall, but the top-20 grid positions were allocated by an unorthodox game of musical chairs between the team managers, which pushed them down to 18th for the race start.

Meanwhile, the TDI team of Happy Racing, car 252, driven by Jason Porter, Max

Hunter and ex-BTCC racer James Pickford, was looking super-strong for the UK. Hunter soon surged through the field into seventh overall.

By the six-hour mark, Pickford had stormed from sixth to second and his next stint was even stronger. He eventually secured the overall lead by a full lap over the second-placed

Belgian ASH-PVI team car number 56. But disaster struck on Pickford’s in-lap, when the driveshaft failed as he exited the fast left of Pouhon, causing Happy Racing to drop to ninth overall as they changed the part.

This opened a window of opportunity for the Dominos Track Torque team to pull ahead of the Happy racers for the UK lead, and move into a strong fifth place overall.

There was an on-track battle between Swift and Pickford, which Pickford got the better of to gain a lap back for his team, but there was nothing more Happy Racing could do.

Dominos Track Torque continued strongly, securing fifth overall for the UK. DTT’s Henry Dawes said: “What a fantastic team effort. The car was faultless, plus Clive and Nick were fantastic on the pitwall. They made all the right decisions.”

Happy Racing eventually

recovered to seventh, while Team Tiger 214 took a fantastic 10th overall and first in the petrol class with Chris and Ben Beighton, Chloe Noyce and Oliver Bryant.

Delahaye TR/Retrodor racing took a close-fought overall victory from ASH/PVI.

RESULTS (390 LAPS)

1 **Delahaye TR/Retrodor** (Alexandre Viron/Laurent Richard/Gautier Engisch/Emmanuel Orgeval); 2 ASH/PVI (Patrick van Impe/Michael Leenders/Amin Bentchikou/Benoit Dupassage) +1.809s; 3 Astur Car (Pierre Piron/L Fontaine/Romain Delva/Jean-Francois Oliver); 4 e-RACE Raidillon (Jean-Pierre Baudart/Didier Charlier/Arnold de Quirini/Olivier de Pierpont); 5 Dominos Track Torque (James Swift/Henry Dawes/Mark Owen/Ross Kaiser/Lawrence Howlett); 6 e-RACE en famille (Vincent & Jean Vandenabeele/Claudie & Arthur Tanghe). **FL** Mc Donald s Racing 3m02.281s (85.96mph).



Track Torque were top Brits



BRITISH HILLCLIMB CHAMPIONSHIP HAREWOOD, JULY 8

Moran overcomes Raptor challenge

SCOTT MORAN reckoned the pair of wins he scored at Harewood last weekend to be among his most testing.

Working hard in qualifying for round 15 he managed to grab the cream the last run-off shot. GWR driver Jos Goodyear set an early mark in the shoot-out that only Moran could beat, with second qualifier Lee Adams only fifth.

Goodyear look set to go one better later, qualifying fastest for the round 16 run-off. But one last push ended with the little Raptor backwards in the Orchard gravel trap with a zero score as he chased Moran's mark, which thus stood as the event's best.

“This season is a bit like

having Martin [Groves] back, but the push is not only from Trevor [Willis] but also the lads in that 1600 Raptor,” said Moran. “I just had to behave myself as it's too easy to overdrive this hill, which is what happened to Jos.”

The Raptor's original driver, Adams, also had a fair day and eventually scored more than Goodyear with a fifth and a fourth.

Willis concluded the day as second highest scorer to enhance his second place in the points ahead of a pack still headed by Roger Moran. Moran Sr took third in round 16 and his utter consistency punishes the Raptor team when they make any mistake.

Class-record-grabbing



Moran worked for his double

Goodyear was philosophical about his gravel-bound incident, and another disappointed driver was Wallace

Menzies. He also put his car into the Orchard gravel when pushing to qualify for the first run-off. Consolation came with

fifth place later on.

Tony Wiltshire scored a point on his first Harewood event in 22 years.

● Eddie Walder

ROUND 15 1 Scott Moran (3.5 Gould-NME GR61X) 49.39s; 2 Jos Goodyear (1.6 GWR-Suzuki Raptor Extreme) 49.88s; 3 Trevor Willis (3.2 OMS-Powertec) 50.02s; 4 Roger Moran (3.5 Gould-NME GR61X) 50.21s; 5 Lee Adams (1.6 GWR-Suzuki Raptor Extreme) 50.31s; 6 John Bradburn (3.5 Gould-Cosworth HB GR55) 51.40s; 7 Richard Spedding (1.6 Force-Suzuki PC) 51.52s; 8 Will Hall (3.5 Force-Nissan WH) 52.04s; 9 Oliver Tomlin (4.0 Pilbeam-Judd MP97) 52.43s; 10 Steve Owen (1.6 OMS-Suzuki 25) 53.24s; David Uren (1.6 Force-Suzuki PC) Fail; Andy Coley (2.5 Gould-Cosworth GR55) Fail.

ROUND 16 1 S Moran 49.32s BTD; 2 Willis 49.41s; 3 R Moran 49.84s; 4 Adams 50.09s; 5 Wallace Menzies (3.2 DJ-Cosworth Firestorm) 50.26s; 6 Tomlin 52.09s; 7 Bradburn 52.10s; 8 Spedding 52.22s; 9 Hall 52.64s; 10 Tony Wiltshire (2.5 Gould-Cosworth GR55) 53.34s; 11 Coley 53.76s; 12 Goodyear Fail. **Class winners** Eric Morrey (1.1 Clan Crusader) 64.37s; Graham Smith (1.1 OMS 2000M) 56.69s; Ben Tranter (1.9 Swift FB91) 64.20s; Karl Jackson (2.0 Honda S2000) 69.91s; Peter Herbert (3.6 Porsche Carrera) 72.45s **record**; Wil Ker (1.0T Austin Mini) 66.74s; David Paterson (1.6 Peugeot 106) 64.22s; Paul Martin

(2.3t Mitsubishi EVO6) 59.79s **record**; Stuart Dow (1.3 Caterham-Suzuki) 61.04s; Peter Hubbard (3.1 Marcos GT) 77.86s; John Palmer (1.7 Westfield-Ford SE) 61.57s; Graham Wynn OBE (1.6 Force-Suzuki LM001) 56.78s; Allan McDonald (2.0t Z-Cars Mini-Mitsubishi EVO2) 61.49s; Bill Chaplin (0.6 Force-Empire-Suzuki) 57.50s; Gary Thomas (1.1 Force-Suzuki PT) 54.53s; Goodyear 49.39s **record**; Morgan Jenkins (2.0 Pilbeam-Vauxhall MP87) 53.58s; Willis 50.26s. **POINTS** 1 S Moran, 149; 2 Willis, 133; 3 R Moran, 115; 4 Adams, 91; 5 Goodyear, 75; 6 Menzies, 67; 7 Tom New, 52; 8 Hall, 45; 9 Bradburn, 37; 10 Spedding, 30.



Roche (right) about to be held up in traffic

MAZDA MX5 Mk1 BRANDS HATCH, JULY 7

Packed Mazda races produce three winners

BEN SHORT NARROWLY emerged victorious in the tightest of the Mazda MX5 Mk1 races, defeating Rich Puddle by half a second.

Puddle led initially, but as the track dried he lost out to Short on the inside at Clearways at half-distance. Puddle fought back and tried to capitalise when Short was boxed in by a backmarker on the final lap but, although he ran through Surtees alongside,

Short ensured he could not squeeze past at McLaren.

Short was one of three double victors on a day when championship leader Tom Roche went winless. In his first encounter, James Blake-Baldwin pounced to win when Roche and Alan Henderson stumbled across backmarkers at McLaren on the final lap. Later, Roche spun to the back after first-lap contact from Adam Gore, the day's other victor.

Dan Rogers earned the Driver of the Day award for a best-ever second in race five, while Jade Edwards starred with a feisty drive to third in race two.

● Ian Sowman

RESULTS (18 LAPS) 1 Adam Gore; 2 Rhys Jenkins +5.191s; 3 Simon Goddard; 4 Charlie Charman; 5 Simon Baldwin; 6 Andy Coombs. **FL** Charman 59.570s (72.99mph).

RACE 2 (20 LAPS) 1 Ben Short; 2 Brett Smith +2.421s; 3 Jade Edwards; 4 Matthew Lambert; 5 Eduardo Rodrigues; 6 Will Blackwell-Chambers. **FL** Blackwell-Chambers 59.263s (73.37mph). **RACE 3 (19 LAPS)** 1 James Blake-Baldwin; 2 Tom Roche +0.746s; 3 Alan Henderson; 4 Brian Chandler; 5 Ed Gay; 6 Daniel Rogers. **FL** Roche 58.009s (74.96mph). **RACE 4 (18 LAPS)** 1 Short; 2 Richard Puddle +0.512s; 3 Baldwin; 4 Alex Preston; 5 Lambert; 6 Jonathan Bailey. **FL** Puddle 1m04.306s (67.62mph). **RACE 5 (16 LAPS)** 1 Blake-Baldwin; 2 Rogers +12.592s; 3 Brett Smith; 4 Blackwell-Chambers; 5 Jack Sycamore; 6 Carly Latcham. **FL** Smith 59.300s (73.33mph). **RACE 6 (19 LAPS)** 1 Gore; 2 Charman +5.745s; 3 Henderson; 4 Jenkins; 5 Matt Robinson; 6 Roche. **FL** Roche 58.425s (74.43mph).

MAZDA MX5 Mk3 & MX150R BRANDS HATCH, JULY 7

Herbert doubles up

LUKE HERBERT TOOK over the lead of the Mazda MX5 Cup with a double race victory at Brands Hatch, although his closest rival Chrissy Palmer bounced back with a resounding triumph in race three.

Herbert made the best start to the opener, with poleman (and Castle Combe treble winner) Jordan Stilp being shuffled back to third position by Palmer after a sluggish start. Slower cars played their part, with Palmer's challenge blunted after a delay behind an MX150R, while Herbert encountered a sideways MX5 at Clearways. Eventually, Stilp was aided by backmarkers as he reclaimed second from Palmer at McLaren.

The second race was red-flagged due to stranded cars and a cloudburst, with Herbert

switching back from the outside line for Paddock to the inside for Druids to wrest the lead from Stilp on lap two of seven.

Palmer made a great fist of the reversed-grid finale, going from seventh on the grid to the lead at Surtees. He aced the safety car restart and reeled out a big lead. Herbert pulled some sublime moves on his way to second.

● Ian Sowman

RESULTS (14 LAPS) 1 Luke Herbert; 2 Jordan Stilp +0.982s; 3 Chrissy Palmer; 4 Adam Gore; 5 Paul Sheard; 6 Eynon Price. **CW** Jonathan Blake (MX150R). **FL** Stilp 1m01.646s (70.54mph). **RACE 2 (7 LAPS)** 1 Herbert; 2 Stilp +2.482s; 3 Palmer; 4 Sheard; 5 Price; 6 Matthew Davies (MX5). **CW** Blake. **FL** Sheard 1m03.950s (68.00mph). **RACE 3 (13 LAPS)** 1 Palmer; 2 Herbert +2.017s; 3 Gore; 4 Stilp; 5 Clint Bardwell (MX5); 6 Davies. **CW** Blake. **FL** Herbert 1m01.744s (70.42mph).



Dow's Ray was a double FF1600 winner at Knockhill

KMSC LEGENDS KNOCKHILL, JULY 8

Allan and Newall take their chances to star in Legends



Allan won finale after some great battling

THE KNOCKHILL Motor Sports Club's races for the Scottish Legends provided a chance for this season's top rookies to stand out, with the absence of some of their normal championship rivals. David Newall and David Allan made the most of the opportunity, sharing the

spoils in three close events. Sunday's opening heat featured the duo going head to head, literally, as they bump-drafted for the majority of the race. This proved the undoing of Allan as his front bumper loosened and lodged itself under the car. "We were bump-drafting on the

main straight and I got up the back of him too many times," explained Allan, who fell to third as a result. Newall claimed his second victory in heat two by just three tenths of a second. The pair raced from near the back to once again set a dominant pace; their fastest laps over 0.5s

clear of the next best. Although they started near the back in the final race, the tables were turned for Allan when, crucially, he got a break from Newall as the top five fought among themselves. A last-lap dice between Chris Hynds and Newall at the chicane allowed Allan to win by over a second.
 ● Jonathan Crawford

RESULTS (10 LAPS) 1 David Allan; 2 David Newall +1.589s; 3 Gerard McCosh; 4 Chris Hynds; 5 Daniel McKay; 6 Alan Fearnley.
FL McCosh 1m01.060s (75.47mph).
HEAT 1 (7 LAPS) 1 Newall; 2 McCosh +1.685s; 3 Allan; 4 C Hynds; 5 Scott Hynds; 6 Kieran Gallacher. **FL** McCosh 1m01.357s (75.10mph).
HEAT 2 (7 LAPS) 1 Newall; 2 Allan +0.349s; 3 S Hynds; 4 McCosh; 5 Andrew Donald; 6 Fearnley. **FL** Allan 1m00.928s (75.63mph).

KMSC RADICALS/MODIFIED SALOON AND SPORTSCARS KNOCKHILL, JULY 8

Thorburn's Radical is too much for Scottish rivals

ALTHOUGH THE organisers struggled to attract the Radical field they were looking for, the sight of David Thorburn's Radical SR3 was nonetheless a great spectacle as he dominated the two mixed-class races. Despite the Radical's outright pace, Thorburn could not share the start performance of his rivals and he fell down the order with a slow getaway in race one and a stall in race two. Garry Watson's Westfield was therefore the frontrunner at the start of both events and he built what would normally be considered an unassailable lead. But the Radical's pace was almost two seconds per lap faster and Thorburn

soon recovered. Radical PR6 driver Doug Carter completed the podium for both races, although he had his own problems in race one as he was penalised 10 seconds for jumping the start.
 ● Jonathan Crawford

RESULTS (BOTH 20 LAPS) 1 David Thorburn (Radical SR3 RS); 2 Garry Watson (Westfield SEI) +45.153s; 3 Doug Carter (Radical PR6); 4 Philip Duncan (Westfield SE); 5 Stuart Walker (Porsche GT2); 6 Fiona Kindness (Nissan Skyline GTR). **CW** Watson. **FL** Thorburn 52.116s (88.42mph).
RACE 2 1 Thorburn; 2 Watson +33.028s; 3 Carter; 4 Walker; 5 Alex Bruce (Mitsubishi Evo 10); 6 Kindness. **CW** Watson. **FL** Thorburn 51.621s (89.27mph).

Thorburn pounces on Watson's lead



Caterhams battled in Radical's wake



SEMSEC SPORTS RACING AND KIT CAR LYDDEN, JULY 7

Three to Harvey-Kelly

WHILE CHARLES Harvey-Kelly took an effortless trio of victories in his Radical SR4 at Lydden last Saturday, it was left to the assorted Caterhams to provide the frantic action behind for the minor placings. SEMSEC was blessed with dry conditions but more entries would have helped. The racing itself was good, especially as Mark Bishop, Bruce Wilson, Paul Gibb and Ian Conibear put on a great display, swapping places in their Caterhams until Wilson led the quartet from Gibb and Conibear, as Bishop retired. Second time out and

Conibear made a dash to lead the Caterhams, leaving Gibb, Wilson and Bishop arguing over third.
 ● Linda Keen

RESULTS (ALL 17 LAPS) 1 Charles Harvey-Kelly (Radical SR4); 2 Bruce Wilson (Caterham CSR Superlight) +25.985s; 3 Paul Gibb (Caterham 7 HPC); 4 Ian Conibear (7); 5 Derek Hambly (Radical Clubsport); 6 Richard Finlay (Global GT Light). **CW** Wilson. **FL** Harvey-Kelly 42.471s (84.76mph).
RACE 2 1 Harvey-Kelly; 2 Conibear +25.020s; 3 Gibb; 4 Wilson; 5 Mark Bishop (7); 6 Hambly. **CW** Gibb. **FL** Harvey-Kelly 42.543s (84.51mph).
SOUTH EAST CHALLENGE 1 Harvey-Kelly; 2 Gibb +23.738s; 3 Wilson; 4 Conibear; no other starters. **CW** Gibb. **FL** Harvey-Kelly 42.786s (84.13mph).

IN BRIEF



MX5 Mk3 racer Bardwell took enduro

MA5DA MINI ENDURO Those that imagined the Ma5da Mini Enduro at Brands would be of low entertainment value were proved emphatically wrong. Anthony Nield (MX5) picked his way through into the lead – dicing with Jonathan Blake's MX150R as he went – but promptly spun at Druids and terminally drove into the gravel. The remaining third of the race was a nip-and-tuck dice between Blake and Clint Bardwell's MX5, which was won by Bardwell by 0.2s.

KMSC FF1600 Alistair Dow continued his season's successes with another double victory in his Ray at Knockhill. Michael Gray took two second places despite a drama before the second race when steam was rising from his Vector. Despite a nine-month lay off, Martin Pieraccini raced to two third places in his Van Diemen.

KMSC OPEN/CLASSIC SALOONS & SPORTSCARS The normal Scottish championship runners combined for two fairly spread out Knockhill races. Shonny Paterson triumphed in both with his Triumph TR8. The best racing came between the Mini of Craig Noble and the XR2 of Stephen Russell who battled tirelessly over fourth place, with Noble taking the spot in both encounters.

SEMSEC SALOON & SPORTS Bill Richards was in top form again at Lydden as his spurred his Mini past Nigel Craig's Subaru Impreza following a safety-car intervention to clear debris. Richards was on pole for the second outing and, although he had Craig pushing hard in the early laps, Richards' win was in little doubt.



Richards and his Mini won twice more

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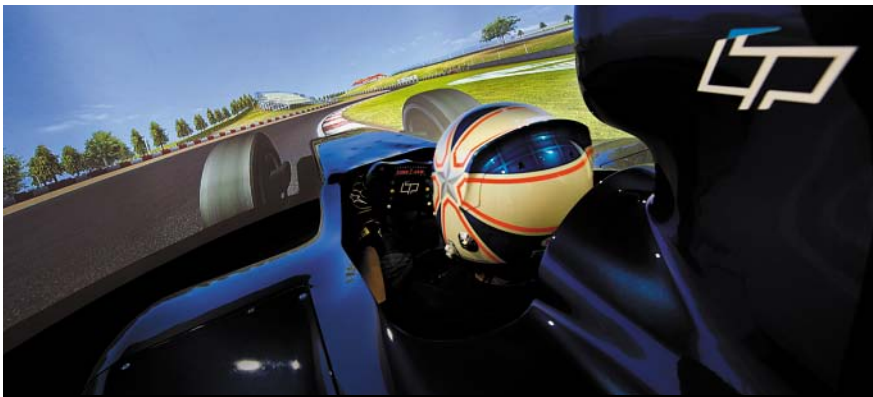
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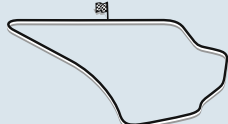
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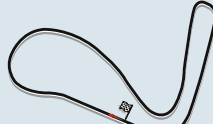
SPORTS EXTRA RESULTS ROUND-UP



Brands Hatch



Knockhill



Lydden

Luke Herbert passes Jordan Stilp in Brands MX5 Cup



Bill Richards leads tin-top Lydden pack

BRANDS HATCH BRSCC, JULY 7

MASDA MINI ENDURO (46 LAPS)

1 Clint Bardwell (MX5 Mk3); 2 Jonathan Blake (MX150R) +0192s; 3 Jamie Ingram (MX150R); 4 Julian Taylor (MX5 Mk3); 5 Kevin Taylor (MX5 Mk3); 6 Christopher Lord (MX5 Mk3). **CW** Blake; Simon Baldwin (MX5 Mk1). **FL** Bardwell 57101s (76.15mph).

KNOCKHILL KMSC, JULY 8

KMSC FF1600 (BOTH 12 LAPS)

1 Alistair Dow (Ray GR09); 2 Michael Gray (Vector) +7134s; 3 Martin Pieraccini (Van Diemen); 4 Adrian Hamilton (Van Diemen); 5 Andrew Cheshier (Van Diemen); 6 Kerr McEwan (Van Diemen). **FL** Dow 56.474s (81.60mph).

RACE 21 Dow: 2 Gray +5.439s; 3 Pieraccini; 4 Hamilton; 5 McEwan; 6 Cheshier. **FL** Dow 56.146s (82.07mph).

KMSC OPEN/CLASSIC SALOONS AND SPORTSCARS (BOTH 12 LAPS)

1 Shonny Paterson (Triumph TR8); 2 Tom Wilson (Ford Escort Mk1 RS) +2728s; 3 Bruce Weir (Lotus Sunbeam); 4 Craig Noble (Mini Cooper); 5 Stephen Russell (Ford Fiesta XR2); 6 Andy Walker (Triumph Sport). **CW** Noble. **FL** Paterson 1m02.593s (73.62mph).

RACE 21 Paterson: 2 Wilson +6.666s; 3 Weir; 4 Noble; 5 Russell; 6 Stephen Ward (Fiesta ST). **CW** Noble. **FL** Paterson 1m02.357s (73.90mph).

LYDDEN SEMSEC, JULY 7

SEMSEC SALOON & SPORTSCAR CHAMPIONSHIP & MERIDIAN 14/16 CHALLENGE (14 LAPS)

1 Bill Richards (Rover Mini Clubman); 2 Nigel Craig (Subaru Impreza) +0542s; 3 Tony Skelton (Renault Clio); 4 Mary Grinham (Maguire Mini); 5 Andy Banham (Impreza ABW); 6 Mark Garner (Renault Spider UK Cup). **CW** Craig Grinham; Tristram Barden (Mini); William Hornsey (Peugeot 106 Rallye). **FL** Richards 45.607s (78.83mph).

RACE 21 Richards: 2 Craig +4.126s; 3 Banham; 4 Grinham; 5 Barden; 6 Garner. **CW** Craig Grinham; Barden; Hornsey. **FL** Richards 46.173s (77.96mph).

JOHN TAYLOR HANDICAP (12 LAPS)

1 Michael Jackson (Ford Fiesta); 2 Charles Harvey-Kelly (Radical SR4) +15.778s; 3 Paul Gibb (Caterham 7 HPC); 4 Bruce Wilson (Caterham CSR Superlight); 5 Dan Williams (Mazda MX5); no other finishers. **FL** Harvey-Kelly 42.00s (85.71mph).

Scott Hynds' mascot tries to escape as his Legend catches fire at Knockhill





BEEN THERE, DRON THAT

After more than four decades as a racer, Tony Dron has finally decided to hang up his helmet. **MARCUS PYE** chats to the guy all journos try to emulate...

Tony Dron, who has called time on a sparkling competition career aged 65, is a six-foot-five man of many talents.

Often mistakenly cast as a journalist who raced, he is in fact a racer who fell into writing and 'maxed' his talents at both.

"I don't know where it came from," says Dron. "Racing wasn't in my family, although I was taken to Goodwood a couple of times in the 1950s."

Like many of his peers, the College of Aeronautical and Automobile Engineering student's circuit debut was with Motor Racing Stables at Brands Hatch, in 1967. "MRS star pupil Bruce Johnson and I watched Jim Clark set a fantastic German GP pole at the Nurburgring – 8m04.1s, to Hulme's 8m13.5s, then the rest – and that inspired me. Three school lessons was all I could afford, but I decided to buy a Formula Ford car.

"I chose a Titan Mk4, but didn't really know what I was doing. Fortunately, I was introduced through a family connection to Innes Ireland [Team Lotus's first grand prix winner in '61], then sports editor of *Autocar* magazine.

"We met at the Steering Wheel Club [central London's motorsport mecca] and Innes said, 'This is all great but you need something to fall back on.' I'd read every motoring magazine for years, did a

few reports and ended up winning the Guild of Motoring Writers' William Lyons scholarship in '68."

Dron started racing that season, his first two events being at Brands Hatch and Snetterton, where he formed a lasting friendship with James Hunt. "James was a much misunderstood character, but thoroughly British, and always ready to have a go," insists Tony. "He was very, very serious about his racing."

Having become a frontrunner in 1968 – the only Titan to beat him was Tony Trimmer's works car – Dron was tempted by a deal for '69. "Mike Spence Garage [Lotus dealer] offered me a new FF Lotus and £12 per week to clean trade-in cars for resale. It was my only chance. Hunt and I were skint, but it didn't happen. Once my car was sold to South Africa I was up shit creek without a paddle."

Tony took a job as PA to motorsport entrepreneur Nick Brittan – "my god, did that bloke work..." – who was running Formula Ford International and launched it in Europe.

"Through this I was offered a Crossle 16F for 1970 through Gerry Birrell.

"Somebody from Unipart rang and said, 'What do you want to drive next year?' I thought he was joking" Dron: the answer's yes. Now what's the question?

But my long-term plan became to do motoring journalism as a job, so I joined *Motor* as road-test editor on January 1, '71."

By 1974, with Ford Escort Mexico successes behind him, Dron changed tack again: "I decided I was sufficiently professionally established to give up journalism and become a racing driver proper. Mike Doodson got my [then] sports editor's job, but as the season approached my sponsor Strakers of Wimbledon [Ford dealer] didn't exist anymore and my Capri deal went down the pan. I was 27 and had absolutely nothing in life."

Simon Pearson was his saviour, offering him the number two Broadspeed Triumph Dolomite Sprint drive: "At the end of the year, though, they got rid of me, apparently because we had 'different objectives'. Fortunately, I'd finished third and won the class in the TT, which proved significant."

After contesting the 1975 Tour of Britain with Penthouse pet Madeleine le Mauviel in a Fiat 128



MR VERSATILITY

CHRONICLING A CAREER COVERING

1968 to 2011, Tony Dron's CV includes hundreds of wins – outright or class, and in races, stage rallies, speed events and autotests – and several championships at the wheel of 44 models from 24 marques.

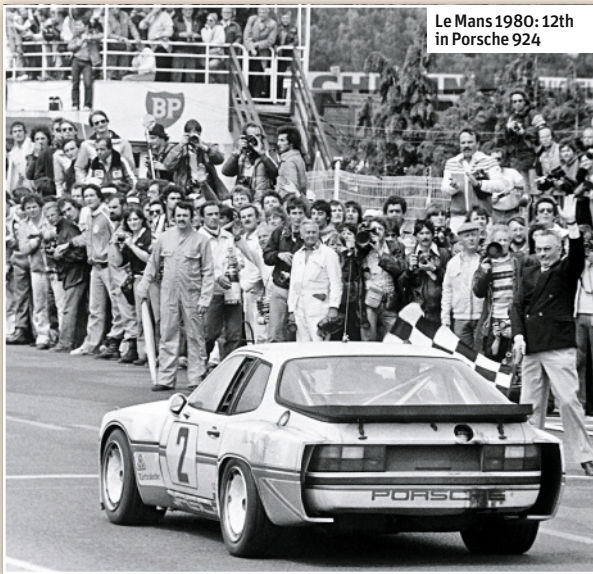
Porsche provides the longest list, with nine cars from 924 to mighty 934 turbocar. Mirroring the versatility of an egg, successes came in Renault 5 to Morgan Plus 8, Bentley 3-litre to Lola Mk6GT and Allard JR to Ferraris.

The Nurburgring's Nordschleife is Dron's favourite circuit, one of his proudest victories coming in the 1996 Eifel Klassik, driving a

Ferrari 330LM/B solo from pole in a field of 180. Three years later he co-drove a BMW M3 to a class win in the 24 Hours.

Having demonstrated cunning in landing a Sussex Trophy hat-trick at Goodwood in Harry Leventis's sublime ex-Phil Hill/Wolfgang von Trips Ferrari 246S Dino in 2001-03, Dron would excel at the 'Ring again, sharing Mark Taylor's Aston Martin DB4GT.

Much of his success he puts down to sorting cars' handling to his liking: "When it came to suspension tuning I always relied on Rhoddy Harvey-Bailey [former works Autodelta Alfa Romeo and American V8 racer]. He transformed cars."



Le Mans 1980: 12th in Porsche 924



Leading Marshall in 1970s BTCC



Nordschleife is favourite track

Coupe, "and appearing on page three of the *Daily Mirror*, somebody from Unipart rang me and said, 'What do you want to drive next year?' I thought he was joking, but the obvious thing was Formula 3. We set up a team and ran a March 763 from Brentford, but my mechanic really wanted Ian Taylor in the car, and they eventually took Tiff [Needell] on too."

The Dolomite engine was hopeless in F3, but the upside was that Dron's speed

competitive class. Sensationally, he also thrapped allcomers at the wet International Trophy meeting in '78, to bridesmaid Gerry Marshall's chagrin.

"A lot of people didn't understand the Dolomite, but I stuck with it because I wanted to drive the Jaguar XJ12C that Ralph Broad had developed. Unfortunately, that programme fizzled out. By the end of '78 I'd had enough of touring cars and wanted to race sportscars, but the reality was that I had to get a proper job again. So I joined Saab Piccadilly as a car salesman."

Tony's prowess in one-make series had been underlined when he won the Porsche 924 series and finished second in the BMW County Challenge with Frank Sytner. Through Porsche connections, and prowess, he was honoured with a factory 924 Carrera GT drive at Le Mans in 1980 and finished 12th in the turbocar with Andy Rouse.

Engine-management failure forced a non-start in Richard Lloyd's 924GTR in 1981, but while driving Richard Cleare's 934 that year Dron suffered a collapsed lung, a long-time weakness.

He recovered sufficiently to race it to a Group 4 class-winning 13th (and record 934 lap) at Le Mans in '82, with Cleare and Richard Jones. Having contested the 24 Hours four times – finally, fleetingly, in Cleare's Kremer CK5 in '83 ("I pulled

221mph in qualifying, but the very expensive fresh engine broke after 40 minutes, before I could race it") – he adores the French marathon and is a huge admirer of the current hybrid prototypes.

"I was still enjoying racing, but not the rest of life. I liked reading *Classic Cars*, thus tried to get a job there. To my surprise I did. Roger Bell was editor, but he left pretty rapidly and I found myself editing it for 11 years. Far from relaxing I ended up doing 45-50 events per year."

As a bigwig on the historic scene, and still a very fine driver, Tony got to race some of the world's greatest cars, including the 1959 Le Mans-winning Aston Martin DBR1. But after last year's Goodwood Revival he decided to retire gracefully.

"I'd spent every penny I had to get started and raced dozens of fantastic cars. Over 44 seasons I reckon I had a pretty good run for that £1600!"



Shaggy-haired Dron gets '74 Mexico trophy

and mechanical sympathy in a test landed him the Broadspeed-run works 'Dolly' drive in the 1977 and '78 British Saloon Car Championships, with Unipart's backing. He dominated the 2300cc class in '77, saw off the three-litre Ford Capris to win Silverstone's British GP support race and only lost the overall title to Bernard Unett, whose Chrysler Avenger was in a less-



Goodwood hat-trick in Ferrari

YOUR SAY

What you think of the motorsport news of the past week



Silverstone meets the great British summer

Where was Silverstone's plan B?

Let's start with the positives. Yes, Silverstone does some things very well and should be complimented on it. More toilets this year, and when things go according to plan it is well organised.

But this year we saw a complete failure because of a lack of foresight and the weekend descended into chaos with massive frustration and very angry and disappointed customers. Where was plan B? Where was the contingency plan in the event of the bad weather? Alarm bells should have been going off since the middle of June.

Silverstone has a duty to care for all the people coming to visit. I felt very cheated by the service I received.

John Ramsay, Edinburgh

EDITORIAL CONTACT mail@autosport.com

This weekend was

incredibly testing for everyone involved with the British Grand Prix, as the extraordinary weather led to challenges that could never have been foreseen.

With the country struggling to cope with torrential rain, the team at Silverstone did an incredible job just to put the event on.

We all felt for the fans whose early weekend plans may have been upset, but thanks to the efforts of everyone involved, Mark Webber's triumph on Sunday was enjoyed

by a capacity crowd.

When the weather was at its worst, our thoughts were with the army of 1000 volunteers without whom the event couldn't take place.

They stay out in all weathers, keeping drivers and spectators as safe as possible; we owe them a debt of gratitude and must never underestimate the importance of the role they play in every one of the 4500 motorsport events held annually in the UK.

Colin Hilton
Chief executive,
Motor Sports Association

I went to the GP on Sunday.

Left home (St Albans) at 6am – parked by 7.20am. Perfect. Yes, the track was muddy, but most spectators had the correct footwear so it was OK.

Left after the GP, no significant queues, home by 4.15pm. Perfect. Well done Silverstone!

Peter Bolton
St Albans, Herts

Suffering Silverstone fans

should expect at the very least a hard-standing parking space rather than a quagmire resulting in long delays getting in and out, then

having to get their vehicle valeted afterwards.

The time has come to restrict numbers based on the amount of hard-surface parking available and if Silverstone starts complaining that it doesn't own the parking land, it's about time it sorted the matter out rather than building 'gin palaces' for BRDC members.

This is Britain and it rains, nothing new about that. Home of British motor racing – what a joke!
Mike J Kelly
London

AUTOSPORT.COM

TOP FIVE ON OUR WEBSITE

1. DE VILLOTA CONSCIOUS IN HOSPITAL
2. DE VILLOTA LOSES RIGHT EYE IN ACCIDENT
3. F1 PENALTY SYSTEM SET FOR AN OVERHAUL
4. ALONSO GRABS POLE IN DISRUPTED QUALIFYING
5. SCHUMACHER DECISION DUE IN SIX WEEKS

AUTOSPORT.COM PLUS

TOP STORY ONLINE

AUTOSPORT'S HALF TERM F1 REPORT

To read this exclusive feature and many others like it, log on to autosport.com/plus and choose which package you'd like. A month will cost £5.50, a year £46. Includes access to Forix – the ultimate stats website.

WIN!



ROAD ANGEL VANTAGE

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 Please ensure that your full address is included on all correspondence.

CORRECTIONS AND CLARIFICATIONS

- Last week's DTM results featured Andy Priaulx in a Phoenix Audi. He races an RBM BMW.
- We also stated that Austin Dillon took the lead of the NASCAR Nationwide standings after winning at Kentucky. In fact, Elliott Sadler was top of the points before and after the event.

It is the policy of AUTOSPORT to correct significant errors as soon as possible. Please note the issue date and page number when contacting us on autosport.editorial@haynet.com

WHAT'S ON...

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

BRANDS HATCH (MSVR/FORMULA 2)

July 14-15

Admission: £13 (Saturday), £21 (Sunday)

Tel: 01474 872331

The fifth round of the Formula 2 championship is at Brands Hatch, where it's supported by the International GT Open, European F3 Open, Britcar British Endurance Championship, Aston Martin GT4 Challenge and Formula Junior. The Formula 2 championship is currently led by Briton Luciano Bacheta, who has taken five wins from the first eight races, with Swiss driver Christopher Zanella in pursuit.



F2: Markus Pommer's backers may find Brands a touch chilly

DONINGTON PARK (BARC/EUROPEAN LE MANS SERIES)

July 14-15

Admission: £10 (Friday),

£10 (Saturday), £25 (Sunday)

Tel: 01332 810048

Donington will host the second round of the ELMS after the Zolder round was cancelled. The TDS Racing ORECA of Mathias Beche/Pierre Thiriet won the first round at Paul Ricard from the Sebastian Loeb Racing entry of Stephane Sarrazin/Nicolas Minassian/Nicolas Marroc. The ELMS will be supported by the Speed EuroSeries, Caterham Academy and Pre-'66 Touring cars.

OULTON PARK (BARC)

July 14

Admission: £13 (Saturday),

£10 (Sunday)

Tel: 01829 760301

Sports Saloons, Classic FF2000, Classic FF1600, Kumho BMWs, Clubmans Cup and Classic Clubmans.

SNETTERTON (BARC)

July 14-15

Admission: £13 each day

Tel: 01953 887303

Car action comes from the youngsters in InterSteps, as well as saloon-based fun for Dunlop Production Touring Cars, Mini Se7en and Mini Miglia. But the headliners on the Snetterton 300 circuit are the gearbox karting brigade fighting out the MSA British Superkart Grand Prix, qualifying for CIK FIA European Superkart, BSA F250 National Long Circuit and BSA F125 Open National Long Circuit points.

PEMBREY (VSCC)

July 14-15

Admission: £10 (Saturday),

£12 (Sunday)

Tel: 01554 891042

The vintage family heads to Wales with races including Pre-war events and 500cc Formula 3.

FORMULA RENAULT 3.5 SERIES

Rd 5/9

Moscow, Russia

July 14-15

worldseriesbyrenault.fr

The new Moscow Raceway is christened by the Renault World Series this weekend. Four Russian drivers are on the FR3.5 grid, but it's Sam Bird and Robin Frijns who lead the standings. As well as Formula Renault Eurocup and Megane Trophy, Vitaly Petrov will demo a Caterham F1 car.



FR3.5 racers have hopefully got their visas

MASTERS OF FORMULA 3

Zandvoort, Netherlands

July 15

cpz.nl

NASCAR SPRINT CUP

Rd 19/36

Loudon, New Hampshire, USA

July 15

nascar.com

SUPERSTARS

Rd 6/9

Spa Francorchamps, Belgium

July 15

superstars.it

GERMAN FORMULA 3

Rd 4/9

Spa Francorchamps, Belgium

July 14-15

formel3.de

FORMULA NIPPON

Rd 4/7

Fuji, Japan

July 15

f-nippon.co.jp

Television

THURSDAY JULY 12

1445-1650 **Motors TV**
American Le Mans Series: Lime Rock
2100-2215 **Sky Sports F1**
Formula 1: 1988 Season Review
2215-2325 **Sky Sports F1**
Formula 1: 1989 Season Review
2130-2145 **Eurosport 2**
Dakar Series: Silk Way Rally, Day 5

FRIDAY JULY 13

1310-1515 **Motors TV**
NASCAR Nationwide: Daytona Highlights
1945-2000 **Eurosport 2**
Dakar Series: Silk Way Rally, Day 6
2000-2100 **Sky Sports F1 LIVE**
The F1 Show
2100-2200 **Sky Sports F1**
Formula 1: 1990 Season Review
2300-0000 **Sky Sports F1**
Formula 1: 1991 Season Review

SATURDAY JULY 14

0700-0030 **Sky Sports F1**
GP2 Marathon
Every race of the 2012 season so far.
0705-0730 **Channel 4**
British F3: Norisring Highlights
0900-1100 **Motors TV**
V8 Supercars: Townsville Highlights
1015-1130 **Eurosport 2 LIVE**
Formula Renault 3.5: Moscow Race 1
1100-1200 **Motors TV**
British F3: Norisring Highlights
1200-1335 **Motors TV**
GP3: Silverstone Highlights
1335-1445 **Motors TV LIVE**
Formula 2: Brands Hatch Race
1615-1720 **Motors TV LIVE**
European F3 Open: Brands Hatch Race
1720-1750 **Motors TV**
Formula Ford: Spa Highlights

1855-1925 **Motors TV**

Porsche Supercup: Silverstone
1925-2030 **Motors TV**
Nurburgring 24 Hours: Highlights
2030-2305 **Motors TV LIVE**
NASCAR Nationwide: Loudon Race
2305-0115 **Motors TV**
Le Mans Classic: Highlights

SUNDAY JULY 15

0750-1430 **Sky Sports F1**
GP3 Marathon
1015-1130 **Eurosport LIVE**
Formula Renault 3.5: Moscow Race 2
1330-1530 **ESPN LIVE**
DTM: Munich Race Event
1500-1610 **Motors TV**
International GT Open: Brands Race 2
1515-2000 **Sky Sports F1**
Formula 1: British Grand Prix Replay
1610-1710 **Motors TV**
European F3 Open: Brands Hatch Race 2
1710-1810 **Motors TV**
Formula 2: Brands Hatch Race 2
1800-2300 **Premier Sports LIVE**
NASCAR Sprint Cup: Loudon
1810-2010 **Motors TV**
European Le Mans Series: Donington
2010-2130 **Motors TV**
Superstars: Spa Race Highlights
2200-2305 **Sky Sports F1**
Formula 1: 1993 Season Review
2305-0005 **Sky Sports F1**
Formula 1: 1994 Season Review

MONDAY JULY 16

1545-1750 **Motors TV**
NASCAR Nationwide: Loudon
2230-2330 **Sky Sports 2**
NASCAR Sprint Cup: Loudon
2100-2200 **Sky Sports F1**
Formula 1: 1995 Season Review

Online

AUTOSPORT.COM PLUS

Coming up in our premium web content this week

Senna needs to make most of his big chance



IS SENNA SQUANDERING HIS CHANCE?

Edd Straw talks to Williams's Bruno Senna to find out just why the 2012 season doesn't seem to be going to plan. Plus, in-depth post-British GP analysis from AUTOSPORT's Jonathan Noble and Adam Cooper.

WHY F1 NEEDS TO KNOW THIS MAN

Dutchman Robin Frijns is impressing in Formula Renault 3.5 this year. Glenn Freeman says F1 should take note.



DAVID EVANS: PACE NOTES

Our man's latest column on what's going on in the world of rallying.



REVVED UP OVER WHAT'S ON THE BOX

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

Revved Up thinks the BBC should bang a different drum



"EDDIE!" "EDDIE!" "EDDIE!" the crowd chanted. "B-B-C!" "B-B-C!" "B-B-C!" they continued like the brain-washed hordes from *Indiana Jones and the Temple of Doom*. "Eddie!" "Eddie!" "Eddie!" they repeated, until my ears couldn't take it anymore.

So this is what's become of my beloved BBC, the corporation responsible for shows such as *Panorama*, *Horizon* and those amazing David Attenborough series. The organisation that gave us expert commentators such as Dan Maskell, Ron

Pickering and Harry Carpenter is reduced to a pantomime. How depressingly, shockingly, lamentably sad.

Interacting with the crowd is all very well, but pandering to their whims as a way of massaging the egos of the presenting team... Honestly, the post-British GP forum coverage was rubbing shoulders with Keith Chegwin's naturist game at the bottom of the TV barrel. At least Lee McKenzie had the decency to look embarrassed.

From the lumpen

rendition of the *The Chain* by Eddie Jordan and the Robbers to DC interviewing a nine-year-old boy through a fence, where neither the question nor the answer could be clearly heard, I struggled to see the point of the whole fiasco other than as part of some sort of appendage-dangling contest with a rival broadcaster.

Honestly, I don't care who the most popular is. There are two of you out there. Get over it.

The nearest we got to some form of analysis was Murray Walker breathing

unexpected life back into *Mrs Dale's Diaries* as he stated that "I'm worried about McLaren". But rather than this being the starting point for an intelligent debate, it was the cue for one of Eddie Jordan's nonsensical questions.

Murray didn't even attempt to answer it. But even if he had offered up a reply it would have been drowned out by chanting.

So what does this mean for the future of the BBC as a broadcaster of live sporting events? "It's behind you!" *Revved Up*

THE WEEK IN PICTURES

Our lensmen pounding the beat, from Florida to Bedfordshire, via San Francisco and Northamptonshire

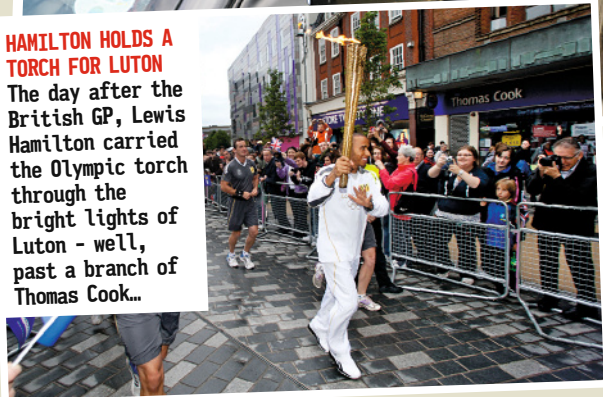


WONDER WHY HIS NICKNAME IS 'ROWDY'?
Kurt Busch won Friday night's Nationwide race at Daytona, but this is younger brother Kyle - who owns Kurt's car, too

SORRY MATE, YOU'RE STUCK WITH MASSA
Mark Webber lets Stefano Domenicali know that he won't be needing a seat



HAMILTON HOLDS A TORCH FOR LUTON
The day after the British GP, Lewis Hamilton carried the Olympic torch through the bright lights of Luton - well, past a branch of Thomas Cook...



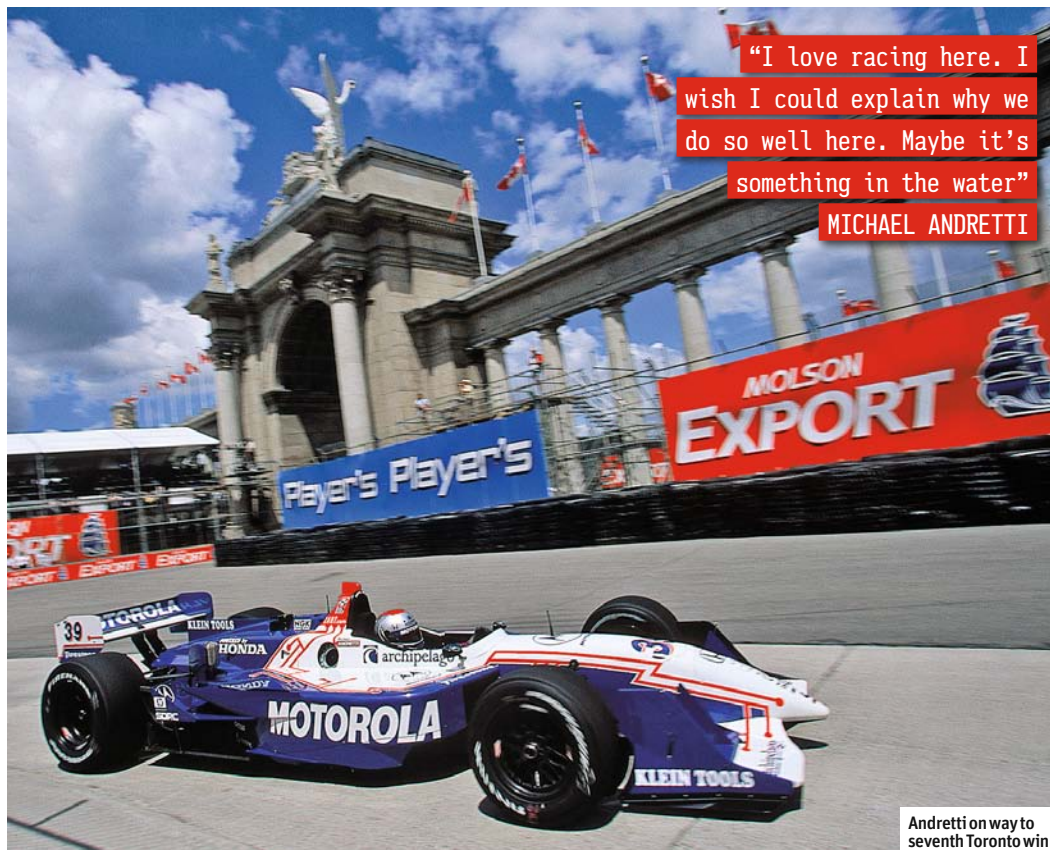
KEN BLOCK APES STEVE McQUEEN IN BULLITT
The fifth installment of the Gymkhana video craziness features the WRC star on the streets of San Francisco

PICS: LAT SOUTH, THOMPSON/GETTY, FERRARO/LAT

NEXT WEEK MICHAEL SCHUMACHER HAS HIS COMEBACK WORKED OR NOT? BY MARK HUGHES **DON'T MISS IT!**

FROM THE ARCHIVE

CART Indycar, Toronto, July 15 2001



Andretti on way to seventh Toronto win

RYAN HUNTER-REAY'S THIRD STRAIGHT INDYCAR

victory for Andretti Autosport last weekend in Toronto continued a distinguished history for team owner Michael Andretti at the Canadian street circuit.

Andretti struck gold in an incident-filled CART Indycar race in 2001 to take victory for Team Green – which would later become his eponymous squad. It was the second year in a row that he had claimed the spoils in Ontario, and the victory brought his Toronto tally to a remarkable seven.

There were no fewer than nine full-course yellows shown during the race, as a result of several multi-car collisions. Andretti's Reynard-Honda didn't escape the chaos entirely; 13th on the grid, he dropped to last on the opening lap after a collision with rookie Scott Dixon.

His weekend looked to be over after that altercation, but he was fortunate that one of CART's safety crews was able to get him on his way again.

"After the first lap we thought the race was over for us," said Andretti. "I have to give credit to the safety crew. They got me going before the field came around and lapped me."

Andretti slowly made his way back up through the field, while taking the opportunity to pit twice for fuel during the

two yellow-flag periods that followed his own incident. The decision to do so effectively allowed him to run almost the entire distance on a fuel-rich mixture and he charged back into contention.

Andretti seized the lead at the penultimate yellow and restart, with Alex Tagliani – now second – unable to take up the fight because he needed to conserve fuel. The French-Canadian's engineers even instructed him to avoid warming up his tyres before the restart.

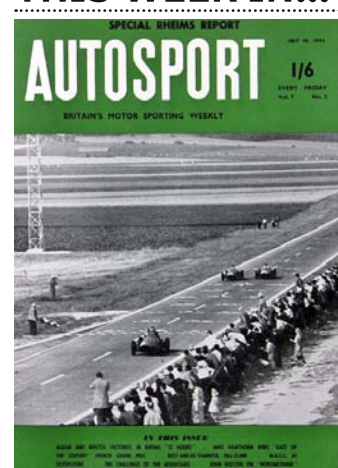
At the final restart, which came with six laps to go, Andretti pulled away for a fine win, the 41st triumph of his CART Indycar career.

Andretti, who had not stood on the top step of the podium since the race in Toronto the year before, was delighted with the result.

"I love racing here," said the American. "I wish I could explain why we do so well here. Maybe it's something in the water. Whatever it is, I'm not going to change it."

The win pushed Andretti up to second in the drivers' standings, but three non-scores followed and his failure to claim another victory meant he finished the season third in the championship behind Gil de Ferran and Kenny Brack. ❖

THIS WEEK IN...



JULY 10 1953

"THE RACE OF THE CENTURY" RAN

the headline in AUTOSPORT this week in 1953, as a thrilling French Grand Prix on the revised Gueux circuit at Rheims built to a thrilling crescendo between Mike Hawthorn's Ferrari and Juan Manuel Fangio's Maserati.

Action raged throughout the contest, with Hawthorn and Fangio initially involved in a five-way battle for second in which positions swapped several times per lap. The pair eventually fought their way clear and, when Jose Froilan Gonzalez was forced to surrender a 24s lead by pitting his Maserati again, their fight became a battle for victory.

On 10 separate occasions they came past the pits dead level, the overall lead changing hands 12 times over the final 30 laps before Hawthorn eventually clinched it, one second ahead of the Argentinian.



PICTURE: LEBERGE/GETTY



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JARNO TRULLI

■ Monaco GP ■ May 23, 2004 ■ Renault R24 ■ Beating the opposition – including his own team



This was the easy part: Trulli leads Button late on

I THINK IT'S DIFFICULT TO pick one race from so many, but the one that stands out as the race of my life is Monaco because of my first pole and victory, and it's one of those races that everyone wants to win.

The weekend was a really tough battle with my Renault team-mate Fernando Alonso, not only because the team wanted him to win but also everyone was pointing me out as a possible poleman for that weekend. The pressure was really on me! I knew I had to set the car up well and keep cool to get a good lap in, which is not at all easy in Monaco, but I did it in a massive way and ended up four tenths of a second ahead of Fernando, which I thought was some achievement.

That was the first step. I had to remember anything could happen over the 78 laps on Sunday. I was focused on making a good start so I could push as hard as possible and then handle the race, because the team were going to attack me with Fernando's strategy by pitting him one lap later. It was like the team were playing a chess game with our strategies.

There was a safety car three or four laps later and the gap I had

"I was focused on making a good start so I could push as hard as possible and then handle the race, because the team were going to attack me with Fernando's strategy"

was reduced to nothing, but I knew I just needed to do a good restart and pull away. I managed that.

After the first stop I came out ahead of Fernando and was able to pull out a 12-second lead over him. It was quite tough though, because the backmarkers were holding me up in traffic and when you're the leader you're the one who loses

most out of it. I had to really push at that point to make sure Fernando did not come out ahead of me in either of our stops, because he managed to get the gap down to three seconds in five laps due to traffic. He was taking a lot of risks though and he eventually crashed in the tunnel.

When the safety car came out

again because of Fernando's accident, I pitted again and came out behind Juan Pablo Montoya [who was a lap behind] and Michael Schumacher, who had yet to stop. They were playing some weird game, zigzagging, braking, accelerating... neither of them were giving up. I remember thinking that I should keep a little bit of a gap between them because something might happen and it did. As I passed their crash I was really, really laughing inside my helmet!

That was the last drama of the race, really. I said to myself, 'I've been leading all the race, I know I have the car, I know I have the pace, I know I have the skill! I had Jenson Button behind me but he wasn't really close enough to attack. Those last 10 laps were probably the easiest part of the race! I was just concentrating on not making any mistakes and getting to the end.'

For me, I really couldn't miss this opportunity in Monaco as it was my only chance to win a race at that time because of the situation within the team, and because we weren't constantly delivering race-winning performances. ✪ *Jarno Trulli was talking to George East*

IN PROFILE



JARNO TRULLI WAS A SENSATION when he made the transition from karting superstar to German Formula 3 in mid-1995, and won the title in '96. He was instantly promoted to F1 with Minardi for '97, then replaced Oliver Panis at Prost when the Frenchman had his leg-breaking Canada crash. Trulli went on to drive for Jordan, Renault, Toyota and Lotus in an F1 career that spanned 15 seasons. Although he claimed four pole positions, his Monaco '04 result remained his only victory.

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